

THE CAPABILITIES APPROACH TO THE QUALITY OF URBAN LIFE OF  
WOMEN: MEASURING THE INTRA-URBAN DISPARITIES IN THE CITY OF  
AMASYA

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**THE CAPABILITIES APPROACH TO THE QUALITY OF URBAN LIFE OF  
WOMEN: MEASURING THE INTRA-URBAN DISPARITIES IN THE CITY  
OF AMASYA**

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## ABSTRACT

### **THE CAPABILITIES APPROACH TO THE QUALITY OF URBAN LIFE OF WOMEN: MEASURING THE INTRA-URBAN DISPARITIES IN THE CITY OF AMASYA**

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Everyone has the right to live their life with dignity in a place where they have the freedom to realize the functionings they value. Disadvantaged women experience their environments differently from men and arguably do not live in environments that enhance their agency, freedom, and opportunities to live valuable lives. There is a need to understand the quality of urban life of women living in urban neighborhoods in terms of freedom to achieve the valued functionings. Accordingly, this thesis theoretically aims to question the aggregate satisfaction measurement based on the utilitarian perspective, to further develop the concept of quality of urban life by reconceptualizing it within the framework of the relationship between women and urban space and the capabilities and functionings approach, and to introduce the concept of '*Capabilities-Based Quality of Urban Life*'. In the empirical research part of the thesis, it is aimed to understand whether and in what aspects the capabilities-based quality of urban life differs for women living in two urban neighborhood clusters in the central district of Amasya classified by Women's Human Development Index levels. Additionally, it aims to evaluate the impact of internal/external conversion factors and the choice factor on

limiting women's capabilities to achieve valued functionings in urban space. To achieve these aims, a quantitative research design was implemented. Within this scope, after identifying the neighborhoods exhibiting urban center characteristics using ArcGIS Pro, SPSS Cluster Analysis was employed to determine urban neighborhood clusters differing in terms of Women's HDI. Subsequently, SmartPLS Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to analyze the survey data obtained from 470 women. Unlike other studies on the quality of urban life, this study explores whether the urban environment in which women live provides them with the freedom to achieve valued functionings related to accessibility, safety, and participation. Conducting this study will pave the way for the quality of urban life research that takes into account women's capabilities/freedoms and functionings in the evaluation of their quality of urban life. Additionally, the results obtained will be important for both the critical evaluation of problems encountered in the urban physical structure and the development of future urban policies to expand women's agency freedom in cities.

**Keywords:** Quality of Urban Life, Capabilities and Functionings, Women and Urban Space, Human Development, PLS-SEM

## ÖZ

### KADINLARIN YAPABİLİRLİKLER YAKLAŞIMI TEMELLİ KENTSEL YAŞAM KALİTESİ: AMASYA MERKEZ İLÇEDE KENT İÇİ FARKLILIKLARIN ÖLÇÜLMESİ

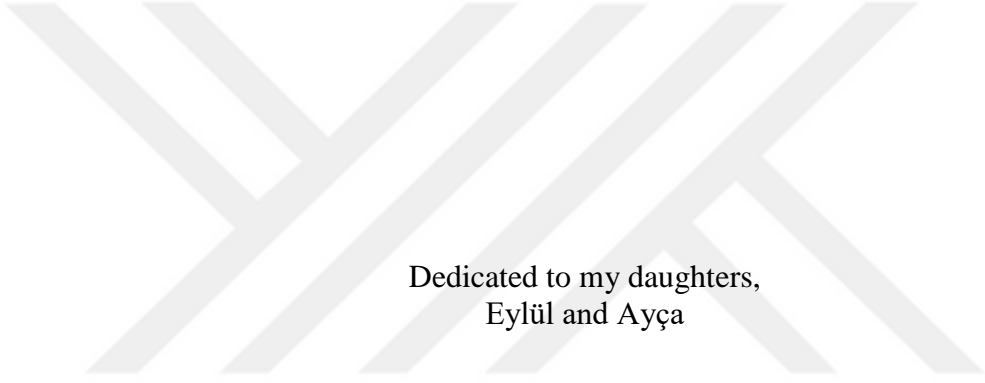
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Herkes, değer verdiği işlevsellikleri gerçekleştirebilme özgürlüğüne sahip olduğu bir yerde, onurlu bir yaşam sürme hakkına sahiptir. Bu açıdan dezavantajlı konumda bulunan kadınlar, kentsel çevreyi erkeklerden farklı şekillerde deneyimlemekte, eylemde bulunabilme özgürlüklerini ve değerli hayatlar yaşama fırsatlarını genişleten bir kentsel ortamdan yoksun yaşamaktadır. Bu nedenle, kentsel mahallelerde yaşayan kadınların kentsel yaşam kalitesinin, değerli işlevselliklere erişebilme özgürlüğü çerçevesinde incelenmesi önem taşımaktadır. Teorik olarak bu çalışma ilgili yazındaki boşluğa dikkat çekerek, faydacı bakış açısına dayalı toplam memnuniyet ölçümünü sorgulamayı, kentsel yaşam kalitesi kavramını kadınlar ve kentsel mekân ilişkisi ile yapabilirlikler ve işlevsellikler yaklaşımı çerçevesinde yeniden kavramsallaştırarak geliştirmeyi amaçlayarak ‘*Yapabilirlikler Temelli Kentsel Yaşam Kalitesi*’ kavramını önermektedir. Tezin ampirik araştırma bölümünde, Amasya merkez ilçede ‘Kadınların İnsani Gelişmişlik Düzeyleri’ açısından farklılık gösteren iki kentsel mahalle kümesinde yaşayan kadınların yapabilirliklere dayalı kentsel yaşam kalitesinin farklılaşıp farklılaşmadığını ve hangi yönlerden farklılaştığını anlamak amaçlanmaktadır. Ayrıca, kadınların kentsel mekânda değerli işlevselliklere ulaşma yapabilirliklerini sınırlamada içsel/dışsal dönüşüm faktörlerinin ve seçim

faktörünün etkisinin değerlendirilmesi amaçlanmaktadır. Belirlenen amaçlar doğrultusunda, çalışmada nicel araştırma yöntemleri kullanılmıştır. Bu kapsamda, Amasya merkez ilçede kentsel alan niteliğine sahip mahalleler ArcGIS Pro programı ile tespit edilmiş, Kadınların İnsani Gelişmişlik Düzeyleri (WHDI) açısından farklılık gösteren kentsel mahalle kümelerinin belirlenmesinde SPSS Küme Analizi yönteminden yararlanılmış ve 470 kadından elde edilen anket verilerinin analizi için ise SmartPLS Kısmi En Küçük Kareler Yapısal Eşitlik Modeli (KEKK-YEM) kullanılmıştır. Kentsel yaşam kalitesi üzerine yapılan diğer çalışmalardan farklı olarak, bu çalışma, kadınların kentsel yaşam kalitesini, onlara erişilebilirlik, güvenlik ve katılım konularında değerli işlevselliklere ulaşmaları için özgürlük sağlayan bir çevre olup olmadığı üzerinden değerlendirmektedir. Bu çalışma, kadınların kentsel yaşam kalitesinin değerlendirilmesinde onların yapabilirliklerini, özgürlüklerini ve işlevselliklerini dikkate alan kentsel yaşam kalitesi çalışmalarının önünü açacaktır. Ayrıca, elde edilecek sonuçlar, kentsel fiziksel yapıda karşılaşılan sorunların eleştirel değerlendirilmesi ve gelecekte kentlerde kadınların eylemde bulunabilme özgürlüğünün artırılmasına yönelik kentsel politikaların oluşturulması açısından önemli olacaktır.

**Anahtar Kelimeler:** Kentsel Yaşam Kalitesi, Yapabilirlikler ve İşlevsellikler, Kadın ve Kentsel Mekân, İnsani Kalkınma, KEKK-YEM



Dedicated to my daughters,  
Eylül and Ayça

## ACKNOWLEDGMENTS

During the 2020s, one of the most pressing issues in Türkiye is that individuals are often compelled to lead a survival-focused existence, deprived of opportunities for self-actualization. This thesis was initiated with the perspective of integrating the relationship between urban space and the understanding of expanding capabilities and freedoms for individuals to live the lives they value. At this point, my supervisor, Assoc. Prof. Dr. Yücel Can Severcan, suggested narrowing the unit of analysis to disadvantaged groups, thereby making the connection I established between the capabilities approach and the quality of urban life much more specific and meaningful.

I learned about the relative positions of women in different cities across Türkiye at a very young age, through the experiences gained from living in various cities, districts, and villages due to my father's military service in the Turkish Armed Forces. There were striking differences between playing in the streets of İzmir as a young girl and playing in the streets of Şırnak, or between being in public spaces in Hakkari as a young woman and being by the seaside in Aydın. The constant fluctuation in women's freedoms in public spaces across and within different settlements significantly influenced my daily life experiences in those areas as well. Based on these experiences, and following the suggestion of my supervisor, I decided to narrow the unit of analysis in the framework I developed for my doctoral thesis from people in general to women specifically. The conceptual framework developed in this thesis was awarded during the PhD Showcase session organized by the Marmara Municipalities Union as part of the Marmara Urban Forum (MARUF) on October 4, 2023.

First and foremost, I wish to express my deepest gratitude to my supervisor, Assoc. Prof. Dr. Yücel Can Severcan, who provided precise guidance, critical comments, and meticulous feedback, carefully reviewing the manuscript to ensure coherence and clarity throughout. I also express my sincere thanks to my thesis monitoring committee members, Prof. Dr. Nil Uzun and Prof. Dr. F. Nihan Özdemir Sönmez, for

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Whatever I have achieved today would not have been possible without the endless support of my family. I am deeply grateful to my father Umut Bütün, my mother Aylin Bütün, my mother-in-law Hülya Sağıroğlu, and my sisters and lifelong best friends Gülsün Duygu Bütün and Gülben Bütün, for their unwavering belief in me and their constant encouragement. Their presence in my life is truly invaluable. Their

strong stance in the face of the challenging lives they lead both sets an example for me and serves as a source of motivation.

I have sacrificed and waived many things to complete this thesis - most importantly, the precious moments I had to forgo with my husband and children. My husband, Celal Ahmet Sağıroğlu, is a precious person who opens the way for a woman to live a life she values and strives for, who creates spaces of freedom, eases her burdens, and offers his full support. In this sense, my daughters and I are truly fortunate. I am deeply grateful to him for supporting me throughout this process. And my daughters... Hülya Eylül Sağıroğlu and Ayça Sağıroğlu... I regret the precious moments I had to steal away from them. It was challenging with them, but I couldn't have done it without them. It was their love, their light, and their presence that gave me strength when I needed it most. I thank them for being my source of motivation and joy.

Since many concepts in this thesis are ambiguous, value-laden and dispersed in the literature, the study has become quite challenging. I am, of course, well aware of the speculative and rudimentary nature of this study. Any mistakes in this labor-intensive, struggle-filled, yet enlightening journey are entirely my own, warts and all. I hope that the shortcomings of this study will be addressed as more researchers engage with the idea I proposed within the capabilities approach framework that cities should be acknowledged as spaces where individuals have the freedom to achieve the functionings they value. In this way, I believe that one day, cities in Türkiye can evolve into places where individuals, especially women, are able to live fulfilling and capable lives with dignity, safety, happiness, and hope.



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## **LIST OF ABBREVIATIONS**

### **ABBREVIATIONS**

AARP: American Association of Retired Persons

ABPRS: Address-Based Population Registration System

CB-SEM: Covariance-Based Structural Equation Modeling

CEDAW: Convention on the Elimination of All Forms of Discrimination against Women

CEID: Gender Equality Monitoring Center

CEMR: Council of European Municipalities and Regions

CDCs: Community Development Corporations

CIDI: Center for Innovation through Data Intelligence

CIESIN: Center for International Earth Science Information Network

CPI: City Prosperity Index

CORINE: Coordination of Information on the Environment

CO: Community-Objective

CS: Community-Subjective

CUPCD: Center on Urban Poverty and Community Development

DEGURBA: Degree of Urbanization

EC: European Commission

EFTA: European Free Trade Association

EIU: The Economist Intelligence Unit

EU: European Union

EUROSTAT: The Statistical Office of the European Union

GHSL: Global Human Settlement Layer

GHS-BUILT-S: Global Human Settlement - Built-up surface

GHS-DUC: Global Human Settlement - Degree of Urbanization Classification

GHS-POP: Global Human Settlement - Population

GHS-SMOD: Global Human Settlement - Settlement Model

GDI: Gender Development Index

GII: Gender Inequality Index

GISCO: Geographic Information System of the European Commission

GPR2C: Global Platform for the Right to the City

GPW: Gridded Population of the World

HDI: Human Development Index

HOC: Higher-Order Construct

IO: Individual-Objective

IPU: Inter-Parliamentary Union

IS: Individual-Subjective

IULA: International Union of Local Authorities

LAU: Local Administrative Units

LOC: Lower-Order Construct

MAKS: Spatial Address Registration System

NUTS: Nomenclature of Territorial Units for Statistics

OECD: Organization for Economic Cooperation and Development

PLS-SEM: Partial Least Squares Structural Equation Modeling

QoL: Quality of Life

QoUL: Quality of Urban Life

SEDAC: Socioeconomic Data and Applications Center

SEM: Structural Equation Modeling

SKBT: Fancy Women Bike Ride

SMT: Small and Medium-Sized Towns

TEPAV: The Economic Policy Research Foundation of Türkiye

TOBB: Union of Chambers and Commodity Exchanges

TOKI: Housing Development Administration of Türkiye

TSKB: The Industrial Development Bank of Türkiye

TURKSTAT: Turkish Statistical Institute

UCLG: United Cities and Local Governments

UIS: UNESCO Institute for Statistics

UN: United Nations

UNESCO: United Nations Educational, Scientific and Cultural Organization

UNDP: United Nations Development Programme

VIF: Variance Inflation Factor

WEF: World Economic Forum

WHDI: Women's Human Development Index



## CHAPTER 1

### INTRODUCTION

From ancient times to the present, humans' understanding of a good life has remained essentially unchanged. For a dignified life, people have certain expectations regarding the quality of their living environment. Many people worldwide wish to live their lives under good management, in good health, in a safe and clean, natural and built environment with friends and relatives, with sufficient financial resources, and with the freedom to choose and achieve their personal goals. A good life in a good place is not only a desire but also a right that all people should have. Everyone has the right to live their life with dignity in a place where they have the freedom to realize the functionings they value.

As Aristotle stated, "*Men come together in the city to live; they remain there in order to live the good life,*" cities act as magnets, drawing people from surrounding areas by offering significant opportunities and the promise of a better life. For centuries, people have migrated to cities in pursuit of civilization, wealth, opportunities, and the hope of achieving better living conditions than those they currently experience. In many respects, people living in urban areas receive much better services than those living in rural areas. Urban residents, compared to their rural counterparts, have greater opportunities to increase their income, enjoy better housing, living conditions, social opportunities, and access services such as healthcare, education, and safety. However, for some, cities may be havens of opportunity; for others, they can be landscapes of struggle.

Building on this context, this chapter introduces the problem of the study. Followed by a discussion of the gaps in the literature which this thesis seeks to fill out, it outlines the aims and the research questions of the study. The hypotheses are then

presented in alignment with these research questions. The chapter concludes with a concise summary of the research design and an overview of the thesis structure.

### **1.1. The Problem Statement**

Although cities have significant positive and negative impacts on human life, the distribution of these advantages across space and among people can be highly uneven (United Nations, 2020). For the former, public services and resources are often distributed inequitably, resulting in some neighborhoods offering supportive environments for residents, such as better public services, higher spatial-physical quality, more effective education and healthcare services, and safer public spaces, while others do not. In these disadvantaged neighborhoods, living conditions, socio-economic standards, access to social and health services, education levels, and life expectancy are typically much lower.

For the latter, the people are not equally exposed to negative impacts and cannot benefit from positive impacts to the same extent. Since people are not composed of unitary or homogeneous groups, terms such as "people," "residents," "inhabitants," and "households" cast a veil over the diversity of human beings, which includes variations in gender, age, ethnicity, religion, and socio-economic, socio-cultural, and political backgrounds (Fadda and Jiron, 1999). Among these groups, genders are exposed to the positive and negative effects of urban space in different ways. The daily life experiences of women in urban public spaces differ significantly from those of men. Certain economic, social and spatial factors contribute to the deepening inequalities women face, preventing them from equally benefiting from available opportunities. These factors, which may constrain the freedom and capabilities of women in urban spaces, arguably have a significant influence on their quality of urban life.

The challenging circumstances of women in the city are a human rights violation that needs to be examined in the urban space. As can be seen in Figure 1, this thesis is structured around three distinct yet interrelated themes: the quality of life in urban areas, the relationship between women and urban spaces, and the capabilities and

functionings approach. The following paragraphs briefly explain these themes and the relationships between them.

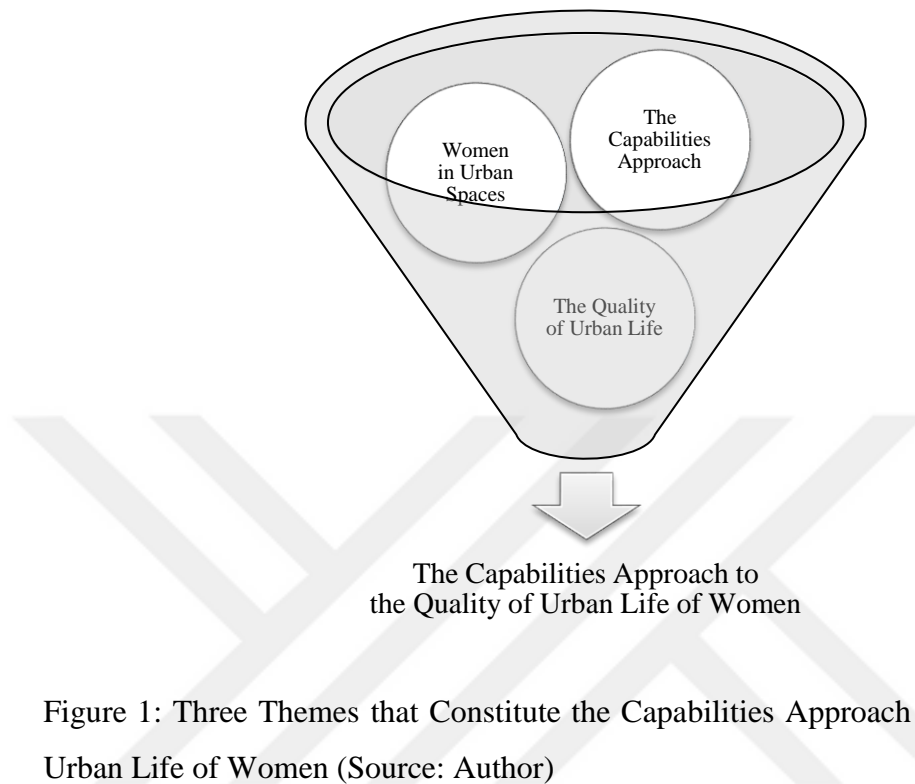


Figure 1: Three Themes that Constitute the Capabilities Approach to the Quality of Urban Life of Women (Source: Author)

Improving the quality of life of residents and providing them with more livable environments is one of the main goals of urban living. However, although women have more opportunities in cities than in rural areas, arguably, they are more disadvantaged relative to men (Rakodi, 2002a). Women and men often have different daily experiences in urban spaces, especially in specific contexts, leading to significant differences in their quality of urban life. However, the quality of urban life concept is often influenced by an androcentric bias, neglecting essential aspects of women's daily lives. This neglect typically disregards gender perspectives and the everyday challenges women face in urban space.

In urban public spaces, women generally deal with three main issues: accessibility, safety, and participation. Although these three issues may seem like separate concepts, a problem in one area often affects the others (e.g., safety issues in a public space can impact accessibility, or limited access to education can affect participation

in the economy). Access to and use of urban public space are gender-differentiated, as men are often perceived as breadwinners and associated with public spaces (Ranade, 2007), while women are viewed as caregivers and associated with private spaces (Fenster, 2005; Taylor, 2011). The issue of accessibility for women in urban public spaces can be understood in two ways: physical access and access to opportunities. Women may face challenges in physically accessing urban amenities, including difficulties with mobility and access to transport services. In terms of access to opportunities, they may encounter barriers to accessing education, as well as clean, healthy, and sustainable environments.

In addition, the safety and security of urban areas are pivotal factors influencing the quality of life for urban residents, particularly women. Ensuring women's safety in urban public spaces and public transportation is crucial. However, women in the androcentric urban public spaces often feel insecure and are afraid of being abused, which restricts their right to the city and impacts their mobility in daily life (Bravo, 2022). Evidence shows that crime and the fear of crime reduce women's quality of life, keeping them passive and confined at home to avoid being perceived as provocative and deterring them from venturing out at night (Gordon et al., 1980).

In addition to accessibility and safety, women's participation in economic activities and decision-making is important for their empowerment. However, caregiving responsibilities, family maintenance, heavy domestic work, inadequate levels of education, and negative social norms regarding women's employment are some of the factors that hinder women's participation in the economy (Chant, 2006; Buckingham, 2010; Mackenzie, 2014; ILO, 2019; Grabowska, 2021; Jayachandran, 2021). Another reason that affects the quality of life for women in urban spaces is their limited participation in the decision-making processes that affect their living environment. When fulfilling their various responsibilities, shaped by traditional roles, women require different urban services than men. To address the factors that negatively affect women's quality of life and their disadvantaged position in a "*city of men*" (Little et al., 1988; Greed, 1994; Mackenzie, 2014), it is crucial to ensure their equal participation in all aspects of urban life, alongside men. This can be achieved



by actively involving women in the planning and decision-making processes of local governments, especially those directly affecting women's lives.

The issues discussed up until this point highlight the critical importance of addressing the problems, concerns, and needs of women in urban planning. Although the relationship between gender and urban space began to be addressed in the 1980s (Spain, 2014), even today, urban planning and design often ignore the complexity and inequality of gender dynamics. Traditional urban planning and design tend to prioritize and predominantly reflect male perspectives and interests, neglecting the challenges, viewpoints, and experiences of women in their daily lives (Garcia-Ramon et al., 2004; UN-Habitat, 2012a). As a result, gender-blind urban planning (a term coined by Rakodi, 1991) continues to shape the daily lives of urban women today, significantly impacting their quality of urban life.

The reasons limiting women's opportunities to lead fulfilling lives in urban spaces are multifaceted. One important factor is not merely having access to resources, but having the capability to use these resources effectively, which ultimately contributes to overall quality of urban life. This perspective underlines the need for a shift in how the quality of urban life is analyzed. A new approach to studying the quality of urban life can be found in development literature, as the quality of life is closely tied to the concept of development. Moreover, research on the quality of life is often intertwined with shifts in the development concept over time.

The content of quality of life has been shaped by the development ethics, which is dramatically influenced by value judgments or normative frameworks. The factors that determine what development should be based on have significantly influenced the quality of life studies. The ever-increasing population and the limited resources required for the current and future generation have been quite effective in the change in the understanding of development. Especially after the second half of the 20<sup>th</sup> century, to meet the needs of the increasing population, as the environmental degradation resulting from production and consumption processes becomes evident, there has been an awareness that the growth trend cannot continue in the same way (Meadows et al., 1972; Cole, 1999; Wheeler, 2015). Especially after the 1980s, when

environmental degradation increased alongside rising social injustices, it became evident that the development should be viewed as a holistic concept encompassing environmental, societal and economic aspects simultaneously (Wise, 2001; Asara et al., 2015). However, the ongoing pressures on the environment and the rising social problems have once again brought the essence of the development concept into discussion (Sen, 1983; Alkire and Deneulin, 2009a). The new perspective on development emerged in the 90s *“enables all individuals to enlarge their human capabilities to the full and to put those capabilities to their best use in all fields economic, social, cultural and political”* (UNDP, 1994, p. 4). The concept of human development puts the people first at the center of development and focuses on agency aspect of people and their capabilities and functionings, aims to increase the opportunity to live fulfilling lives, not solely aim to the increase in material wealth, which is just one of means to reach human development (Sen 1999; Sen, 2000; Nussbaum, 2011).

The capabilities and functionings approach, which constitutes the philosophical and conceptual framework of human development, refers to the freedom of people to achieve various valuable activities and states that contribute quality of life of people (Sen, 1999). This new understanding of development has undoubtedly had a great impact on the analysis of people's quality of life because it supports the idea that *“acting freely and being able to choose are directly conducive to well-being”* (Sen, 1992, p. 51).

According to the UNDP People-Centered Development report (2011, p. 2), *“people's well-being and their quality of life is the most important measure of whether 'development' is successful.”* In this perspective, economic development is regarded solely as a means to expand the choices available to people for leading valuable lives, which, in turn, enhances human capabilities.

As much as the human development approach has affected the development literature and, accordingly, the quality of life studies, it has not influenced the spatial dimension of the quality of life or quality of urban life in particular to the same extent. Since cities are for humans and planned for them (Gehl, 2010), urban

planning concerns not only allocating land to accommodate the large numbers of people living in or flocking to cities but also providing livable spaces and accessibility to opportunities that ensure the quality of life of people and allow them to live fulfilling lives. As stated in the UNDP People-Centered Development report (2011), the well-being and quality of people's life are the most critical measures of whether the development is successful or not; in a similar people-centered vein, it can be argued that the determinants of whether the urban development is successful or not are humans and their quality of the urban life.

The capabilities and functionings approach within the framework of human development contains important opportunities to form the basis of urban planning in general and quality of urban life research in particular. In this study, considering women's compelling challenges in cities and their quality of urban life, the freedom for women to live the valuable lives in urban spaces, as well as the factors that hinder them from exercising these freedoms, will be examined by synthesizing the three mentioned themes together.

## **1.2. The Gaps in Knowledge**

Women should live in an urban environment that expands their opportunities to live valuable lives. For nearly half a century, since Harvey Perloff first introduced the concept of the quality of urban life in 1969, numerous studies have been conducted on the people's quality of urban life. The majority of quality of urban life research is conducted at the international level, while, in the national context, there is a steadily growing body of literature (see, e.g., Geray, 1998; Zengin, 1999; Evcil-Türksever and Atalık, 2001; Ülengin et al., 2001, Baycan-Levent & Nijkamp, 2006; Görür & Uğurlar, 2007; Şenlier et al., 2009; Tekeli, 2010a; Tekeli, 2010b; Oktay and Marans, 2010; Okumuş and Eyüboğlu, 2015; Yakın-İnan & Özdemir-Sönmez, 2019; Salihoğlu and Türkoğlu, 2019; Bovkır et al., 2023).

Moreover, both internationally and nationally, studies addressing women's quality of urban life remains notably limited (see, e.g., Gordon et al., 1980; Fadda and Jiron, 1999; Dunning et al., 2006; Zehba and Firoz, 2021). While several studies do touch upon women's experiences in urban life, there is still a notable gap in literature

specifically addressing the broader topic of "women's quality of urban life" as a distinct field of research.

Within the framework of human development, particularly over the last 15 years, several researchers (Jasek-Rysdahl, 2001; Shin, 2008; Beyazit, 2011; Blečić et al., 2013; Deneulin, 2014; Frediani and Hansen, 2015; Hansen, 2015; Bucheli, 2016; Biagi et al., 2018; Bucheli, 2020; Randal et al., 2020; Grabowska, 2021) have conducted research that examines urban studies through the lens of the capabilities and functionings approach. These researches are important as they provide the initial contribution; however, the literature gap on examining the quality of urban life of women in the context of human development still exists.

This thesis proposes '*The Capabilities Approach to the Quality of Urban Life of Women*' to contribute to the literature gap in studies related to women's quality of urban life. It questions the utilitarian approach to understanding women's quality of urban life. It is argued that the utility-based welfarist calculus, commonly used in quality of urban life studies, focuses on total satisfaction achievement, makes the normative evaluation considerably on the basis of the well-being aspect of humans. It also ignores the different factors that constrain individuals from converting resources into functionings in urban areas.

### **1.3. The Aims of the Study**

Considering compelling and constraining challenges that women grapple with in urban life are considerably higher than those of men, there is a need to understand and examine the quality of urban life of women in the context of their freedom to act as an agent and achieve the functionings they value in the urban environment. For this purpose, this thesis synthesizes the capabilities and functionings approach developed by Nobel laureate Amartya Sen (1999) and Martha Nussbaum (2000) with the concept of quality of urban life and women and urban space relations.

In theory, this study aims to reconceptualize by synthesizing the concept of quality of urban life in the context of women's perspectives in urban space and the capabilities and functionings approach. It proposes the idea that living environments that allow

women to have the freedom to achieve the functionings they value are places with high quality of urban life.

Although Türkiye has committed to advancing gender equality by becoming a party to various international conventions, reports such as the Gender Inequality Index (GII), the Gender Development Index (GDI), and the Global Gender Gap (GGG) indicate that Türkiye continues to perform poorly in terms of gender equality at the international level. The troubling state of gender equality in Türkiye, highlighted by cross-national comparisons, is also reflected within the country itself. Amasya, which ranked below the national average in terms of gender equality according to TEPAV's 2019 report, was selected as the site for the empirical research in this study.

In practice, this thesis aims to measure and compare the capabilities-based quality of urban life of women living in urban neighborhoods in the central district of Amasya, which are clustered based on their Women's Human Development Index (WHDI) levels. By questioning the aggregate happiness/satisfaction measurement based on the reductionist utilitarian view, this study aims to reveal the internal (personal) and external (social and environmental) conversion factors that constrain women's capabilities in achieving valued functionings in urban neighborhoods.

This thesis attempts to holistically introduce the quality of life, women and urban space relations, and capabilities and functionings approach into the urban agenda. A study focusing on spatially measuring the quality of life is already significant in terms of revealing the subjective views of the inhabitants about the objective physical environment. Nonetheless, the quality of urban life studies that focus not on urban resources but on people's opportunity sets of achievable functionings with these resources would be far more important.

Aiming to improve quality of life is also closely related to the effort for the realization of human rights. As an abstract concept, human rights can only become meaningful and embodied in local areas where humans live their daily lives (Tekeli, 2010b). This study will make an essential contribution to the embodiment of human rights in place by bringing an alternative analytical perspective to examine and expand the theoretical background of the quality of urban life studies with the gender

equality and capabilities and functionings approach, and then by empirically measuring the new framework in urban space from the point of view of women.

Conducting this study will pave the way for urban planning that prioritizes and takes into account the freedom of the women living in the urban area. Also, the obtained results will be important both for the critical evaluation of the problems encountered in the urban physical structure and for the formation of future policies to eliminate the problems. Considering the different ways men and women experience the city will contribute effectively to improving the future planning and management of cities. Planning cities with and for women will also lead to the provision of women's right to the city, urban planning that specifically focuses on human values, and the development of more democratic decision-making processes in cities.

#### **1.4. The Research Questions and Hypotheses of the Study**

Based on the aims of the study, this study poses the following main question:

- What are the relationships between women's resource perceptions, capabilities, and functionings regarding their accessibility, safety, and participation in urban neighborhoods with varied WHDI levels?

The main research question guides the literature review to be conducted and requires several analyses to examine the factors affecting women's capability-based quality of urban life. Based on the main research question, sub-research questions were formulated to guide the empirical study. To analyze the subjective-primary data obtained through the survey in study area, SmartPLS software was used. The main path model and the second-stage path models are structured to answer the sub-research questions derived from the main question of the thesis.

The sub-research question guiding the formation of the study's main path model is:

- To what extent and how significantly are women's overall resource perceptions and overall capabilities related to their overall functionings in terms of their accessibility, safety, and participation in urban areas?

The hypotheses of the main research model are: (H1) There is a significant relationship between women's overall resource perception and women's overall capabilities; (H2) There is a significant relationship between women's overall capabilities and women's overall functionings; (H3) There is a significant relationship between women's overall resource perception and women's overall functionings. The hypotheses outlined in the main path model were tested separately in high and low Women's HDI clusters in the central district of Amasya.

The second-stage models were designed to analyze the relationship between women's resource perception, capabilities, and functionings regarding accessibility, safety, and participation in urban areas. The relationship between women's capabilities regarding the sub-dimensions of accessibility, safety, and participation and conversion factors has been analyzed. Additionally, the relationship between women's functionings regarding the sub-dimensions of accessibility, safety, and participation and the agency/choice factor has been analyzed. The sub-dimensions of accessibility are (1) women's access to public open spaces, (2) women's access to education, (3) women's access to healthy environment, and (4) women's access to mobility and transport. The sub-dimensions of safety are (5) women's safety in public open spaces, and (6) women's safety in public transport. The sub-dimensions of participation are (7) women's participation in economic activities, and (8) women's participation in decision-making processes. The sub-research questions guiding the formation of the study's second-stage path models are:

- What are the relationships between women's resource perception, capabilities, and functionings regarding their accessibility to public open spaces, and how do these relationships vary across neighborhoods with different WHDI levels?
  - . What is the relationship between women's capabilities regarding accessibility to public open spaces and the related conversion factors?
  - . What is the relationship between women's functionings regarding accessibility to public open spaces and agency/choice factor?

- What are the relationships between women's resource perception, capabilities, and functionings regarding their accessibility to education, and how do these relationships vary across neighborhoods with different WHDI levels?
  - . What is the relationship between women's capabilities regarding accessibility to education and the related conversion factors?
  - . What is the relationship between women's functionings regarding accessibility to education and agency/choice factor?
- What are the relationships between women's resource perception, capabilities, and functionings regarding their accessibility to healthy environment, and how do these relationships vary across neighborhoods with different WHDI levels?
  - . What is the relationship between women's capabilities regarding accessibility to healthy environment and the related conversion factors?
  - . What is the relationship between women's functionings regarding accessibility to healthy environment and agency/choice factor?
- What are the relationships between women's resource perception, capabilities, and functionings regarding their accessibility to mobility and transport, and how do these relationships vary across neighborhoods with different WHDI levels?
  - . What is the relationship between women's capabilities regarding accessibility to mobility and transport and the related conversion factors?
  - . What is the relationship between women's functionings regarding accessibility to mobility and transport and agency/choice factor?
- What are the relationships between women's resource perception, capabilities, and functionings regarding their safety in public open spaces, and how do these relationships vary across neighborhoods with different WHDI levels?



- . What is the relationship between women's capabilities regarding safety in public open spaces and the related conversion factors?
- . What is the relationship between women's functionings regarding safety in public open spaces and agency/choice factor?
- What are the relationships between women's resource perception, capabilities, and functionings regarding their safety in public transport, and how do these relationships vary across neighborhoods with different WHDI levels?
  - . What is the relationship between women's capabilities regarding safety in public transport and the related conversion factors?
  - . What is the relationship between women's functionings regarding safety in public transport and agency/choice factor?
- What are the relationships between women's resource perception, capabilities, and functionings regarding their participation in economic activities, and how do these relationships vary across neighborhoods with different WHDI levels?
  - . What is the relationship between women's capabilities regarding participation in economic activities and the related conversion factors?
  - . What is the relationship between women's functionings regarding participation in economic activities and agency/choice factor?
- What are the relationships between women's resource perception, capabilities, and functionings regarding their participation in decision-making processes, and how do these relationships vary across neighborhoods with different WHDI levels?
  - . What is the relationship between women's capabilities regarding participation in decision-making processes and the related conversion factors?

- . What is the relationship between women's functionings regarding participation in decision-making processes and agency/choice factor?

For the second-stage path models, a total of 48 hypotheses were constructed, with 6 hypotheses under each sub-dimension  $n$  (1-access to public open spaces, 2-access to education, 3-access to healthy environment, 4-access to mobility and transport, 5-safety in public open spaces, 6-safety in public transportation, 7-participation in economic activities, 8-participation in decision-making processes). The hypotheses of the second-stage research models are: ( $Hn_1$ ) There is a relationship between women's resource perception and their capabilities regarding (sub-dimension  $n$ ); ( $Hn_2$ ) There is a relationship between women's capabilities and their functionings regarding (sub-dimension  $n$ ); ( $Hn_3$ ) There is a relationship between women's resource perception and their functionings regarding (sub-dimension  $n$ ); ( $Hn_4$ ) There is a relationship between social conversion factors and women's capabilities regarding (sub-dimension  $n$ ); ( $Hn_5$ ) There is a relationship between environmental conversion factors and women's capabilities regarding (sub-dimension  $n$ ); ( $Hn_6$ ) There is a relationship between women's choice and their functionings regarding (sub-dimension  $n$ ). The hypotheses outlined in the second-stage path model were tested separately in high and low Women's HDI clusters in the central district of Amasya. Further information can be found in Chapter 6.

### 1.5. The Research Design

This thesis is structured into two main sections: the literature review and empirical research. In alignment with the stated objectives, the literature review provides an in-depth exploration of the constituent parts of *the Capabilities Approach to the Quality of Urban Life for Women*, situated within the broader concepts of quality of life, gender equality, and human development. Building on these concepts, the quality of life of women in urban spaces is conceptualized within the framework of the capabilities approach, specifically focusing on the dimensions of accessibility, safety, and participation. The research design of this study is presented in Figure 2.

In the literature review section of the thesis, the utilitarian approach to measuring quality of life is critically examined, as it is the most significant factor influencing the choice of methodology for the thesis. The reasons for questioning the utilitarian conception of quality of life measurement are as follows:

- i. From the utilitarian perspective, the significance of the presence of a commodity in generating utility is substantial. By considering the mere existence of the commodity as sufficient to obtain utility, it disregards whether the commodity is able to be used by people or not.
- ii. According to the utilitarian perspective, if the happiness levels of a disadvantaged person and a non-disadvantaged person are equal at the end of the process, this perspective fails to address the issue of injustice that the disadvantaged person has experienced throughout the process.
- iii. In evaluating a policy or practice, the utilitarian perspective focuses on the total utility or total happiness output, and ignores how utility or happiness is distributed among the individuals of the society.
- iv. According to the utilitarian perspective, if a decision has the potential to produce greater happiness outcomes for the majority, the negative externalities incurred in the process of achieving the outcome are neglected.

In addition, because of the quality of urban life analysis, based on a utilitarian approach, evaluates people's quality of life in the urban environment according to the satisfaction they obtain at the end, while ignoring the reasons arising from personal, economic, social, environmental and political factors that influence people's capabilities and functionings, the empirical research section of the thesis is structured around the capabilities-based approach to measuring the quality of urban life.

For the assessment of capabilities-based quality of urban life of women, a bottom-up, theory-driven and indicator-based approach was adopted. This type of assessment, which aligns with the 'Type C' classification in Rogerson (1999) and 'approach i' in Dissart and Deller (2000), is presented in Table 1.

Table 1: The Assessment Approach Chosen for the Thesis (Gomes et al., 2010)

	<b>Top-Down Approach</b>	<b>Bottom-Up approach</b>
<b>Type A</b> (Places)	Secondary/objective data through collection of statistical data (Dissart & Deller approach iii)	Subjective/Primary data through <i>in loco</i> observation
<b>Type B</b> (Places and People)	Implied prices for specific goods – hedonic models (Dissart & Deller approach iv)	Primary data complemented by secondary data (Dissart and Deller approach ii)
<b>Type C</b> (People)	Secondary/objective data through collation of statistical data	a) Questionnaires to residents with questions from a Likert-type scale (Dissart & Deller approach i) b) Other questionnaires

Adopting a capabilities-based perspective on the quality of urban life necessitates working at the closest level to the human scale and considering individuals' subjective evaluations. Therefore, the spatial scale of the study was determined as 'neighborhoods', with the unit of analysis determined as 'women' living in those neighborhoods. Since the subject of the research focuses on measuring the quality of life in 'urban' areas, it requires the distinction between urban and rural areas. For this purpose, non-urban areas were classified and excluded from the study area using ArcGIS Pro software. The determination of the study area's size is also crucial for measuring the quality of urban life. Therefore, the size of the study area was determined using the OECD and EC methods.

After the site of the study was selected, the Women's Human Development Index (WHDI) rankings of urban center neighborhoods in the central district of Amasya at the LAU-2 level were determined using data-driven indicators obtained from TurkStat based on 2023 data. On the basis of human development measurement, which is the geometric mean of three indices, namely a long and healthy life, knowledge, and a decent standard of living, the human development level of women for each neighborhood was then ranked based on standardized surrogate indicators. The neighborhoods, ranked according to Women's HDI levels, were clustered using the Agglomerative Hierarchical Clustering Technique in IBM SPSS software. This approach was chosen due to the unknown number of groups to be formed and the

small sample size, with the aim of constructing clusters that are most homogeneous within groups and most heterogeneous between groups.

Based on the 2023 census data obtained from TurkStat, the study population, comprising women residing in neighborhoods within the central district of Amasya, was 58,810 women. However, the target population, specifically including women aged 18 to 65 living in twenty selected urban neighborhoods within the central district, was found to be 36,034 women. The sample size for the study, initially calculated to be 380 women using the formula designed for cases where the total population is known, was increased to 470 women because the original sample size did not meet the minimum requirement for PLS-SEM analysis in SmartPLS.

This study is based on the individual level of quality of life, one of two levels used for measuring quality of life, individual and community level (Tekeli, 2010a; Murgas and Klobucnik, 2018), which influences the data collection tool of the study. In order to capture women's subjective judgments, evaluations, and perceptions regarding the quality of urban life, a survey technique was employed in the study area. Following this, the appropriate survey instrument for primary data collection was determined. A questionnaire, designed based on theory-driven indicators identified through an extensive review of the literature, was selected for this purpose. The prepared questionnaire form was tested and revised through pilot studies.

The subjective, cross-sectional primary data were collected through this questionnaire from women residing in the urban center neighborhoods of the central district of Amasya between September 2023 and February 2024. The responses collected through the questionnaires were coded in IBM SPSS software and then exported to SmartPLS 4.1 for data analysis. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to analyze the collected data. The main research model and the second-stage research models were developed, graphically visualized, validated and analyzed using SmartPLS 4.1. The findings from the analysis were presented separately for the high and low WHDI clusters and reported using a comparative approach.

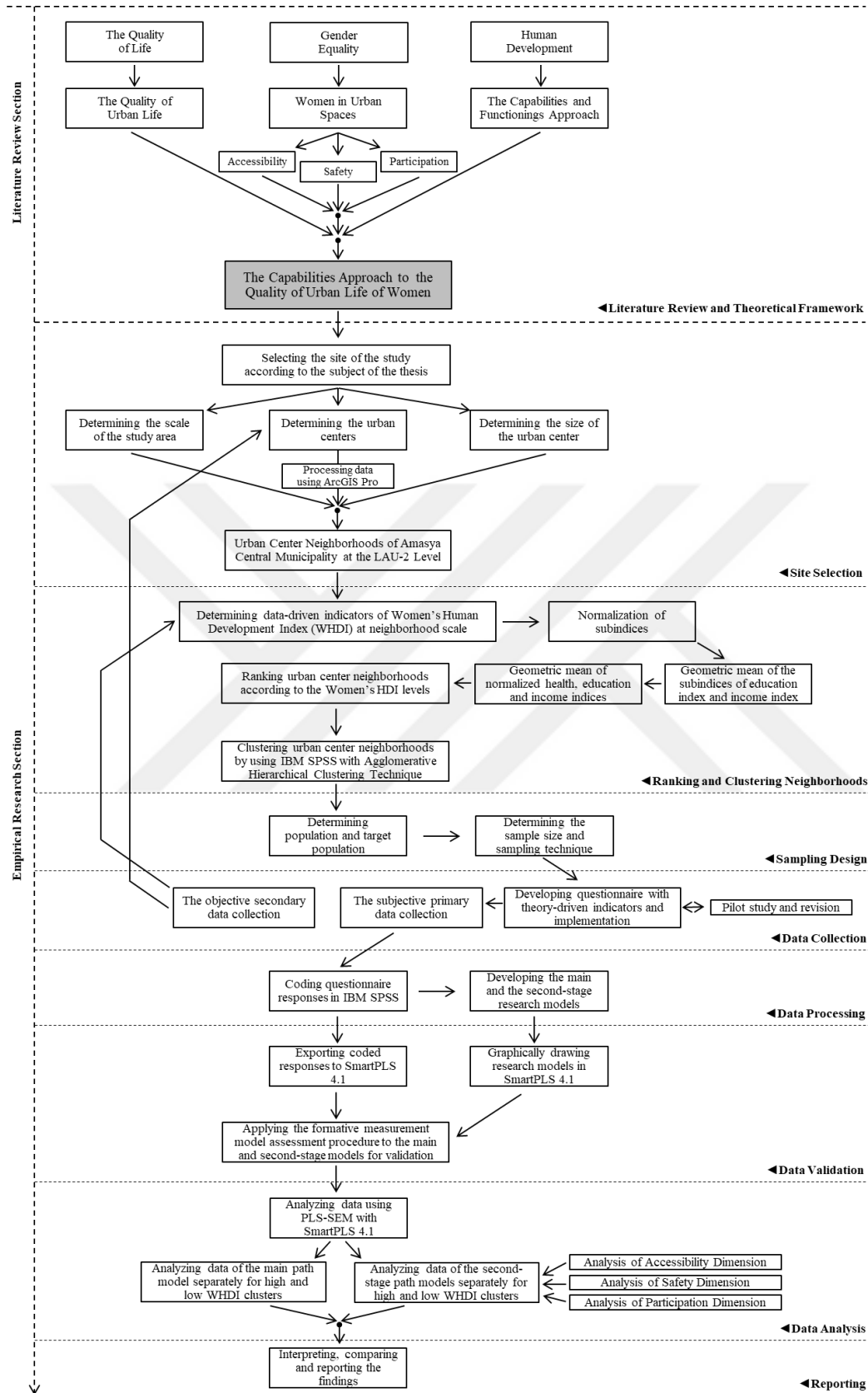


Figure 2: The Research Design of the Thesis (Source: Author)

## **1.6. The Outline of the Chapters**

This thesis is structured into eight chapters. The first four chapters are dedicated to the literature review, providing a comprehensive overview of the existing research and theoretical frameworks relevant to the study. These chapters set the foundation for understanding the key concepts, theories, and debates in the field. Chapters five, six, and seven focus on the empirical research, where the methodology, analysis, and findings are presented in detail. These chapters form the core of the thesis, offering insights into the research process and the outcomes derived from the data. The final chapter provides the conclusion of the thesis.

The first chapter serves as an introduction to the thesis, providing an overview of its structure and context within the broader field of study. It begins by clearly defining the problem statement, outlining the key issues or challenges the research seeks to address. This chapter also identifies the gaps in existing knowledge or research that the study aims to fill, establishing the need for the investigation. Furthermore, the chapter articulates the primary objectives of the study, specifying the aims and what the research intends to achieve. The significance of the study is discussed, highlighting its potential contributions to the field. Additionally, the research questions and hypotheses are introduced, framing the scope of the study and guiding the investigation. Finally, the research design is outlined, detailing the methodology and approach adopted to answer the research questions, including the data collection methods, analysis techniques, and overall structure of the study.

The second chapter traces the understanding of a good life that forms the basis of quality of life and examines the issue in the urban context. This chapter includes the philosophical foundations of good life which is based on eudaimonic and hedonic philosophical approaches formed the basis of modern quality of life theories. This chapter will also focus on the changing scope of the concept of quality of life over time and the definitions of the concept, the growing importance of environmental factors in QoL studies, with a particular emphasis on the concept of quality of urban life (QoUL), and the methodological approaches used to measure QoUL.

The third chapter examines the conditions of women in urban spaces and their quality of urban life. It begins by analyzing key policy documents related to women and urban spaces, focusing on issues such as discrimination against women, gender equality, and the relationship between women and urban environments. This section explores how these policies address the challenges women face in urban settings and how they contribute to shaping women's experiences in public spaces. Following this, the chapter discusses the challenges that women encounter in urban spaces and their impact on their quality of urban life. These challenges are explored in detail under three main headings: accessibility, safety, and participation, all of which play a crucial role in shaping the lived experiences of women in cities.

The fourth chapter of the thesis explores the normative perspectives that have significantly influenced the emergence and evolution of the concept of development, with a particular focus on human development and the capabilities and functionings approach. The chapter provides an in-depth review of the fundamental concepts associated with the capabilities and functionings approach. The next section begins by reviewing and conceptualizing studies on the capabilities and functionings approach as well as the quality of life. The chapter concludes by synthesizing these ideas, drawing connections between the capabilities approach and the quality of urban life for women, aiming to provide a detailed exploration of the theoretical foundations and practical implications of applying the capabilities approach to women's quality of urban life.

The method of the study is put forth in the fifth chapter. In this chapter, after the rationale behind the selection of the study area, selected urban neighborhoods in the central district of Amasya, is presented, the boundaries of the study area will be clearly defined within the context of women's capabilities-based quality of urban life, taking into account the scale and areas with characteristics of city centers, as well as the size of the city by using ArcGIS Pro software. This chapter will continue with the explanation of the clustering urban neighborhoods of site according to Women's Human Development Index (WHDI) levels by using IBM SPSS software. It is followed by the sampling design including the determination of the population and



target population, sample size and sampling techniques. This chapter ends with the explanation of the data collection tools of the research.

The sixth chapter focuses on the analysis of the capabilities-based analysis of the quality of urban life women living in two urban neighborhood clusters in the central district of Amasya that differed in terms of the women's Human Development Index levels. This chapter begins with the determination of analysis method, which is Partial Least Squares Structural Equation Modeling provided by SmartPLS 4.1 software. Following this, the procedure for assessing the formative measurement models is outlined to ensure the validity and reliability of the constructs used in the model. The development of the path models and corresponding hypotheses is then described, covering both the main and second-stage path models. The next step involves the validation of the path models, both main and second-stage, with a specific focus on the high and low WHDI clusters. The validation process for the second-stage path models examines each dimension of the study (accessibility, safety, and participation) in the context of the two WHDI clusters.

The seventh chapter presents the findings of the study, beginning with a descriptive analysis of the characteristics of the women participants. It provides an overview of the sample based on their demographic and socio-economic conditions, as well as household responsibilities and support. The next section presents the findings from the main path models, focusing on the relationships between key constructs such as resource perception, capabilities, and functionings. It analyzes how these factors are related to one another, with comparisons made between the high and low WHDI clusters. Finally, the chapter concludes with a discussion of the results of the second-stage path models, which explore specific sub-dimensions under the accessibility, safety, and participation dimensions for both high and low WHDI clusters.

The eighth and final chapter of the thesis is the conclusion. This chapter summarizes the key points of the thesis, providing an overview of the main findings and results from the empirical research. It addresses the research questions and objectives outlined in the introduction and discusses the extent to which these have been achieved through the conducted study. The chapter also includes a discussion on the

policy implications of the findings, highlights the limitations of the study, and concludes with recommendations for future research.



## CHAPTER 2

### A GOOD LIFE IN A GOOD PLACE:

#### UNDERSTANDING THE QUALITY OF LIFE IN THE URBAN CONTEXT

*"When a person can't find a deep sense of meaning,  
they distract themselves with pleasure."*

*Victor Frankl*

A good life is the right of every living being. Life, however, cannot be thought of separately from the geography in which one lives due to the fact that life can be defined as existing in a period of limited time with a beginning and an end in a particular space. Thus, life and space are inextricably linked as the very notion of life necessitates a place in which it can be lived. Given that humans are intimately linked to their living environment, the quality of life is inherently tied to the quality of the place in which they live. Therefore, a refined version of the initial statement would assert that every living being has the right not only to a good life but also to a good place in which to live.

Although the concept of quality of life has been studied and measured across various geographical regions by researchers from different disciplines since the 1930s (Wish, 1986), it has attained its current content particularly after the Second World War, following the steps taken to ensure the human rights with dignity. It was only after the 1960s that both the quality of life and the quality of living environment began to be systematically investigated. Although these concepts may seem to have developed in contemporary times, debates on what constitutes a good life and how it should be lived date back to ancient times.

This chapter begins with a discussion of the philosophical foundations that have shaped the understanding of a good life. It explores the difference between the

*eudaimonic* and *hedonic* perspectives in ancient philosophy and their influence on the modern understanding of quality of life. Both the concepts of quality of life and quality of urban life lack a universally agreed-upon theoretical and methodological framework. Therefore, the following two sections will focus on the concept of quality of life in urban planning and the methods used to measure the quality of urban life.

## **2.1. The Philosophical Foundations of a Good Life**

Philosophy, as the quest to understand everything through reason, begins when human beings seek to comprehend the world through their rational abilities. Ancient Greek philosophy can be examined in three periods based on the issues its thinkers questioned and sought to comprehend. The first period corresponds to the pre-Socratic era, during which questions about the universe and nature were explored. The second period marks the time when sophists and, particularly, Socrates shifted the focus to human rather than metaphysical problems related to the universe. Finally, the third period refers to the systematic phase of Ancient Greek philosophy, during which Plato and Aristotle synthesized the knowledge gained by earlier philosophers in the first and second periods, addressing both natural and human-related issues.

The philosophical quest for the ideal way of life is generally acknowledged to have started with Socrates, despite the fact that some traces can be found in Democritus' thought (Magee, 1998). Although all philosophers before Socrates tended to seek universal principles to explain the universe and nature, Socrates tried to understand how an individual should live and tried to find out the difference between right and wrong, good and bad, and focused on the human himself (Osborne, 1991). Magee (2009) states that Socrates argues what people most need to know is not how nature works or finding universal principles that will explain the entirety of nature, but how people should live; thus, they need to address ethical problems first and foremost.

The variations in the contemporary understanding of a good life are rooted in the differing philosophical perspectives. From Socrates onwards, philosophers in ancient times have questioned the ultimate goal of human life and human action, and this

exploration continues today. Under this section, the *eudaimonic* and *hedonic* perspectives, which form the foundational basis for understanding the good life, along with quality of life concept shaped by modern development paradigms, will be explained.

### 2.1.1. Eudaimonia

Although Aristotle introduced the idea of *eudaimonia* in the 4<sup>th</sup> century BC within Ancient Greek philosophy, its origins can be traced further back. Gökberk (1990) and Hançerlioğlu (1982) argue that Democritus, one of the pre-Socratic philosophers, can be considered the founder of *eudaimonism* through his concept of *euthymia*. According to Gökberk (1990), Democritus defines happiness as the serenity of the soul, referring to this state as *euthymia* and establishing it as the ultimate goal of human actions. According to Democritus, those who seek happiness should prioritize the soul (*psychē*) over the body (*sōma*) (Preus, 2007). Gökberk (1990) states that, according to Democritus, those who seek happiness must know how to distinguish between what is beneficial and what is not, as well as differentiate between what is relatively good and what is absolutely good. Relatively good things include material and sensory pleasures, such as beauty, honor, and wealth, while absolute good refers to the well-being of the soul, known as *euthymia*. To achieve happiness, one must attain peace of mind and avoid all forms of distressing passions and emotions.

Wisdom → Virtue → Spiritual relaxation → *Euthymia*

Figure 3: Democritus's Means for Reaching '*Euthymia*' as an End (Source: Author)

Democritus is of the opinion the state of *euthymia* is best attained through spiritual relaxation, which is achieved through virtue, and virtue, in turn, is obtained through wisdom (Hançerlioğlu, 1982). For him, the root of all wrongful behavior is ignorance of what is good. Over time, Democritus' concept of spiritual relaxation evolved into *apatheia* in Stoicism, *ataraxia* in Epicureanism, and *adiaphoria* in Pyrrhonism

(Hançerlioğlu, 1982). Democritus's ideas for reaching euthymia are visually represented in Figure 3.

In the Introduction part of *Nicomachean Ethics* (2009) written by Lesley Brown, it is stated that Socrates, Plato, and Aristotle all agree that the chief good for human beings is *eudaimonia*. In this context, it can be said that Socrates followed the traces of the mentioned thoughts of Democritus. Socrates asserts that in order to find out whether a man has a nature just in terms of being human, what is peculiar to him that distinguishes him from other living things and its purpose should be looked at. According to Socrates, what distinguishes human beings from other living things is their intelligence and consciousness. Like many philosophers who followed him, Socrates claims that the ultimate goal of human life and conscious action *eudaimonia* (Cevizci, 2007).

Arslan (2006) considers Socrates as a moral philosopher and argues that Socrates aims to establish morality as a science based on virtue. According to him, the virtue of an entity lies in having what its nature requires and being in a state of perfect condition. Socrates is concerned with human virtue, which is what human nature requires and means that it is in a perfect and complete state (Arslan, 2006). For him, *eudaimonia* is a matter of performing virtuous activities rather than feeling certain emotions for being in a good state, and he bases ethical virtues on this ground (Cevizci, 2007). According to Socrates, as relayed by Plato in his *Protagoras* and *Meno* dialogues, the thing that enables people to achieve their goal of happiness or the greatest source of happiness is knowledge (*episteme*) (Plato, [circa 380 BC] 1949; [circa 385 BC] 2006). Additionally, he argues that the greatest obstacle to happiness is ignorance or error. By linking the concept of virtue, which Socrates placed at the foundation of his moral philosophy, with the concept of knowledge, he ultimately arrives at the idea that "*virtue is knowledge*".

According to him, based on the relationship between virtue and happiness, a person realizes that in order to be happy, s/he should be virtuous (Cevizci, 2007). Above all, however, the realization of proper behavior fundamentally depends on possessing knowledge (Arslan, 2006). Socrates' view that goodness, derived from and grounded

in knowledge, leads to happiness and ensures the health and well-being of the soul demonstrates that his moral philosophy is *eudaimonist* (Gökberk, 1990). Socrates's ideas for reaching happiness are visually represented in Figure 4.

Based on the equality he establishes between knowledge and virtue, Socrates attributes a person's wrongful actions to ignorance and argues that "*no one knowingly does evil.*" Socrates rejects the idea that a person keeps doing something that s/he knows is bad behavior because s/he derives pleasure from it. Someone refrains from doing good because they indulge in pleasure, even though they know what is good. Socrates attributes this indulgence in pleasure to the person's ignorance about what is truly good (Arslan, 2006).



Figure 4: Socrates's Means for Reaching '*Happiness*' as an End (Source: Author)

Plato also asserts that the ultimate goal of humankind is happiness, which aligns with the *eudaimonism*. He divides the soul into three parts: the rational part (*logistikos*), which is governed by reason; the spirited part (*thymoeides*), which is driven by emotions; and the appetitive part (*epithymetikon*), which is motivated by various desires (Cevizci, 2007). The virtue of the appetitive part of the soul is moderation, while the virtue of the spirited part is courage. For the soul to attain peace and happiness, the rational part, whose virtue is wisdom, must govern both the spirited and appetitive parts. When all three parts of the soul fulfill their respective virtues and the rational part governs the other two, a fourth virtue, justice (*dikaioσύνη*), emerges. When a person regulates their emotions and desires through rational thought and acts justly, they become healthy, strong, and ultimately a happy individual who actualizes their ideal self and potential. Like Socrates, Plato's ethical and virtue-based philosophy can be described as *eudaimonist* (Cevizci, 2007). Plato's ideas for reaching happiness are visually represented in Figure 5.

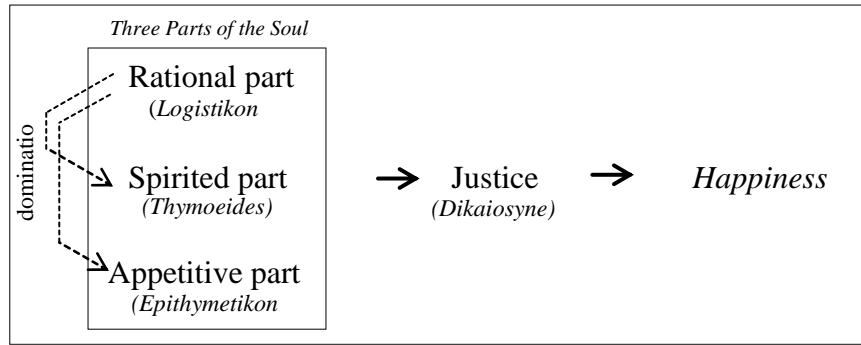


Figure 5: Plato's Means for Reaching '*Happiness*' as an End (Source: Author)

Although both Plato and Aristotle belong to the same tradition, Aristotle did not adopt Plato's dualistic metaphysical philosophy. While Plato relied on metaphysics and the Theory of Forms to understand the good, Aristotle sought to reveal the common aspects of things deemed good by studying them through observation in order to understand what the good truly is (Cevizci, 2007).

In book one of *Nicomachean Ethics*, Aristotle seeks an answer to the question of what the function or purpose of life is. He argues that everything has a purpose, and that every art and inquiry, similarly every action and choice aim at some good. It is indicated in this book that the highest good for human beings is *eudaimonia* ([circa 350 BC] 2009). In other words, if every being has a purpose by nature, the purpose of man is to find *eudaimonia* (Moseley, 2008) resulting from rational activity (Megone, 1990) or virtuous activity (Audi, 1999; Preus, 2007). Humans seek *eudaimonia* as a chief good, self-sufficient, something final and the end of the action that is the cause of nothing but itself and never desired for the sake of something else (Aristotle, [circa 350 BC] 2009; Audi, 1999).

As shown in Table 2, there is no clear answer given by Aristotle to the question of what the *eudaimonia* is in *Nicomachean Ethics* (Heinaman, 1988). Aristotle alludes to *eudaimonia* as a sort of living and faring well ([circa 350 BC] 2009) and a chief good of human beings (Davies, 2021). In the explanatory notes part of the *Nicomachean Ethics*, *eudaimonia* is explained as having a good *daimon*. The concept of *daimon* or *daimonion* is in the form of a guiding transcendent inner voice first introduced by Socrates (Gökberk, 1990). According to Waterman (1990), human



beings' potentialities, including their talents and life purposes, reflect their *daimon*. He indicates that, in the ethical system of *eudaimonism*, they are responsible for recognizing and living in accordance with their true self or *daimon*. *Eudaimonia* is the human good and activity in accordance with complete virtue for Aristotle (Roche, 1988; Bunnin and Yu, 2004).

Table 2: Eudaimonia Definitions in Nicomachean Ethics (Tabulated by the Author According to Aristotle, [circa 350 BC] 2009)

Paragraph numbers	Happiness* ( <i>as eudaimonia</i> ) is... in Nicomachean Ethics
1095a17-22	Verbally there is very general agreement; for both the general run of men and people of superior refinement say that it is happiness, and identify living well and faring well with being happy; but with regard to what <b>happiness is</b> they differ, and the many do not give the same account as the wise.
1097b20-21	<b>Happiness</b> , then, <b>is</b> something final and self-sufficient, and is the end of action.
1097b22-23	Presumably, however, to say that <b>happiness is</b> the chief good seems a platitude, and a clearer account of what it is still desired.
1101b10-13	These questions having been definitely answered, let us consider whether <b>happiness is</b> among the things that are praised or rather among the things that are prized;* for clearly it is not to be placed among <i>potentialities</i> .
1101b31-35	<i>Praise</i> is appropriate to virtue, for as a result of virtue men tend to do noble deeds; but <i>encomia</i> are bestowed on acts, whether of the body or of the soul. But perhaps nicety in these matters is more proper to those who have made a study of encomia; to us it is clear from what has been said that <b>happiness is</b> among the things that are prized and perfect.
1102a5-7	Since <b>happiness is</b> an activity of soul in accordance with perfect virtue, we must consider the nature of virtue;* for perhaps we shall thus see better the nature of happiness.
1153b12-19	Thus the chief good would be some pleasure, though most pleasures might perhaps be bad without qualification.* And for this reason all men think that the happy life is pleasant and weave pleasure into their ideal of happiness — and reasonably too; for no activity is perfect when it is impeded, and <b>happiness is</b> a perfect thing; this is why the happy man needs the goods of the body and external goods, i.e. those of fortune, namely, in order that he may not be impeded in these ways.
1169b28-30	For we have said at the outset that <b>happiness is</b> an activity; and activity plainly comes into being and is not present at the start like a piece of property.
1177a11-14	If <b>happiness is</b> activity in accordance with virtue, it is reasonable that it should be in accordance with the highest virtue; and this will be that of the best thing in us.
1177b3-5	And <b>happiness is</b> thought to depend on leisure; for we are busy that we may have leisure, and make war that we may live in peace.
1178b8-9	But that <b>perfect happiness is</b> a contemplative activity will appear from the following consideration as well. We assume the gods to be above all other beings blessed and happy; but what sort of actions must we assign to them? Acts of justice? Will not the gods seem absurd if they make contracts and return deposits, and so on? Acts of a brave man, then, confronting dangers and running risks because it is noble to do so? Or liberal acts? To whom will they give?

\* Because of the translator's choice of the word for English, happiness should be understood as *eudaimonia*

The Greek word *eudaimonia* is translated to English as happiness. However, while some scholars support this translations (e.g. 'human happiness' for Preus, 2007); some other scholars do not. Some others have suggested being translated as 'fulfillment' and 'flourishing', 'one's perfection' (Mele, 1985), 'a worthwhile life' (Kenny, 2006), 'human flourishing' (Blackburn, 1996), and 'human good' (Heinaman, 1988) instead of happiness. Furthermore, happiness may have both eudaimonic and hedonic background. Bunnin and Yu (2004) explain that the main difference between these two aspects of happiness is that *eudaimonia* concerns the overall shape of one's life rather than specific moments or parts of it.

Cevizci (1999), in his book *Philosophical Dictionary*, defines *eudaimonia* in Ancient Greek philosophy as a state in which everything is in harmony with an individual's personal daimon (destiny or nature). He explains that this state requires one's nature to be well-ordered, balanced, and structured as it should be, in accordance with the person's inherent nature. According to Norton (1972), *eudaimonia* is not about feeling divided within oneself but about feeling at one with oneself and living in harmony with one's true self, or *daimon*. According to Telfer (1980), the concept of *eudaimonia* concerns what is truly worth desiring and having in one's life, rather than mere satisfaction with one's life. Waterman (1990) states that *eudaimonia* is the activity of living in accordance with one's *daimon*. For Preus (2007), *eudaimonia* is the virtuous activity of soul and the ultimate goal of human existence. *Eudaimonia*, in the sense of flourishing, concerns how well a person is doing rather than how good a person is feeling (Audi, 1999). *Eudaimonia* is what human nature pursues or its ultimate purpose (Arslan, 2006). When summarized according to the statements of various scholars, *eudaimonia* is virtuous activity of one's soul for living in accordance with one's true self, potentialities, talents, and life purposes (*daimon*).

Another important issue that needs to be addressed in the concept of *eudaimonia* is Aristotle's distinction from Socrates and Plato regarding moral responsibility. As previously explained, Socrates and Plato equated knowledge with virtue. In contrast, Aristotle argues that intellectual error should be distinguished from moral evil, which requires punishment. Aristotle's view challenges the views of Plato and Socrates, who believed that no one would knowingly do wrong or evil, asserting instead that

wrong moral action arises from a lack of understanding or intellectual error (Cevizci, 2007). Aristotle criticizes Socrates' moral determinism, which equates knowledge with virtue, as overly simplistic, arguing that people can knowingly misbehave by choosing the moral low ground (Moseley, 2008). The distinction between Socrates and Aristotle arises from their different interpretations of the relationship between knowledge and virtue. For Aristotle, reason manifests itself both as moral attitude (*ethos*) on the one hand and as the maturity of thinking (*dianoia*) on the other. From this perspective, two kinds of virtues emerge: moral virtues and dianoetic virtues (Gökberk, 1990). Moral virtues are related to character and willpower; on the other hand, dianoetic virtues, whose characteristics are based on reason in thinking and action, are directly related to reason (Gökberk, 1990). People who train their willpower make decisions and act based on correct views, that is, by following practical reason (*phronesis*). With this view, Aristotle differs from Socrates, who equates virtue with knowledge (*episteme*). According to Aristotle, humans cannot achieve good merely by knowing what is good; they can only realize the good and avoid evil if they possess moral virtues, which are developed through the training of their willpower (Gökberk, 1990). Aristotle's ideas for reaching *eudaimonia* are visually represented in Figure 6.

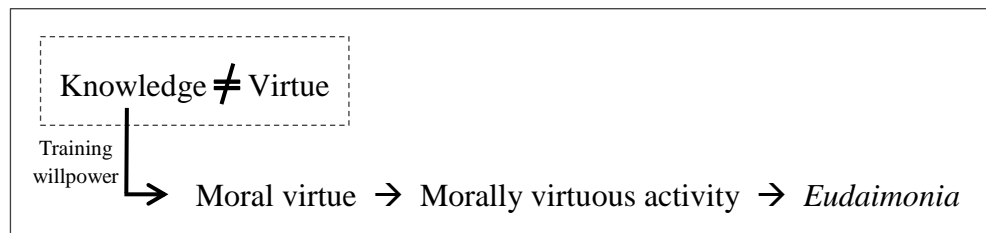


Figure 6: Aristotle's Means for Reaching '*Eudaimonia*' as an End (Source: Author)

Although there are some differences, it can be claimed that Socrates, Plato, and Aristotle share the following ideas: Virtue, understood as morally virtuous action, cannot exist without knowledge; humans cannot be virtuous without knowledge of true being. Since *eudaimonia* depends on virtue, it cannot be attained without

knowledge. In this view, both the value of knowledge and the importance of acting in moral virtue are greatly enhanced, making them the foundation of a happy and fulfilling life.

### 2.1.2. Hedonism

Hedonism is an ethical stance similar to *eudaimonia*, as both pursue happiness as an end; however, unlike *eudaimonia*, hedonism asserts that pleasure is the highest good in life and that people should seek as much pleasure and as little pain as possible (Bunnin and Yu, 2004). In other words, hedonism is the doctrine that pleasure is the ultimate and highest good in life and morality (Cevizci, 1999). Hedonism also recognizes that humans, by nature, tend to pursue pleasure and avoid pain. Although hedonism was defended by Aristippus and Epicurus in Ancient Greece, it was later supported by Hobbes, Locke, Hume, La Mettrie, Helvetius, and the utilitarians, particularly Bentham, J.S. Mill, and Sidgwick, whose perspectives on the meaning of pleasure differed.

While Socrates presents an understanding that is close to hedonist thought in some passages, in others, he argues that the desire for pleasure interferes with the activity of the mind (*nous*) (Preus, 2007). Socrates' conflicting ideas of equating happiness with pleasure has been criticized by Plato and Aristotle, who opposed grounding the purpose of life and the source of happiness in pleasure.

Plato, on the one hand, revisits hedonism, which he opposes in the *Protagoras*, *Gorgias*, and *Phaedo* dialogues, in the *Philebus* dialogue. The main subject of *Philebus* is the discussion of pleasure and whether it is a determinant of or an important component of a good life. In this dialogue, Plato attempts to prove that pleasure is last in the order of what is necessary for a good life by questioning *Philebus*, who argues that the good life consists of pleasure, using Socratic questioning (Plato, [circa 4th century BC] 1975). Plato opposes both hedonism and asceticism, as these extremes represent living only one aspect of life (Cevizci, 2007). Unlike hedonist theories that rely on measuring pleasure, Plato argues in *Philebus* that pleasure is an indeterminate state and cannot be measured (Bunnin and Yu, 2004). For Plato, all pleasure is about compensating for something missing (Sizer,

2013). According to Van Riel (2000), Plato defines pleasure as "the replenishment of a lack" or deficiency. According to Sizer (2013), this concept is similar to the Epicurean idea of kinetic pleasure, which is the relief of pain or lack. For example, drinking when thirsty is a key illustration, as it represents the replenishment of bodily needs (Van Riel, 2000). Plato extends this idea to intellectual pleasures as well, suggesting that pleasures like gaining knowledge fulfill deficiencies we may not even perceive.

Aristotle, on the other hand, considers pleasure, which arises through good functioning of human capacities, is not the whole of but a contributive part of happy life (Preus, 2007; Bunnin and Yu, 2004). Waterman (1990) claims that Aristotle considers people who perceive good and happiness as pleasure, and therefore who love a satisfying life as slaves, and evaluates their life as the life of grazing animals, and openly rejects the Cyrenaic view of happiness with these opinions. According to Sizer (2013), Aristotle challenges Plato by pointing out that the pleasure from replenishing a deficiency (like drinking when thirsty) is different from the pleasure that follows (the satisfaction of no longer being thirsty). The first involves pain, while the second does not. Many pleasurable activities, like reading, solving puzzles, or listening to music, do not involve a lack but are driven by intellectual curiosity or aesthetic engagement, which are pleasurable in their pursuit. Aristotle's ideas resonate with Mill's concept of 'higher pleasures' (Van Riel, 2010) and Csikszentmihalyi's concept of 'flow,' where deep engagement in an activity is itself pleasurable, not just the completion of it (Sizer, 2013).

After the death of Socrates, his students tried to continue his teaching and Socratic questioning method among themselves, and then gradually the Socratic Schools came into being. There are four different Socratic Schools that try to interpret and improve Socrates' work according to his own understanding: (1) Megara School, (2) Elis-Eretria School, (3) Cynics School, (4) Cyrenaic School (Gökberk, 1990). Among them, although the Cynics and Cyrenaic School mostly bear the traces of Sophist thought, it also bears some of the views of Socrates. The founder of the Cynics School is Antisthenes of Athens, who lived between 444 and 368 BC. Antisthenes, whose ethical understanding is *eudaimonist*, opposes that the ultimate

goal of human actions is pleasure and puts hard work, difficulty, and distress (*ponos*) in front of pleasure (Gökberk, 1990). On the contrary, The Cyrenaic School puts the ideal of a comfortable and vivacious life in opposition to the very harsh virtue doctrine of the Cynics and their ideal of living in trouble and difficulties (Gökberk, 1990). According to Aristippus, who is the founder of the Cyrenaic School and hedonist thought, the only purpose of will is pleasure, and what provides pleasure is good, while what causes pain is bad (Bunnin and Yu, 2004). In other words, good for Aristippus is nothing but a momentary pleasure, as intense as it can be. For Aristippus's hedonism philosophy, the goal of life and the source of happiness are the maximization of pleasure (*hēdonē*) and minimization of pain (*lypē*). In other words, this philosophy advocates that the maximization of pleasure would bring about happiness for humans (Preus, 2007). The Cyrenaic School has been criticized because of their emphasis on the momentary perception and feeling and ignoring deep long-term needs (Bunnin and Yu, 2004).

Aristippus's philosophy of hedonism is followed by the Epicureans in a more moderate fashion (Sirgy et al., 2006). For Epicurus, the absence of pain is simply the pleasure (Bunnin and Yu, 2004). The Epicureans consider happiness in terms of pleasure and virtue as a tool for pleasant life (Audi, 1999). Furthermore, they believe that real happiness is having peace of mind, tranquility (*ataraxia*) and healthy body (Bunnin and Yu, 2004). While the necessity of *phronesis* (wisdom in relation to practical action) to achieve this kind of intense and momentary pleasure is a Socratic element in Aristippus's philosophy of hedonism (Gökberk, 1990), according to Epicurus, sound knowledge is required to take right action (Cevizci, 2007). While the measure (*kriterium*) of sound knowledge in the theoretical field is the general conception (*prolepsis*) arising from the repetition of the sense data, the practical dimensions of sound knowledge are the feelings of pleasure (*hēdonē*) and pain (*pathē*) (Gökberk, 1990). There are also differences between Aristippus' and Epicurus' hedonist philosophy. Cevizci (1999) stated that hedonism can be divided into two according to whether they make a comparison between the types of pleasure: quantitative hedonism and qualitative hedonism. Quantitative hedonism, as Aristippus argues, does not distinguish between pleasures and does not favor one

kind of pleasure over another, emphasizing that the only important thing is to get as much pleasure as possible. For Aristippus, all pleasures do not differ in value, but differ in degree and duration (Bunnin and Yu, 2004). In contrast, as Epicurus advocates, qualitative hedonism distinguishes between pleasures, arguing that spiritual pleasures, for example, related to reading, learning, and understanding are more important than material or bodily pleasures (Cevizci, 1999). These different views on hedonism also influenced the utilitarian philosophers of the 18<sup>th</sup> century.

Cevizci (1999) divides hedonism into two separate categories: psychological hedonism and ethical hedonism. The former one, psychological hedonism, is the notion that all human actions are motivated by the desire to obtain pleasure. It refers that people by nature avoid pain and seek their own pleasure by maximizing the amount of pleasure they get. The psychological hedonism does not assert that people only desire pleasure, but rather that people make choices among options based on which will provide the most pleasure (Bunnin and Yu, 2004). In this view, the thing that motivates human conduct is the expectation of pleasure or pain. The latter view, ethical hedonism, is an ethical approach in which pleasure and pain are the basic criteria for moral decisions (Bunnin and Yu, 2004). The ethical hedonism is advocated by thinkers such as Aristippus, Epicurus, Locke, Hobbes, Bentham, and Mill. Cevizci (1999) divides ethical hedonism into two according to the humans' pursuit of their own pleasure even if the pleasure of the majority is in danger or the humans' pursuit of the pleasure of the majority: egoistic hedonism and utilitarianism. For Gökberk (1990), those of the Cyrenaics, like the Cynics, follow egoistic hedonism because they are individualistic and do not value community life.

The understanding of 'as much pleasure as possible' has emerged as a utilitarian philosophy in the modern era. During the 18<sup>th</sup> century, happiness which is considered the highest good and ultimate motivation for human action became the central concern of political economists. By arguing that the greatest happiness for the largest number of people is the morally right action, Francis Hutcheson laid the foundation for the utilitarian doctrine in 1725 (Kerce, 1992). Prior to Bentham and J. S. Mill, the concept was also developed by William Paley, who tried to combine Christian ethics and the theory natural rights (Çıvgın-Bolat and Öztürk, 2004). Utilitarianism was

significantly advanced by Jeremy Bentham, James Mill, John Stuart Mill and Henry Sidgwick by answering how to live in order to maximize utility resulting from happiness (Blackburn, 1996). Bentham asserts that, for an act to be morally right, it should produce the greatest happiness for the greatest number of people (Çıvgın-Bolat and Öztürk, 2007). According to J.S. Mill, what determines the rightness and wrongness of actions ultimately depends on whether they promote happiness resulting from pleasure or not (Blackburn, 1996). Utilitarianism can be divided into the following constituent parts: (1) consequentialism, (2) welfarism, and (3) sum-ranking (Sen, 1984; Sen 1985b). While, for consequentialism, the rightness or goodness of the actions is evaluated solely based on the positive outcomes or goodness they produce, for welfarism, the goodness of states of affairs is judged entirely by the goodness of the set of individual utilities within that situation. For sum-ranking, the goodness of any set of individual utilities is determined entirely by their sum total.

Similar to the difference between Aristippus' and Epicurus' hedonist philosophies, the differences in the foundations of Bentham and J. S. Mill's hedonistic understandings can also be followed in the modern era. These differences are related to quantitative and qualitative hedonism. The idea that actions are equally good and valuable if they produce the same amount of pleasure shows that Bentham emphasizes the quantitative aspect of hedonism, rather than the qualitative. One of the key points where John Stuart Mill, as a utilitarian, differs from another utilitarian, Jeremy Bentham, is the qualitative versus quantitative distinction on which they base their hedonistic philosophies (Sen, 1984). According to Bentham's egalitarian utilitarian view, if playing billiards provides the same pleasure to a person as reading poetry, then both should be considered equally good (Blackburn, 1996; Moseley, 2008). Mill opposed Bentham's quantitative understanding of hedonism, arguing that it reduces human existence to the same level as that of a pig (Cevizci, 1999). He famously stated that he would prefer to be a dissatisfied human being rather than a satisfied pig (Osborne, 2006). According to Mill's understanding of qualitative hedonism, pleasures differ not only in terms of quantity but also in terms of quality. Mill argues that a smaller but more valuable pleasure should be preferred over a



larger amount of less valuable or worthless pleasure. He described the person who is able to make this distinction as a 'hedonic expert' (Cevizci, 1999).

The choice based on the value of pleasure in Mill's thought points to a cost-benefit analysis and a calculation of utility. Socrates suggests that the good life results from an "art of measuring," which involves weighing and comparing the amount of present and anticipated pleasures and pains (Van Riel, 2000). The idea of *hedonic calculus* was developed within the hedonistic moral framework, asserting that the amount of pleasure and pain resulting from an action should be used as a measure when choosing the action. Cevizci (1999) argues that the concept of hedonic calculus was first defended by Epicurus (measure (*kriterium*) of sound knowledge) in opposition to Aristippus' quantitative hedonism. According to Epicurus, a happy life filled with pleasure requires the practice of *summetresis*, or the art of calculation and measurement. In other words, humans should strike a balance between present pleasures and future pains, calculating the various types of each in order to achieve hedonistic happiness, which is the ultimate and highest goal of life and morality in hedonism. Jeremy Bentham, an important 18<sup>th</sup> century utilitarian thinker, expanded the concept of *hedonic calculus* into a more advanced framework, introducing the concept of *felicific calculus*. This algorithm was designed to calculate the degree or amount of pleasure that a particular action can generate. Bentham's felicific calculus includes seven dimensions of pleasure and pain that must be considered: intensity, duration, certainty, propinquity, fecundity, purity, and extent. According to Bentham, each individual seeks to avoid pain and attain pleasure; therefore, an action is morally good if it produces "*the greatest amount of pleasure for the greatest number of people*" (Cevizci, 1999). However, the idea of summing the amount of pleasure and pain has been widely criticized, as comparing different types of pleasure can be challenging (Bunnin and Yu, 2004).

## **2.2. The Concept of Quality of Life in Urban Planning**

The idea of a good life has been contemplated and questioned over the more than two millennia. Today, the quality of life, which is '*the degree to which a life meets various standards of the good life*' (Veenhoven, 2014b, p. 5265), is a widely debated

concept in contemporary discourse. Understanding, measuring, and improving the quality of life of people is one of the most universally recognized policy priorities and goals that all societies strive to achieve. Ensuring quality of life is acknowledged as a fundamental requirement of the right to a dignified life for people (Tekeli, 2010b).

This section aims to provide a comprehensive understanding of the evolving concept of quality of life (QoL) and its relevance to urban contexts. In the first sub-section, the changing scope of the concept of quality of life over time and the definitions of the concept will be presented. Initially, the historical development of the concept will be outlined, highlighting how its meaning has expanded from a narrow focus on individual psychological and physical well-being to a more inclusive, multidimensional perspective. Particular attention will be given to how the understanding of quality of life has gradually shifted from a utilitarian perspective, which emphasizes material well-being and quantifiable outcomes, to the capability approach, which focuses on individuals' freedoms and opportunities to achieve functionings. This broader understanding recognizes that beyond the internal conditions of individuals, the external environments in which they live play a significant role in shaping their overall quality of life.

Following this foundational discussion, the second sub-section will delve into the growing importance of environmental factors in QoL studies, with a particular emphasis on the concept of quality of urban life (QoUL). As urbanization accelerates globally, the living conditions in cities, including access to public open spaces, clean air, safe transportation, and social cohesion, have become integral components of QoL assessments. The rise of environmental aspects in these discussions reflects an increasing awareness of the symbiotic relationship between quality of life of people and the built and natural environments.

In the third sub-section, attention will be given to the methodological approaches used to measure QoUL. This analysis will cover the diverse frameworks that researchers have developed, examining the different domains and sub-domains commonly employed in these measurements. By addressing both subjective and

objective indicators, this section will illuminate how scholars and policymakers seek to understand the complexity of urban life.

### **2.2.1. The Concept of Quality of Life**

The term quality of life first emerged in the United States after World War I (Al-Qawasmi, 2019). Wish (1986) argues that the concept of quality of life has been on the research agenda and studied by various disciplines since the 1930s. Initially, quality of life studies focused on the health-related domain, emphasizing individual physical and psychogenic health (Guyatt et al., 1993), and were primarily conducted by health professionals. Early studies on quality of life concentrated on quantitative health status to measure quality of life at the individual level, as well as on quantitative economic data to assess quality of life at the community level. The concept of quality of life gained significant popularity, especially after its emergence within the *Social Indicators Movement* in the 1960s (Wish, 1986; National Research Council, 2002; Oktay, 2007). Research on quality of life grew exponentially with the establishment of two international journals: *The Journal of Happiness Studies* in 2000 and *Applied Research in Quality of Life* in 2006 (McCrea et al., 2011a). The 1960s marked a shift toward understanding whether people live a quality life, rather than merely measuring the duration of life and standards of living. Prior to the late 1960s, the Social Indicators Movement redirected the focus of quality of life research from material well-being and standard of living to the social attributes of life (Al-Qawasmi, 2019). Culyer (1990) distinguishes between these different approaches to the standard of living and quality of life. While the conventional welfarist approach evaluated standard of living and quality of life in terms of the utilities of individuals, the Social Indicators Movement adopted a non-utility focus. This shift was also reflected in the medical field, particularly with the 1946 redefinition of health by the World Health Organization (WHO) as "*a state of complete physical, mental, and social well-being.*" Pennacchini et al. (2011) assert that before the 1960s, medicine focused on the quantity of life, largely concerned with mortality, whereas in the 1960s, the focus shifted to the quality of life, with greater attention given to morbidity rather than mortality.

Especially after the 1960s, as it became clear that the conditions creating the state of complete physical, mental, and social well-being were not solely health-related, quality of life studies in medicine, which focused on individuals' mental and physical health, began to face criticism. Health-related quality of life studies were criticized for relying on a narrow, health-focused perspective that excluded other determinants in measuring the quality of life of people (Mostafa, 2012). Over time, with the understanding that factors affecting the quality of life of people extend beyond physical and mental health, the scope of the concept began to expand and become more multidisciplinary.

The concept of quality of life is closely linked to development and has evolved alongside shifts in the understanding of development over time. It gradually became evident that economic, social, political, and environmental factors also influence people's quality of life. Among these factors, before the 60s, the first one associated with the concept of quality of life was the economy. During this period, economic growth was widely regarded as the primary factor in enhancing people's quality of life (Drydyk and Keleher, 2019). It was assumed that an increase in economic wealth would automatically lead to a rise in people's subjective well-being and overall quality of life. However, Easterlin (1974) argues that beyond a certain income threshold, there is a negative relationship between subjective well-being and income (as cited in Asara et al., 2015; Biagi et al., 2018; Demaria et al., 2013). The studies show that after a certain threshold point on personal income, it is argued that there is no improvement in quality of life of people (Max-Neef, 1995; Kahneman and Deaton, 2010). According to Zapf (1987), the welfare of a society cannot be measured solely in economic terms.

Especially after the 1960s, the traditional economic growth-oriented development the resulting environmental degradation in pursuit of economic growth faced widespread criticism. During the 1960s and 1970s, several influential publications, including literary works and academic studies, raised awareness of the negative impacts of human activity on nature (Meadows et al., 1972; *The Ecologist*, 1972). As environmental problems caused by human activities and their subsequent negative impact on human health became more evident and a topic of public debate in the

1960s, the environmental aspects of quality of life gained greater attention (Flynn et al., 2002). Consequently, particularly after the 1970s, the living environment was recognized as a fundamental dimension of quality of life of people. It is emphasized that measuring quality of life requires considering various life domains, such as housing, health, and social relationships (Zapf, 1987).

Sustainable development, which focuses on intergenerational justice and welfare while aiming to prevent resource consumption that exceeds the rate of resource replenishment, has had a significant influence on quality of life of people. The sustainable development paradigm was developed to offer a framework for harmonizing economic growth, environmental protection, and social welfare (Asara et al., 2015). The social pillar of sustainability has been less emphasized in the development literature compared to the economic and environmental pillars. As a result, economic and environmental issues initially dominated the sustainable development debate, with social sustainability being considered the most neglected aspect (Colantonio and Dixon, 2011; Rasouli and Kumarasuriyar, 2016; Palich and Edmonds, 2013).

Ranking countries based on their Gross National Product (GNP) per capita has been used as primary method for evaluating and comparing the quality of life of them (Nussbaum, 1999, 2001). However, Nussbaum (2011) highlights that an increase in gross national product does not necessarily result in a better quality of life for people. The quality of life in countries cannot be measured solely by wealth or economic prosperity, but by how effectively they ensure the fundamental human rights of all citizens. A society may be wealthy, but if it fails to provide basic rights, such as access to healthcare, education, and housing at a minimum acceptable standard for all, it cannot be considered truly just. Consequently, Nussbaum and Sen (1993) criticize this method for overlooking income distribution, social inequalities, and essential aspects of human life. In addressing deprivation, Sen (1984) contends that a rights-based moral approach is particularly more effective than utility-based approaches. The 1980s and the 90s saw a fundamental shift with the introduction of the human development approach, primarily developed by Mahbub ul Haq (1995) and Amartya Sen's works, particularly in 1983, 1984, 1987, 1988, and 1999. This

conceptualization of development focused on freedom, opportunity, and choice of people.

The capabilities and functionings approach, which is closely related to the concept of quality of life, emphasizes that development is about expanding people's capabilities to achieve the functionings they value, rather than simply increasing material wealth. The link between quality of life and the capabilities approach is first established in Sen and Nussbaum's 1993 book *The Quality of Life*, where they argue that gross national product per capita is an incomplete measure of quality of life. Scholars like Healey (1997) and Alkire (2008) further emphasize that improving quality of life goes beyond material welfare, advocating for a broader perspective based on capabilities and functionings rather than just monetary indicators. At the core of this approach is an understanding of human dignity, wherein quality of life is assessed based on how people live their lives rather than merely on the possession of goods (Nussbaum, 2001; Deneulin, 2006). This brings the concept closer to the Aristotelian understanding of *eudaimonia* (Nussbaum, 1987).

The concept of quality of life (QoL) attracts researchers from various fields, including health sciences, economics, sociology, psychology, urban planning, and environmental studies. The conceptualization of quality of life including its definition, how it can be achieved, and what it encompasses along with the diverse ethical, theoretical, and methodological perspectives proposed by scholars in this field, has transformed quality of life studies into a multidisciplinary research area. Despite the widespread use of the term not only by scholars but also by politicians, policymakers and the general public, its broad interpretation has resulted in a lack of a clear and universally accepted definition of quality of life (Wish, 1986; Veenhoven, 1999; Dissart and Deller, 2000; Das, 2008; Lotfi and Koohsari, 2009; Pennacchini et al., 2011; Pazhuhan et al., 2020). This is due to its complexity and multidimensionality (WHOQOL Group, 1995; Das, 2008; El Din et al., 2013; Mittal et al., 2019; Al-Qawasmi, 2019), its multi-faceted and interdisciplinary nature (Marans and Stimson, 2011a; Marans, 2012), and the various approaches to the subject. The literature agrees that the term quality of life is ambiguous. The ambiguity of the concept of quality of life is further deepened by the use of related

concepts such as happiness, well-being, and satisfaction in place of the term (Marans and Stimson, 2011a).

The term quality of life is used interchangeably with other concepts due to the lack of a standard definition (Dissart and Deller, 2000). It serves as an umbrella term that encompasses notions reflecting how well humans live, such as the good life, the happy life, a satisfying life, and a valued life (McCrea et al., 2006). Since the concepts of quality of life, well-being, satisfaction, and happiness are often used synonymously (Veenhoven, 1999; Marans, 2015), distinguishing these notions is challenging (Marans and Stimson, 2011a; Marans, 2012). Happiness is associated with a high quality of life and well-being, and a high quality of life and well-being are linked to happiness. However, according to Veenhoven (1999), quality of life, well-being, and happiness denote different meanings; life satisfaction and subjective well-being are synonyms for happiness.

Some scholars emphasize that there is a distinction between the concepts of happiness and satisfaction. For Kerce (1992), although there are fundamental differences between happiness and satisfaction, the literature does not dwell on this distinction. In this regard, happiness is an appraisal of emotional experience (Cheng, 1988) and the degree to which a person evaluates the overall appreciation of their life positively (Veenhoven, 1999), whereas satisfaction relates to expectations and the comparison of current objective conditions to some internal standards (Campbell et al., 1976; McKennell, 1978; McKennell and Andrews, 1980; Cheng, 1988). According to Diener and Re (2000), satisfaction pertains to people's cognitive and affective evaluations of their lives. It would not be accurate to claim that happy people are always satisfied. People can be unhappy yet satisfied, or happy yet dissatisfied (Kerce, 1992). According to Sirgy (2012), life satisfaction, emotional well-being, and eudaimonia together constitute subjective well-being. With this understanding, subjective well-being becomes a concept that encompasses life satisfaction. The question of 'all things considered, how satisfied are you with your life as a whole these days?' typically measure the life satisfaction (New Economics Foundation, 2009).

Liu (1975) defines quality of life as the result of a production process with two types of inputs: physical inputs, which are objectively measurable and transferable, and psychological inputs, which are subjective and not comparable between individuals. According to Rice (1984), quality of life refers to the extent to which an individual's life experiences satisfy their physical and psychological wants and needs. For Megone (1990), the ambiguity of the term increases the fact that the term encompasses both the quality of the individual's life and the quality of the living conditions surrounding the individual. Dissart and Deller (2000) assert the quality of life can have different meanings for people according to their well-being centered on the people and to good place centered on the location. According to Costanza et al. (2007), quality of life reflects the extent to which objective human needs are met in relation to personal perceptions of subjective well-being. One of the most acknowledged definitions of the quality of life proposed by World Health Organization Quality of Life Group is as *'individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns'* (WHOQOL Group, 1995, p. 1405). The quality of life, in this definition, emphasizing a proactive approach that individuals can improve their own well-being is composed of physical, psychological, and social aspects (WHOQOL Group, 1995). In the 1990s, Sen and Nussbaum (1993) significantly reshaped the concept of quality of life, defining it as the individual freedom to use one's capabilities to take action, create outcomes, and achieve personally meaningful goals. Through the capabilities approach, they evaluate quality of life based on people's capability to attain valued functionings.

### **2.2.2. The Concept of the Quality of Urban Life**

There is an indispensable relation between humans and their living environment. In *Nicomachean Ethics*, Aristotle claims that humans, as *zoon politikon* by nature, can reach their chief good, *eudaimonia* or flourishing, only by living in the *polis* ([circa 350 BC] 2009). *'Since man is born for citizenship'* as stated by Aristotle ([circa 350 BC] 2009, p.11), the good life of humans, which is the goal of morality, can be realized only in a well-ordered society. Aristotle examines the good of human beings not in isolation from their political setting but as they are in the Greek city-state or



*polis* (see Explanatory notes in Aristotle, [circa 350 BC] 2009). In *The City in History*, Mumford (1961, p. 111) quotes Aristotle's statement, '*Men come together in the city to live; they remain there in order to live the good life*,' and indicates that the nature of a city in any cultural context involves both the local and universal qualities of a good life.

With this understanding, Aristotle views the *polis* as a place where people striving to live the best life come together (Mumford, 1961). Montgomery (2013) suggests that Aristotle argued the *polis* was the only means through which humans could achieve *eudaimonia* as their ultimate end. Similarly, Wiryomartono (2020) states that, for Aristotle, the purpose of the *polis* is to nurture and cultivate human beings toward a sense of *eudaimonia*. This suggests that humans can live a full and happy life only as members of a society; those isolated from social life cannot achieve self-realization and happiness (Magee, 1998). The concept of the *polis* not only denotes a well-ordered and politically organized community but also evokes a spatial dimension, particularly referring to urban life where people live in harmony with their *daimon*.

A good life in a good environment is also a matter of human rights. What the ancients regarded as living and faring well in life is seen today not only as the highest good for human beings but also as their inherent right. According to the Universal Declaration of Human Rights, proclaimed by the United Nations General Assembly on December 10, 1948, in Paris, '*everyone has the right to life, liberty, and security of person*,' as well as the right to an adequate standard of living for their health and well-being. Tekeli (2010b) asserts that ensuring the quality of life is a requirement of the right to a dignified life. The meaning and concretization of human rights, an abstract concept, become possible in the local contexts where people live their daily lives (Tekeli, 2010b). From this perspective, cities play a crucial role in the realization of human rights, serving as spaces where these rights are both protected and fulfilled. According to Geray (1998), cities that uphold first-generation fundamental rights and freedoms, second-generation economic, social, and cultural rights, and third-generation solidarity rights through local governance, allowing their inhabitants to enjoy these rights, are of high quality. Such cities become livable,

sustainable, and high-quality settlements to the extent that they provide these rights in ways that benefit their residents.

The spatial dimension in quality of life studies began to gain prominence, particularly after the 1960s, when the relationship between environmental factors and human health became increasingly evident and the subject of public debate. The urban environment has been recognized in the literature as an important factor influencing people's quality of life (Sirgy, 2012). The places where people reside influence their lives and, consequently, their overall quality of life (Marans, 2012). The first study to examine the concept of quality of life within the context of the urban environment is Harvey Perloff's (1969) article titled '*A Framework for Dealing with the Urban Environment: Introductory Statement.*' In this work, Perloff (1969) argues that changes in both the natural and built environments, in direct interrelationship with one another, impact the quality of life for all city residents.

In the urban planning literature after 1980, Gedikli (2012) notes that new policy agendas have emerged, which can be grouped into two main categories. On one hand, local governments strive to compete with each other to attract investments and keep pace with the globalizing world order. On the other hand, they aim to preserve urban identity and differentiate themselves from other local areas by adopting policies focused on protecting urban and environmental values, as well as improving quality of life in alignment with the principle of sustainability. Kerce (1992) claims that while governmental agencies use the objective approaches, survey organizations with academic affiliations usually prefer to use subjective approaches to analyze the quality of life of people.

It is notable that the emphasis on the quality of urban life has increased in policy documents, starting from the 1970s, but especially since the 1990s. In 1976, the Vancouver Declaration on Human Settlements, known as the Habitat I, emphasized that improving quality of urban life is the primary objective of human settlement policies. It highlighted that the quality of life in cities depends on fulfilling basic needs such as housing, health, education, employment, recreation, and social security, which must be provided equitably and without discrimination. The

conference indicated that quality of urban life requires not only economic development but also a fair distribution of its benefits. A key message was that urban planning should set progressive, adaptable standards for an acceptable quality of life, defined both quantitatively and qualitatively, while promoting social justice. The conference further stressed that improving quality of urban life means addressing the specific needs of vulnerable groups (such as children, women, the elderly, and persons with disabilities) through adequate shelter, social services, and accessible urban environments. Overall, Habitat I positioned human-centered, culturally respectful, and socially inclusive urban development as fundamental to creating and sustaining a high quality of life in cities.

The European Urban Charter, adopted by the Council of Europe in 1992, stresses that the cities of the future should be livable, attractive, beautiful, and healthy. The European Urban Charter is the first document to address the rights of urban dwellers. According to the charter, the ideal city is one that protects civic rights, provides the highest living standards, and is responsive to the lifestyles and attitudes of its citizens. The charter asserts that ensuring and expanding human rights for all city residents is fundamental. In this charter, the following features are provided for all people living in the cities to ensure and improve human rights (Council of Europe, 1992):

- (1) provision of suitable, well-located and well-lit housing and dwellings of sufficient size, with adequate amenities, reasonably priced and reflecting anti-pollution requirements;*
- (2) preventive health measures; to the provision of greenery, space, sunlight, silence, vegetation, beauty;*
- (3) the interlinking of the various functions of city life;*
- (4) cultural opportunity, sport and leisure facilities, social development, to free circulation, incorporating a harmonious balance between all street users (public transport, private cars, the pedestrian and cyclists);*
- (5) provision for community facilities; measures against poverty; particular help for the disadvantaged;*
- 6) security; work; well-being; training and education possibilities; culture and history*

The Second United Nations Conference on Human Settlements (known as Habitat II), which was held in Istanbul in 1996, resulted in the adoption of the Istanbul

Declaration on Human Settlements and the Habitat Agenda. Recognizing the continuous growth of the global population and the increasing concentration of people in urban areas, the resolution highlighted two critical priorities: ensuring adequate and affordable housing for all and promoting sustainable, high-quality living environments in human settlements. This global commitment underscored that improving the quality of urban life is essential for addressing the challenges of a rapidly changing world (UN-Habitat, 1996). In the period following the Habitat II Conference, the concept of the quality of urban life came into more frequent use in Türkiye, accompanied by an increasing volume of research on the topic.

The European Urban Charter – II, adopted by the Council of Europe in 2008, sixteen years after the first charter, aims to promote a new approach to urban living. The European Urban Charter – II highlights several key aspects related to the quality of urban life. It emphasizes the urgent environmental crisis, including biodiversity loss, pollution, and climate change, all of which have direct implications for the quality of life in urban areas. The charter calls for increased citizen involvement in addressing these environmental issues, recognizing the growing importance of sustainability in urban development. It also underscores the crucial role of mobility, emphasizing its importance for both the functionality of cities and the overall quality of urban life. Mobility is seen as a key factor in urban practice and essential for good urban living standards. The charter stresses that sustainability is not just an improvement to urban life but a foundational requirement for proper urban development. Sustainable practices such as compact cities, controlled mobility, and environmental respect are vital for creating cohesive, inclusive, and high-quality urban environments. Also, the document recognizes the need to improve the architectural quality of urban landscapes, acknowledging past shortcomings in urban planning and calling for greater attention to architecture and spatial development to foster more vibrant and creative urban environments.

In 2010, the World Health Organization (WHO) identified urbanization as one of the greatest challenges of the 21<sup>st</sup> century, emphasizing the physical and mental impacts of urban living on humans and the interrelationship between them, as highlighted in the World Health Day theme 'Urbanization and Health.' The report links the place

where people live to their health and their ability to live according to their full potential (WHO, 2010). As a result, it becomes increasingly important to design human settlements that provide high-quality environments, worthy of human dignity, which enable individuals to live healthily and reach their full potential.

Furthermore, the the New Urban Agenda (Habitat III), adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in Quito, places a strong emphasis on improving urban quality of life as a core objective of sustainable development. It recognizes the positive relationship between good urbanization and enhanced quality of life, highlighting that urban renewal policies and strategies must address job creation, livelihood opportunities, and equitable access to resources. The document acknowledges that, despite progress since Habitat I and II, urban areas still face challenges such as poverty, inequality, environmental degradation, and social and spatial exclusion. Addressing these issues is essential to achieving a high quality of life for all urban inhabitants. The Agenda articulates a shared vision of "cities for all," where everyone, without discrimination, has the right to inhabit and shape just, healthy, and accessible urban spaces. This vision is grounded in social inclusion and equity, with a commitment to addressing the specific needs of vulnerable groups, including children, women, the elderly, and persons with disabilities. The New Urban Agenda promotes integrated urban planning that balances short-term needs with long-term goals, aiming for competitive economies, sustainable environments, and improved quality of life. It advocates for disaster risk reduction, environmentally sound urban management, and innovative transport systems that reduce congestion and pollution while enhancing connectivity, health, and accessibility (UN-Habitat, 2017).

Apart from the policy documents, the scholars emphasize the characteristics of a good urban environment. Lynch (1985) examines what makes a good city by connecting its value to its spatial characteristics. He identifies five core dimensions of settlement quality, each representing a cluster of related qualities with a common basis for measurement. (1) Vitality refers to how well a city's form supports the essential functions, biological needs, and capabilities of humans, with a primary focus on protecting the survival of the species. Lynch (1985) notes that, in the future,

the environment's support for other species may also become important. (2) Sense is the degree to which a city can be clearly perceived and mentally structured by its residents in time and space. This dimension reflects how well the environment aligns with people's sensory and cognitive abilities, cultural constructs, and values. (3) Fit pertains to the adequacy of a city's spaces, infrastructure, and equipment in accommodating the customary and desired activities of its inhabitants. It also considers the adaptability of these spaces to future needs. (4) Access measures the ability to reach other people, activities, services, resources, and information, emphasizing both the quantity and diversity of what can be accessed with minimal time and effort. (5) Control focuses on how the use, creation, repair, and management of spaces and activities are governed ideally by those who live, work, and spend their time there. Beyond these five dimensions, Lynch (1985) introduces two meta-criteria. Efficiency addresses the cost, in terms of other valued things, of achieving any given level of settlement quality, whereas justice concerns the fair distribution of environmental benefits and costs among people, based on principles such as equity, need, contribution, and ability to pay. These meta-criteria are not independent but apply to each of the five dimensions, prompting questions about the cost of achieving vitality, sense, fit, access, or control and who benefits from it. Lynch (1985) argues that measuring and applying these dimensions and meta-criteria provides a practical and evolving framework for assessing, improving, and maintaining the quality of urban life.

Bentley et al.'s (1985) book, *Responsive Environments: A Manual for Designers*, offers a practical guide to architecture and urban design, focusing on creating places that enhance people's choices and experiences. Rather than covering basic design principles, it addresses why modern architecture often feels inhuman and disconnected from its social ideals, arguing that form and function must work together to shape democratic, responsive environments. The book identifies seven key qualities that influence the choices people can make in a place: permeability (how accessible and connected a space is), variety (the mix of uses available), legibility (how easily people can understand and navigate the environment), robustness (the flexibility of spaces for different uses), visual appropriateness (how

the appearance helps people understand their options), richness (the diversity of sensory experiences), and personalisation (the ability for people to leave their own mark on their environment). The seven design qualities provide a comprehensive framework for creating places that are not only functional but also socially and culturally enriching.

In '*Toward an Urban Design Manifesto*', Jacobs and Appleyard (1987) emphasize five physical characteristics that all must be present for the good urban environment namely (1) livable streets and neighborhoods, (2) some minimum density of residential development as well as intensity of land use, (3) and integration of activities – living, working, shopping – in some reasonable proximity to each other, (4) a manmade environment, particularly buildings that defines public space, (5) and many separate, distinct buildings with complex arrangements and relationships as opposed to few and large buildings.

Overall, these perspectives converge on the idea that a good urban environment is not only about physical form but also about creating places that support people's quality of life, social interaction, and cultural richness, with a strong emphasis on equity, adaptability, and a sense of belonging. However, the quality of urban life encompasses much more than the understanding of a good city. The next section will focus on the differentiated approaches, dimensions, and sub-dimensions in measuring urban quality of life.

### **2.2.3. The Measurement of the Quality of Urban Life**

The measurement of the concepts of quality of life and quality of urban life is quite challenging. There is a lack of consensus in the literature on the domains, sub-domains, and indicators used to measure the quality of urban life (Wish, 1986; Veenhoven, 1999; Evcil-Türksever and Atalık, 2001; Costanza, 2007; Lula and Hamerska, 2016; Sarı and Kindap, 2018). Although there is still no consensus on a standardized methodology for measuring quality of life and quality of urban life, scholars agree that a person's quality of life cannot be understood solely by assessing objective attributes (Wish, 1986). In national surveys conducted in the USA between 1957 and 1972, the fact that the proportion of the population describing themselves

as ‘very happy’ tended to decline while most economic and social indicators were rapidly moving upward makes it clear that quality of life cannot be simply predicted from objective conditions alone (Kerce, 1992). The quality of life of people is far more complex than its evaluation through descriptive social indicators based on external living conditions (Das, 2008). While early attempts to measure quality of life relied almost entirely on statistical indicators, after the 1970s, subjective evaluations of quality of life became increasingly recognized (Kerce, 1992).

As shown in Figure 7, there are two main approaches to measuring quality of life: objective quality of life and subjective quality of life (Das, 2008). Understanding quality of life of people requires a simultaneous analysis of objective and subjective indicators, which influence each other (Wish, 1986; Cummins, 2000; Camfield and Skevington, 2008).

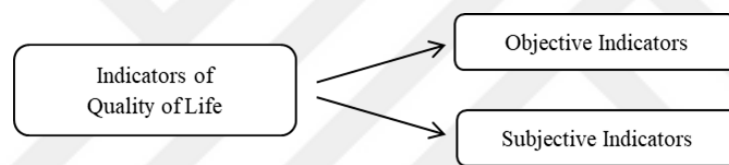


Figure 7: Two Basic Approaches for the Measurement of the Quality of Life (Source: Author)

Rice (1984) defines the term ‘objective quality of life’ as the extent to which specified standards of living are met by the objective conditions of human life. According to Das (2008), the objective dimension of quality of life reflects the external conditions of life. Dissart and Deller (2000) refer to objective quality of life as exogenous factors, emphasizing that it depends on the objective realities of people’s lives. According to Biagi et al. (2018), exogenous characteristics are determined by the quality and quantity of public services, built and natural environments, and cultural amenities, as well as more intangible factors such as human interactions and social and human capital. The objective approach is used to analyze and report secondary data, typically aggregate data at different geographic or spatial scales (Marans and Stimson, 2011). Objective quality of life is measured



using indicators related to observable facts derived from secondary data and objective, quantifiable social, economic, and health indicators (Costanza et al., 2007). However, a key drawback of this measurement approach is that it cannot capture people's subjective experience of well-being (Das, 2008). Therefore, to fully understand people's quality of life, it is essential to incorporate an analysis of subjective quality of life.

Rice (1984) defines the term 'subjective quality of life' as a set of affective beliefs directed toward one's life. Rice (1984) defines subjective quality of life as a set of affective beliefs about one's life. According to Diener and Suh (1997), subjective quality of life reflects people's conscious experiences in terms of hedonic feelings and cognitive satisfaction. Das (2008) suggests that subjective quality of life represents people's cognitive and affective reactions to, and evaluations of, both the overall and specific domains of their lives. Dissart and Deller (2000) refer to subjective quality of life as endogenous perceptions, emphasizing that these reflect people's views of themselves and their internal experiences. In quality of life studies, the endogenous characteristics of the resident population are based on factors such as status, gender, age, education, culture, and ethnicity (Biagi et al., 2018). The subjective approach collects primary data at a disaggregated or individual level using social survey methods.

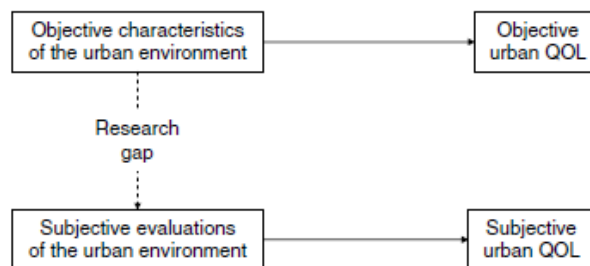


Figure 8: The Research Gap Between the Objective Characteristics and Subjective Evaluations of the Urban Environment (McCrea et al., 2011b)

Some studies on the quality of urban life focus either on objective indicators of the urban environment or on subjective indicators based on residents' perceptions of the

places where they live (McCrea et al., 2006). However, objective urban environments influence people's evaluations of their quality of life (McCrea et al., 2011b). Moreover, despite their importance, there are limited studies that link the objective characteristics of the urban environment with subjective evaluations of it (McCrea et al., 2006). Figure 8 illustrates this research gap highlighted in McCrea et al.'s (2011b) study. The quality of life in urban environments requires combining an objective assessment of the urban environment with subjective evaluations of the people living there, as individuals in the same objective environment may have different perceptions of it. As Marans and Stimson (2011) stated, people's differing perceptions lead to varying subjective judgments about urban attributes that influence their quality of life.

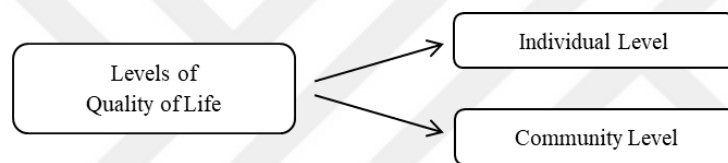


Figure 9: Two Levels for the Measurement of the Quality of Life (Source: Author)

In addition to the two approaches to the concept of quality of life, there are two levels of its measurement: quality of life at the individual level and quality of life at the community level (Tekeli, 2010a; Murgas and Klobucnik, 2018), as shown in Figure 9. While the individual level focuses on people's personal circumstances, the community level concerns the conditions of the community in which they live.

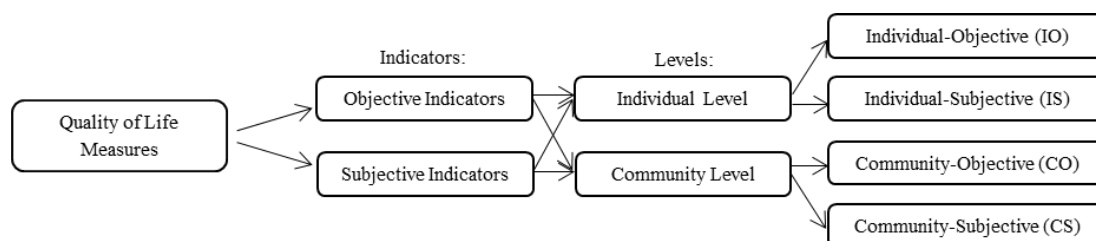


Figure 10: Quality of Life Measures Derived from the Intersection of Indicators and Levels (Source: Author)

Considering the two basic approaches (objective-subjective) and two levels (individual-community) for measuring quality of life, four types of quality of life measures emerge: individual-objective (IO), individual-subjective (IS), community-objective (CO), and community-subjective (CS). Tekeli (2010a) explains that objective measures of quality of life at the individual level (IO) refer to the objective realities each individual experiences, independent of their personal evaluations. These include demographic characteristics, income level, education level, health status, and the characteristics of the environment in which the person lives. In contrast, subjective measures of quality of life at the individual level (IS) involve individuals' own evaluations of their situation, such as life satisfaction, happiness, and subjective well-being. For instance, while a person's income level is an objective measure of quality of life at the individual level (IO), their evaluation of their income or how they feel about it represents a subjective measure of quality of life at the individual level (IS).

Tekeli (2010a) further explains that objective measures of quality of life at the community level (CO) focus on the conditions related to the characteristics of the society in which an individual lives, in order to enable a quality life. In contrast, subjective measures of quality of life at the community level (CS) reflect people's subjective evaluations and feelings about the community in which they reside. Whether objective or subjective, quality of life at the community level is typically quantified using frequency, proportion, and ratio. For example, the frequency of road traffic accidents in a neighborhood is an objective measure of quality of life at the community level (CO). The proportion of individuals who perceive the risk of traffic accidents to be high in the neighborhood reflects the subjective evaluation of the community, representing a subjective measure at the community level (CS).

Despite its widely accepted multi-dimensional characteristics, there is no consensus in the literature regarding the specific dimensions that contribute to the realization of urban quality of life. As shown in Table 3, several international policy documents aim to measure quality of life at both national and urban levels. The Economist Intelligence Unit (EIU) develops a Quality of Life Index that compares results across 111 countries, based on nine determinants: material well-being, health, political

stability and security, family life, community life, climate and geography, job security, political freedom, and gender equality. Furthermore, the EIU provides the Global Livability Matrix, ranking 173 cities worldwide according to over thirty quantitative and qualitative indicators, which are grouped into five broad categories: stability, healthcare, culture and environment, education, and infrastructure. Similarly, the Quality of Living Survey conducted by Mercer, a global consulting firm, defines ten evaluation criteria for assessing and comparing the quality of urban life at the provincial level. These criteria include political and social environment, economic environment, socio-cultural environment, medical and health considerations, education, public services and transport, recreation, consumer goods, housing, and natural environment.

The OECD's Better Life Index aims to engage citizens in discussions about measuring well-being of societies and enables cross-country comparisons by considering factors such as housing, income, jobs, community, education, environment, civic engagement, health, life satisfaction, safety, and work-life balance. The 'How's Life – Measuring Well-being' initiative, which is part of the OECD Better Life Initiative, focuses on 11 dimensions of current well-being and uses over 80 indicators to assess whether life is improving for people, as well as to compare outcomes across different population groups and between 37 OECD countries and 4 partner nations. The dimensions used in the 'How's Life' Index include material living conditions such as income and wealth, jobs and earnings, and housing, as well as quality of life factors such as health, education, work-life balance, environment, social connections, civic engagement, safety, and subjective well-being (OECD, 2011a).

UN-Habitat's City Prosperity Index aims to identify potential areas of intervention for local authorities to enhance the prosperity of cities. This composite index includes six dimensions and assesses 333 cities and urban areas: productivity, infrastructure, development, quality of life, equity and social inclusion, environmental sustainability, and governance and legislation. Quality of life is one of the key dimensions measured in this index. The three sub-dimensions of quality of dimension are education, health and security. Education sub-dimension is measured

by two indicators, namely literacy rate and mean years of schooling. Health sub-dimension is measured by two indicators, namely life expectancy at birth and under-five mortality rate. Security sub-dimension is measured by homicide rate indicator.

Table 3: Quality of Urban Life Dimensions in Policy Documents (Source: Author)

Index	Level	Dimensions
Quality of Life Index (Economist Intelligence Unit)	Country	material well-being, health, political stability and security, family life, community life, climate and geography, job security, political freedom, gender equality
Better Life Index (OECD)	Country	housing, income, jobs, community, education, environment, civic engagement, health, life satisfaction, safety, work-life balance dimensions
How's Life Index (OECD)	Country	income and wealth, job and earnings, housing, health, education, work-life balance, environment, social connections, civic engagement, safety, subjective well-being
Happy Planet Index (New Economics Foundation)	Country	life satisfaction, life expectancy, ecological footprint
Quality of Living Index (Mercer)	City	political and social environment, economic environment, socio-cultural environment, medical and health considerations, school and education, public services and transport, recreation, consumer goods, housing, natural environment
Global Livability Matrix (Economic Intelligence Unit)	City	stability, healthcare, culture and environment, education, infrastructure
City Prosperity Index (UN-Habitat)	City	productivity, infrastructure, development, quality of life, equity and social inclusion, environmental sustainability, governance and legislation
Happy City Index (New Economics Foundation)	City	city conditions, equality, sustainability
Urban Audit (European Union-Eurostat)	City	demography, social aspects, economic aspects, civic involvement, training and education, environment, travel and transport, information society, culture and recreation
Quality of Life Indicators (European Union-Eurostat)	City	material living conditions, productive or main activity, education, health, leisure and social interactions, economic and physical safety, governance and basic rights, natural and living environment, overall experience of life
Well-being Index for Provinces (Turkish Statistical Institute)	City	housing, work life, income and wealth, health, education, environment, safety, civic engagement, access to infrastructure services, social life, life satisfaction
The Livability Index (AARP* Public Policy Ins.)	Neighborhood	housing, neighborhood, environment, transportation, health, engagement, opportunity
The Progress Index (Cleveland Neighborhood Progress / CUPCD**)	Neighborhood	housing, local economy, workforce participation, population trends and safety, diversity, stability, community perception and well-being, health, educational attainment
The Well-being Index (New York City and Columbia)	Neighborhood	housing, economic security and mobility education, health and well-being, core infrastructure and services, personal and community safety

\*American Association of Retired Persons; \*\*Center on Urban Poverty and Community Development

The Happy Planet Index, introduced by the New Economics Foundation in 2006, measures and compares the happiness levels of countries while considering ecological factors. This concept of well-being focuses on long, happy, and meaningful lives, balanced with resource consumption. The index includes life satisfaction, life expectancy, and ecological footprint as its components (New Economics Foundation, 2009). Similarly, the Happy City Index, developed by the New Economics Foundation and Happy City, aims to assess how well cities in England provide conditions that promote well-being in a fair and sustainable manner. This is done through the creation of Happy City Index Maps and Scorecards. The index focuses on five well-being domains: work, health, education, place, and community. Each domain consists of several sub-domains. The work domain includes quality of work, income, and unemployment. The health domain covers mortality and life expectancy, illness and disability, health behaviors, and mental health. The education domain consists of children's education and adult qualifications. The place domain includes safety, housing, transport, and green space. Finally, the community domain comprises culture, participation, social isolation, and local business (New Economics Foundation, 2016).

The Urban Audit project, initiated in 1999 by Eurostat and the Directorate General for Regional Policy, aimed to promote social and economic cohesion and reduce disparities between European regions by measuring the quality of life in European cities. It collects quantitative data across various aspects, including demography, social issues, economic conditions, civic involvement, education, the environment, transportation, the information society, culture, and recreation (European Union, 2004). These areas are categorized into nine statistical fields, with 25 domains containing various variables and indicators. Additionally, Eurostat's 'Final Report of the Expert Group on Quality of Life Indicators,' published in 2017, recommends an 8+1 dimensional framework for measuring citizens' functional capabilities and personal achievements in life satisfaction and well-being. These dimensions include material living conditions, productive or main activity, education, health, leisure and social interactions, economic and physical safety, governance and basic rights, natural and living environment, and overall life experience (European Union, 2017).

Turkish Statistical Institute (TurkStat) which aims to measure and compare the well-being of people and households by using objective and subjective criteria initiate Well-being Index for all 81 Turkish provinces. For this purpose, trying to rely on the OECD Better Life framework and country-specific conditions, 11 dimensions are determined as housing, work life, income and wealth, health, education, environment, safety, civic engagement, access to infrastructure services, social life, and life satisfaction. Also, 41 indicators are specified under these dimensions (TurkStat, 2022b).

American Association of Retired Persons (AARP) Livability Index creates an index score for each neighborhood in the United States based on services and amenities directly influencing people's lives. With 61 indicators, the index measures how effectively a community supports its residents in seven key areas: housing, neighborhood, transportation, environment, health, engagement, and opportunity. Cleveland Neighborhood Progress has developed the Progress Index, a data tool designed to assist Community Development Corporations (CDCs) and other partners in neighborhood revitalization. Created in collaboration with Case Western Reserve University, the tool provides housing and economic mobility data to help practitioners understand neighborhood dynamics, track trends, and measure program outcomes. The index focuses on key dimensions including housing, local economy, workforce participation, population trends and safety, diversity, stability, community perception and well-being, health, educational attainment. The NYC Well-Being Index, led by the Center for Innovation through Data Intelligence (CIDI), includes nine weighted domains and indicators, offering a holistic view of well-being at the neighborhood level. These domains are housing, economic security and mobility education, health and well-being, core infrastructure and services, personal and community safety.

Apart from policy documents, some scholars have emphasized the fundamental dimensions of urban quality of life in their studies. El Din et al. (2013), as shown in Figure 11, define seven interrelated and dependent dimensions, represented as a heptagon shape, namely environmental urban quality of life, physical urban quality

of life, mobility urban quality of life, social urban quality of life, psychological urban quality of life, economic urban quality of life, and political urban quality of life.

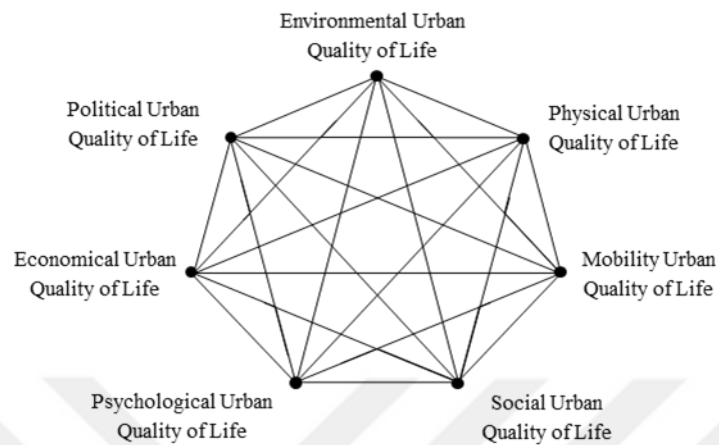


Figure 11: Heptagon Shape of Seven Dimensions of Quality of Urban Life (El Din et al., 2013)

The dimensions encompass various aspects of urban areas. The environmental dimension pertains to the natural characteristics of a neighborhood, while the physical dimension includes facilities, urban fabric, land use, services, and infrastructure. The mobility dimension addresses accessibility, traffic, and transportation issues. The social dimension relates to the neighborhood's social aspects, whereas the psychological dimension reflects residents' perceptions and feelings toward their neighborhood. The economic dimension characterizes the neighborhood as a hub for economic activities, and the political dimension concerns city policies and the extent of their implementation (El Din et al., 2013).

Das (2008) proposes a bottom-up framework for empirical research that examines the relationship between the environment and quality of life, as shown in Figure 12. According to this framework, the physical, economic, and social environments influence both objective quality of life, defined as the provision of necessary environmental conditions, and subjective quality of life, which reflects individuals' satisfaction with their environmental conditions. The objective and subjective quality of life collectively constitute the overall quality of life.



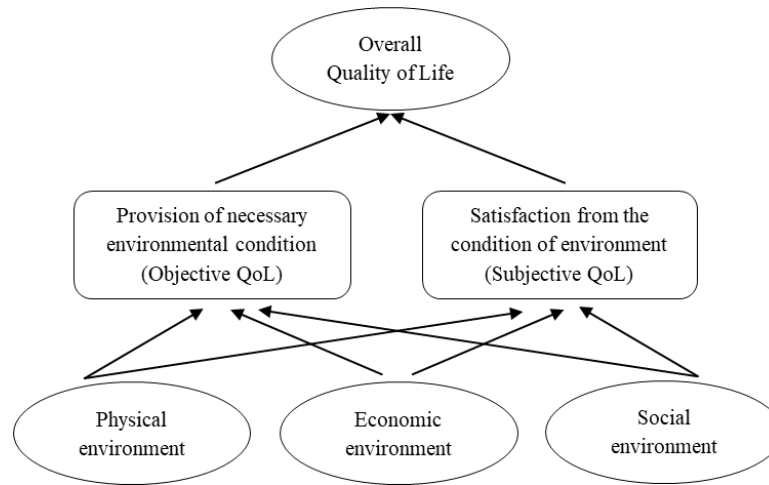


Figure 12: Bottom-up Conceptual Framework Illustrating the Relationship Between the Environment and Quality of Life (Das, 2008)

Valdez and Augustin (2020) define seven quality of life dimensions. These dimensions are: (1) access to health support and provision, (2) presence of community and government support and facilities, (3) safety, security and order, (4) presence of opportunities for economic empowerment, (5) mobility and access to market, (6) access to natural and environmental amenities, and lastly (7) property ownership and access to utilities. Pazhuhan et al. (2020) determines seven dimensions for the measurement of quality of urban life in Arak, Iran as place identity, citizenship ethics, social security, environmental quality, environmental sanitation, economic satisfaction, and quality of public transportation. Faka (2020) evaluates and maps quality of life and quality of place at local level in Katerini, Greece. He defines five dimensions of quality of life and quality of place: socioeconomic environment, housing conditions, public services and infrastructures, cultural and recreational facilities, and natural environment.

In the Turkish context, Evcil-Türksever and Atalık (2001) explore the measurement of quality of life in urban areas, and conducts a case study in Istanbul Metropolitan Area, analyzing the satisfaction levels of 384 residents from 22 districts. The

research employs a multiple linear regression model using 18 quality of life indicators. These indicators are shopping facilities, environmental pollution, education provision, cost of living, noise levels, climate, job opportunities, travel to work, crowding, relation with neighbours, housing conditions, parks and green areas, health, leisure opportunities, sporting, crime rate, accessibility to public transportation, traffic congestion. The findings indicate that satisfaction levels vary significantly across districts, influenced by factors such as health, climate, crowding, sporting opportunities, housing conditions, travel to work, and environmental pollution. The study underscores the complexity of the quality of urban life assessment, pointing to the need for more refined methodologies that integrate both objective conditions and residents' subjective experiences.

Ülengin et al. (2001) models the priorities, expectations, and needs of residents of Istanbul from a multidimensional perspective to optimize resource allocation and improve the quality of urban life. A survey was conducted among 200 inhabitants, using hierarchical conjoint analysis to evaluate hypothetical city profiles across four main constructs: physical environment, social environment, economic environment, and transportation-communication facilities. The study identified key quality of life attributes through literature review, pilot surveys, and expert interviews. The physical environment includes building arrangement, house type, green and recreational areas, and municipal services. The social environment covers education and healthcare services (extent and price), cultural activities, and safety. The economic environment considers the cost of living, job opportunities, and housing costs. The transportation-communication facilities assess public transport availability, communication means, and traffic flow. The study found that respondents prioritized job opportunities, adequate infrastructure and municipal services, smooth traffic flow, and affordability (housing and cost of living, and emphasized that urban planners and policymakers should focus on these aspects to enhance quality of life in Istanbul.

Okumuş and Eyüboğlu's (2015) study focuses on assessing pre-transformation urban life quality by analyzing social and physical needs to guide urban renewal projects. A model with 81 quantitative and qualitative indicators, classified under six key

categories, was developed and tested in Ataşehir Barbaros Neighborhood, where disaster-focused urban transformation projects are ongoing. These categories include: (1) demographic structure (population, household structure, socio-economic conditions), (2) spatial structure (land use, buildings, housing conditions), (3) accessibility and transportation (transportation, accessibility), (4) satisfaction levels (housing conditions, surrounding environment), (5) perceptions (sense of belonging to the house and neighborhood, quality of urban life perception, urban transformation perception), and (6) expectations (expectations regarding UQoL and urban transformation). The research integrates objective data (spatial analysis) and subjective data (surveys and interviews) to evaluate residents' satisfaction, perceptions, and expectations. The study highlights the need for thorough assessments before implementing urban transformation projects to ensure they enhance urban life quality rather than merely serving land development interests. It emphasizes the importance of increased oversight to consider physical, social, and economic impacts beyond property owners and investors, promoting social justice and disaster resilience at an urban scale.

Sarı and Kındap's study (2018) examines 30 studies that measure urban quality of life using objective indicators. A total of 814 indicators from various sources were analyzed, including 8 studies from international organizations, 6 from the U.S., 3 each from the EU and Canada, 2 from the U.K. and Türkiye, and 1 study each from Japan, China, Malaysia, Portugal, and New Zealand. The frequency analysis revealed that many indicators are infrequently repeated, suggesting a lack of international consensus on urban quality of life indicators. 68% of indicators appeared only once, and 85% appeared three times or less. This variation reflects the flexibility of the concept and its adaptation to different national and local needs. Key findings highlight sustainability as a central theme in urban quality of life measurement, with a strong emphasis on environmental, economic, accessibility, and social development indicators. The most frequently recurring indicators include the unemployment rate (23 times, economy), air quality measured by total particulate matter (20 times, environment), access to drinkable water (20 times, environment), voter turnout rate (20 times, democracy), infant/child mortality rate (19 times, health), crime rate per

1,000 people (19 times, safety), poverty rate (17 times, social development), average water consumption (16 times, other), and the mode share of different transportation types (15 times, accessibility). This study emphasizes the need for a more systematic and multi-level approach to data collection in Türkiye, incorporating both national and local-level efforts to develop a robust set of urban quality of life indicators.

The study of Yakin-İnan and Özdemir-Sönmez (2019) aims to contribute to the development of a methodology for measuring, monitoring, and comparing quality of urban life. In this context, the indicators based on the works of the EU, UN, and OECD on the quality of urban life were examined, and a list of indicators was created based on the services provided in cities. The ideal indicators for urban quality of life assessments by researchers are categorized under housing, education, health, environment, safety, culture, sports and recreation, transportation, infrastructure, and information and communication. It is indicated that the accessibility of these ideal indicators in Türkiye is limited. While indicators for education, health, and infrastructure are well-accessible, very few indicators exist for environment, transportation, culture, sports, and recreation. This clearly indicates the need for a reliable and regular data infrastructure.

Salihoğlu and Türkoğlu's study (2019) examines the relationship between residential environment and urban quality of life in Istanbul, focusing on residents' perceptions and satisfaction levels. The research covers selected residential areas in Istanbul, classified into three groups based on population density and land value (low, medium, and high) further divided into nine subcategories. A spatially random sampling method was used with ArcGIS Sampling Design Tool, selecting 198 sample clusters, each containing six surveyed households, resulting in a total sample of 1,188 households. The study considers six primary dimensions:

Accordingly, Salihoğlu and Türkoğlu (2019) found that objective indicator scores decrease from the central and coastal areas toward the periphery. Central areas exhibit high levels of perceived accessibility and municipal service satisfaction but also experience higher urban stress factors. Satisfaction with urban quality of life is highest in mid-density, high-land-value neighborhoods and lowest in high-density,

low-land-value neighborhoods. Moreover, demographic factors such as higher education and income levels are associated with greater satisfaction with urban quality of life. The results suggest that satisfaction with the residential environment is strongly influenced by subjective factors such as image and accessibility, as well as objective factors like spatial quality and access. Longer residency duration is also linked to increased attachment and satisfaction. Ultimately, residential environment satisfaction emerges as the most significant factor influencing urban quality of life satisfaction, aligning with previous literature.

- (1) **Objective Indicators:** *Air pollution, population and building density, infrastructure maintenance, transportation accessibility, traffic conditions, parking, pedestrian/bicycle/disability access*
- (2) **Subjective Perceptions:**
  - a. **Environmental Quality:** *Aesthetics, noise, cleanliness, perceived pollution, overcrowding*
  - b. **Accessibility:** *Pedestrian, bicycle, and disability access, congestion, parking, public and private transport connectivity*
  - c. **Safety:** *General security, nighttime safety, safety for women and children, traffic safety*
  - d. **Municipal Services:** *Infrastructure reliability, waste collection, road and sidewalk maintenance, transparency in governance, satisfaction with healthcare, education, and security services*
  - e. **Cost of Living:** *Affordability, housing expenses, transportation costs*
- (3) **Satisfaction with Other Aspects of Life:** *Work/school life, family life, social relationships, health, living standards*
- (4) **Satisfaction with Residential Environment**
- (5) **Satisfaction with Quality of Urban Life**
- (6) **Demographic Characteristics of Households:**
  - a. **Demography:** *Gender, age, marital status, household size, kinship structure,*
  - b. **Social status:** *education level, employment sector, occupation, work hours*
  - c. **Economic status:** *household income, vehicle ownership,*
  - d. **Residential history:** *duration of stay in housing, location of previous residence, reasons for relocation, duration of stay in Istanbul*

Apart from the approaches (objective-subjective), levels (individual-community), cross-measures (individual-objective, individual-subjective, community-objective, and community-subjective), and dimensions of quality of life, the methodologies used to analyze this concept have varied across studies. Dissart and Deller (2000) examine four methods for evaluating the geographical dimension of quality of life:

- (i) The first approach involves data collection through a survey structured around Likert-type scale responses from inhabitants of a specific place to assess their quality of life. Subsequently, quality of life measures are

regressed on relevant independent variables associated with the location. Finally, the regression results are analyzed to identify the most critical factors in predicting quality of life. Studies by Crider et al. (1991) and Jeffres and Dobos (1995) exemplify this approach.

(ii) The second approach involves a combination of primary and secondary data. This method integrates both objective (secondary) and subjective (primary) indicators to estimate the quality of life in different locations. The perceptual evaluation and weighting of indicators are derived from surveys. Subsequently, objective indicators are selected to represent each rated dimension of quality of life. These indicators are standardized and averaged to capture the dimensions of quality of life. Finally, the overall quality of life ranking for a place is determined by multiplying the score for each dimension by the corresponding weight. An example of this approach is found in the work of Rogerson et al. (1989).

(iii) The third approach involves constructing scales using only secondary data. These studies have been criticized for not considering the psychological aspects of an individual's perceived quality of life. In this approach, a set of comprehensive objective indicators is used to measure the quality of life in a given location. An example of this approach is found in Liu's study (1976)

(iv) The fourth approach focuses on determining implicit prices for specific amenities, which are assumed to reflect the quality of life in a particular location. These studies rely on aggregate cross-sectional data and employ regression methods. Examples of this approach include the studies by Rosen (1979) and Roback (1982).

Linking objective and subjective indicators of quality of life is another critical issue. Some studies explore the relationship between these two types of measures. While certain studies argue that objective measures have little to no significant impact on subjective measures (e.g., the correlation between objective and subjective quality of life is weak) (Das, 2008; McCrea et al., 2011b), others suggest that improvements in objective measures contribute to higher overall life satisfaction. Additionally, it has

been suggested that objective circumstances do not have a significant influence on subjective quality of life (Headey et al., 1984; Bowling & Windsor, 2001, as cited in McCrea et al., 2006).

Studies on the quality of urban life can either focus separately on the objective and subjective aspects or aim to link both dimensions of the urban environment. The unit of analysis in the latter type of study becomes crucial when connecting objective and subjective measures of urban quality of life. If both objective and subjective measures are based on individuals, the two dimensions can be easily linked and compared. However, when objective indicators of urban quality of life pertain to the urban environment and subjective evaluations are based on individuals, a methodology must be developed to bridge these two aspects. In their study, McCrea et al. (2006) use Geographic Information Systems (GIS) to link objective and subjective measures of the urban environment. To combine both objective and subjective measures of urban quality of life, Lora and Powell (2011) propose a methodology including ‘the hedonic approach’ that employs market prices for housing alongside ‘the life satisfaction approach’ that addresses subjective well-being. According to McCrea et al. (2006), there are three theories linking objective and subjective quality of life as follows:

- (1) The first theory is homeostasis theory, which explores why an individual's quality of life tends to return to an equilibrium level of satisfaction over time, even after changes in objective life circumstances. This theory also explains the low correlations between objective life events and subjective quality of life.
- (2) The second theory is the top-down model, which suggests that personality traits have a stabilizing influence on life satisfaction unless significant positive or negative events occur. In this model, personality traits affect both overall quality of life and individuals’ satisfaction judgments in specific life domains. As a result, personality traits indirectly influence subjective satisfaction, while objective quality-of-life indicators related to specific domains have a direct impact. Similar to homeostasis theory, the

influence of personality traits in top-down models weakens the relationship between objective and subjective indicators.

- (3) The third one is bottom-up models which can start with the subjective evaluations of the urban environment contributing to satisfaction in particular urban domains, or with objective characteristics of the urban environment contributing to subjective evaluations of the urban environment. The bottom-up models do not inherently suggest a weak correlation between objective and subjective indicators of the quality of urban life. These two kinds of bottom-up models propose direct relationship between objective and subjective indicators if the psychological theories of judgment are not included the study.

There are various challenges and limitations in measuring quality of life. Firstly, as previously mentioned, there is no universally accepted approach to investigating quality of life, as researchers across different disciplines define and interpret the concept in diverse ways, despite efforts to establish a common framework. In other words, no consensus exists regarding the definition of both quality of life and urban quality of life, nor on the appropriate approaches, dimensions, and indicators for their assessment. Referring to the studies of Felce and Perry (1995), Diener (1995), Diener and Suh (1997), Keith (2001), Jones and Riseborough (2002), and Schalock (2004), Al-Qawasmi (2019) indicated that the selection of quality of life indicators remains a subject of debate and is largely influenced by researchers' subjective preferences.

Another challenge in measuring urban quality of life is the lack of consideration for differentiation based on the geographic unit of analysis (Wish, 1976). Tekeli (2010a) emphasized that meaningful indicators should vary depending on the scale of the study area. However, many studies fail to clearly distinguish how indicators differ at the neighborhood, city, regional, or national levels. The Urban Audit project serves as a notable example of indicator differentiation across regional scales (European Union, 2004). This project categorizes indicators under 25 domains and distinguishes them across three spatial observation units: administrative level, larger urban zone, and sub-city district.



Another problem encountered in measuring the quality of life is experienced during the data collection phase for indicators. Among the problems encountered are the lack of secondary data in studies conducted on sub-province level or neighborhood scale and the high cost of collecting primary data, which is especially necessary for measuring the subjective dimension. The last problem is that due to cities' dynamic and constantly changing structure, they present cross-sectional information specific to the time when the level of life quality is measured and requires regular repetition of the measurement.

Similar to the challenges associated with defining the concept of quality of life, the lack of consensus on the definition and scope of the concept of quality of urban life also extends to its measurement. In other words, there is no consensus on the indicators and criteria to be used in measuring the quality of urban life. As Van Kamp (2003) noted, the absence of a comprehensive framework incorporating physical, economic, and social indicators remains a persistent issue. For Biagi et al. (2018), because of the complexity of the quality of life concept, developing a possible measurement framework for the concept is relatively difficult.

### **2.3. Conclusion**

Especially over the last five decades, the concept of development, which shaped the concept of quality of life, has been widely criticized in the literature regarding the fundamental basis on which development should occur. The approach adopted for development fundamentally shapes the epistemological basis of the quality of life.

In this chapter, two philosophical debates influenced the contemporary development and quality of life agenda were examined. *Eudaimonia*, a concept introduced by Aristotle in the 4<sup>th</sup> century BC, refers to living in accordance with one's true self or *daimon*, encompassing virtuous activities aligned with one's nature and purpose. While there are variations in interpretation, the overarching theme of *eudaimonia* is the pursuit of a well-lived, meaningful life through virtue and rational activity, emphasizing the link between moral development and ultimate human well-being. *Hedonism*, in its simplest form, asserts that pleasure is the highest good, with the pursuit of pleasure and the avoidance of pain as central to human motivation. The

philosophical debate on hedonism has undergone significant evolution from ancient to modern times. Early proponents such as Aristippus and Epicurus, along with the discussions of philosophers like Socrates, Plato, and Aristotle, laid the foundation for subsequent developments in ethical theory. Epicurus' moderate hedonism, distinguishing between types of pleasures, influenced later thinkers. The distinction between quantitative hedonism (maximizing pleasure, as Aristippus advocated) and qualitative hedonism (prioritizing more meaningful pleasures, as Epicurus suggested) influenced 18<sup>th</sup> and 19<sup>th</sup> century utilitarianism. Utilitarian philosophers such as Bentham and J.S. Mill sought to create a moral framework based on maximizing happiness for the greatest number, though they faced tensions between quantitative and qualitative pleasure. This evolution demonstrates the complexity of hedonism as both a theory of pleasure and a moral framework, with philosophers refining the relationship between pleasure, happiness, and the good life.

In the utilitarian perspective, the quality of life, which is affected by the traditional economic growth-oriented development, is primarily determined by an individual's level of material welfare, which is understood as the pleasure or satisfaction derived from consuming goods or, more broadly, utilizing resources. One of the major criticisms of the utilitarian approach is its tendency to evaluate social welfare solely based on aggregate or average happiness, thereby overlooking the distribution of wealth within society. This perspective places utilitarianism in an ambiguous position between the total sum of human happiness and the average individual well-being. Utilitarianism fails to establish adequate boundaries to safeguard individuals' fundamental interests and does not allow them the necessary space to pursue personal concerns that give meaning to their lives. Moreover, utilitarianism is often regarded as a rigid and overly pragmatic approach. It is criticized for its narrow and inflexible framework, which, at a certain point, may justify the happiness of some at the expense of others' suffering. Additionally, it is argued that utilitarianism reduces quality of life to a mechanical model focused the calculus of the possession of goods.

Utilitarianism evaluates quality of life based on economically measurable characteristics, whereas the capability approach argues that quality of life lies not in the possessions one has but in what an individual can do and be (functionings). An

individual's quality of life is not solely determined by access to resources; what truly matters is how these resources can be utilized. Therefore, the concept of capabilities comes to the forefront, representing the freedom to achieve valuable functionings. The capability approach provides a broader and interdisciplinary framework that assesses quality of life not only through economic indicators but also through the states an individual can reach and the actions they can take.

These criticisms have been further reinforced by Amartya Sen (2008, p. 18), who argues that utilitarian calculations can be deeply unjust toward the most disadvantaged segments of society:

*“The utilitarian calculus based on, say, happiness can be deeply unfair to those who are persistently deprived, such as the traditional underdogs in stratified societies, oppressed minorities in intolerant communities, precarious sharecroppers living in a world of uncertainty, sweated workers in exploitative industrial arrangements, subdued housewives in deeply sexist cultures.”*

Sen's (2008) critique highlights how utilitarian evaluations can be inherently unjust toward the most disadvantaged groups in society, including those subjected to systemic oppression and socio-economic inequalities. Among these, women in deeply sexist cultures face significant disadvantages, particularly in urban spaces where structural barriers limit their opportunities and freedoms. Given these persistent inequalities, in the next chapter, the focus will now shift to women's quality of urban life, emphasizing the ways in which gendered disadvantages shape their access, safety, participation, and overall quality of life in the urban environment.



## CHAPTER 3

### WOMEN'S QUALITY OF URBAN LIFE:

#### EXAMINING THE CONDITIONS OF WOMEN IN URBAN SPACES

*“We know that women's social control and subjugation are partly maintained through spatial restrictions imposed on their lives. (...) Women living in Türkiye are aware of this and have long been struggling to gain their right to access all urban environments and feel safe within them.”*

*Leslie Kern*

For centuries, women have struggled with significant challenges to be treated equally with men. *‘Men are born and remain free and equal’*. It is the first article stated in *La Déclaration des Droits de l’Homme et du Citoyen* (The Declaration of the Rights of Man and of the Citizen), proclaimed in 1789. But what about women? *‘What advantage have you (women) received from the Revolution?’* It could be argued that the word *‘men’* refers to all human beings. If that were the case, the *La Déclaration des Droits de la Femme et de la Citoyenne* (The Declaration of the Rights of Woman and of the Female Citizen) would not have been declared two years later, in 1791, by the French activist Olympe de Gouges. In these years, when the quest for freedom and rights reached its peak, women were not wanted to be in the public spaces, in assemblies, or on the political scene, but in their homes and in their private spaces, in short, in places where men designated to them. The incidents that happened to Olympe de Gouges and considering the barriers that women faced in the 18<sup>th</sup> and 19<sup>th</sup> centuries, it is evident that solely and exclusively men are meant by *‘men’* expression. Perhaps, if the word *‘men’* meant to include all human beings without discrimination, the issue of freedom and equality between women and men would

still not appear as a problem area in the 21<sup>st</sup> century and would still not massively occupy the current agenda.

The light of hope for the equality of men and women began to be lit in the 20<sup>th</sup> century. Starting from the Universal Declaration of Human Rights was adopted in 1948 and reaffirmed that men and women have equal rights, several international documents have been laid out to eliminate discrimination and violence against women, and ensure gender equality. However, the inequalities between genders still exist in many parts of the world, and this unequal situation manifests itself in various ways, such as economically, socially, culturally, politically, and, *inter alia*, spatially.

Compared to rural areas, urban areas have the potential to continually regenerate opportunities for people to improve their lives. Clos states in the *State of Women in Cities 2012/13: Gender and Prosperity of Cities* that since economic opportunities have not been available for them in rural areas, women have migrated to urban areas in search of employment to escape poverty, gender-based violence, discrimination and disinheritance (UN-Habitat, 2013). Citing Elizabeth Wilson's book '*The Invisible Flaneur*', Tuncer (2018) draws attention to the liberating aspects of city life for women that offer them the greatest peculiarity and a chance to break free from the constraints of gendered domestic space and patriarchy, as well as to access education, paid employment, health and transportation opportunities. However, the city both offers opportunities for and puts oppression on women. Kern (2019) claims that although women in the cities have the opportunity to choose from many options unheard of in rural areas, women experience the city through a set of physical, social, economic, and symbolic barriers shaping their daily lives in deeply gendered ways.

Throughout the 20<sup>th</sup> century, the roles played and the responsibilities taken by women began to be shaped by urban life, which has been planned according to the male-dominant manner. In this way, the challenges faced in urban areas have gained gendered nature over time. Despite the fact that women, compared to men, are more disadvantaged in cities in terms of access to employment, access to health and education, transport, property ownership, urban poverty, safety and security in urban

areas, and exercising their rights are known, not grasping the nettle deepens the gender gap.

The urban environment should enable people to express themselves, to become involved, to decide what they want and act on it (Jacobs and Appleyard, 1987). In cities, women and men must have equal rights and opportunities. As a fundamental aspect of gender equality, it is essential that both women and men should exercise equal rights and opportunities in cities, not only in economic, sociocultural, ethical, and political contexts but also in physical terms. This chapter will first examine key international legislative frameworks addressing the relationship between women and urban space. While these international policy documents are important in various other respects, they will be analyzed here in terms of their impact on discrimination against women, the promotion of equality between women and men, and the specific relationship between women and urban space. The chapter will conclude by addressing the challenges faced by women in urban areas and how these challenges affect their quality of urban life, organized under three main themes: accessibility, safety, and participation.

### **3.1. The Key Policy Documents on Women and Urban Space**

Although the adoption of human rights and the universal recognition of women's rights, along with their inclusion in policies across various fields, have historically emerged after a long struggle, discrimination and violence against women still continue to be exposed all over the world in the 21<sup>st</sup> century. Despite the fact that fundamental human rights are universal, indivisible, indispensable, interdependent, and interrelated rights that human beings have from birth, women have not been able to enjoy the same rights as men due to traditions, prejudices, and economic, social, and political factors across the globe.

Gender equality, which is an integral part of human rights and an essential criterion for democracy, has started to be included in the international policy agenda since the middle of the 20<sup>th</sup> century. *The Charter of the United Nations*, which is the founding document of the United Nations signed on 26 June 1945 in San Francisco, affirmed the faith in fundamental human rights, in the dignity and worth of the human person,

in the equality of men and women and of nations (United Nations, 1945). *The Universal Declaration of Human Rights*, a milestone document adopted by the UN General Assembly on 10 December 1948, has paramount importance on gender equality. This declaration, which recognized that all human beings are born free and equal in dignity and rights, and acknowledged that everyone is entitled to all rights and freedoms without distinction of any kind, including gender, paved the way for the women's movement (United Nations, 1948). In 1967, the UN General Assembly adopted the *Declaration on the Elimination of Discrimination against Women*. This document stated that, despite the efforts of the UN and other organizations to address the issue of equality of rights, significant discrimination against women continues to persist. It emphasized that discrimination against women, which prevents their participation in economic, social, cultural, and political life, denies them equal rights with men, or limits their rights, is fundamentally unjust and constitutes a violation of human dignity. The declaration outlined several key objectives, including abolishing discriminatory regulations, establishing legal protections for equal rights, educating the public to eradicate the notion of women's inferiority, ensuring women's right to vote, providing equal rights for women and men in civil law, combating all forms of exploitation of women, and securing equal rights for women and men in economic, social, and educational spheres (United Nations, 1967).

The United Nations designated the years between 1976 and 1985 as the UN Decade of Women. During this decade, three major conferences were convened to address issues related to women. In 1975, the United Nations declared the year as International Women's Year and organized the first World Conference on Women in Mexico City to highlight the ongoing problems of discrimination against women. The conference set forth a series of goals for countries to improve women's rights worldwide. At this conference, the international community was strongly encouraged to commit to creating a just society in which women, men, and children could live in dignity, freedom, justice, and prosperity. At the conference, *Declaration of Mexico on the Equality of Women and their Contribution to Development and Peace* and the *World Plan of Action for the Implementation of the Objectives of the International Women's Year* were adopted. The Declaration defines the meaning of *the equality*



*between men and women* as ‘equality in their dignity and worth as human beings as well as equality in their rights, opportunities and responsibilities’. The World Plan of Action outlines three main objectives: (1) the elimination of gender discrimination and the assurance of gender equality, (2) the full integration of women into national development, and (3) the increased participation of women in securing and maintaining international peace (United Nations, 1975).

Before the second World Conference on Women convened in 1980, two utmost important international meetings are worth mentioning. In 1976, the proceeding report of the first United Nations on Human Settlements, held in Vancouver, was adopted as *the Vancouver Declaration on Human Settlements*, also known as Habitat I. The Declaration states that the living conditions in human settlements are regarded as unacceptable, and unless action is taken at both national and international levels, these conditions are likely to worsen. Therefore, the need to create an international community based on equity, justice, and solidarity is emphasized. In addition to children and the infirm, women are recognized as one of the most disadvantaged groups. The necessity of creating more livable, attractive and efficient settlements, while considering the human scale, cultural heritage, and the special needs of disadvantaged groups, including women, was highlighted. Additionally, the creation of economic opportunities in settlements, where both women and men are fairly compensated for their labor under safe and healthy conditions, is emphasized as another crucial issue. The Declaration stresses that equal participation of women should be guaranteed, advocating for the full involvement of women, as well as young people, in political, social, and economic activities. It particularly underscores the importance of supporting women’s equal participation in the planning and implementation of human settlement proposals and all related activities, based on equal rights (UN-Habitat, 1976).

In 1979, *the Convention on the Elimination of All Forms of Discrimination against Women* (CEDAW) was adopted by the United Nations General Assembly in New York, USA. This Convention is considered an international bill of women’s rights, as states that ratify or accede to it commit to eradicating all forms of discrimination against women by undertaking several measures. These include incorporating the

principle of gender equality into their legislation, establishing public institutions to protect women against discrimination, and eliminating such discrimination by individuals, organizations, or enterprises. The Convention defines discrimination against women as any distinction, exclusion, or restriction based on gender, irrespective of marital status (United Nations, 1979). In terms of spatial dimensions, the Convention primarily addresses discrimination against women in rural areas, not considering it as a significant issue in urban areas. Although discrimination against women in urban areas is also a substantial problem, the Convention's recommendations focus solely on rural women, thus leaving a gap in addressing the rights of women living in urban areas.

In 1980, the Second World Conference on Women was held in Copenhagen. During the conference, progress toward achieving the objectives set out in the First World Conference on Women in 1975 was reviewed. It was acknowledged that a gap exists between the women's rights that were guaranteed and their capacity to exercise these rights. Therefore, in addition to the three main themes of equality, development, and peace outlined in the first conference, three key sub-themes were identified in the second conference to address this disparity: (1) women's equal access to employment opportunities, (2) women's equal access to education, and (3) women's equal access to healthcare services. In the final report of the conference, the Programme of Action for the Second Half of the United Nations Decade for Women, equality is defined 'as meaning not only legal equality, the elimination of de jure discrimination (which is defined as the discrimination supported by law), but also equality of rights, responsibilities and opportunities for the participation of women in development both as beneficiaries and as active agents'. While the World Plan of Action, adopted in 1975 after the first conference on women, prioritized improving the economic conditions of the most disadvantaged groups of rural and urban poor women working in the tertiary sector, the Programme of Action adopted in 1980, following the second conference, focuses on improving the conditions of the most disadvantaged groups of rural and urban poor women. This is done by addressing the socio-economic and historical conditions that affect these women, and by emphasizing the three subthemes identified at the conference.

Table 4: The International Legislative Regulations on Women's Right

Year	Institution	International Legislative Regulations
1945	United Nations	The Charter of the United Nations – <i>San Francisco, USA</i>
1948	United Nations	The Universal Declaration of Human Rights – <i>New York, USA</i>
1967	United Nations	The Declaration on the Elimination of Discrimination against Women – <i>New York, USA</i>
1975	United Nations	The First World Conference on Women - International Women's Year- <i>Mexico City Declaration of Mexico on the Equality of Women and their Contribution to Development and Peace</i>
1976	UN-Habitat	Vancouver Declaration on Human Settlements (Habitat-I) – <i>Vancouver, Canada</i>
1979	United Nations	The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)
1980	United Nations	The Second World Conference on Women – <i>Copenhagen, Denmark</i>
1985	United Nations	The Third World Conference on Women to Review and Appraise the Achievements of the UN Decade for Women: Equality, Development and Peace – <i>Nairobi, Kenya</i>
1992	Council of Europe	The European Urban Charter - I
1993	United Nations	World Conference on Human Rights – <i>Vienna, Austria</i>
1993	United Nations	The Declaration on the Elimination of Violence against Women (DEVAW)
1994	European Union	The European Charter for Women in the City
1995	United Nations	The Fourth World Conference on Women – Beijing Declaration and Platform for Action – <i>Beijing</i>
1996	UN-Habitat	The Second United Nations Conference on Human Settlements (Habitat-II) <i>Istanbul Declaration on Human Settlements – Istanbul, Türkiye</i>
1997	European Union	The Treaty of Amsterdam
1998	IULA *	Worldwide Declaration on Women in Local Governments – <i>Harare, Zimbabwe</i>
2000	UCLG**	European Conference Cities for Human Rights Charter for the Safeguarding of Human Rights in the City – <i>Saint-Denis, France</i>
2000	United Nations	The United Nations Millennium Declaration The Millennium Development Goals
2001	Council of Europe	Recommendation of the Committee of Ministers to Member States on the Participation of Citizens in Local Public Life R(2001)19
2004	UN-Habitat	The Charter for Women's Right to the City – <i>Barcelona</i>
2005	International Alliance of Inhabitants	World Charter for the Right to the City
2006	CEMR***	The European Charter for Equality of Women and Men in Local Life
2008	Council of Europe	The European Urban Charter – II
2010	UN-Habitat	Report of the Fifth Session of the World Urban Forum – The Right to the City: Bridging the Urban Divide – <i>Rio de Janeiro, Brazil</i>
2011	UCLG**	Global Charter – Agenda for Human Rights in the City – <i>Florence, Italy</i>
2011	Council of Europe	Istanbul Convention (The Convention on Preventing and Combating Violence against Women and Domestic Violence) – <i>Istanbul</i>
2015	United Nations	2030 Agenda for Sustainable Development – <i>New York, USA</i>
2017	UN-Habitat	The New Urban Agenda – <i>Quito, Ecuador</i>
2019	Global Platform for the Right to the City	Women's Right to the City Manifesto
2023	Global Platform for the Right to the City	IWD2023: Women's Right to the City Manifesto

\* IULA: International Union of Local Authorities; \*\* UCLG: United Cities and Local Governments; \*\*\* CEMR: Council of European Municipalities and Regions; IWD: International Women's Day

Five years after the second conference on women in Copenhagen, *the Third World Conference on Women to Review and Appraise the Achievements of the United Nations Decade for Women* was held in Nairobi at the end of the decade in 1985. During the third conference, progress made during the UN Decade for Women (1976–1985) was assessed, and new solutions were proposed to address the challenges encountered in achieving the decade's objectives. The Nairobi Forward-Looking Strategies for the Advancement of Women was adopted as a final document of the conference. The strategies identified three main categories to measure the progress of women's status achieved during the decade: (1) constitutional and legal measures, (2) equality in social participation, and (3) equality in political participation and decision-making. A critical point in the document, in terms of spatial dimension, is that the urban poor women were identified as one of the areas of special concern, highlighting the numerous disadvantaged conditions they face. It was noted that the number of women living in urban areas, and consequently the number of urban poor women in developing countries, could nearly double by the year 2000. To address this issue, the document suggested that governments ensure women have equal access to economic, social, and educational opportunities alongside men (United Nations, 1985). Although the focus is on urban poor women, the spatial discrimination they experience in urban areas is not directly addressed, and the relationship between women and space is not explored in the document.

The European Campaign for Urban Renaissance, organized by the Council of Europe between 1980 and 1982, had great importance in the relationship established between human rights and the quality of urban life, inspiring the emergence of *the European Urban Charter* in 1992. The European Urban Charter emphasized the qualitative aspects of urban development and quality of urban life and the fundamental urban rights that all citizens have, such as the right to protection from adverse outcomes of the urban environment, the right to decent housing, health, cultural opportunity and mobility, and also the right to exercise democratic control of their local community. It is rather critical that these rights, one of the responsibilities of local and regional authorities, are for all urban residents without any discrimination in regard to gender, age, ethnicity, race, religion, socioeconomic status, political affiliation, and physical

or mental disability. In this way, the equality of women and men in urban space has started to take place in the urban agenda.

*The World Conference on Human Rights* was held in Vienna in 1993 under the leadership of the United Nations. ‘*The human rights of women and of the girl-child*’, first mentioned in the Vienna Declaration and Program of Action adopted by consensus at the conference, is accepted as an inalienable, integral and indivisible part of universal human rights (United Nations, 1993a). For promoting and protecting the rights of women, children and indigenous people, the new steps were taken and new mechanisms were created in the conference. In addition, the conference urged governments, institutions, inter and non-governmental organizations for the promotion and protection of human rights of women and also the girl-child. Under the Equality, Dignity and Tolerance title, the adverse situations that women confront were urged upon and were stated the need to eliminate them by separating a section on the equal status and human rights of women. The conference highlighted the importance of the efforts for the elimination of violence against women in public and private life, all forms of sexual harassment, exploitation and trafficking in women, gender bias in the administration of justice, the conflict between the human rights of women and customary practices, cultural prejudices and religious extremism. Hereupon, it is seen that the violence against women became also a main issue of the policy documents. Violence against women was defined in *the Declaration on the Elimination of Violence against Women (DEVAW)* adopted by the UN General Assembly in 1993 as any act of gender-based violence likely to result in physical, sexual or psychological suffering to women, whether occurring in public or private life. In the Declaration, women's human rights and fundamental freedoms were determined, and to realize these rights and freedoms, the governments and also the organs and agencies of the UN system were held responsible (United Nations, 1993b).

*The European Charter for Women in the City: Moving towards a Gender-Conscious City* adopted by European Union in 1994 is quite critical in terms of highlighting the relationship between women and their living environment and demanding the quest for a new city philosophy specifically focused on human values. The motivations of

the charter are stated that women are absent from all decision-making level related to cities, that urban planning hardly ever include women's particular needs, that women are the most frequently subjected to discrimination on the issue of employment, and that urban planning considering only nuclear families and depending on fixed socio-behavioral stereotypes excludes women's responsibilities. A declaration about 12 general themes (active citizenship, decision making-parity in democracy, equal opportunities, participation, daily life, sustainable development, social safety and mobility, the right to housing and habitat, gender issues, education-local experimentation, the role of the media-transmitting experience and networks), and also 5 priority themes on town planning and environment, mobility, urban safety, housing, and strategies were determined in the charter (European Union, 1994).

In 1995, the *Fourth World Conference on Women* convened by United Nations in Beijing in 1995 is acknowledged as the most important conference on women and a significant turning point for gender equality as it brought this issue to the global agenda. Discussions were organized under the twelve critical areas of concern regarding women's role in the society: women and poverty, education and training of women, women and health, violence against women, women and armed conflict, women and the economy, women in power and decision-making, institutional mechanism for the advancement of women, human rights of women, women and the media, women and the environment, and the girl-child. On the women and environment, it was dwelled on the relationship of environmental degradation with poverty, safe and healthy environment and health, well-being and quality of life of people, especially women and girls of all ages. Stressing on the women's critical role in promoting sustainable development, the conference defined the actions to be taken by the actors as follows: (1) involving of women actively in environment decision-making at all levels, (2) integrating of gender concerns and perspectives in policies and programmes for sustainable development, (3) strengthening or establishing mechanism at the national, regional and international levels to assess the impact of development and environmental policies on women (United Nations, 1995).

*The Second United Nations Conference on Human Settlements*, known also as *Habitat II* or *City and Town Summit*, took place in Istanbul in 1996. Istanbul

Declaration on Human Settlements and the Habitat Agenda was the resolution adopted by the conference. Considering the world population, which tended to increase continuously, and the concentration of the population in cities, the major themes addressed in the resolution were about adequate and affordable housing for all and sustainable and improved quality of living in human settlements in a changing world. The recognition of the particular needs of women for safe, healthy and secure living conditions, eradication of poverty and discrimination, promotion and protection of all human rights and fundamental freedoms for all, and provision of basic services for all are the decisions that strengthened the realization of the gender equality in the urban areas (UN-Habitat, 1996). Promoting equality and eliminating inequalities between women and men, ensuring equality between women and men with regard to labor market opportunities, treatment at work, employment and occupation, including equal pay for equal work without discrimination based on gender are the tasks determined for all the Member States in *the Treaty of Amsterdam* signed in 1997 and amended the *Treaty on European Union (the Treaty of Maastricht)* (European Union, 1997). In 1998, *the Worldwide Declaration of the International Union of Local Authorities on Women in Local Governments* affirmed the role of local and regional governments in ensuring gender equality and asserted that democracy could not be realized without the adequate inclusion of women in the local governance process. It is stated that women have equal rights with men:

- *to exercise human rights, duties and opportunities,*
- *to vote,*
- *to be eligible for election,*
- *to be hold public office at all levels,*
- *to representation at all levels and in all fields of decision-making,*
- *to freedom from poverty, discrimination, environmental degradation, and insecurity,*
- *to freedom from domestic violence and other forms of physical, psychological and sexual violence and abuse,*
- *to access the services of local governments,*
- *to be treated equally using public services,*
- *to employment in local government and equality in recruitment procedures,*
- *to equal pay, equal access to benefits, promotion and training, and equal working conditions and treatment in the evaluation of their work as employees in local government,*
- *to equal responsibility to care for their children and relatives,*
- *to sound environmental living conditions, housing, water distribution and sanitation facilities and public transportation,*
- *to equal access to the territory and geographical space of local governments,*
- *to own land, and*
- *to move freely without fear in public spaces and on public transport.*

In the declaration, it is acknowledged that the problems could be solved at the local level by strengthening the empowerment of women, including them in the decision-making process, and applying the mainstreaming principle by including a gender perspective into all policies, programmes and service delivery activities of local governments (IULA, 1998).

In 2000, *the European Charter for the Safeguarding of Human Rights in the City* was adopted during the second European Conference Cities for Human Rights in Saint-Denis. To implement human rights for all inhabitants, the general provisions, civil and political rights in the city, economic, social and cultural rights in the city, rights relative to democratic local administration, and the mechanism for the implementation of human rights in the city was propounded. It is stated that these rights should be guaranteed by the municipal authorities regardless of color, ethnic, national or social origin, age, gender, sexual orientation, language, religion, political opinion, or level of income (UCLG, 2000).

There are eight targets set in *the United Nations Millennium Declaration* in 2000 which are aimed to be achieved by 2015: poverty, disease, hunger, illiteracy, environmental degradation and discrimination against women, which are aimed to be achieved by 2015. On the freedom and equality issue, it is stated that the equality of men and women as well as the empowerment of women must be guaranteed and promoted, and that men and women should have the right to live their lives and raise their children in dignity without having to worry about hunger and being subjected to oppression, injustice or violence (United Nations, 2000). In 2001, the Committee of Ministers of the Council of Europe adopted the Recommendation of the Committee of Ministers to Member States on the Participation of Citizens in Local Public Life [Recommendation Rec(2001)19]. The recommendation offered balance participation of women and men in political and public decision making.

Especially after the 2000s, the rights of women over the urban space began to be dealt with through the perspective of the right to the city. *The Charter for Women's Right to the City* in 2004 highlighted the challenges to achieving equitable and democratic cities and the rights of women from which they were historically



excluded. Two fundamental problems were identified that prevented women from exercising the right to the city: the problems with women and democratic management of the city and the problems with women and right to a sustainable city. Regarding the first problem statement, it is stated that women are excluded from participating to political decision-making, to urban and territorial planning, and to control of public investments and expenditure. Regarding the second, it is remarked that women experience problems in access to urban public services, access to clean water, access to secure housing tenure, security conditions in the city, mobility in the city, and the relation with the environment (UN-Habitat, 2004). *The World Charter for the Right to the City* adopted by International Alliance of Inhabitants in 2005 stressed on the fact that cities were far from providing equitable conditions and opportunities to the citizens. Under the second article, the cities are expected to undertake commitments to the implementation of public policies that guarantee equal opportunities for women in cities. Also, women are among the vulnerable groups that have the right to take special measures for protection and integration, resource allocation, access to basic services and protection against discrimination. Under the eighth article, the cities are expected to implement affirmative action policies for the representation and political participation of women and minorities in local political life. Under the fourteenth and fifteenth articles, the cities are expected to include women in the possession and ownership documents regardless of their civil status, and to promote women's equal access to employment (International Alliance of Inhabitants, 2005).

Similar to the understanding introduced by IULA in 1998, the Council of European Municipalities and Regions adopted *the European Charter for Equality of Women and Men in Local Life* in 2006 and invited the local and regional governments of Europe to commit to the principle of equality of women and men and to implement it within their territory (CEMR, 2006). In the charter, the equality of women and men is agreed as a fundamental right. To achieve the equality of women and men, addressing the multiple discrimination and disadvantage, the balanced participation of women and men in decision-making, and the elimination of gender stereotypes are proposed. Furthermore, to advance equality of women and men, including the gender

perspective into all activities of local and regional government and properly resourced action plans and programmes are the principles stated to be taken into account. Under the planning and sustainable development section, for the sustainable development of the area, it is stated that the planning and developing strategies on spatial transport, economic development and land use policies and plans should be constructed by taking into consideration the principle of equality of women and men. Mobility and transport, economic development and the environment are the areas of responsibility determined under the planning and sustainable development section that local and regional governments are expected to recognize the equal right of women and men.

*The European Urban Charter – II* was adopted in 2008, sixteen years after the first charter by the Council of Europe, in order to establish a new way of living together and a new approach to city life. The desire to keep up the fight against discrimination on social status, age, culture, religion, gender and disability grounds is repeated in the charter. In 2010, *the Fifth Session of the World Urban Forum* took place under the theme ‘The Right to the City: Bridging the Urban Divide’ in Rio de Janeiro. The report of the session highlights the six dialogues focusing on the important aspects of sustainable development, namely the right to the city, inclusive cities, equal access to shelter and basic urban services, cultural diversity in cities, governance and participation, and climate change. The fourth annex, the Report on the Gender Equality Action Assembly, the action areas within the gender plan is discussed on the issues of (a) the advocacy and monitoring of gender equality in cities, (b) gender perspectives in urban planning, governance and management, (c) women’s access to adequate housing and land ownership right, (d) women’s needs and economic opportunities in delivering services, and (e) strengthened affordable housing finance systems for women (UN-Habitat, 2010).

*The Global Charter-Agenda for Human Rights in the City* adopted by United Cities and Local Governments (UCLG) in 2011 is rather critical in terms of specifying the rights of the inhabitants on the city and, in this context, the measures that need to be taken in order to realize these rights in the city. The objective of the charter is determined as promoting and strengthening the human rights of all the citizens of all

the cities around the world. In the charter, the rights of all the city inhabitants on the right to the city, the right to participatory democracy, the right to civic peace and safety in the city, the right of women and men to equality, the rights of children, the right to access public services, freedom of conscience and religion, opinion and information, right to peaceful meeting, association and to form a trade union, cultural rights, the right to housing and domicile, the right to clean water and food, and lastly the right to sustainable urban development are enunciated (UCLG, 2011). *The Convention on Preventing and Combating Violence against Women and Domestic Violence*, known as Istanbul Convention, was adopted by Council of Europe in 2011. The aims of the convention are stated as protecting women against all forms of violence, including domestic violence and promoting international cooperation, eliminating all forms of discrimination against women, promoting equality between women and men, empowering women, designing comprehensive framework, policies and measures to protect and assist the victims of violence, and providing support to agencies to adopt an integrated approach for eliminating violence against women (Council of Europe, 2011).

In 2015, the 2030 Agenda for Sustainable Development adopted by United Nations superseded the Millennium Development Goals for sustainable development. Although gender equality and discrimination against women were handled as one of the eight targets to be achieved by 2015 in the Millennium Development Goal, the Sustainable Development Goals detailed this target more broadly. The purpose of the fifth goal of the SDGs is achieving gender equality and empowering all women and girls. The targets of the goal are briefly ending discrimination against women and girls, eliminating violence against women and girls in the public and private spaces and harmful practices for women, recognizing and valuing unpaid care and domestic work, ensuring women's participation in decision-making in economic, political and public life, and universal access to sexual and reproductive health and rights, providing equal rights to economic resources and access to ownership and control over land and property, enhancing the use of enabling technology and promoting the empowerment of women, and adopting and strengthening policies and legislation for promoting gender equality at all levels (United Nations, 2015).

*The United Nations Conference on Housing and Sustainable Urban Development*, known also as *Habitat III* took place in Quito in 2016. Habitat-III is rather significant as it is the first global summit accepted by the United Nations, which was created according to the changing understanding with the 2030 Agenda for Sustainable Development and the Paris Climate Change Agreement (UN-Habitat, 2016). The New Urban Agenda adopted at the conference includes (1) *Quito Declaration on Sustainable Cities and Human Settlements for All* and (2) *Quito Implementation Plan for the New Urban Agenda*. In the agenda, there is specific attention to combat the discrimination faced by marginalized groups, including women and girls. The rights of women and girls in the Agenda are considered as a critical element for the realization of the right to the city. To prevent the discrimination and violence against women, the UN took steps to ensure women's full participation and equal rights to tenure security, and access to basic services, integration in disaster risk reduction, and climate change mitigation and adaptation understanding into age and gender responsive urban and territorial development and planning processes, providing safe, accessible, green, and quality public spaces free from crime and violence, promoting capacity development initiatives for empowerment increasing access to ICTs, providing safe, affordable, accessible and sustainable transport for women, including those who are in vulnerable situations, were some other steps considered by the UN to prevent discrimination and violence against women (UN-Habitat, 2020).

One of the eight components of the Right to the City determined by Global Platform for the Right to the City (GPR2C) Manifesto is gender equality. In 2019, GPR2C adopted the Women's Right to the City Manifesto. The steps that cities should take in order to ensure that women are not exposed to discrimination in urban space and to realize women's right to the city are stated in eleven articles. Accordingly, for cities, the articles put forward to ensure women's right to the city are as follows: combating all forms of discrimination, guaranteeing women's political participation, becoming free from violence, assuring protection of women in times of war and conflict, recognizing and equally redistributing the care work of dependent persons, guaranteeing women's equitable and affordable access to the goods, public services and opportunities, promoting the economic autonomy of women, involving women

in the process of planning, design, production, use and occupation of urban spaces, considering the diversity of women, promoting gender equality (GPR2C, 2014). Lastly, in 2023, Global Platform for the Right to the City relaunched a campaign called Women's Right to the City Manifesto within the context of International Women's Day to contend with the omission of women in city planning and acknowledge women's critical role in creating an inclusive and just social transformation. They reiterated 11 articles of manifesto and also called for a city encouraging women's transformative participation, providing safe and inclusive spaces, and prioritizing the life and care. The problem of gender equality remaining only in legal regulations and the difficulties experienced in its implementation continue to be a challenge that needs to be solved in many western democracies as well as in many countries across the globe.

### **3.2. The Challenges of Women in Urban Spaces Affecting their QoUL**

Throughout history, only men have been meant when making claims on the good life for humans; women making up the female half of humanity have been ignored. Women, therefore, have faced great struggles to exercise the same rights as men. In Ancient Greece, as stated in Chapter 2, it was acknowledged that the chief good of humans could only be reached by living in the politically organized *polis*, which cultivated humans towards the sense of *eudaimonia*. While '*men are born for citizenship*' (Aristotle, [circa 350 BC] 2009), women, along with slaves and foreigners, are noncitizens kept in oblivion and devoid of codetermination (Levi, 1987; Madanipour, 2010). The ancient Greek thought that men are more suitable to rule and women to be ruled were also put forward by Aristotle (Yalom, 2002). In the Ancient Greek *polis*, women were confined to the private household and excluded from political spaces like the Acropolis and the agora (Franck and Paxson, 1989; Terlinden, 2003) where they had no right to participate in decision-making, while their limited presence in the marketplace reflected the broader economic, social, and political inequalities that restricted their role in public life and prevented women from achieving *eudaimonia* (Alkan, 2000).

Throughout the 20<sup>th</sup> century, women have achieved, at least on paper, equal rights with men in many issues. However, despite what is stated in national and international documents, discrimination, mistreatment, and the inequalities women face in their daily lives continue to persist in both private and public spaces even in western countries. While issues like discrimination and violence against women in private spaces are critically important, this study will focus solely on the problems women experience in public spaces.

It is notable that the access to and use of public space by women is cross-cut by many factors. Phadke (2012) argues that factors such as class, caste, community, age, and physical ability influence women's access to public spaces. Kern (2019) reflects on her own experience, noting that after becoming pregnant and a mother, she perceived urban spaces differently, concluding that staying at home seemed best since cities were not designed with parents and children in mind. Egbatan and Ak (2019) highlight how able-bodiedness and patriarchy restrict the mobility of women with disabilities, excluding them from fully exercising their right to the city. Lordoğlu (2020) reveals that single women, including never-married, divorced, and widowed individuals, living in different neighborhoods in Istanbul, develop various strategies to combat oppression and create relationships with friends, family, and neighbors in unique ways. Hannan (2007) argues that poverty increases the likelihood of women becoming victims of sexual violence or trafficking in urban areas. Therefore, it is important that the intersection of being a woman with characteristics such as age, geographic location, level of education, physical and mental health, race, income, marital status, having babies and toddlers, and caring elderly relatives influences the everyday experiences of women in urban public spaces.

The concept of quality of life, often shaped by androcentric bias due to the neglect of fundamental aspects of people's everyday experiences, generally fails to incorporate gender perspectives and the specific challenges women face in urban areas (Gutierrez-Valdivia, 2021, as cited in Bravo, 2022). To enhance women's quality of urban life, it is crucial to address the issues they encounter in urban spaces, particularly in three key areas: (1) accessibility, (2) safety, and (3) participation.

### 3.2.1. Accessibility-Related Challenges

Identifying and removing obstacles to accessibility and ensuring equitable access for all, particularly for disadvantaged groups, is essential. As emphasized in international policy documents (see, e.g. IULA, 1998; UN-Habitat, 2004; UN-Habitat, 2010; UN-Habitat, 2020), women's access to urban public spaces, education, healthcare, employment, public transportation, social and cultural services, land and property ownership, secure housing, and clean water and sanitation is of critical importance.

Explaining the concept of accessibility is essential for addressing the challenges women face in various aspects of urban life. According to the *Merriam-Webster Dictionary* (2023), accessibility is defined as the quality of being capable of being reached, used, seen, understood, appreciated, or influenced, as well as being easily accessed by disabled individuals. In the urban context, while accessibility is often primarily associated with physical access, it extends far beyond mere being able to reach urban areas. According to Carr et al. (1992), there are three different but interrelated dimensions of accessibility: physical, visual and symbolic. The physical accessibility is the most fundamental dimension of access, referring both to the ability to enter a space and the connections that facilitate access. It includes considerations such as walkability, transportation links, and other design features that accommodate diverse users. The visual accessibility pertains to the perception of accessibility, specifically the extent to which people feel a sense of freedom and safety when entering a space. Good visibility enhances security, making people feel more comfortable using a space, while poor visibility can deter certain groups, such as women, from entering spaces like parks during evening hours. The symbolic accessibility is concerned with how a space signals who is welcome and who is excluded. It is shaped by design features, the presence of specific social groups, and implicit or explicit cues about belonging. The factors like security guards, shops, or seating arrangements can either invite or discourage different user groups.

According to Akkar-Ercan (2010), public space can be defined through four interrelated dimensions of access. Firstly, physical access ensures everyone can be present in the space, corresponding to Carr et al.'s (1992) concept of physical access.

Secondly, social access, also called symbolic access, is shaped by design, management, and social cues that indicate who is welcome, aligning with Carr et al.'s (1992) symbolic access. Thirdly, access to activities and discussions allows open participation in decisions about the space's development and use. Finally, access to information ensures transparency about management and policies, further reinforcing the inclusivity of public spaces.

In addition to physical barriers, economic, social, environmental, political, and psychological factors can also hinder accessibility in urban areas. These obstacles can prevent the full realization of accessibility, restricting individuals' ability to engage fully in urban life. This issue will be further examined in the section on the capability approach to women's quality of urban life, where the relationship between accessibility and women's functionings in urban spaces will be explored in depth.

The sharp gender-related division between the public realm of political discourse and the private realm of the household was also a characteristic of the Ancient Greek *polis*. The public spaces of *polis* were the places designated for male citizens (Franck and Paxson, 1989; Terlinden, 2003). Ancient Greek women did not have a place in the Acropolis, one of the most important public places of the *polis*, nor did they have the right to speak in the agora where public meetings were held (Alkan, 2000). Women and slaves of Ancient Greece remained confined to the *oikos*, or private household (Terlinden, 2003). In addition, women were not informed about the decisions made in the agora, and their requests to be informed about these decisions were denied. While women could not occupy the agora as a place for the exchange of views, they were allowed in the marketplace section of the agora, where they could sell various goods (Alkan, 2000). In this regard, the *polis* had economic, social and political structures based on inequality and exploitation. In such a living environment, women did not have the right to realize their own chief good and to participate in the politically organized life of *polis*, which would have nurtured them toward achieving *eudaimonia* in Ancient Greece.

The dichotomy of the 'public man' and 'private woman' emerged following significant economic and cultural transformations, shaping the foundations of



modern and civil thought (Terlinden, 2003). The historical processes underlying the separation of public and private spaces in the modern era include industrial development, the spatial fragmentation of production and reproduction, the decline of the family as an economic unit of production, and the increasing participation of men in roles outside the household (Alkan, 2000). In preindustrial European society, public and private spaces were not culturally distinct or spatially segregated; instead, both men and women participated in production and consumption activities within a single economic unit (Terlinden, 2003). However, industrialization led to the spatial division of cities into working and residential areas, reinforcing gendered associations with these spaces (Bondi, 1992). Men became linked to working areas and income-generating productive labor, while women were confined to reproductive labor, primarily focused on caregiving and household responsibilities (Preston & Üstündağ, 2005; Buckingham, 2010).

Kern (2019) argues that during the Industrial Revolution, the rapid increase in the proletariat population in cities, combined with Victorian social norms in Europe, led middle-class families to relocate to the suburbs. This suburbanization aimed to prevent 'white women' from encountering proletariat men and to preserve their perceived purity. Particularly in the nineteenth century and the decade following the First World War, if a woman wants to be a 'respectable woman', she should obey norms accepted by society and act in the urban public spaces accordingly; for example, she should not go to restaurants, not take evening walks, and should not engage in social activities without a man accompanying her (Terlinden, 2003).

Although the association of women with the domestic sphere has been present since the earliest city-states of Ancient Greece, as noted in urban history literature (Sennett, 1994; Alkan, 2000), the notion that women do not belong in public space remains socially accepted in many places today. For example, in Afghanistan, women are banned from entering public parks except for one designated day per week. Although this issue is particularly evident in Middle Eastern societies, the perception of women's presence in public space as problematic is not exclusive to the East; in many cities worldwide, women who are in public spaces at socially deemed

‘inappropriate’ times are labeled as ‘women of the street,’ reflecting societal attempts to control and regulate their presence through moral hygienist.

Madanipour (2010) argues that accessibility is the main feature of public space, and a place that is not accessible cannot be considered public. However, gender-differentiated access to and use of urban spaces diminishes their publicness of urban space. The dichotomy between private and public space reflects a gender-biased distinction, highlighting the differentiation between domestic and non-domestic spheres (Alkan, 2000; Hubbard, 2005). The association of women with the private sphere, tied to responsibilities such as raising children, housework, and caring for family members (Loukaitou-Sideris, 2020), is not inherent but ideologically and historically constructed, and this association persists in modern times. While men generally have better access to public spaces throughout the day (Ranade, 2007), women are often seen as belonging to the private sphere (Fenster, 2005; Fenster, 2010), and excluded from public spaces (Alkan, 2000). In addition, the opportunities and events offered by the public spaces of a city are often inaccessible to women whose daily lives are confined to private spaces (Terlinden, 2003). Ranade's (2007) study in Mumbai found that women and girls, having internalized a sense of discomfort in public spaces, rarely linger in these areas. Instead, they use these spaces to move from one point to another, often fabricating a sense of purpose in order to justify their presence in these spaces.

Access to education is a fundamental human right that should be available to all individuals, ensuring equal opportunity and non-discrimination. Ensuring the right to education for all women and girls, without exception, is vital for enhancing their life opportunities and empowering them for the future. However, in certain regions of the world, women's and girls' access to education remains a significant challenge. In such oppressive environments, women's and girls' access to education is intentionally obstructed, and they are often threatened for opposing the injustices they face. Pakistan and Afghanistan are among the countries that impose bans and restrictions on women and girls' right to education (Breen & Jordahl, 2020).

Although in many countries women and girls are not deliberately denied access to education, certain conditions and prevailing social norms can prevent them from fully enjoying this right. While girls in urban areas generally have higher enrollment rates compared to rural areas, poor urban neighborhoods experience similar challenges to rural areas, such as lack of resources, child marriage, adolescent pregnancy, household responsibilities, and parents' reluctance to cover the costs of education (Hannan, 2007).

Education has an important role in shaping women's lives. Kabeer (2001) argues that while education enhances women's capacities and self-determination, mere access does not guarantee empowerment. Studies in India and Pakistan show that only women with at least 8-10 years of schooling benefit from better job opportunities and earnings (Aslam et al., 2012).

In women's participation in the paid and formal employment, the role of education is quite crucial. Kabeer's (2011) research in Bangladesh, Egypt, and Ghana highlights secondary education as a major driver of change in women's lives. In this study, it was found that education enable higher access to formal employment and directly positive impact on their political participation, and decision-making power. Women with higher education are likely to postpone marriage and having a child, be healthy, become less vulnerable to venereal diseases, hold more power at home, and have few and better-educated children (Reichlin and Shaw, 2015).

Furthermore, it is notable that the education levels of women play a critical role in their relationship with the city. Alkan (2005) identifies a positive correlation between women's education levels and the frequency of going outside, indicating that as education levels increase, so does outdoor mobility. This suggests that women with lower education levels tend to stay at home more frequently. Similarly, Tuncer (2018) finds that increased participation in higher education and employment significantly enhances women's social status, participation in public life, and mobility outside the home.

Access to a clean, healthy, and sustainable environment was recognized as a fundamental human right by the UN General Assembly in its seventy-sixth session in

2022). Women generally spend more time in their homes and neighborhoods (Rakodi, 2002b) and have a closer relationship with their surroundings (Garcia-Ramon et al., 2004), meaning that poor living conditions tend to have a more adverse impact on them (OECD, 1994; Rakodi, 1996). It is recognized that housing quality and conditions have a greater impact on women due to their strong connection to the domestic sphere. According to Mulling et al. (2013), women living in informal communities and unplanned neighborhoods face an increased risk of depressive symptoms. Additionally, the lack of access to safe drinking water and sanitation presents a significant challenge for women. For instance, Gleick et al. (2020) demonstrate that in Iraq, where women and girls are the primary water collectors and spend an average of three hours per day on water collection, this burdensome task negatively impacts women's and girls' education, women's economic participation, and safety, while also contributing to higher rates of girls' secondary school dropout.

Access to mobility and transport in freedom is crucial for all people. Borja (2010) argues that the right to mobility should be recognized as a universal right, applicable to all levels of society at all times. The mobility in urban space is a gendered activity (McGukin and Nakamoto, 2005; Cresswell and Uteng, 2016). Compared to men, women use public transportation more frequently in cities to commute between unpaid reproductive work at home and paid productive work outside the home, which are becoming increasingly spatially separated (Whitzman, 2013). A global study across 19 major cities, including 8 in low and middle-income countries and 11 in high-income countries, found that in all cities, women are more likely than men to walk and use public transport, while men are more likely to cycle (Goel et al., 2023). According to Romero-Torres and Ceccato (2020), women are more likely to travel by public transport than men. In addition, a study by the World Bank Transport team in the Buenos Aires Metropolitan Area shows that women make more non-motorized (7%) and public transport trips (13%) than men, with public transport and non-motorized travel constituting a higher share of their total trips compared to men (Stokenberga et al., 2024).

In comparison to men, women face significantly more challenges regarding mobility and are disproportionately affected by issues related to walking and public transport

(Beebeejaun, 2017). Public transportation systems often prioritize peak-hour travel between work and residential areas based on the traditional nine-to-five schedule, often neglecting the needs of individuals with varied work hours and domestic responsibilities during off-peak times. The oversight of differed travel characteristics disproportionately affects the specific needs of women (Kern, 2019), as their daily activity patterns within the city tend to be more complex than those of men (Duchene, 2011). A study conducted in Lima, Peru finds that, in general, men tend to travel more during peak hours when transportation services are more frequent, while women are more likely to make off-peak trips during the day when service provision is less frequent (Gomez, 1997, as cited in Levy, 2013). Kern (2019) states that although women are less well-served by public transport, they are more likely than men to rely on it. In addition, women tend to walk more, visit a greater number of places during their journeys for various needs and responsibilities, and generally travel with heavier loads (Alkan, 2000). Salon and Gulyani (2010) show that poor women in Nairobi slums bear a disproportionate burden of limited mobility, as they are more likely than men to walk due to financial constraints rather than personal choice.

Women's public life activities are often shaped by the extension of their domestic responsibilities (Franck & Paxson, 1989; Preston and Üstündağ, 2005; Araya et al., 2022). A study conducted by McGukin and Nakamoto (2005) highlights that women's travel patterns are significantly influenced by household and childcare responsibilities. In other words, women primarily engage in family-related and domestic tasks in their immediate urban environment, such as picking up children from school, accompanying family members to health centers, and shopping (Garcia-Ramon et al., 2004). In London, for instance, women are three times more likely than men to be responsible for accompanying their children to school (Transport for London, 2019). According to the New Urban Agenda, women typically travel more than men in the city due to childcare and household responsibilities (UN-Habitat, 2020), which increases the likelihood of women engaging in trip-chaining behavior. A research showed that a working woman with a child under the age of five can extend her trip chain by 54%, whereas a man in the same position extends it by only

19% (Madariaga, 2013). According to McGukin and Nakamoto (2005), the fact that women are twice as likely as men to drop off or pick up children in two-worker households results in women having less flexibility in their departure times.

Lastly, it is important to note that many women in the city, unlike men, lack the freedom to be wherever and whenever they wish. Women's restricted physical access to urban areas is not solely linked to their reproductive labor but also to the regulated use of both private and public spaces (UN-Habitat, 2013). According to Whitzman (2013), women's '*forced immobility*' can result from the intersection of factors such as income, location, culture, identities, experiences, and violence or insecurity related to transport options. For instance, the reduced frequency of public transportation services, particularly outside standard work hours, limits women's mobility within urban areas, thereby affecting accessibility. Furthermore, the cultural and symbolic meanings attached to space significantly influence, if not regulate, women's spatial mobility (Fenster, 2005). Consequently, social, cultural, and ethnic norms impose restrictions on women's movement within cities.

### **3.2.2. Safety-Related Challenges**

One of the most significant factors influencing people's quality of urban life is the safety and security of urban areas, as individuals seek to live in environments that ensure their safety and security. According to the report of the European Union (2015) on the quality of life, individuals residing in densely populated urban areas feel less safe than those in sparsely populated rural areas. The prevalence of violent crime in cities diminishes the quality of life for both women and men (Gordon et al., 1980), constituting a critical concern for all, but especially for women. In urban areas, women's safety and security concerns are more pronounced in public spaces and public transport.

Women have equal rights to access and use public spaces as men, and their freedom to do so should not be limited by fear or the threat of violence (Shaw et al., 2013). However, because women tend to avoid public spaces, particularly streets and urban parks, and refrain from using public transport due to safety and security concerns, they are unable to fully exercise their right to the city (Fenster, 2005; Fenster, 2010).

Moreover, women do not have the right to be *flâneuses* as much as men have the right to be *flâneurs* in the cities' public spaces. The peripatetic strolling of gentlemen through the city streets, as portrayed in Charles Baudelaire's romantic poems about Paris, may be an unattainable dream for many women. The majority of people who are loitering around the public spaces are composed of men (Ranade, 2007; Whitzman, 2013; Tuncer, 2018). The women who walk around the public space are thought of or perceived by men as asking for trouble, especially at night (Kern, 2019). Ranade's (2007) study conducted in Mumbai emphasized that women deliberately avoided specific locations in the urban areas due to safety concerns and to prevent being perceived as having questionable morals.

There is a considerable gap between genders in the feeling of safety when being alone at night in the city. Unlike men, urban public spaces can hold varying meaning for women at different times of the day. Especially in the evening and at night, women have quite restricted mobility because of feeling unsafety and fear of violence. After a certain time in a day, the urban parks transform into '*forbidden space*' because of the fear of crime (Fenster, 2005). Women are blamed for their preference to be in public after a certain time in the evening, even though they know the probability of being harassed. They are also blamed and held responsible for violent crime they experience because of their provocative dress and lifestyle choices (Taylor, 2011).

For Romero-Torres and Ceccato (2020), individuals who feel fear in urban space tend to change and adapt their movement in there. As can be seen in the study of Bondi and Domosh (1998), women adapt their behavior to their sense of vulnerability in urban public spaces. Women take safety precautions in order not to be perceived as provocative and off the street at night by preferring to be passive and modest and to stay home at night or keeping away from the unsafe parts of the city (Gordon et al., 1980). In this way, the *male gaze* in public space dominates and shapes women's lives. The power and privilege of men are retained by keeping women's movements limited and their ability to access different spaces restricted (Kern, 2019). The androcentric nature of public spaces, where women feel insecure and fear abuse, affect their mobility in daily life and restricts women's right to the

city (Bravo, 2022). By avoiding unsafe places and having to restrict their mobility, due to fear of harassment, women are subjected to patriarchal relations of power and control (Buckingham, 2010).

For Fenster (2005), fear and safety are both a social and a spatial issue that is related to the design of urban spaces. The concerns of women regarding safety of urban public spaces are exacerbated by characteristics of built environment and the lack of necessary physical infrastructure. Buildings under construction and jerry-built houses, poorly-lit and narrow streets (Lee et al., 2016), deserted places after a particular hour of the day (Lee et al., 2016; Ceccato et al., 2020), secluded areas and inadequate public transport (Pucher et al., 2004) are some physical factors that increase the likelihood of violent crime occurring in urban public spaces, rendering women more vulnerable.

Women are more likely than men to encounter unwanted behavior during transit and while using public transportation (Romero-Torres and Ceccato, 2020). According to research conducted in Bogota, Colombia, in 2017, more than 85% of female participants in reported feeling unsafe, and 64% had encountered sexual harassment while using public transportation (Connective Cities, 2018). Mitra-Sarkar and Partheeban's (2011) study conducted in Chennai, India found that 66% of female participants reported experiencing sexual harassment while commuting. These studies show that women face personal safety and security problem especially in developing cities, when using the public transport. The lack of public transportation serving distant areas, poorly-lit streets (Crime Concern, 2004; Ceccato et al., 2013), and the insecurity of public transit vehicles (Romero-Torres and Ceccato, 2020) all have an impact on women's safety. Also, reducing the frequency of public transportation vehicle trips except for the start and end times of work increases the time women wait at the bus stop in the evenings, which creates safety and security problems (Buckingham, 2010; UN-Habitat, 2013; Altay-Baykan, 2015). In areas where urban densities and the demand for public transport are high, fewer trips may cause an increase in the crowd of public transportation vehicles. In public transportation vehicles, especially at peak hours, the physical distance between women and men decreases considerably. Ceccato and Paz's (2017) study in Sao



Paulo conducted in showed that incidents of sexual violence are primarily concentrated in the busiest central stations and tend to occur during peak hours in the morning and afternoon when large crowds pass through these areas. The overcrowding problem of public transportation vehicles increases the likelihood of women being verbally, physically or sexually abused (Mitra-Sarkar and Partheeban, 2011).

The streets and their sidewalks, which are the most important elements of the public spaces of cities, are the best places to see how contradictory the nature of the city is for women in terms of freedom and danger (Tuncer, 2018). Iqbal et al.'s study (2020) conducted in Karachi showed that harassment significantly restricts women's mobility and daily activities, with their travel decisions being largely influenced by the need for safety. Especially after certain hours of a day, walking and cycling which are healthy and sustainable ways of transportation, can create security threats for women. In low-income cities, where walking is a vital mode of transportation for many people, individuals, particularly women, may be more exposed to crime and violence (Brown and Lloyd-Jones, 2002). Rivera (2007) indicates that women, in developing countries, are more likely to travel as pedestrians because of the restricted access to transportation and face the risk of harassment. Women may be forced to walk or cycle long distances due to limited mass transit options before or after certain hours, inadequate transportation services in the city, or restricted access to a car. In many parts of the world, if there is only one car in the house, men usually drive the car or it is thought that men should drive the car (Wekerle, 1980; Franck and Paxson, 1989; Hannan, 2007). When women drive the car, attempts to bully and intimidate them by the outnumbered male drivers increase women's safety and security concerns.

For Phadke (2013), the gender norms, cultural obstacles, and concerns about sexual harassment and assault by men often discourage women from using certain modes of transport at specific times of the day. Women who use public transport while wearing immodest clothing that highlights their body often face negative remarks and are frequently perceived as responsible for any harm they experience (Lea et al., 2017). The fear of being exposed to crime may cause women to avoid using urban

public spaces and also constrains their mobility within cities in freedom (Valentine, 1990; Hyndman, 2004). However, women can be ‘forced mobility’ under the threat of harassment and violence due to the lack of services such as inadequate water supply and sanitation infrastructure in low-income communities (Whitzman, 2013).

Women who are unequally exposed to the target of violent crime have greater safety and security needs in public spaces compared to men; therefore, the effective urban planning and design to prevent violence in urban areas is rather crucial. Although transit environments are highly problematic in terms of safety for women, transportation planning has not been comprehensively overhauled to address the issues experienced by different genders and the specific needs of women (Greed, 1994), and it continues to become gender-blind (Kern, 2019). Whitzman (2013) indicates that gender issues and women’s safety are addressed explicitly only in a few transport plans and policies. Nevertheless, as a general policy implication, the authorities try to reduce violence and insecurity by applying policies and using more Closed-Circuit Television (CCTV) and separating facilities for men and women in the case of public transport; many cities around the world have introduced women-only transport services (Whitzman, 2013). For example, Mumbai, Tokyo, Manila, Mexico City, Rio de Janeiro and Seoul have women-only train carriages; Thailand, United Arab Emirates, Indonesia, Brazil, Mexico, Pakistan and India have women-only buses; United Kingdom, Mexico, Russia, India, Dubai and Iran have women-only taxis (Whitzman, 2013). However, the separated carriages for women are criticized because measures were taken to abduct women from men before taking measures for men to stop harassing women. Also, it can be rejected on the basis of equality between men and women in countries like Türkiye on the grounds that it is not suitable for secularism.

### **3.2.3. Participation-Related Challenges**

Women's participation in the economic-activities and decision-making processes is essential, first for their own agency and empowerment, and subsequently for sustainable development. Women’s access to economic opportunities are closely related to reducing gender disparities, strengthening women's status in both personal

and professional spheres, and fostering greater representation in leadership and policy-making processes. This section will examine women's participation in economic activities and decision-making processes.

There is a considerable gender gap in workforce participation, both in developed and developing countries. Across the OECD countries, women are less likely to be employed than men, with the gender employment gap averaging 10 percentage points in 2021, ranging from around 5 percentage points in countries like Finland and Sweden to over 30 percentage points in countries like Mexico and Türkiye (OECD, 2022). In 2023, the labor force participation rate of women in Türkiye (35.8%) is half that of men (71.2%) (CEID, 2025).

The gap between genders in workforce participation did not emerge in recent years. With the spatial separation of public and private spaces in post-industrial European society, the participation of women and men in production activities within a single economic unit became spatially segregated; thus, dichotomy of the public man and private woman emerged as a result of significant economic and cultural changes over time (Terlinden, 2003). According to Bondi (1992), with the industrialization process, which led to the spatial separation of cities into areas for work and residence, strengthened the gender-based shaping of spaces. With the separation of public and private spaces, gender-based divisions of labor emerged, leading to the association of 'productive' income-generating labor with men and unpaid 'reproductive' labor with women (Ferguson & McNally, 2013; Fraser, 2016). In other words, spatially, men become associated with workspaces, while become associated with their homes (Preston & Üstündağ, 2005; Buckingham, 2010).

Today, there are important barriers that hinder women from participating in economic activities. In many parts of the world, still, the role of men is seen as breadwinners, while the role of women is seen as caregivers (Taylor, 2011; ILO, 2019). This traditional acceptance and social norm has considerable impact on women's lives. The intensity of the reproductive labor, and the responsibility of childbearing and childcare, as well as care of elderly or sick family members placed mainly on women's back at home can constrain women from getting involved in

productive full-time paid employment. For Sorensen (1983), the increase in household size can negatively influence women's working life. In line with the increase in the number of children, women face a fall in wages (Grimshaw and Rubery, 2015). Agüero (2011), in a study conducted across 21 developing countries consisting mostly Africa and Latin America countries, identified that the age group of children causing the greatest reduction in women's wages is 3 years and under.

In addition to the domestic burdens that imposed on women throughout historical processes, women's employment is closely linked to the level of exercising their right to education. The participation of women in higher education and employment contributes significantly to the advancement of women's status in society (Tuncer, 2018). The lack of education and knowledge followed by lack of access to productive resources are the main obstacles to women's economic productivity and prosperity and also women's economic empowerment (UN-Habitat, 2013). The impoverished urban women become vulnerable to the negative impacts of urban life and have low quality of urban life. In addition to education, International Labour Organization indicates that lower and unequal pay, tax systems, violence and harassment in the workplace, technology, and weak voice and representation are the reasons that hinder women's employment opportunities and impact on their being able to access jobs, pay and representation (ILO, 2019). Also, in developing countries, the absence of accessible and safe transportation options lowers women's probability of engaging in the labor force by 16.5% (ILO, 2017).

The patriarchal traditions can limit women's access to economic, social and development opportunities and services in urban areas (United Nations, 2012). In some societies, women are expected to avoid working after getting married or having children, and instead stay at home to care for their children (Cowan, 1983). In many parts of the world, the idea that "men should work and women should stay at home" is widely accepted (Fraser, 1989; Franck and Paxson, 1989; Bondi, 1992; Healey, 2003; Fenster, 2005; Taylor, 2011; ILO, 2019; Jayachandran, 2021).

When women overcome all these difficulties and enter formal working life, there is no reduction and any division of labor in domestic responsibilities. As full-time

domestic worker-mother and full-time breadwinners, women have dual roles which require hours of hard work in spatially separated areas (Mackenzie, 2014). In this way, women working in paid productive labor outside the home also work in unpaid reproductive labor at home (Buckingham, 2010), and cannot stay out of the production process in any way. Chant (2006) names this workload of women, which creates less choice to deal with poverty and limits women's agency and power, as the 'feminization of responsibility and obligation'. It is important to remark on the fact that handling problems experienced by women regarding participation independently of each other makes it difficult to understand the problem and to see the connections between the causes that create the problems.

There is also a gap between genders in participation in decision-making processes. Humans are responsible agents who act and bring about change to shape their own future (Sen, 2000). As a fundamental requirement of democracy, individuals' participation in decision-making processes is quite important. In the urban context, one of the key aspects of urban rights is urban democracy and participation, which entails the inclusion of individuals in decision-making processes concerning urban life and their ability to influence the decisions made.

Throughout the vast majority of human history, women who pursued their freedom and rights, were actively discouraged from participating in the public spaces, assemblies, and the political arena, and were expected to confine themselves to their homes or places designated for them (Franck and Paxson, 1989). Despite constituting half of the population, women, who were excluded from all forms of political activity until the 20th century (Terlinden, 2003), still cannot achieve equal representation in political and administrative decision-making mechanisms today (with exceptions in Cuba, Mexico, New Zealand, Nicaragua, Rwanda, and the United Arab Emirates; see IPU, 2023). No matter where they live, in many parts of the world, ordinary women have been excluded from decision-making processes related to their communities, underrepresented in political structures, and often face struggles over participation.

It is important that urban planning and design take into account the issues faced by women experience in urban space more extensively and plan accordingly. The

increasing emphasis on sustainable planning has created a need for a deeper understanding of how to involve ordinary individuals in place-making (Severcan, 2015). However, urban theory and practice ignore and marginalize gender considerations in shaping cities (UN-Habitat, 2012; Spain, 2016; Beebeejaun, 2017). As an important consequence of women's exclusion from public space, women's right to the city cannot be adequately expressed because of their limited right to speak in the planning of urban areas and participation in decision-making processes (Akduran et al., 2018). Many public spaces in the city are perceived as '*a planned trap*' by women because most of the public spaces are planned by professionals who do not give enough consideration to gender-specific sensitivities (Fenster, 2005). The feminist critique of urban theory and practice emphasizes the gendered environments mostly suited to the needs of men are created by urban planners (Beebeejaun, 2017). Urban planning, which is acknowledged as a male-dominated profession (Greed, 1994; Hashemi et al., 2021), has led to the development of urban spaces that are uniform and devoid of gender considerations, and have acknowledged men's interests as universal, despite the fact that the design of public spaces has a greater impact on the daily lives of women (Garcia-Ramon et al., 2004). As the primary decision-makers in cities, men determine several issues regarding cities, including urban economic policy, spatial planning and design, and transportation, without considering how their decisions impact women (Kern, 2019).

The issue of planning and managing cities from a male-dominated perspective is likely related to the underrepresentation of women in local decision-making processes. Therefore, to understand and solve the problems women encounter in cities, better representation of women in urban planning and design related decision-making is rather critical (Buckingham, 2010). The problems women experience in the urban space on critical issues such as accessibility and security can be solved more effectively with their participation in the processes and their effects on the decisions taken. In order to ensure the participation in the creation and recreation of the city, the equal participation of women in all levels of government and decision-making processes in relation to their urban environment is thus absolutely vital (Buckingham, 2010).

### 3.3. Conclusion

Over the centuries, women have made remarkable strides and great sacrifices in their struggle to equal rights with men, attain equal roles in public spaces and gain access to the opportunities of urban life. Milestones such as the Universal Declaration of Human Rights (1948) and the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1979) have laid the groundwork for gender equality, while more recent frameworks like the New Urban Agenda (2016) emphasize the importance of creating inclusive and equitable urban environments. Despite significant progress in international policy documents and the establishment of key legislative frameworks aimed at eliminating discrimination and promoting gender equality, the lived experiences of women in urban environments continue to reveal persistent inequalities.

In many cities, including those in Türkiye, the spatial inequalities faced by women demonstrate that international policy gains have not been effectively translated into local practices. Women still encounter significant barriers when accessing public spaces, participating in decision-making processes, and feeling safe in urban environments. These challenges are not only physical but also deeply rooted in social, economic, and cultural structures that continue to shape urban life along gendered lines. Women continue to face restricted access to public spaces, experience safety concerns, and encounter various forms of exclusion from economic, political, and social participation in urban life. Addressing these inequalities requires not only policy changes but also a transformation in how cities are designed, governed, and experienced. Without the active consideration of women's needs, aspirations, and agency, cities will continue to perpetuate gendered disparities rather than serve as spaces of empowerment and equality for all citizens.





## CHAPTER 4

### **AN URBAN LIFE ENHANCING WOMEN'S CAPABILITIES: THE CAPABILITIES APPROACH TO THE WOMEN'S QOUL**

*"The real wealth of a nation is its people.  
And the purpose of development is to create an enabling  
environment for people to enjoy long, healthy, and creative lives.  
This simple but powerful truth is too often forgotten  
in the pursuit of material and financial wealth."*

*Mahbub ul Haq*

How agencies should act to foster growth, improvement, and progress is a key issue in understanding the way of development. Development is inherently normative, as it is based on value judgments. Different normative frameworks influence the development process, shaping policies and determining outcomes.

Although the term "development" is inherently complex and defined in various ways across different disciplines, the primary goal of the desire for development remains consistent: to achieve a better situation. While aiming for a better situation, which aspect (economic, environmental, or social) would dominate has been a factor that has shaped the understanding of development over time. Regardless of the differences in meaning between the concepts of progress, growth, and development, there are two distinct and conflicting normative perspectives that serve as the main motivations for achieving a better situation and realizing a good life. These two contradictory perspectives present distinct views: the first advocates an economic output-oriented approach, focusing on economic growth as the path to a good life, while the second criticizes the notion that economic wealth alone can guarantee a good life, arguing that development should not be solely economy-oriented. According to the first perspective, settlements are classified as developed or

underdeveloped based on their economic performance. In contrast, the second perspective, which emphasizes evaluating development in terms of the quality of life, well-being, freedom, and opportunities of the people living in a settlement, views economic performance not as an end but as a means to achieve development processes that prioritize individual and community welfare.

This chapter primarily focuses on the normative perspectives that have shaped the emergence and evolution of development literature, with particular emphasis on the human development approach and the capabilities and functionings framework. Accordingly, the normative motivations underpinning development processes will be examined under the central debates within the development literature. These debates concern whether the primary motivation for development is limited to economic growth and wealth accumulation, or whether it also encompasses broader objectives such as enhancing quality of life and the freedoms of individuals and societies possess or strive to attain. Secondly, this chapter will explore the relationship between the capabilities approach and the quality of urban life for women. After reviewing relevant studies on the capabilities approach and quality of life, the chapter will conclude by conceptualizing a capabilities-based understanding of women's quality of urban life.

#### **4.1. The Rise of Human Development and the Capabilities Approach**

The term development, which is a complex concept inherently, is defined in a multitude of ways from different disciplines. The word development is semantically varied by being added to the other terms associated with many different types of literature such as economics, geography, sociology, psychology, and physiology. For instance, the word development becomes to have meaning variations in different disciplines by including phrases such as economic development, social development, national-regional development, urban development, human development, personal development, mental development, physiological development, and so on. Looking at the meaning of the word in the lexicon, Macmillan Contemporary Dictionary (1986) defines the word 'development' as (1) an act or a process of developing, (2) state or condition of having been developed, (3) step or stage of advancement, (4)

event or happening, (5) group of houses or other buildings, often of similar design, usually constructed by one builder. In the Merriam-Webster Online Dictionary (n.d.), development is defined as ‘the act, process or result of developing’ in a first sense and ‘the state of being developed’ in a second sense, and ‘a tract of land that has been made available or usable’ in a third sense. In the article by Alkire and Deneulin (2009a), it is also stated that the term development, which is ambiguous and value-laden, has many different meanings: (1) more material prosperity such as money, land, and house, (2) liberation from oppression, (3) new word for neo-colonialism, (4) a holistic project of personal social and spiritual progress, (5) a process of completion of something as yet unfinished. The inherent complexity and ambiguity of the term make the deep chronological trace necessary to understand the current debates.

Humans have been living in mutual interaction with nature for ages. Achieving a better situation requires the existence of certain natural, human, and capital resources. The development processes involve using and managing these resources to meet people's needs and improve their quality of life. However, with the humans' domination of nature over time, the balances have changed, and the pressure on nature has increased for the sake of progress, advancement and growth.

The Industrial Revolution and its aftermath played a significant role in the breakdown of the balance between humans and their interaction with nature over the centuries. Keeping the liberal economy and individual interests above all and limiting the state's intervention led to an increase in the sovereignty established over nature. For Sen (1983), the term ‘growth’ does not have the same meaning as the term ‘development’, but it is one aspect of the process of development. Until the 60s, the development approach focused on pure economic growth that aimed at achieving and sustaining high rates of income. An economical-oriented growth view that ignores emerging social and environmental problems comes with its consequences. Especially after the 60s, the development process, which focused only on economic growth and ignored environmental and social issues, began to be heavily criticized by arguing on the limits to growth especially pure economic growth.

It was not until after the second half of the 20<sup>th</sup> century that the concept of development began to be used in the field of social sciences (Cobbinah et al., 2011). A sustainable approach to development has emerged as a result of the discussions related to economic, environmental, and social dimensions and rejecting a development approach focused solely on economic growth. However, due to the environmental consequences of economic growth, these two pillars were emphasized more, while the importance given to the social pillar of sustainability has not been as much as the others. Parallel to these discussions, the idea of 'aiming development' has been also questioned. Mahbub ul Haq's (1995) statement that the main purpose of development is to enlarge people's choice indicates a radical change in the concept of development. The concept of development as a term that refers to human agency (including their quality of life, well-being, freedom, and equality of opportunity) as ends and economic wealth as means to achieve those ends, have been discussed especially after the 1980s. The following sections will begin to examine the mentioned change in the traditional development paradigm, focusing on economic growth, the rise of sustainable development, and human development. Thereafter, this section will continue to explain the capabilities and functionings approach and its fundamental concepts that are shaped within the human development approach.

#### **4.1.1. The Change in the Normative Framework of the Development Paradigm**

Although it is claimed that Adam Smith was the first development economist and his work 'The Wealth of Nations' published in 1776 is the first scientific study on development, the first systematic studies on development started in the late 1940s. The early writings on development economics have started especially after the Second World War in order to ensure the economic development of the underdeveloped countries that declared their political independence and the developed countries trying to fix their deteriorated economies after the war. In this period, development economics concentrated to a great extent on ways of achieving economic growth, particularly increasing the gross national product (GNP) and total employment (Sen, 1988).

The economic growth view in development, which is dominant in the 1950s and 1960s, sees development as equivalent to industrialization and, in this way, targets rapid capital accumulation. If the investment and employment rates and people's income per capita in any region is higher than other regions, this region may be considered more developed. The main concern of such an understanding of development is economic growth and productive investments (Alkire and Deneulin, 2009a). The main feature of the economic growth period is that this kind of development understanding prioritizes to increase economic wealth and, in this sense, focuses on economic value output.

Even if the gross domestic product of the countries grew, the inability to make progress in the solution of poverty and the unequal distribution of income and wealth led to the criticism of the understanding of economic growth in development on the basis of poverty and inequality towards the end of the 1960s. Therefore, the following 70s were the years when the issues of poverty and distribution of wealth in development economics were discussed. The 1970s corresponded to the years when the focus shifted from physical capital to human capital. The World Bank and the International Labor Organization focused on a new approach called the basic human needs approach, which aims to meet the basic needs of the poor such as nutrition, shelter, health, and education. According to Gutwald (2019), the basic human needs approach became popular in development research in the 1970s to understand the basic needs for human life that should be at least marginally well lived. With this approach, economic development was aimed to eliminate poverty; it was stated that a growth that could not solve the problem of poverty could not be considered as development, and argued that development could not be realized without meeting the basic needs of life such as income distribution, nutrition, shelter, clothing, education, health, and clean drinking water.

In the 1960s, the development approach that prioritized economic growth was also criticized for its core assumption that economic growth is the primary factor in improving people's quality of life (Drydyk and Keleher, 2019). The traditional economic growth-oriented development argues that if economic wealth increases, subjective well-being of people and their quality of life will automatically increase in

this way. This idea is problematic in the first place, as it assumes that the achieved economic wealth is distributed and shared equally among people. Even if it is so, that is, even if the assumption that the economic wealth is shared equally among people is accepted, the increase in subjective well-being and quality of life of people can maintain their validity up to a certain threshold point. For Easterlin (1974), there is a negative correlation between subjective well-being and income above certain threshold of income (cited by Asara et al., 2015; Biagi et al., 2018; Demaria et al., 2013). Similarly, according to the threshold hypothesis of Max-Neef (1995), after a certain threshold point on personal income, it is argued that there is no improvement in the quality of life of people. For Kahneman and Deaton (2010), there is no further progress of emotional well-being (one of the two aspects of subjective well-being apart from life evaluation) beyond an annual income of approximately 75,000 US dollars; therefore, the article argues that despite a certain threshold point, increased income continues to improve life evaluation of people, but not their emotional well-being.

Alkire and Deneulin (2009a) critically evaluated six main assumptions of the economic growth-oriented development paradigm and its contribution to human flourishing. For the first assumption, it is true that a high GDP per capita is necessary for human flourishing but not always and not necessarily because of the fact that there is no automatic connection between two variables according to the empirical evidence. Although certain countries have a much lower GDP per capita than other countries, their life expectancy, under-five mortality, adult and female literacy rate, correspondingly human development index, and political rights and civil liberties scores are much higher. According to Sen (1983), based on the GNP per head and life expectancy at birth data in 1980, although Sri Lanka had the lowest per capita GNP, it had a higher level of life expectancy at birth. Secondly, it is assumed in the economic growth-oriented development paradigm that people who have high income will not be deprived in other dimensions; however, empirical data does not prove this assumption. Even if the personal income of people is high, if public services are weak or non-existent, people may be deprived of nutrition and education services. Thirdly, the assumption that high economic growth rates will inevitably reduce the

types of poverty is not valid. Although certain countries have experienced continuing economic growth for years, this advancement in the economy has not provided a remarkable solution to child malnutrition, incomplete vaccination, and health problems. Fourthly, Alkire and Deneulin (2009a) reject the assumptions that the non-monetary indicators are not of high quality and that income and expenditure data are the most reliable indicators of development compared to the other poverty data. Fifthly, the assumption that economic growth can be achieved more easily than human flourishing has been criticized. It is claimed that the fact that economic growth can be achieved more easily does not inevitably lead to an increase in the living standards of societies. Lastly, the claim that economic development can be continued without targeting human flourishing has been criticized on the grounds that although the countries with less educated and less healthy people continue their economic growth, but they may not sustain this economic growth in the long term.

Especially after the 1960s, the environmental degradation for the sake of economic growth became a problem area for the scholars. In the 1960s and 1970s, concerns about the negative impacts of humans on nature began to increase. The limits to growth and economy-based development strategies and basic human needs approach were come up for discussion and started to be criticized in these years. Although the desire for economic growth is unlimited, the resources are limited; thus, the need to strike a balance between the two has arisen. In the process up to the 70s, Tekeli and Ataöv (2017) state the intellectual roots of the environmental movement as follows.

Table 5: The Intellectual Roots of the Environmental Movement up to the 70s (Tabulating According to the Work of Tekeli and Ataöv, 2017)

Year	Scholar(s)	
1864	George Perkins Marsh	<i>"Man and Nature"</i>
1900s	John Muir	Personal effort for environmental protection
1962	Rachel Carsons	<i>"Silent Spring"</i>
1967	Lynn White	<i>"The Historical Roots of our Ecological Crisis"</i>
1968	Paul Erlich	<i>"The Population Bombs"</i>
1968	Garret Hardings	<i>"The Tragedy of Commons"</i>
1971	Barry Commoner	<i>"The Closing Circle"</i>

The limits to growth debate led to the emergence of sustainable development in the 80s (Cole, 1999). The term 'sustainable' was first used in the Club of Rome's the Limits to Growth report in 1972 and A Blueprint for Survival in 1972 (Meadows et al., 1972; The Ecologist, 1972; Wheeler, 2015). While The Limits to Growth report emphasizes that the limits to growth on the planet would be reached if the resource use remained unchanged for the next hundred years (Meadows et al., 1972), A Blueprint for Survival Report emphasizes the inevitable need for change because of environmental degradation.

For Wheeler (2015), the UN Conference on the Human Environment held in 1972 in Stockholm is regarded as the catalyst of the sustainability issues after the 1970s. At the conference, it was emphasized that economic development should be carried out in harmony with the environment. After the establishment of UNEP in 1975 and WCED in 1984 as a result of the decisions taken at the conference, environmental concerns began to be expressed more.

Politically first in 1987, the sustainable development term was described in the Our Common Future report (WCED, 1987). Until the Brundtland Report, the sustainable development discourse had focused on environmentally sustainable development; since 1987, the concept of sustainability has broadened beyond environmental concerns and included social dimensions (Wise, 2001). As known, sustainable development is described in the Brundtland Report as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED, 1987). For Yadollahi (2015), the sustainable development definition placed the needs of communities and their limits in an ethical framework. It introduces a new way of development which aims to prevent the resource consumption that increases faster than the replenishment of them. This understanding that today's societies should meet their own needs without compromising the ability of future societies to meet their needs emphasizes the importance of the intergenerational justice and welfare. The sustainable development paradigm emerged to provide a framework through which economic growth, social welfare, and environmental protection could be harmonized (Asara et al., 2015). The development according to the sustainable development approach is possible not only



with economic growth but also with growth in environmental, social, and human aspects.

For Healey (1997), how the environment is viewed by people is not the result of objective facts but arises from how people look at the world and their place in it. Based on a perspective that people's conceptions, which are interlinked with their other preoccupations and ways of understanding, are socially constructed, Brundtland Report first questions how far the way people live now is reproducible over the long term, and secondly, from a moral point of view, how people ought to live.

Three distinct but interrelated pillars for sustainable development, which are economic, environmental, and social sustainability, showed up, especially after Agenda 21, one of the resulting documents of the Rio Summit held in Brazil in 1992. After the Rio Summit, under the leadership of the UN, the concept of sustainability has become the precondition of the visions determined for the future of the nations. UK Government in 1994, for example, was the first country to produce a national strategy on sustainable development and a report on 'A Better Quality of Life' in 1999 (Colantonio & Dixon, 2011).

The Habitat-2 meeting held in Istanbul in 1996, a meeting where the social dimension is emphasized sufficiently in sustainable development, is important. In the meeting, the indispensable foundations for sustainable development are specified as democracy, respect for human rights, transparent, representative, and accountable government and administration in all sectors of society, and effective participation by civil society (UN-Habitat, 1996).

At the UN Millennium Summit held in September 2000, 189 countries signed the United Nations Millennium Declaration on the most urgent issues of providing sustainability. Following eight major development goals were set and determined to be achieved until 2015: (1) eradicate extreme poverty and hunger, (2) achieve universal primary education, (3) promote gender equality and empower women, (4) reduce child mortality (5) improve maternal health, (6) combat HIV/AIDS, malaria

and other diseases, (7) ensure environmental sustainability, (8) develop a global partnership for development (United Nations, 2000).

The Sustainable Development Goals replaced the Millennium Development Goals in 2015. In 2015, with the 2030 Agenda for Sustainable Development, the world further strengthened its commitment to sustainable development (United Nations, 2015). As a result of the comprehensive studies carried out by the United Nations, 17 goals and 169 sub-goals have been determined in order to achieve sustainable development. These goals are more comprehensive than the Millennium Development Goals and have not only for developing countries but also developed countries by claiming universality (Tekeli, 2018).

While the concept of development largely corresponded to economic growth until the 1960s, today the scope of the concept of development has expanded to include the environmental and social dimension. In such a development approach, the topics such as respect for the environment, social justice, equality, and improving the welfare of disadvantaged groups are considered indispensable. However, as a reflection of the development literature, the social pillar of sustainability in sustainable development has not been given as much importance as it is in the economic and environmental pillars. In other words, economic and environmental issues dominated at the beginning of the sustainable development debate. For many scholars, the most theoretically neglected sustainability pillars are social sustainability compared to other pillars - economic and environmental sustainability - (Colantonio and Dixon, 2011; Rasouli and Kumarasuriyar, 2016; Palich and Edmonds, 2013).

Although the social issues within the sustainability agenda started to be profoundly taken into consideration after the late 90s, the signs of change began to be seen after the 60s. In *On Ethics and Economics* book, Amartya Sen (1987) points out that although modern economics has a consciously unethical character, it has developed largely as an extension of ethics in the historical evolution of economics. Sen argues that economics comes from two separate roots: (1) ethics, and (2) engineering. He states that ethical and engineering roots are seen to be present, albeit in varying

proportions, in the works of prominent economists. The tradition associated with ethics dates back to Aristotle and his eudaimonic philosophy. In the *Nicomachean Ethics*, Aristotle ([circa 350 BC] 2009) relates the subject to human ends by referring to economics' relationship with wealth. It also reminds us that Adam Smith, considered the father of modern economics, was a professor of ethics at the University of Glasgow. However, Sen states that economics is currently at odds with ethics. In parallel with the evolution of modern economics, a serious disregard for the importance of the ethical approach has caused the serious impoverishment of modern economics. However, it is important to iterate that individuals have certain moral rights, and being deprived of these is akin to being deprived of something valuable. For Sen (1984), a rights-based moral approach can be more effective than utility-based approaches, especially when dealing with deprivation.

Economic growth in the 1950s and 1960s was based on engineering roots. In these years, importance was given to finding the most appropriate tools to achieve the goal of economic growth, regardless of the environmental and social negative externalities they create. However, after the 1960s, with the re-emergence of the disregarded ethical roots of economics, voices opposing economic growth-oriented paradigms began to rise (Sen, 1987). Moreover, the understanding that equates social development with economic development has begun to change over time. This change was advocated by those who adopt the motto that gross national happiness is greater than the gross national product. The changed understanding of development found its first expression in political discourses. The '*Great Society*' speech in 1964 made by Lyndon B. Johnson, who was the 36<sup>th</sup> president of the United States from 1963 to 1969, shows the transition from economic to social aspects of development. Johnson in 1964 stated that

‘The Great Society...is a place where the city of man serves not only the needs of the body and the demands of commerce but the desire for beauty and the hunger for community... is a place where men are more concerned with the quality of their goals than the quantity of their goods.’

Similarly, in 1968, Robert F. Kennedy stated that *'the gross national product (...) measures everything in short, except that which makes life worthwhile'* (The Guardian, 2012). As mentioned before, especially after the late 90s, the lack of social dimension in the concept of development was criticized.

According to the understanding that emerged after the Brundtland Report in 1987, the main concern started to be on the flourishing of all human life rather than on merely maximizing general human welfare (Healey, 1997). It was assumed that economic growth may not increase people's quality of life. The conventional view of development, which regarded it as a progression from an 'underdeveloped' to a 'developed' stage through industrialization and economic growth, replicating the trajectory of industrialized nations, has become obsolete (Deneulin, 2006). After the 1980s, some scholars such as Martha Nussbaum and Nobel laureate Amartya Sen claimed that the concept of development based on economic growth does not reflect the true meaning of development because it neglected the physical capabilities and conditions of the individual. Sen (1983) elucidates that the primary thematic deficiency of traditional development economics lies in its focus on national product, aggregate income, and total supply of specific goods, rather than on the entitlements and capabilities of individuals. Through the capabilities approach developed by the two aforementioned scholars, development analysis and evaluation have shifted from a focus on economic output to a human development perspective that emphasizes the achievement of basic capabilities as a prerequisite for a quality life. The human development approach has been used in the United Nations Development Program's evaluation of the development performance of countries. In 1990, the United Nations Development Programme introduced the first Human Development Report, marking a transformative shift in development ideology. This new perspective emphasizes 'human development,' focusing on expanding individuals' choices across all aspects of their lives - economic, social, and cultural - and enhancing their overall quality of life (Deneulin, 2006).

According to Sen (1983), economic development, which aims at expanding people's capabilities, has not been successfully characterized by traditional development economics, which regard economic growth as the sole and often inefficient means.

The new perspective on development, emerged in the 90s, puts more emphasis on the human issues. It

“puts people at the centre of development, regards economic growth as a means and not an end, protects the life opportunities of future generations as well as the present generations and respects the natural systems on which all life depends. Such a paradigm of development enables all individuals to enlarge their human capabilities to the full and to put those capabilities to their best use in all fields economic, social, cultural and political” (UNDP, 1994, p. 4).

Instead of traditional development strategies based on economic wealth and income increase, the human development paradigm defines development by concerning how free people are in accessing the opportunities they value, such as health, education, adequate nutrition, expectancy for long life, political participation, and representation. From this perspective, it is argued that if the goal of development is to improve individuals' quality of life, and if capabilities are the core components of their quality of life, then the evaluation of development processes should focus on the expansion of capabilities (Deneulin, 2006). Such a new understanding of development separated from the utilitarian approach based on hedonism and centered on human beings and the richness of human life rather than the richness of economic conditions humans live in it.

#### **4.1.2. The Capabilities Approach and Fundamental Concepts**

In the 90s new development approach, which lays the foundation of human development, the quality of life of people is thought to depend on their power to capable of doing certain things or to realize certain situations. It is the capabilities and functionings approach that constitutes the theoretical background of the concepts of and analysis on poverty, deprivation, and human development, which are frequently used by the United Nations (UN). The notions as the well-being of a person, or standard of living, or freedom in the positive sense require incorporating the concept of capabilities (Sen, 1983). During the 1990s, the utilitarian or commodity-oriented approaches to the assessment of the quality of life of individuals

which based on mainstream welfare theories, such as income, wealth, happiness and primary goods were criticized. The capabilities and functionings approach differs from not only the standard utility-based approaches valuing only happiness and only desire fulfillment but also other non-utilitarian-approaches (like Rawlsian and Dworkinian) in not placing among value-objects primary goods or resources (Sen, 1993).

According to Sen (1987), the concept the capability to achieve valued functionings, was previously explored by Aristotle Adam Smith, and Karl Marx. Sen (1993) states that Martha Nussbaum found the strongest conceptual connections of the capability approach in the Aristotelian human good approach, with her study titled '*Nature, Function, and Capability: Aristotle on Political Distribution*' in 1987 and '*Non-Relative Virtues: An Aristotelian Approach*' in 1993. In his writings on ethics and politics, Aristotle recognized the crucial importance of a person's capabilities and functionings (Sen, 1993). Although the Aristotelian connection is important, he underlines that there are some important differences between the ways in which functionings and capabilities are used in his own capability approach and the way they are handled in Aristotle's analysis (Sen, 1993).

Apart from Aristotle, the roots of the capabilities and functionings approach can also be traced back to both Marx and Adam Smith (Sen, 1985a). There is a connection between the approach and the arguments supported by Adam Smith's studies on necessities and living conditions and Karl Marx's thought on human freedom and emancipation (Clark, 2006; Sen, 2000). Nussbaum (2001) states that the approach derives its basis for human dignity and a life worthy of that dignity from the understanding of a life with a 'truly human functioning' in the sense described by Marx in his *Economic and Philosophical Manuscripts* of 1844 and from Marx's definition of human existence as 'in need of a totality of human life-activities'.

In order to understand the capabilities and functionings approach, there are some fundamental elements that need to be explained: (1) resources (*assets, goods, commodities, capacities, services*), (2) capabilities, (3) conversion factors, (4) functionings, (5) agency, and (6) well-being (*type of utility gained at the end of the*

*functioning achievements*). The core elements of the capabilities and functionings approach are illustrated in Figure 13.

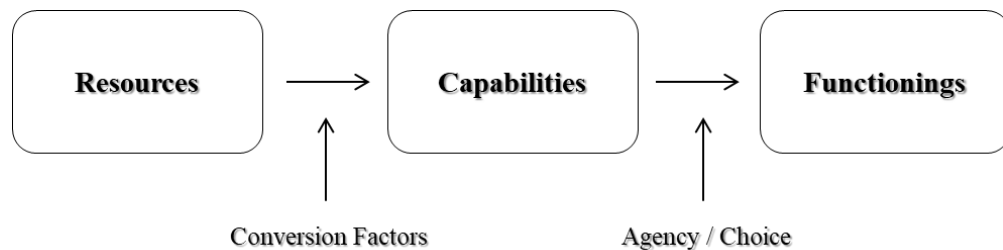


Figure 13: Core Elements of the Capabilities and Functionings Approach (Source: Author)

The first fundamental element of the capabilities and functionings approach is the concept of resources (or *assets, goods, commodities, capacities, services*). The resources have instrumental value in capabilities and functionings approach. In other words, the value of the possession goods is determined solely by their instrumental and contingent contribution to achieving the things that people value (Sen, 1984). Nussbaum (2001) finds the consideration of resources as a measure of quality of life inadequate due to the differing resource needs of individuals and their varying abilities to convert resources into functioning. Sen (1985a, p. 23) claims that ‘*commodities are no more than means to other ends*’. Also, availability of the commodity or the commodity ownership does not reflect the person can be and can do (Sen, 1984). The functionings of a person specify freedoms on what a person can be and do, not primarily concerned with what goods, income or resources that people have and how much satisfaction obtained from the activities when people do them (Sen, 1984). If what is valued is freedom, then primary goods can only be valued instrumentally and are of variable importance. Two individuals possessing the same goods may not attain the same level of well-being, as this depends on their ability to convert these goods into utility. Providing resources to individuals does not always result in equally improving the capability of diverse individuals to function (Nussbaum, 1999). For example, if a person has a physical disability, it is quite

possible that income will be less beneficial to him or her than to someone else (Sen, 1984). In other words, the person using a wheelchair might possess an equivalent income and wealth to someone with normal mobility, yet s/he may lack the ability to move from one location to another (Nussbaum, 2001). Sen (2000) notes that individuals have varying needs for resources and, accordingly, diverse capabilities to convert those resources into functionings. For instance, children require a greater amount of a rich nutrition compared to adults, while pregnant or nursing women need more nutrition than those who are not (Nussbaum, 2001). Moreover, in the '*Standard of Living*' book, Sen (1985a) points out that a person with a higher income than the other will be malnourished and weaker due to diseases despite having the opportunity to consume more food than a person who cannot consume enough food, and questions who has a higher standard in this situation.

The second core element of the capabilities and functionings approach is the concept of capabilities. Sen (1988, p. 16) defines the capability of the person as '*the set of alternative functioning n-tuples any one of which the person can choose*'. The capability reflects a person's freedom to choose between different ways of living (Nussbaum and Sen, 1993). This definition of capabilities can be understood more clearly with the example given by Sen in his works, based on two people both of whom are starving (1985a, 1985b). There is a difference between choosing option A when there are two options, A and B, and being forced to choose A when there are no other alternatives. One of these two people is starving because s/he is very poor, and the other one chooses to remain hungry because fasting is a requirement of the religion s/he believes in. The person fasting for religious reasons is making a conscious decision to starve or '*choosing to starve*' while the other person who is poor and starving has no control or choice in the matter of whether to starve or not. This is the example of a fasting monk and a starving person, both of whom face nutritional deficiency. However, the monk, who has a religious purpose, prefers not to eat even though he is able to access to food, or capable of being reach the food. Therefore, he has the opportunity to choose between options A (eating) and B (not eating). Owing to the poverty, the starving person, on the other hand, has no choice but to starve.



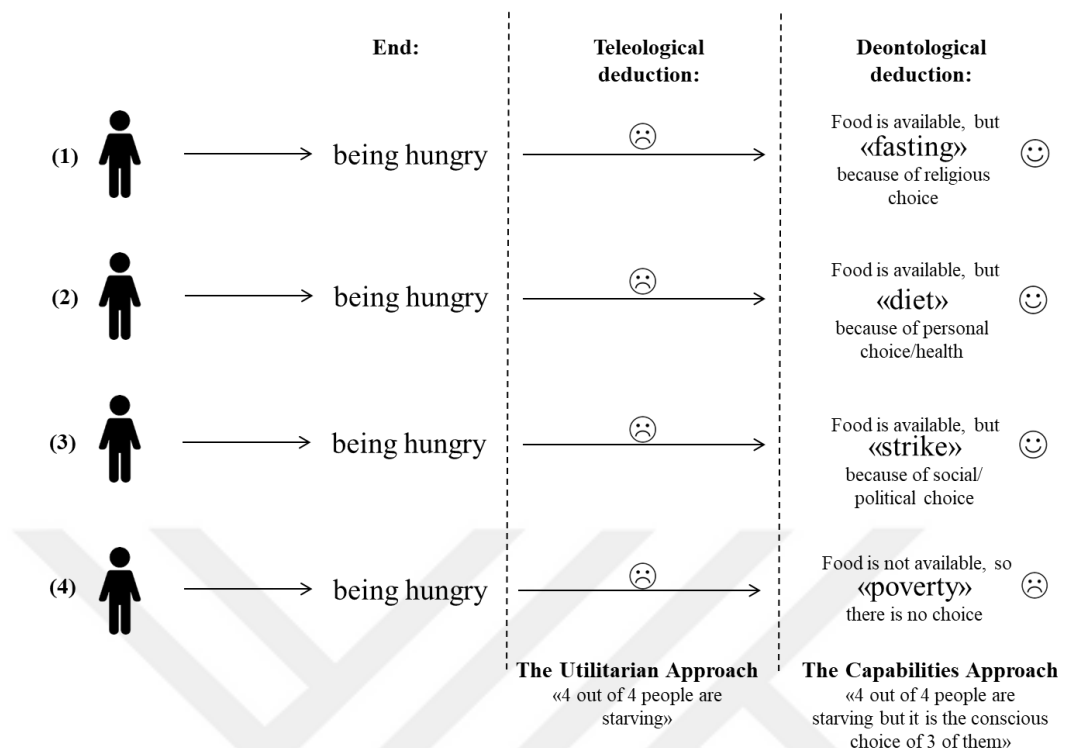


Figure 14: Reconsidering and Expanding Amartya Sen's Example on the Capability of Being Reached Food in Detail (personal interpretation) (Source: Author)

Figure 14 illustrates Amartya Sen's example of the capability to access food (Sen, 1985a, 1985b). This illustration was developed by reconsidering and expanding upon the scenarios and by comparing them with the perspective of the utilitarian approach on these issues. Suppose there are four different people, all of whom are hungry. According to the utilitarian perspective, which focuses on the total utility achieved at the end with a teleological understanding, it can be inferred that none of these four hungry people are satisfied. On the other hand, the deontological and process-oriented approach, which not only considers resources and outcome utilities but also focuses on resources, individuals' capabilities with these means and whether they can achieve the functionings they value, will yield different insights.

Consider the first person who is hungry at the end despite available food, it is not claimed that the person is ultimately dissatisfied because this choice realizes the functionings of fulfilling religious requirements that s/he values. A similar situation

is valid for second and third agencies. They are hungry at the end although they can access food, but their hunger is a conscious choice to realize the valued functionings. While the second person chooses to diet for a healthy life, the third person chooses to strike due to a social or political opposition. The conditions of the fourth person, however, are different from the first three people. This person is starving at the end due to the poverty and food unavailability. This person has no other opportunity to choose between different options.

In another of his work, capability is defined by Sen as '*a person's ability to do valuable acts or reach valuable states of being*' (1993, p. 30). In other words, the ability of people to achieve the various living conditions explains the capabilities of people (Sen, 1985a). For Biagi et al. (2018), capabilities are the opportunities that individuals have.

Sen did not consciously define the capabilities and remained silent about which capabilities should be taken as basis in the analysis and evaluations to be made (Deneulin, 2006), which caused Sen to be criticized by Nussbaum. She expects Sen to make a more radical critique of the utilitarian understanding of well-being by describing an objective evaluation procedure and presenting an objective normative account of human functioning in which functions can be evaluated in terms of their contribution to good human life (Sen, 1993).

The capabilities which are a notion regarding freedom show real opportunities people have concerning the life they may lead (Sen, 1985a). The concepts of freedom and opportunity hold a significant place in the capabilities approach. Freedom is defined by Sen (1992, p. 31) as '*the real opportunity that we have to accomplish what we value.*' He indicates that freedom gives people more opportunity to achieve the valued things (Sen, 2002). Sen (1984) argues that any welfarist theory is inadequate for addressing freedom for two main reasons. Freedom is not just concerned with what a person does do and what utility that doing leads to, but also with what a person can do. Thus, the crucial aspect is the effective freedom individuals enjoy to pursue life paths they have reason to value (Binder and Robeyns, 2019).

The freedom to pursue life paths that one values can be hindered by various reasons. Regarding this issue, the third fundamental element of the capabilities and functionings approach is the conversion factors. A welfare analysis which is based only on means will not effectively understand the different levels of quality of life (Sen, 1992) because each person has different abilities to transform means or resources into functioning achievements (Binder and Robeyns, 2019). Persons' different abilities to convert resources into potential functionings are called conversion factors (Robeyns, 2017). The valued life paths that one wants to pursue can be blocked by a material resource deficiency, personal conversion factors, social conversion factors and environmental conversion factors (Robeyns, 2003; Binder and Robeyns, 2019). The first one is personal characteristics. The resources may not be converted into capabilities due to factors internal to the person such as health, physical and mental conditions, gender, skills and intelligence. The second conversion factor is on the social characteristics which stem from the society where one lives. The social norms, legal rules, the standards accepted by society, public policies, and power relations can limit people's freedom. Social norms might influence specific behaviors that limit people's capabilities or favor the capabilities of certain groups over others (Robeyns, 2006). For example, a social norm that prohibits girls from education life may reduce their freedom to pursue valued life path of 'being educated' (Binder and Robeyns, 2019). The third one is environmental characteristics. The features of the environment in which people live affect people's ability to convert resources into capabilities. For example, the lack of paved roads constrains people from using bicycles as a commodity to achieve the functioning of 'mobility by using bicycle'. The characteristics of the environment people live in may vary depending on the features of the built or natural environment. Apart from the three conversion factor categories, Binder and Robeyns (2019) draw attention on the lack of material resources which block the functioning achievements of the people. They give an example of a child who, although not interfered with in going to school and therefore considered free in this regard, cannot realize the functioning of 'going to school' because the child cannot afford the cost of school books.

The fourth core element of the capabilities and functionings approach is the concept of functionings. The power to capable of 'doings' and 'beings' of people are defined by Sen (1988) as 'functionings' of a person. Sen (1984) states that functionings reflect what a person is able to do and be. With his own words, "*A functioning is an achievement of a person: what he or she manages to do or to be*" (Sen, 1999, p. 7). Alkire and Deneulin (2009b) define functionings as a combination of the person's doings and beings that people value and have reason to value. For Biagi et al. (2018), the functionings are a subset of achievements among a wider set of achievable goals.

When functionings are defined as a combination of the person's doings and beings that people value, it is important to emphasize the subtle distinction between valuing and desiring. It is necessary to clarify whether the preferences of agencies are important because they are valuable or because they are desired. For Sen (1985a), desiring and valuing are not the same thing. There is difference between saying "I desire x because I value it" and "I value x because I desire it." The former refers to the manner of agencies in the capabilities approach. The latter has a specific utilitarian tendency (Sen, 1999). Deneulin (2006) explains the distinction between valuing and desiring by stating that being considered desirable doesn't necessarily imply being valuable, and something can possess value even if it is not desired. For Sen (1985a), desire can scarcely be an adequate basis for valuation, cannot be evaluated as the same as valuing and as the sole object of value, as the source of value, and as the good indicator of what is valued. The difference between the valuing and desiring concept of the capabilities approach constitutes an objective theory of good, not a subjective theory of the good like the utilitarian view of well-being (Deneulin, 2006).

The new understanding on utility obtained from functioning achievements creates a radical paradigm shift in the understanding of development, and thus welfare theory and quality of life studies. In the capabilities and functionings approach, the evaluation of the functionings achieved by a person determines the quality of life of that person. The quality of life of people is evaluated not in terms of the goods and services people consume, but rather based on actions and states such as being healthy, reading or writing, and participating in community life, which Sen refers to

as functionings (Deneulin, 2006). However, Sen (1988) also claims that functioning achievements are not independent from the commodity possession and GNP because of their causal relations. Although these elements are the means of the ends which is the functionings, the functioning achievements depends also on the availability of public goods and the possibility of using private goods freely provided by the state.

In his book *Resources, Values and Development*, Sen (1984) explains the process of gaining utility in the capabilities and functionings approach through a rice example. Sen (1984) divides four different notions in this context: (1) the notion of good (rice), (2) a characteristic of a good (e.g. giving nutrition and calories), (3), functioning of a person (living without calorie deficiency), and (4) utility (the pleasure from the functioning related to the characteristics of rice). Whereas the characteristics relate to goods rather than to persons, the functionings are personal features telling us what a person is doing with that good (Sen, 1984). For the utilitarian, the rice provides utility through its consumption whereas owning rice enables people the capability to fulfill certain nutritional requirements. According to him, the utilitarians focus on the last notion, the utility, attained through the consumption or utilization of resources whereas the egalitarians focus on the first notion, the good, as they are concerned with income distribution and the distribution of goods. Focusing on the third notion which is the functioning of a person showing what a person is able to be and able to do constitutes the domain of the capabilities approach (Sen, 1984).

The fifth fundamental element of the capabilities and functionings approach is the concept of agency. For Sancar and Severcan (2010), agency is the power of individuals to make decisions that impact both themselves and others, and to take action based on those decisions. In this approach, individuals are handled as active agents in their own lives, not passive objects of actions carried out on their behalf (Deneulin, 2006). Preferring not to do something like *Bartleby the Scrivener* is not only an example of passive resistance, but also a choice associated with freedom because it can be associated with the capability to lead a life according to one's values, even in the face of societal expectations.

Utilitarianism's emphasis on satisfaction demonstrates an inadequate consideration for agency (Nussbaum, 2001). The goodness of humans and quality of their life has been handled by focusing on their total satisfaction with a utilitarian approach and made the normative evaluation only on the basis of the well-being aspect of humans. Sen (1987) claims that utility-based welfarist calculus gives importance merely to the well-being aspect of the people and that ignores the agency aspect of them; he criticizes the failure to reveal the difference between the two. Accordingly, Sen (1985b) discusses two distinct forms of freedom: well-being freedom and agency freedom. Well-being freedom based on the well-being aspect of a person emphasizes one's capability to have diverse functioning vectors and to experience the related functionings. Well-being freedom cannot reflect the overall freedom of a person as an agent. On the other hand, the agency freedom of a person is the broader concept of freedom, but not subsumes the well-being freedom. Sen (1987) emphasizes the agency aspect of humans as well as the well-being aspect of them and states that normative evaluations in which the agency aspect of humans is neglected will be incomplete because agency freedom refers to '*what the person is free to do and achieve in pursuit of whatever goals or values he or she regards as important*' (Sen, 1985b). Therefore, to understand the agency aspect of a person, the person's conception of good in terms of his or her aims, objectives, loyalties, and responsibilities is required to be known.

For Sen (1985b), the importance of the agency aspect of a person lies in its relation to the view of persons as responsible agents. On the issue, Nussbaum (2001) gives the Robert Nozick's example of '*experience/pleasure machine*' with a man hooked up to explain the significance of active striving, making choices and agency aspect of people. To point out the difference between the two concepts, Sen (1985b) also gives the example of a man eating his sandwich by the river. A man eating his sandwich by the river will not be able to intervene in a drowning man far away from him. However, if the person who cannot swim drowns in front of the man who is eating his sandwich, then the agency freedom of the man who is eating the sandwich will be affected. If the man eating the sandwich values the opportunity to save someone's life, he will put aside his sandwich, jump into the river and save the drowning man's

life. In this case, while the man's agency freedom increases because the man who eats his sandwich saves a life and makes a choice he considers good, his well-being and well-being freedom may decrease because he risks his own life and jumps into cold water and gets wet. When people achieves what they want for their family, society, class, party, or any other cause, they may feel happier and more fulfilled; however, if people fails to achieve a goal that they wishes to achieve as an agent, their well-being may be diminished by that failure (Sen, 1987). This condition shows the distinct importance of each aspect and the causal linkage between the two because every change in one aspect has a negative or positive impact on the other.

The sixth and last core element of the capabilities and functionings approach is well-being derived from utility gained at the end of the functioning achievements. For Sen (1985b), the central feature of well-being is the ability to achieve valuable functionings. The resources are handled as a means to obtain well-being, not an end. There are tremendous differences between owning something and being able to benefit from it. According to traditional welfare theory, it is assumed that owning resource will bring along the utility. However, in the capabilities and functionings approach, the presence of resources is not guarantee the well-being and instrumentally contributes it as being means to ends. The most well-known example of this explanation is Amartya Sen's bicycle example.

One of the characteristics of a bicycle as a commodity is transportation. Owning a bicycle provides an individual with the ability to move in a manner that may not be achievable without the bike. The ability to move by using the transportation characteristic of the owned bicycle can contribute to individuals' utility derived from bicycle ownership if they value such movement. In this example, there exists a sequence from a commodity (in this instance, a bike), to its characteristics (in this instance, transportation), to the capability to function (in this instance, the ability to move), and ultimately to utility (in this instance, the pleasure derived from movement) (Sen, 1984). In this case, the transportation characteristic of the bicycle provides utility only through the individuals' ability to ride the bicycle. Therefore, bicycling has to be distinguished from possessing a bike (Sen, 1999). It is important to note that individuals are not composed of unitary or homogeneous groups; they

have different gender, age, economic, socio-cultural, political, health and ethnic and religious characteristics (Fadda and Jiron, 1999). However, traditional welfare theory focused on commodity ownership and treats people as homogeneous groups. It ignores differences between individuals. For example, even if a disabled person and an able-bodied person have the same bundle of commodities, the former may not be able to do many things the latter can (Sen, 1999). Considering the bike example, it can be said that having a bicycle does not necessarily imply deriving benefit from that bicycle. Lack of capability is a significant barrier to benefiting from owned commodities.

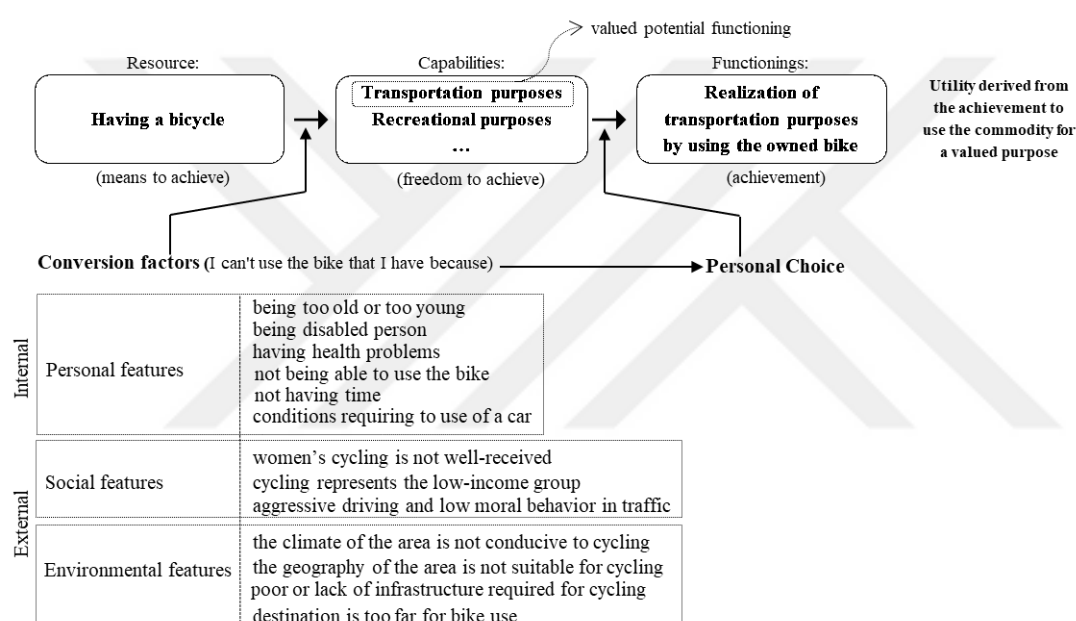


Figure 15: Reconsidering Amartya Sen's Bicycle Example in Detail (Source: Author)

Figure 15 illustrates Amartya Sen's bicycle example in detail by expanding the fundamental elements of the capabilities and functioning approach. Individuals may own a bicycle as a commodity to use for a specific purpose. There are many characteristics of the bicycle as a commodity such as transportation purpose, recreational purpose, sporting purpose, and etc. When a bicycle is valued for transportation purposes, individual's capabilities are evaluated based on their freedom to move from point A to point B using the bicycle they own. However, even if people own a bicycle as a commodity, they may not have the capability or freedom



to use it for the transportation purposes they value. The reasons for the problem why individuals cannot use their bike that they own are investigated through conversion factors. Following the Robeyns' classification (2003), the personal, social, and environmental conversion factors which constrain people from achieving potential functionings can be beneficial for explaining why people cannot use the bike they have. Some factors can be internal to the person, such as demographic conditions, physical and mental health, skills, subjective living conditions, etc. If a person cannot use the bike they have, it may be due to being too young or old, being a person with a disability, lacking the ability to use it, having health problems, facing time constraints, and conditions that require the use of a car. Apart from the internal factors, there are also external conversion factors which hinder people to convert resources into capabilities, such as social and environmental characteristics. The social characteristics stem from the society can change one place to another. As seen in the example, social conversion factors that restrict a person from using the bike may involve the negative perception of cyclists in society and socially ingrained aggressive driving and low moral behavior in traffic. For Robeyns (2005), a law or societal norm that discourages women from cycling would still limit her ability to use a bicycle, even if she is physically able to ride it. In this way, women may refrain from cycling because it is not socially accepted or well-received in their community. The other external factor is the environmental conversion factors which are on the built and natural features of the place. Considering certain natural features of the place, the climate and topography are important determinants for cyclists. If the climate of the area is not conducive to cycling or geography of the area is not suitable to use bike, people may avoid using their bikes for transportation purposes. The physical conditions of the place are also important for riding a bike. If the cycling infrastructure is poor, such as a lack of safe bicycle lanes, automobile-centric transportation and land-use patterns, or if the distance to be reached is too far, people may avoid using their bikes. Examples that can be given for conversion factors can be expanded. Utility emerges when individuals can achieve the end (i.e., traveling) that make means ownership valuable with the means (i.e., bicycle) they possess. In this example, the functioning is traveling while the capability is freedom to travel for the transportation purpose.

#### **4.2. Linking the Capabilities Approach to Women's Quality of Urban Life**

People all over the world strive to build a life that are worthy of their human dignity and to live a meaningful life. The primary method for evaluating the quality of life in the field of development economics and international policy was previously centered on the ranking of nations based on their gross national product (GNP) per capita (Nussbaum, 1999; Nussbaum, 2001). Although states prioritize economic growth when assessing the quality of life, gross national product growth often does not lead to a change in people's quality of life (Nussbaum, 2011). Over time, this approach has been deemed inadequate due to reasons such as its failure to question income, wealth distribution and key elements of human life, and despite clear inequalities in countries like South Africa, their leap to the top of the list of developing countries according to this measure. Nussbaum (2001) claims that a society that fails to ensure these rights for all its members at a certain suitable standard, lacks in being a fully just society, regardless of its level of wealth.

Nussbaum and Sen (1993) argue the quality of life measurement whose focus is merely on opulence and on utility. Nussbaum (2001) criticizes utilitarian manner focusing on society's total or average utility, measured by total or average satisfaction expressions, for not providing sufficient information about different types of people and their relative social placement, and for summing up different elements of life such as freedom, economic well-being, health, education, etc., which should be evaluated independently of each other, but forced to encourage trade-off between them for the sake of largest social total utility.

The capabilities and functionings approach is closely related to the concept of quality of life. For Nussbaum (2001), the approach which is prominent in terms of including opportunities for choice and activity, can be relevant approach to make comparisons of quality of life across societies. The approach advocates a focus on basic freedoms and the quality of life rather than wealth by offering a profound critique of the traditional welfare theory (Sen, 1999). In this approach, instead of supporting for a type of individual who seeks to maximize their income for the purpose of achieving

utility, it advocates a type of individual who seeks to maximize their capabilities and improve their quality of life.

The initial link between the quality of life and the capabilities approach can be traced back to Sen and Nussbaum's book '*The Quality of Life*' which was published in 1993. In the Introduction chapter, Sen and Nussbaum claim that gross national product per capita is a rough and incomplete measure of quality of life (1993). For Healey (1997), improving the quality of life is not only just a matter of material welfare. In her '*The Capability Approach to the Quality of Life*' article, Alkire states that a traditional approach to measuring the quality of life focuses on resources focusing on monetary indicators of income or consumption, but although resources are vital tools for achieving a high quality of life, measures of quality of life based solely on resources may be inadequate. Alkire (2008), therefore, proposes the quality of life should be considered in the space of capability and functionings.

The functionings are achievements and more directly related to living conditions (Sen, 1985a). The core foundational concept of the approach is to start with an understanding of human dignity and a life that is worthy of that dignity (Nussbaum, 2001). Thus, the crucial factor in evaluating people's quality of life is how they actually live, as standard of living is shaped more by quality of life than by mere ownership of goods (Deneulin, 2006). How people actually live their lives brings the capabilities approach closer to the concept of the quality of urban life, because people's lives cannot be considered separately from the quality of the environment in which they live.

A review of the literature shows that the capabilities approach has matured in time and gained acceptance in measuring the quality of life of individuals. The environment in which people live is considered one of the fundamental dimensions of quality of life (Perloff, 1969; Dissart and Deller, 2000; Flynn et al., 2002; Mccrea et al., 2006; Das, 2008; Marans and Stimson, 2011a; Sirgy, 2012; Marans, 2012; El Din et al., 2013; Valdez and Augustin, 2020; Pazhuhan et al., 2020; Faka, 2020). But what about considering the capabilities approach in measuring the quality of life for individuals in terms of spatial aspects, i.e., the quality of urban life? This topic is

quite innovative and in need of further research in urban planning. Although some academics have conducted studies taking into account the impact of the environment on individuals and the quality of life associated with their capabilities (see, e.g., Jasek-Rysdahl, 2001; Shin, 2008; Beyazıt, 2011; Blečić et al., 2013; Deneulin, 2014; Frediani and Hansen, 2015; Hansen, 2015; Bucheli, 2016; Biagi et al., 2018; Bucheli, 2020; Randal et al., 2020; Grabowska, 2021), it would not be correct to claim that the capabilities approach is known in urban studies or that it is recognized and accepted in the literature for measuring the quality of urban life of individuals.

Given the widely acknowledged definitional and methodological challenges accepted in the concept of quality of life within the literature, associating the concept of quality of life with another concept fraught with its own methodological complexities undoubtedly amplifies the overall complexity. As detailed in Chapter 2, the approach centered on objective and secondary data for measuring quality of life has evolved to incorporate subjective and primary data over time. However, for a quality of life study grounded in the capabilities approach, it is insufficient for the research to encompass solely objective and subjective data. It is essential in the capabilities-based quality of life studies to consider the philosophical underpinnings upon which objective and subjective data rely, and whether the utility people derive at the end is determined through desire satisfaction or a valuable purpose. Besides, in the literature, there is a lack of consensus on both the definition and the measurement of the quality of life. This problem certainly has a significant impact on the definition and measurement of quality of life studies based on the capabilities approach, and is further exacerbated by methodological challenges combined with the problem of an insufficiency of applied research.

This study specifically targets a disadvantaged group in urban areas, women, rather than encompassing all individuals residing in urban settings. This decision necessitates a particular focus on exploring the enhancement of women's quality of urban life through the integration of the capabilities approach and conceptualizing its measurement within this framework. The following two subsections will further elaborate on how the capabilities approach can be applied to urban studies.

#### **4.2.1. Conceptualizing the Capabilities-Based Quality of Urban Life**

In this section, the connections between the capabilities approach and the quality of urban life will be examined, with a deeper discussion of the topic. The following articles have established a link between the capabilities approach and urban issues.

The early work that establishes a connection between the capabilities approach and urban studies belongs to Jasek-Rysdahl (2001). His work reviews capabilities and functionings approach, employs asset-mapping process, and brings these two concepts together to improve quality of life for residents and strengthen the community in low-income neighborhoods located in the south-western part of Modesto, California. As a result, it has been found that the levels of functioning achievement among those living in the southwest region of Modesto are relatively low. High unemployment, inadequate education levels and limited proficiency in English are the constraints that limit choices and opportunities of residents of low-income neighborhoods in Modesto (Jasek-Rysdahl, 2001).

Shin's article (2008) develops an approach to urban poverty by interpreting Lewis' culture of poverty thesis within Sen's capability approach, focusing on the capability poverty of 42 Korean immigrant women in Los Angeles. The article makes important theoretical contributions to the urban poverty studies by shifting the primary attention from household income to individual capability. The empirical findings of the study show that lack of freedom to choose their careers for various cases as poverty and how capability poverty leads to economic deprivation. Shin's (2008) study is significant as it advocates for urban policies to broaden their perspective beyond merely addressing income poverty, emphasizing the need to incorporate anti-poverty measures and economic development within a framework of social development.

Blecic et al.'s (2013) book chapter, '*The Capability Approach in Urban Quality of Life and Urban Policies: Towards a Conceptual Framework*,' is another significant work that establishes a linkage between the capabilities and functionings approach and urban issues, specifically in terms of the quality of urban life. The authors criticize Italian initiatives which carry out the quality of life survey in Italy in terms

of their methods for measurement of quality of life which depend on certain characteristics of the city instead of their usage by the inhabitants. The authors recommend the capability approach instead of the countability approach in measuring the quality of urban life. The authors give examples through urban green parks. They state while the countability approach makes an inference by measuring the size of urban open spaces per person in the city, the capability approach focuses on people's being able to enjoy recreation in urban open spaces every time they want to. The countability approach argues that improving the quality of life component in question is due to the mere existence of urban green spaces and that increasing the size of it will be the solution. However, increasing the size of urban green spaces in an area where there is no security will be of no use. Therefore, in assessing the quality of urban life, the authors draw attention to the necessity to build the capability approach.

Blecic et al. (2013) mentioned earlier as an important work for the capabilities approach to the quality of urban life determine three requirements for the conceptual framework of their evaluation model. The first one is about adopting the individual-centered perspective for the evaluation of the quality of urban life. The second one is about employing a survey-based approach in the model and using an operational definition of capability to validate the practical implementation of specific functionings and identify potential constraints. The third one is about spatialisation of results and evaluations. After determining three abstract capabilities, namely autonomy, self-esteem and responsibility, the authors collect data through questionnaire for measuring the quality of urban life of children. They opted to employ the capability approach as the theoretical foundation for their research and methods.

Another study that considers the capabilities approach together with urban studies is conducted by Deneulin (2014). In this research, the aim is to enrich the concept of the right to the city by integrating it with the capabilities approach to reverse the trend of fragmentation in Latin American cities. Deneulin (2014), in her work, puts forward four contributions of the capabilities approach to the right to the city: (1) the capabilities approach's providing tools for well-being evaluation that the right to the

city lacks, (2) the capabilities approach's facilitating analysis of inter-linkages between different rights and providing richer information, (3) the capabilities approach's emphasizing the role of institutions, and (4) the agency aspect of the capabilities approach's providing democratic pluralism for the concept of the right to the city. Deneulin proposes the 'just cities for life' concept and examines how the capabilities approach and the right to the city could enrich each other.

In 2015, the Bartlett Department of Planning Unit (DPU) at University College London published a special issue on the capability approach in development planning and urban design. In the introduction part, the editors of the working paper address the possible linkages, complementarities and contributions between the capability approach and urban planning and design (Frediani and Hansen, 2015). They examine the changing manner from utility maximization to freedom expansion and ponder on the relationship between space and quality of life in cities.

In the same special issue, Hansen (2015) studied the linkage between urban space and the capabilities approach. By integrating urban design theory with the capability approach, Hansen's work shows how concepts from urban design can be applied within a capability approach framework, illuminating the connection between processes and outcomes in the built environment from a grassroots perspective.

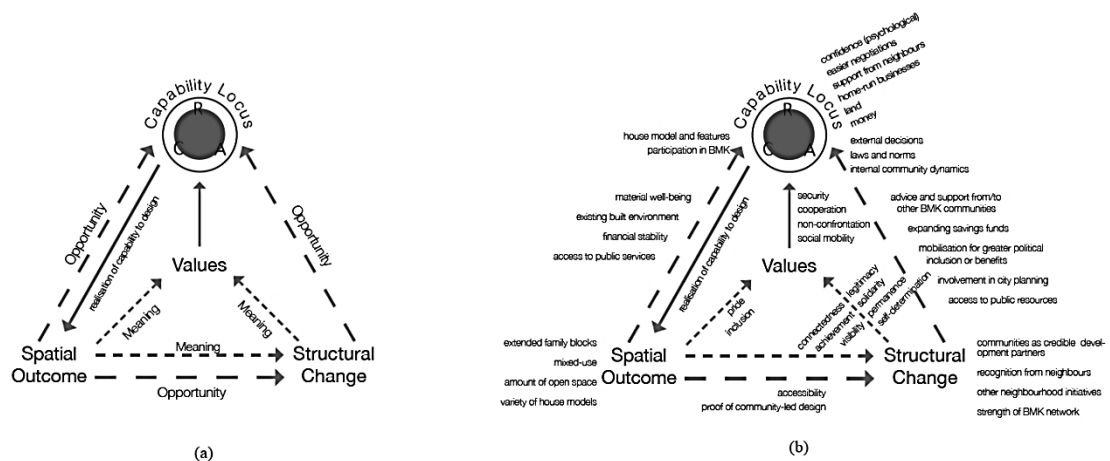


Figure 16: Hansen's (2015) Diagrams on the Locating Capabilities in the Built Environment: (a) The Capability Locus Framework for Socio-Spatial Change, (b) The Capability Locus Framework Applied to Three Baan Mankong Communities

Afterwards, Hansen (2015) creates the capability locus framework for socio-spatial change to apply the capability locus framework to three communities in the city of Nakhon Sawan in Thailand, which experiences annual flooding because of the cities' close proximity to major rivers. These frameworks are shown in Figure 16. The author examines these communities in terms of their group values, resources, choice, ability, spatial outcome, structural change, opportunity and meaning and contributes and opens the door wider for capability-led studies of the built environment.

Another work that considers capabilities in urban studies is conducted by Bucheli (2016). In this work, Bucheli (2016) focuses on the problem of rapid and ongoing urbanization processes, significant socio-spatial segregation and fragmentation, and the patterns of inequality and deprivation in Latin America. He criticizes local public policies for their approach to measuring the quality of urban life, which is based on a countability approach to assess urban well-being instead of emphasizing the inhabitants' ability to use the city.

Bucheli's (2016) study suggests analyzing spatial inequalities by adopting the capabilities approach and rejecting utility-based definitions of quality of life. The author states that the segregation in the city leads to the social stratification and deterioration of well-being. Therefore, it is attempted to link between residential segregation and quality of urban life through the main concepts of the capabilities approach. Since Bucheli's work is primarily exploratory rather than practical, the author states that further research is required to determine the extent to which the conceptual aspects of the capability approach can be put into practice and to what degree the presence of segregation patterns at the micro level either enhances or restricts opportunities.

Biagi et al.'s study (2018) contributes to the practical part of the capabilities approach which is used in urban studies. Their research explores how residents perceive the quality of life in urban areas, employing Sen's capability approach as the framework for analysis. Biagi et al. (2018) question how the concept of capabilities and functionings can be linked with quality of life in cities. Their study is aimed at examining perceptions of quality of life for a sample of residents of Alghero, Italy,



by adopting a broader understanding of quality of life, which encompasses both quantity and accessibility. Their research addresses the presence and accessibility of amenities and also social interactions through an investigation into personal circumstances and the urban resources available. If access to a park is difficult, if a significant portion of the population lacks sufficient time to visit it, or if the park is inaccessible to certain neighborhoods, the authors indicate that the mere existence of this park cannot be considered a good indicator of the quality of life.

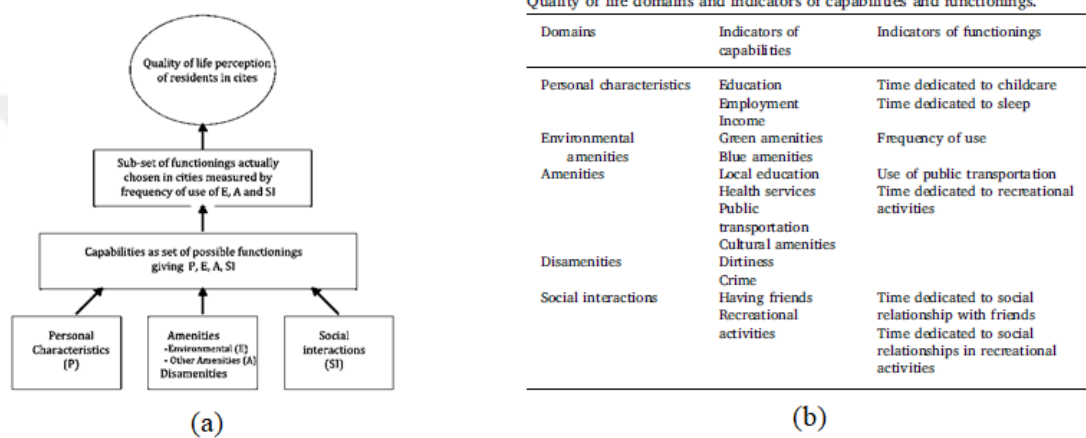


Figure 17: Biagi et al.'s (2018) Empirical Model: (a) The Quality of Urban Life Framework Using Capability Approach, (b) Domains and Indicators of the Study

As can be seen in Figure 17, Biagi et al. (2018) use the quality of life domains as the personal characteristics, amenities-disamenities and social interactions. They determine indicators of capabilities and indicators of functionings to measure these domains. They found that the perception of quality of life follows a U-shaped pattern in relation to age, shows positive associations with factors such as gender, income, education, and the availability of natural amenities and schools and shows negative association with the presence of crime. They state that primary discovery of this research lies in the significance of accessibility, which highly influences residents' perceptions of quality of life in urban areas and their social interactions.

Apart from Bucheli's (2016) exploratory study on the capability approach and urban studies, his practical contribution to the issue published in 2020. This article mapped the spatial patterning of young adults' capabilities in Bogota at different scales. By criticizing the evaluation of quality of life in cities which is based on commodity framework and mere dotation of urban amenities, Bucheli (2020) assessed urban poverty, and examined clusters of deprivation and levels of urban segregation among young adults in Bogota.

This article aimed to identify the spatial distribution of young adults' capabilities under ten domains: 1) Protection and body integrity, (2) habitat and built environment, (3) freedom and independence, (4) occupation, (5) food security, (6) equality and non-discrimination, (7) right of education, (8) leadership and participation, (9) love, support and affection, (10) health and life. If there is a spatial segregation patterning, it is aimed to reveal how this distribution is manifested in the urban structure of Bogota. To realize these aims, three different analyses are employed in the article, namely exploratory data analysis, spatial regression and calculation of segregation indices.

The results of Bucheli's (2020) study indicated that young adults experience greater segregation based on factors related to 'protection and body integrity,' 'habitat and built environment,' 'freedom and independence,' and 'occupation.' It is also found that there is a tendency for young adults with similar levels of capability to reside in closer proximity to each other, that the place where these young adults are situated inherently influences their capability scores, and that geographical disparities reveal that residential segregation is more pronounced among young adults with lower capability scores.

Randal et al.'s study (2020) contributes to the debates in urban studies by considering the capabilities approach together with transport policies. The authors work on the theoretical framework for distributive justice based on the capabilities approach by using the examples related to Aotearoa, New Zealand. They propose an alternative implementation of the capabilities approach to transport by considering

social conversion factors. Randal et al.'s (2020) proposed framework for the capability approach to transport policy is presented in Figure 18.

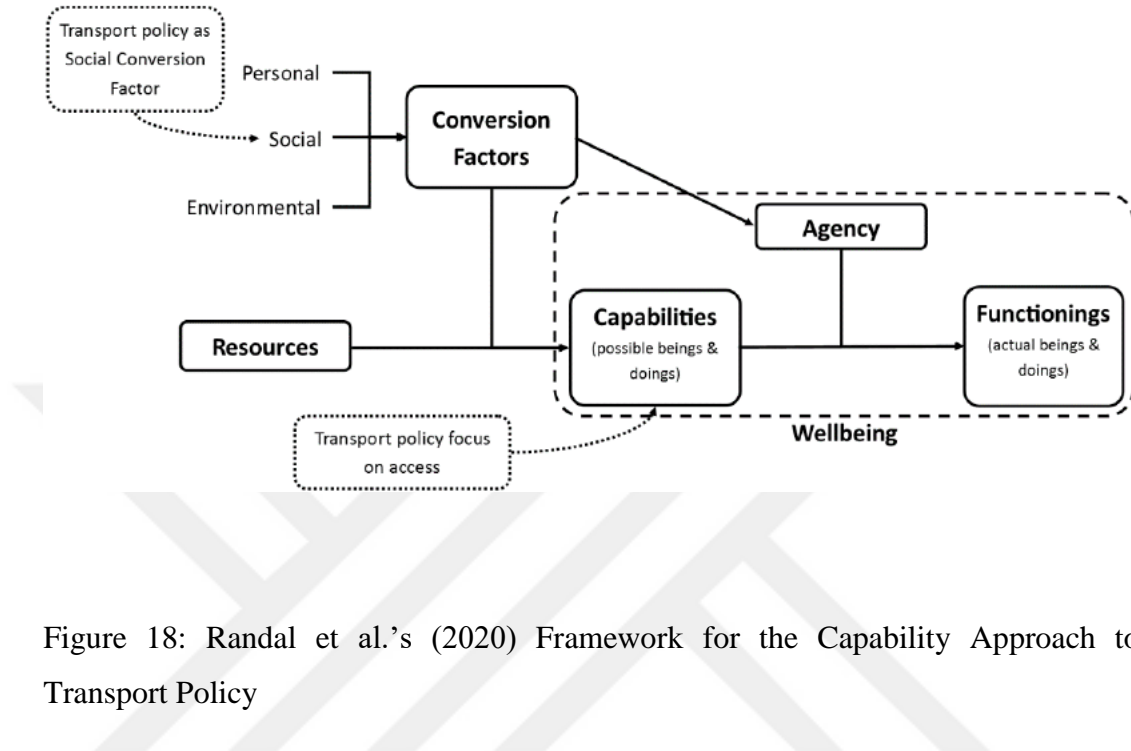


Figure 18: Randal et al.'s (2020) Framework for the Capability Approach to Transport Policy

Randal et al. (2020) criticize that agency and empowerment, transport policy's role in enhancing and constraining other capabilities, and its interactions with other policy areas were not considered in previous study of capabilities approach to transport policy. Therefore, they propose a new approach which provides a wider view of how transport policy affects various capabilities besides access, empowers communities to determine their own set of capabilities, take into account agency, enable stronger normative guidance, and promote the integration of transport policy with other policy areas.

Grabowska's study (2021) integrates the capabilities approach with the urban studies to identify the mechanisms shaping the individual quality of life in poor neighborhoods, focusing on a case study of a deprived area of Lodz, Poland. In the article, it is indicated that having limited choice of capabilities can cause deprivation and social exclusion. The capabilities approach is used to analyze the quality of life

of the residents of poor neighborhoods of Lodz who encounter high risk to social exclusion due to various adverse social factors prevailing in these regions, encompassing inadequate healthcare, economic instability, technological deficiencies, and infrastructural inadequacies. Grabowska's (2021) conceptualization of the capabilities approach is presented in Figure 19.

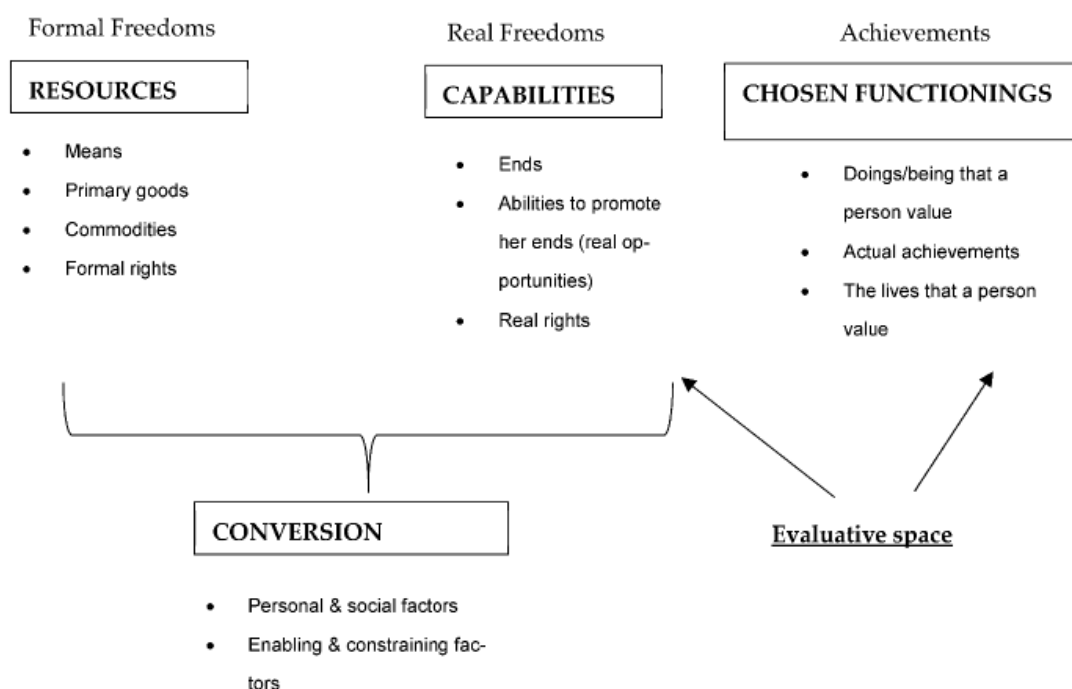


Figure 19: Grabowska's (2021) Conceptualization of the Capabilities Approach

The data of the Grabowska's study (2021) is collected from 80 residents both through quantitative from public registries and qualitative from in-depth interviews. By using mutual verification of the gathered material, the author creates the web of social exclusion on the dimensions on (1) housing conditions, (2) economic wealth, (3) health, (4) knowledge and skills, (5) norms, attitudes and social capital, (6) work environment, and (7) living conditions. The web of social exclusion map shows the conversion factors that constrain residents from achieving their valued lifestyles. The research finding in this article is that the different patterns observed between the causes and consequences of various phenomena occurring in the analyzed area stem not only from the individual characteristics of the residents and neighborhood effects

but also from historical factors and the consequences of public policies implemented in the analyzed area and among its inhabitants.

In many ways, it is difficult to analyze whether people live in an urban environment that expands their opportunities to lead lives they find valuable. Although the initial studies that address the capabilities and functionings approach alongside urban studies, specifically focusing on the quality of urban life, exist, these studies are inadequate in terms of detail and scope.

Even though it is based on a method that takes into account objective and subjective dimensions, the quality of urban life analyses, in their current state, are under the influence of utilitarian philosophy because they focus on the end rather than the means; they are measured based on satisfaction with the existence of resources; their aim is to maximize happiness for the most people; they ignore how the level of happiness is distributed among individuals in society; and they also ignore questioning the reasons for dissatisfaction. The utilitarian perspective typically ends the questioning if the majority is satisfied with their situation. In other words, if 70 people out of a hundred are satisfied with the situation, but 30 people are not, the reasons for the dissatisfaction of the 30 people are not emphasized and their problems are ignored. However, in order to improve the current situation and develop the right intervention method, it is necessary to understand the issues faced by the 30 dissatisfied individuals.

It can be argued that similar limitations observed in analyzing quality of life from a utilitarian perspective may also be relevant when assessing the quality of urban life through the same lens. In studies on the quality of urban life, where individuals' satisfaction with their lives and surroundings is examined while the underlying reasons for dissatisfaction remain unexplored, there is a risk of overlooking critical issues. This, in turn, may limit the ability of urban planners and policymakers to develop effective intervention tools. Therefore, it may be more beneficial to approach both quality of life and quality of urban life through a capabilities-based framework rather than a satisfaction-based one.

The quality of urban life, within a capabilities-based framework, is associated with the extent to which people, endowed with the freedom to achieve the functionings (valuable beings and doings) they value, are able to exercise this freedom in urban areas. The capabilities-based quality of urban life and its relationship with basic elements will be conceptualized and explained through an example, as shown in Figure 20.

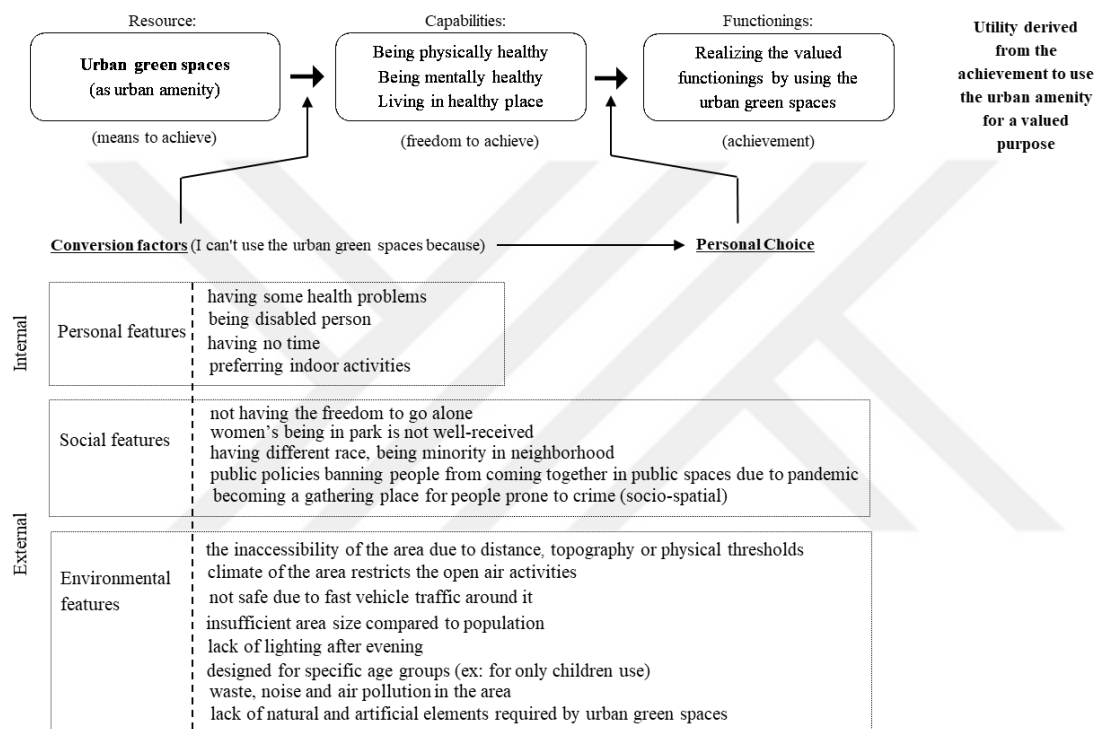


Figure 20: Personal Interpretation of an Urban Amenity Together with the Capabilities and Functionings Approach: An Example of Urban Green Spaces (Source: Author)

Let's reconsider Amartya Sen's well-known bicycle example in the context of urban spaces, particularly urban green spaces. As an urban amenity, urban green spaces contribute to physical health, support mental well-being, and provide opportunities for residents to live in a healthy environment. Firstly, urban green spaces can enhance physical health of residents (for the relationship between children's park accessibility and body mass index, see Wolch et al., 2011; for the correlation

between urban sprawl, walking data, and body mass index, see Ewing et al., 2003; for the impact of park availability on recreational physical activity, see Hartig et al., 2014).

Secondly, urban green spaces contribute to the mental health of residents (for the relationship between green space and lower stress levels, see Stigsdotter et al., 2010; Thompson et al., 2012; Ulrich, 1983; for the link between nature exposure and mental health improvement, see Van den Berg et al., 2015; for the association between nature exposure and reduced incidence of psychosis and depression, see Sundquist et al., 2004). Thirdly, urban green spaces contribute to healthy environment (for the relationship between the natural infrastructure and flood mitigation, see McDonald, 2015; for the link between the natural infrastructure and cooling, air purification and contribution to ozone formation, see McDonald and Beatley, 2021).

The mere existence of urban green spaces can serve as a community-objective (CO) indicator in assessing the quality of urban life. However, when evaluated through the capabilities and functionings approach, the role of urban green spaces as an urban amenity can be understood more comprehensively. Consider an individual whose valued functioning is to use urban green spaces '*to be physically and mentally healthy*'. The realization of valued functioning through urban green space provided in the neighborhood as an urban amenity can contribute to the quality of life of the individual. In this example, the commodity is urban green space in the neighborhood; the characteristic is the provision of health; the capability is to be physically and mentally healthy; the functioning is realizing physical and mental health by using the urban green spaces; and the utility is quality of life derived from the achievement of using the urban amenity for a valued purpose.

The mere existence of an area as an urban amenity is not enough for people to use this area for the functionings they find valuable. In this case, it will be seen that there is a problem in converting the resource into capabilities. Urban green spaces that are deserted and unused at all hours of the day are an indication of the problem. The classical method in urban planning which is based on 'countability approach' focus

on the presence of the area and the distribution of them in the place and the size of the place and try to improve these characteristics. They are of course important characteristics of the urban amenities as resources. However, focusing on an approach that only emphasizes the physical characteristics of these areas and ignores the people who use them will not be enough to solve the problems.

Even if the urban green spaces present in the neighborhood as an urban amenity, people may not have the capability or freedom to use it. The reasons behind the problem can be explored and further understood through conversion factors. Internal (personal) and external (social and environmental) conversion factors, which limit individuals from using these spaces, can help explain why people are unable to access and use urban amenities in their neighborhoods.

There can be personal conversion factors, such as having health problems, being disabled person, having no personal time, preferring indoor activities rather than being outside, etc. These conversion factors are internal to the person and partially independent from the characteristics of the resources. The social conversion factors that constrain people from using the urban green spaces may involve some features like not having the freedom to go alone, women's being in the park not well-received, being a minority in the neighborhood, public policies banning people from coming together in public spaces (i.e., pandemic), becoming a gathering place for people prone to crime, etc. The environmental conversion factors associated with the built and natural features of the place can hinder people from using the urban green space in the neighborhood. These factors include the inaccessibility of the area due to distance, topography, or physical thresholds; the climate of the area restricting open-air activities; the lack of safety due to fast vehicle traffic around the park; insufficient area size compared to the population; inadequate lighting after evening; designed for specific age groups; issues with waste, noise, and air pollution in the park; and a lack of necessary natural and artificial elements required by urban green spaces, among others. The given examples of conversion factors can be further increased or decreased depending on the context specific to the location.



Another important issue is that the reason why a person cannot benefit from using urban green spaces is personal preference, regardless of conversion factors. People may not prefer to use an urban amenity right next to them that is adequate in every respect, for no reason at all, simply because they do not prefer it. In this case, intervening in personal preferences and creating public policy will be quite challenging for urban planners and policy makers.

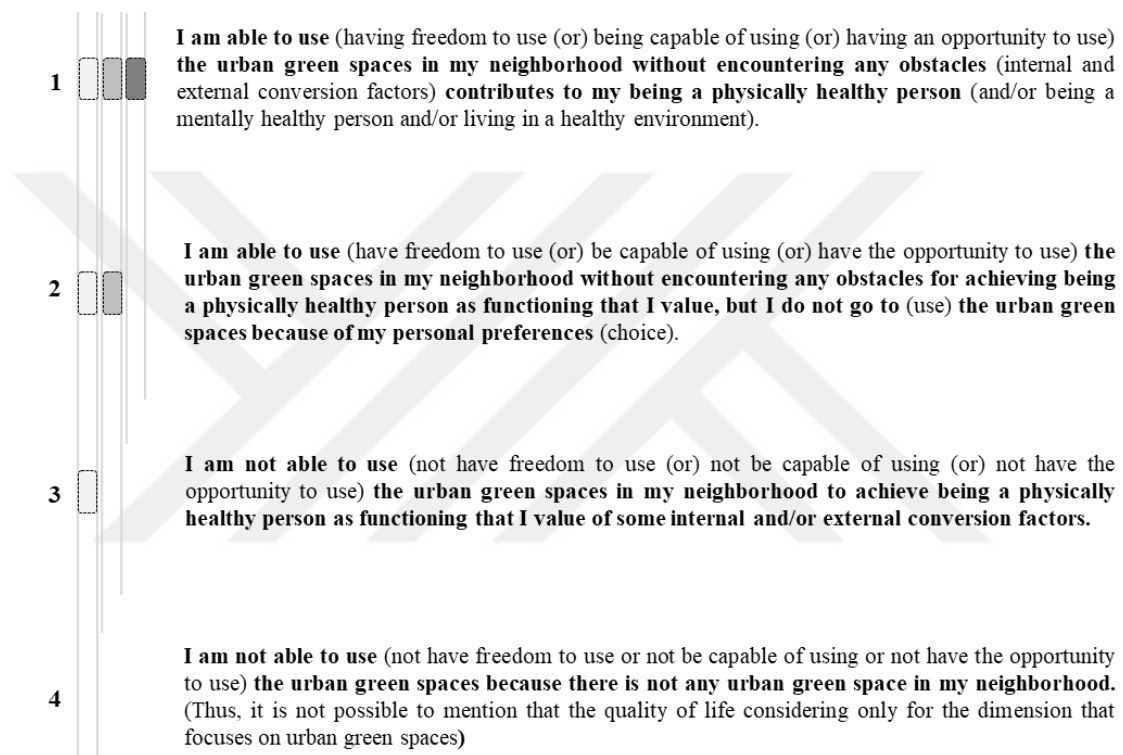


Figure 21: Stages of Functionings Achieved by Using Urban Green Spaces for Valued Purpose (Source: Author)

The Figure 21 illustrates the statements a person would make about urban green spaces in the neighborhood under different conditions: when there is no resource, when the resource exists but cannot be transformed into capabilities due to various conversion factors, when the resource can be transformed into capabilities but not into functionings due to personal choice, and finally, when the resource is successfully transformed into capabilities and capabilities into functionings.

#### **4.2.2. Establishing the Capabilities-Based Quality of Urban Life of Women**

Humans are dignified free beings who have the ability to shape their own lives. The idea of human dignity, which involves an idea of equal worth, indicates that all people are equally deserving of respect, just by virtue of being human (Nussbaum, 1999). However, it would not be correct to assert that women, who comprise half of humanity, are treated equally in terms of human dignity in many parts of the world.

In their book, *'The Quality of Life'*, Nussbaum and Sen (1993) argue that women lack equal opportunities compared to men in most parts of the world and question whether the quality of women's life has the same elements as that of men's. The assessment of gender justice and the quality of life of women are considered as the areas of special urgency in the developing world (Nussbaum and Sen, 1993). In her book, *"Creating Capabilities"*, Nussbaum (2011) provides the example of Vasanti, a woman in her thirties living in the city of Ahmedabad, a city in the state of Gujarat, India. Vasanti is illiterate, malnourished due to poverty and gender discrimination, had an unsuccessful marriage, experienced domestic violence, divorced, was able to return to the family home, received support from a non-governmental organization that provides loans to poor women. If a state evaluates the increase in the quality of life of people through the increase in GDP, it can also be claimed that there will be an increase in the quality of life of Vasanti. At this point, Nussbaum (2011) asks what GDP means to Vasanti. Increasing GDP is good if it leads the state to adopt policies that will change the negativities in Vasanti's life. But in reality, the poor do not benefit at all from increased wealth. Moreover, economic growth does not lead to improvements in health and education without government intervention. In such a case, to what extent would it be correct to claim that an increase in GDP improves people's quality of life? A nation's gross national product per capita, which is higher than other nations, doesn't indicate what government has done for women or how they are doing (Nussbaum, 1999). The negative aspects of women's daily lives, which have a significant impact on their quality of life, need to be revealed by adopting human-centered approaches instead of solely focusing on total GDP or GNP increase. With the awareness of this deficiency, Nussbaum and Sen (1993)

emphasize the importance of the women's quality of life and gender roles while considering their capabilities and functionings.

In this section, the three core concepts (1) the quality of urban life, (2) the capabilities approach, and (3) women in urban setting are synthesized to build *the Capabilities-Based Quality of Urban Life of Women*. This thesis proposes to incorporate the concept of 'space' into the foundational approach established by Sen and Nussbaum (1993) concerning women's quality of life and the capability approach. As a reminder, it is stated previously in this thesis that the quality of urban life, within a capabilities-based framework, is linked to the extent to which individuals that have the freedom to achieve the valued functionings (both in terms of what they are and what they do), are able to exercise this freedom in urban areas. In connection with the preceding statement, *the capabilities-based quality of urban life of women* refers to urban living environments that either enhance or do not constrain women's freedom to achieve their valued functionings.

The capability approach is not about resource ownership or level of satisfaction of people, but about what people are able to do and to be in relation to the opportunities and freedoms they have. In this regard, the capabilities-based women's quality of life questions not what resources women have or how satisfied they are, but what women are actually able to do and to be. Based on this, the capabilities-based understanding of quality of urban life of women does not focus on what resources women have in the urban environment or how satisfied they are with it, but rather on what women can actually do and be in that environment, or whether they are able to live the lives they find valuable within it. In the context of capabilities-based quality of urban life, resources may pertain to the urban amenities provided by local governments or the features of urban physical resources such as the condition, existence, distribution, size, and distance. The traditional approach to measure the quality of urban life attributes great importance to urban physical amenities as objective measure whereas, for the capabilities-based quality of urban life approach, the resources have instrumental and contingent contribution for functioning achievements. For Biagi et al. (2018), if an urban green area is inaccessible or if most people are unable to use it due to time constraints, the mere existence of this area cannot serve as a good

indicator of the quality of urban life. Therefore, the resources in urban space should be handled as means to achieve the ends. An urban amenity in the neighborhood, such as a sports field serving as an urban recreational space, is not equally converted into valued functionings by the residents, as they have different levels of functionings depending on residents' ability to transform these resources into functionings in the urban space by using the sports field differently. If a person has a physical disability, it is quite possible that the sports field will be less beneficial to him or her than to healthy person. In addition to personal factors (i.e. being disabled or having health problems as in the example) there are also social and environmental factors that have an impact on the equally transforming resources into functioning achievements. However, analyses of quality of urban life based on a utilitarian approach typically treat people as a homogeneous group, overlook various personal factors, and assess people's quality of life irrespective of the economic, social, environmental, and political structure of the environment in which they live.

These explanations show the deficiencies of the utilitarian or commodity-oriented approaches to the assessment of the quality of urban life of the individuals which based on resources and satisfaction. Therefore, this thesis proposes that the concern of *the capabilities-based quality of urban life of women* is not only about the resources of urban space or the resources the women have regarding urban space, but also should be about whether women can achieve the functionings they find valuable using those resources.

Women's freedom or opportunity to choose any one among a set of alternative functioning n-tuples expands their capabilities. However, women's personal characteristics, as well as the reality of the society and the environment in which they live, affect women's freedom and opportunities. The personal factors hindering women's capabilities may relate to women's demographic characteristics, health issues, duties and responsibilities, as well as subjective judgments and perceptions. The social factors constraining women's capabilities may include societal patterns of relationship and behavior, traditions, customs, discriminatory practices, gender roles within the family and society, social hierarchies, and social norms. Environmental factors affecting women's capabilities in the place where they live may include the

lack of or insufficiently provided features in the natural and built environment. These conversion factors have a huge impact on women's freedom to choose.

Women face serious challenges to their freedom to live the lives they find valuable in the urban environment, which affects their quality of urban life. To enhance the quality of urban life of women and to understand the challenges they face in urban environments, particularly concerning the three main areas of accessibility, safety, and participation, it is necessary to examine these issues from the perspective of the capabilities approach. In this context, women's functioning achievements on accessibility will be discussed from four different perspectives: (1) women's access to public open spaces, (2) women's access to education, (3) women's access to healthy environment and (4) women's access to mobility and transport. Women's functioning achievements on safety will be discussed from two perspectives: (5) women's safety in public spaces and (6) women's safety in public transportation. Lastly, women's functioning achievements on participation will be discussed from two perspectives: (7) women's participation in economic activities and (8) women's participation in decision-making processes. Following figures present the capabilities-based conceptualization of the eight sub-dimensions.

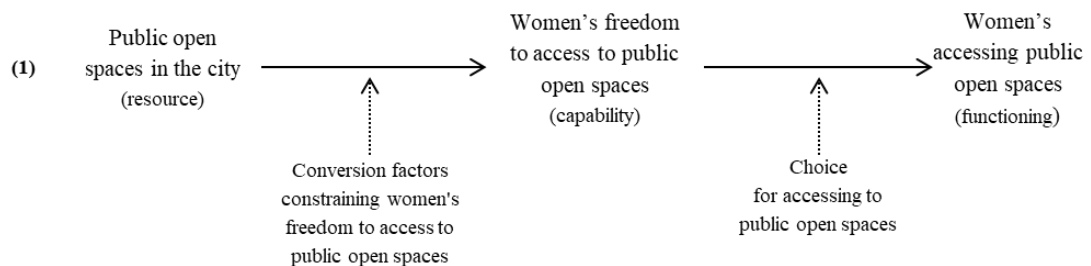


Figure 22: The Functioning of Women's Access to the Public Open Spaces in the Context of Capabilities-Based Quality of Urban Life of Women (Source: Author)

- (1) **Women's access to public open spaces:** Unequivocally, women should have freedom to access to the public open spaces in urban environment. Why are women not as visible as men in the public open spaces of cities, despite making up half the population? Since urban public spaces are both a social and spatial construct, finding the answer to this question is not

that easy. The reasons that exclude women from public open spaces affect to achieve their valued functionings and the quality of urban life of women by restricting their freedom to access these spaces. The access to and use of public open spaces by women is cross-cut by many factors. Health problems (Phadke, 2012; Egbatan and Ak, 2019), lack of time (Franck and Paxson, 1989), being pregnant and having children (Kern, 2019) and heavy domestic responsibilities (Franck and Paxson, 1989) are some of the personal factors that constrain women's access public open spaces. Social norms and constructions of gender and space shape the everyday experiences of women in urban areas (Buckingham, 2010). The patriarchal, cultural and religious powers and norms construct restrictive rules for urban space, dictate them to women, and create spaces of belonging and disbelonging or permitted and forbidden spaces for women (Fenster, 2010). In some cultures, women's being alone in public open spaces is perceived as unacceptable (Franck and Paxson, 1989; Hubbard, 2005); women are expected to spend their leisure time at home instead of outdoors (Fraser, 1989; Alkan, 2000). Unsafe public open spaces are one of the important determinants that restrict women's access to these areas (Fenster, 2005; Fenster, 2010; Bravo, 2022; Manyani et al., 2021). In addition, association of men with working areas and productive work, and women with their home, care-giving activities, and reproductive work (Bondi, 1992; Alkan, 2000; Preston and Üstündağ, 2005; Fenster, 2005; Hubbard, 2005; Buckingham, 2010) has made women's existence in public spaces problematic. Besides, public open spaces that are physically difficult to access (Biagi et al., 2018; Mayen-Huerta and Utomo, 2022), have insufficient area size compared to the population, have waste, noise, air pollution (Mayen-Huerta and Utomo, 2022), lack of infrastructure, and are designed without considering women and children (Kern, 2019) are environmental factors that affect women's access to these areas. Apart from these external reasons, women may not want to access to and benefit from public open spaces they live in as a personal choice, which

corresponds to the agency aspect of the capabilities and functionings approach.

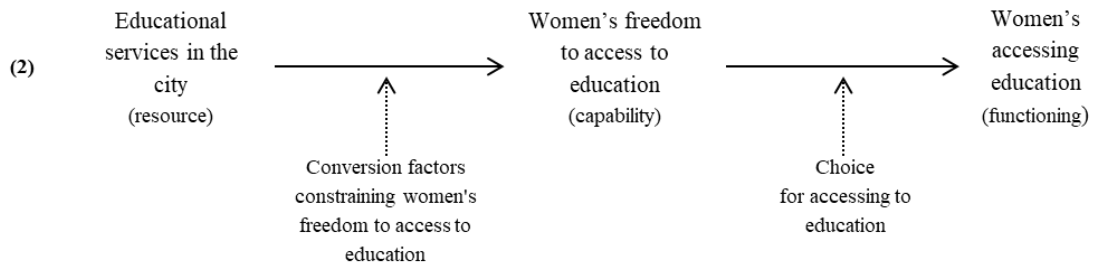


Figure 23: The Functioning of Women's Access to Education in the Context of Capabilities-Based Quality of Urban Life of Women (Source: Author)

(2) **Women's access to education:** Based on the principle of equal opportunity and without discrimination, women's and girls' access to education as a human right should be provided without deprivation. Women's access to education significantly contributes to women's empowerment (Tuncer, 2018). However, some women who are above average in terms of education and income levels may still have capabilities well below average. This situation underscores the importance of identifying the factors that hinder their capabilities and quality of life of women living in the city. The external factors have a great impact on constraining women's access to education. Women and girls face social and spatial challenges as external factors to access to education. Socially, the most concerning situation arises when some countries willfully prevent their female citizens, women and girls, to get education (Breen and Jordahl, 2020). This ban is a human rights violation that takes away life opportunities from women and girls and has no consistent justification. Although, in many countries today, women and girls are not prohibited from accessing education, certain conditions and accepted social norms in certain regions may deprive them of benefiting from these rights. For example, women and girls living in the eastern region of Türkiye, especially in rural areas, encounter social and spatial challenges

in accessing education. Women and girls may be deprived of access to education because their family members do not allow them to receive education, and because there is an expectation that women will leave education after marriage (UN-Habitat, 2013). Although women seem to have the choice to attend school, their economic circumstances make it nearly impossible for many women to do so (Nussbaum, 1999; Hannan, 2007). Expecting school-age girls to contribute to the family budget or to share housework burden causes the rate of school attendance to decrease (Gleick et al., 2020). In addition, many women and girls experience difficulties in accessing education because the spatial requirements for education are not met (such as the absence or distance of schools). It is also an important problem that there are not enough services such as nurseries, day care centers and kindergartens to support women's access to education (Hannan, 2007). Apart from the conversion factors, dropping out education is sometimes a choice of women and girls, which also prevent to achieve the functioning.

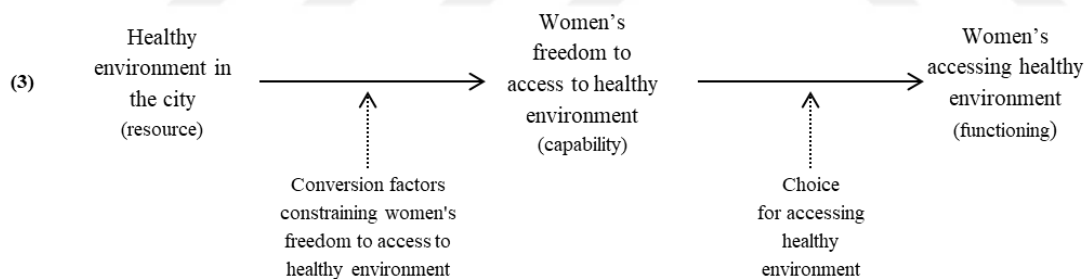


Figure 24: The Functioning of Women's Access to Healthy Environment in the Context of Capabilities-Based Quality of Urban Life of Women (Source: Author)

- (3) **Women's access to healthy environment:** Access to a healthy, clean, and sustainable environment is a universal human right that everyone should have the opportunity to exercise. Clean, healthy and sustainable environment is a service that local governments should provide and corresponds to resources in the quality of urban life focused on capabilities. The reasons such financial difficulties, the current workplace



or school being close to home, and the household's unwillingness to move are among the personal factors that limit access to a healthy environment. Also, high levels of place and community attachment may prevent individuals to move to cleaner and healthier neighborhoods even if they live in unsanitary environments (Adewale et al., 2020). In other words, some people may not want to relocate to neighborhoods with a healthy environment because of their attachment to their family members, relatives and friends, or they may not want to relocate to neighborhoods with a healthy environment because of their attachment to the neighborhood they live in. Socially, due to family and kinship ties, it is expected that relatives stay in houses close to each other, which makes relocation difficult. The pollution of the area, access to clean drinking water and basic sanitation (Hannan, 2007; UN-Habitat, 2013), presence of green areas, width of the streets, population and building density are environmental factors that have an impact on the health of the place. The functioning in this regard is that women live in a clean and healthy environment. However, due to the mentioned factors, women's capability to live in a clean and healthy environment may be constrained, or they may not be able to achieve the functioning of living in a clean and healthy environment due to their personal choice.

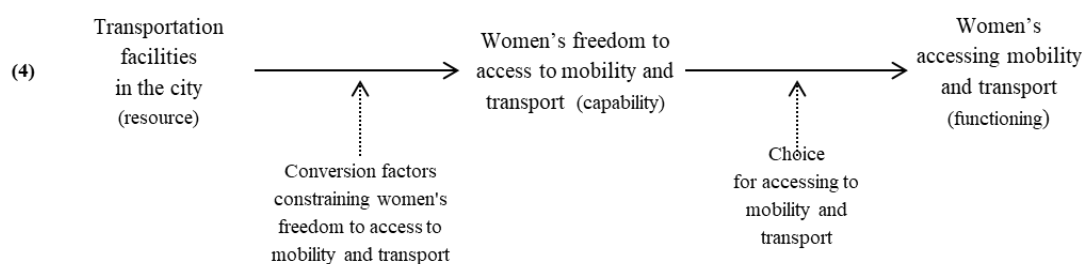


Figure 25: The Functioning of Women's Access to Mobility and Transport in the Context of Capabilities-Based Quality of Urban Life of Women (Source: Author)

- (4) **Women's access to mobility and transport:** Women face barriers in access to mobility and transport. Women's access to mobility and

transport in urban areas is an important issue that also affects women's presence in public open spaces, their access to education, their participation in employment and social life. A range of personal factors, including health problems (Hyndman, 2004), childcare responsibilities, private vehicle ownership (Wekerle, 1980), household duties (Wekerle, 1980; Franck and Paxson, 1989), time constraints, the burden of carrying heavy loads (Alkan, 2000), trip chaining to multiple destinations (Madariaga, 2013), security concerns (Kacharo et al., 2022), and the distance to destinations, serve to restrict women's mobility in urban environments. Also, women's activities in public life are dominated by the extension of their domestic responsibilities (Franck and Paxson, 1989; Garcia-Ramon et al., 2004; Araya et al., 2022). In many places, the social norms influence the mobility and transport of women in urban public open spaces. It is socially accepted that if there is a car in the household, it is expected that men should be the ones driving it (Wekerle, 1980; Franck and Paxson, 1989; Hannan, 2007). Women are expected to explain in detail with whom they are and where they are during the day (Franck and Paxson, 1989). Also, it is thought that women should not go out alone, but usually with someone else or with their family (Gordon et al., 1980; Taylor, 2011; Oosterlaken, 2021). Apart from the personal and social factors, there can be environmental factors that have impact on women's mobility in urban space. Unsafe public spaces (Valentine, 1990; Hyndman, 2004; Taylor, 2011; Bravo, 2022) and unsafe public transportation (Buckingham, 2010; UN-Habitat, 2013) in the city is one of the important reasons that constrain women's mobility. It is also critical when it is unsafe for women to access the destination by walking or cycling (Taylor, 2011; UN-Habitat, 2020), there is a decreased frequency of public transport services in the evening (Altay-Baykan, 2015), and there are places in the city that cannot be reached using public transportation. If women do not encounter any barriers in accessing mobility and transportation, they thereby have the freedom and capabilities to do so. Then, if their choices do not hinder their capabilities,

they accomplish access to mobility and transportation, and thus achieve functionings in this regard.

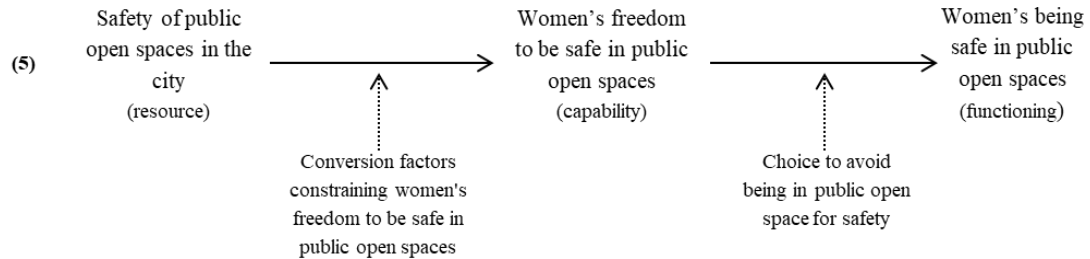


Figure 26: The Functioning of Women's Safety in Public Open Spaces in the Context of Capabilities-Based Quality of Urban Life of Women (Source: Author)

(5) **Women's safety in public spaces:** The issue of women's safety in public open spaces is of critical importance due to its impact on women's quality of urban life, capabilities, and functionings. When considered within the capabilities approach, the public open spaces' being safe in the city can be regarded as a resource which should be provided for all, especially women. However, factors that limit women's freedom to be safe in public spaces may be personal, social and environmental. The personal factors such as the clothing preference or dressing style of women (Gordon et al., 1980; Taylor, 2011; Phadke, 2012; Vera-Gray and Kelly, 2020), being alone in the evening (Gordon et al., 1980; Franck and Paxson, 1989; Taylor, 2011; Whitzman, 2013), being single (Lordoğlu, 2020), fear of harassment and concern of unsafe areas (Fenster, 2005; Gordon et al., 1980; Ranade, 2007; Fenster, 2010), having few acquaintances, and a low sense of attachment to the place affect women's safety in urban public spaces. The discriminatory practices and gender roles in family and society have significant effects on women's freedom to be safe in urban spaces. In some places around the world, it is not welcomed for women to go out after a certain time in the evening; people make women who are outside in the evening feel uncomfortable or guilty; and also, if a crime is committed against a woman, it is considered that the woman deserves it

(Franck and Paxson, 1989; Hubbard, 2005; Phadke, 2012). The clothes that women choose to wear outside are expected to be covered or in moderation (Ranade, 2007; Fenster, 2010; Taylor, 2011). It is considered safer for the women to be at home rather than on the street (Alkan, 2000; Fenster, 2005; Fenster, 2010), which coincides with the social norm on women's access to public open space that women belong in the private space rather than the public one. The urban built environment is critical for the safety of public spaces. Issues related to the built environment, such as inadequate lighting in public spaces (Valentine, 1990; Buckingham, 2010; Taylor, 2011; Phadke, 2012; Altay-Baykan, 2015), deserted streets during the evening hours (Valentine, 1990), and narrow, dark, and intimidating streets (Valentine, 1990; Fenster, 2010)), restrict women's freedom to feel safe in public spaces. Even if women have the freedom to be safe in urban public spaces where they live, they may not choose to be in urban public spaces as a personal choice because they are concerned about their safety, which hinders women's functioning in this regard.

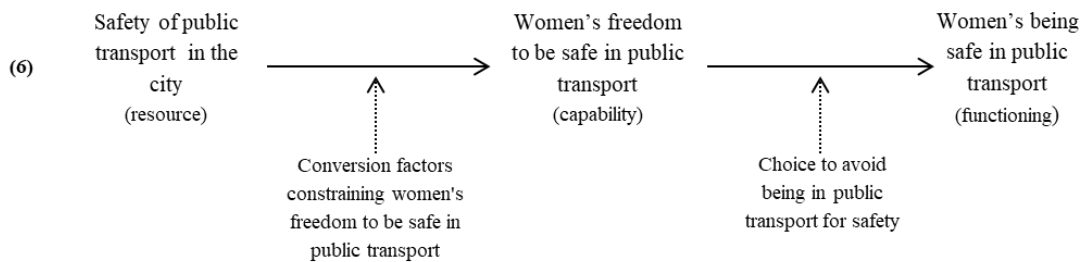


Figure 27: The Functioning of Women's Safety in Public Transport in the Context of Capabilities-Based Quality of Urban Life of Women (Source: Author)

- (6) **Women's safety in public transport:** Women's safety and security concerns may deepen in public transport. The safe public transport service can be regarded as resource in capabilities-based women's quality of urban life. Fear of harassment in public transportation vehicles, the clothing women choose to wear (Vera-Gray and Kelly, 2020), concerns

about using public transportation in the evening (Fenster, 2005; Taylor, 2011), the anxiety of being the only woman in the vehicle, and the fear of traveling alone in public transport are personal factors that significantly impact women's capabilities to use public transportation and feel safe. Women worry about where to sit or stand in public transportation for their safety (Franck and Paxson, 1989; Vera-Gray and Kelly, 2020). Social norms also trigger the safety concern of women's use of public transport. It is widely thought in many places that women walking on the street late at night or using public transport are inviting trouble. Negative comments are often made about women who board public transport wearing revealing clothing that accentuates their body, and they are often considered to deserve whatever happens to them (Lea et al., 2017). The gender-blind transportation planning (Kern, 2019) and the practices in everyday life further exacerbate women's safety problems in public transportation. The decreased frequency of public transport services in the evening (Buckingham, 2010; UN-Habitat, 2013; Altay-Baykan, 2015), the necessity of long walks before and after using public transport, and overcrowded vehicles (Mitra-Sarkar and Partheeban, 2011; UN-Habitat, 2013) all contribute to safety concerns regarding public transportation.

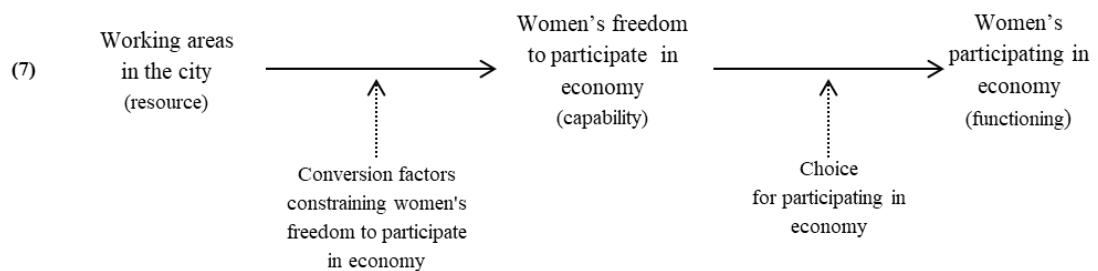


Figure 28: An Example on Women's Participation in the Economic Activities in the Context of the Capabilities Approach (Source: Author)

(7) **Women's participation in economic activities:** Women's participation in the paid and formal employment is quite crucial in the context of women's empowerment. An example of the conversion factors affecting

women's capabilities can be given through women's participation in the economy. Consider two women: the first one (A) is not working, while the second one (B) is working. The functioning achievements of those two women are different from each other. Woman A, who is not working, does not achieve the working functioning, whereas woman B does and obtains the functionings derived from working. Woman A may either choose not to work even if she has the freedom to do so, or she may lack the freedom to work due to personal, social, and environmental factors. The capabilities approach examines the factors that constrain woman A from attaining the working functioning. These examples vindicate Sen, who highlights that individuals are hampered in various atypical ways by the very structure of their society in which they live, and argue the importance of focusing on the capabilities of people (Nussbaum, 2001). If there is a reason beyond the women's free will and choice to participate in working life, the women's freedom to work, and thus their capability on the issue is restricted. The factors that constrain women's freedom to work may be personal, social or environmental. The most vulnerable group to labor market exclusion comprises women who are responsible for childcare duties and to a lesser extent, women who are caring for ill family members (Grabowska, 2021). Health problems, inadequate education (UN-Habitat, 2013; Tuncer, 2018; ILO, 2019), household responsibilities (UN-Habitat, 2013; ILO, 2019), productive and reproductive workload (Chant, 2006; Buckingham, 2010; Mackenzie, 2014), fear of harassment at work, religious concerns, and a small social circle are personal factors that constrain women from working. Additionally, many women show reluctance to work because they feel that the income they would earn would not cover the expenses they have made for that job. The societal patterns of relationship and behavior, traditions, customs, discriminatory practices, gender roles within the family and society, social hierarchies, and social norms have great influence on women's participation in economic activities. In many places around the world, the mindset that 'men should work and women should

stay at home' is widely acknowledged (Fraser, 1989; Franck and Paxson, 1989; Bondi, 1992; Healey, 2003; Fenster, 2005; Taylor, 2011; ILO, 2019; Jayachandran, 2021). It is also considered appropriate for women not to work after marriage or have children, but to stay at home and take care of their children (Cowan, 1983). The acceptance of domestic responsibilities as belonging to women (Franck and Paxson, 1989) hinders women's capability to participate in economy. The environmental factors such as insufficient job opportunities in the city (UN-Habitat, 2013), safety and security concerns while commuting and at work, and distance to the workplace (Preston and Üstündağ, 2005) affect women's capability to participate in economy. Also, it is very difficult for women with preschool children to join the workforce (Wekerle, 1980; Hannan, 2007). If there is no person (relatives, acquaintances or a babysitter) or institution (nursery or child care center) to which they can entrust their children, women they lack the capability to work. Although participation in working life is critical for the empowerment of women, some may not consciously want to work. The reason why women do not work even though they have the freedom to work may be directly related to their own personal choices. Not choosing to work can be considered as a choice that women make with their free will regarding their own lives.

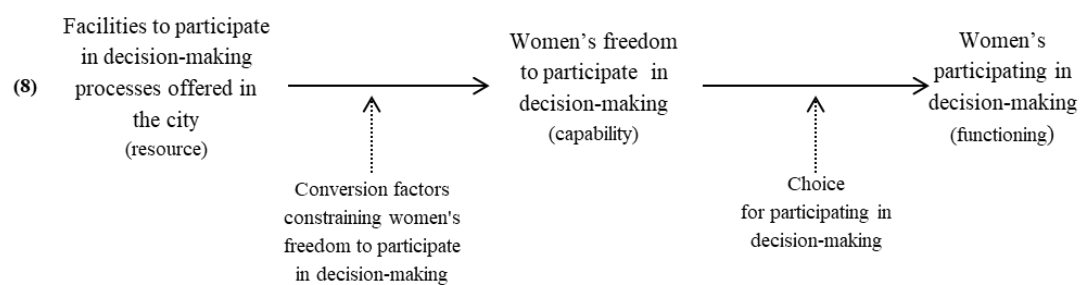


Figure 29: An Example on Women's Participation in the Decision-Making Processes in the Context of the Capabilities Approach (Source: Author)

- (8) **Women's participation in decision-making processes:** As essential aspects of democracy, women's active participation in decision-making

processes and their representation in public spaces, assemblies and the political arena are rather crucial. Within the context of participation in decision-making processes, citizens have the right to participate in non-governmental organizations, municipal council meetings, specialized commission meetings and other decision-making processes in order to convey individual demands and complaints to the authorities and to have a say in the decisions to be taken regarding their life. Ensuring democratic participation opportunities at the local level (i.e. facilities to participate in decision-making processes offered in the city) can be regarded as resource on the women's participation in decision-making in capabilities-based women's quality of urban life. However, women face struggles to convert this resource into freedom to participate in decision-making. Because of the personal, social and environmental conversion factors, women have typically been excluded from decision-making processes related to their communities, underrepresented in political structures, and encountered challenges in matters related to participation. The capabilities of women are influenced by their own personal factors, such as insufficient education and information (Altay-Baykan, 2015), intense working life, small social circle, childcare duties, household responsibilities, religious concerns, family prevention. Socially adopted norms have been one of the most significant reasons restricting women's freedom to participate in decision-making processes. The fact that women's opinions are not valued as much as men's (Altay-Baykan, 2015), that men are accepted as the main decision-makers, and that women's participation in decision-making processes is not welcomed, restricts their capabilities in this regard. The environmental factors such as insufficient effort to include women in the participation processes in the field of urban planning and design (Fenster, 2005; UN-Habitat, 2012; Altay-Baykan, 2015; Spain, 2016; Beebejaun, 2017), lack of associations, foundations, unions, chambers, professional organizations, and cooperatives in the city affect women's capability to participate in decision-making processes. Even if women's freedom to participate in decision-making processes is not restricted by conversion



factors, women may not want to participate as a personal choice, which means they cannot achieve functioning in this regard.

### **4.3. Conclusion**

Initially dominated by an economic growth-oriented perspective, the development discourse has gradually shifted towards a more comprehensive understanding that incorporates environmental and social dimensions. The critiques of the economic growth-centered approach, particularly following the 1960s, have paved the way for alternative paradigms such as sustainable development and human development. Followed by the sustainable development, the emergence of the human development approach marked a significant departure by positioning freedom, quality of life and equality of opportunity as the ultimate goals of development, with economic wealth as a means rather than an end. This shift represents a critical re-evaluation of development, placing human agency and capabilities at the center of the debate. Human development approach empowers individuals to expand their capabilities and utilize them effectively across economic, social, cultural, and political spheres.

The capabilities and functionings approach offers a valuable framework for evaluating the quality of life, particularly in urban contexts. By focusing on human capabilities, the approach emphasizes the importance of providing individuals with the freedom and opportunity to lead lives they have reason to value, rather than merely measuring wealth or material resources. The environment, as a fundamental dimension of life, plays a crucial role in shaping people's capabilities. Therefore, the capabilities and functionings approach should be integrated into urban planning studies. Although the application of the capabilities approach in urban planning is still emerging, it provides a promising framework for understanding and improving the concept of quality of urban life.

In traditional assessments of urban life, physical amenities and resources are often seen as objective measures of quality. However, from a capabilities perspective, the existence of a resource, such as a green space or recreational facility, does not inherently improve quality of life unless individuals have the freedom and opportunity to use it meaningfully. Moreover, factors such as physical ability, social

constraints, and environmental conditions all play significant roles in how resources translate into functionings.

In this chapter, the capabilities-based quality of urban life is conceptualized specifically through the perspective of women, one of the disadvantaged groups in urban areas. Women face a range of challenges that limit their ability to live lives they value in urban settings, affecting their quality of life in profound ways. The key areas that shape their capabilities and functionings include accessibility, safety, and participation. These dimensions are central to understanding how urban environments either support or constrain women's opportunities to achieve valued functionings.

The capabilities-based approach calls for a shift in how the quality of life in urban spaces for women can be conceptualized and measured. The capabilities-based approach to the quality of urban life for women emphasizes not only the availability of resources but also the actual opportunities women have to use those resources to achieve the functionings. It advocates for a more comprehensive understanding of urban environments, one that considers the unique challenges women face and the ways in which societal, personal, and environmental factors can either enable or constrain their freedoms. By incorporating this framework, urban planning and policy can better address the needs of women, ensuring that their urban experiences contribute to meaningful improvements in their quality of life.

## CHAPTER 5

### METHOD:

#### **MEASURING THE CAPABILITIES-BASED QUALITY OF URBAN LIFE OF WOMEN AT NEIGHBORHOOD SCALE IN THE CENTRAL DISTRICT OF AMASYA**

Based on the literature review, the concept of *Capabilities-Based Quality of Urban Life of Women* has been developed through the synthesis of three distinct subjects, each presenting theoretical and methodological challenges.

The measurement of quality of life is mainly shaped by the normative ethical theories based on the utilitarian philosophy, which aims to maximize the total utility experienced in society, particularly in economic models and welfare policies. After the 1990s, the rise of the concept of Human Development and the efforts of Amartya Sen have freed the theory and measurement of quality of life from the dominance of utilitarian philosophy. However, this development in the theory and measurement of quality of life has not been reflected in the theory and measurement of the quality of urban life.

Women, one of the largest groups in terms of population size among disadvantaged groups in the city, face significant challenges in urban public spaces. Approaching their quality of urban life through a framework shaped by utilitarian philosophy obscures the underlying issues and potential solutions. Accordingly, this chapter outlines the methodological framework for assessing the QoUL from a capabilities-based perspective for women living in the central district of Amasya.

This chapter begins with a discussion on site selection, detailing the criteria used to determine the scale of the study area, the neighborhoods that have urban center

characteristics according to EU method, and the classification of city sizes based on OECD and EC standards, by using ArcGIS Pro software. It further explains the identification of specific neighborhoods within the central district of Amasya (at the LAU-2 level) according to settlement typologies. Following this, the chapter describes the clustering process for urban neighborhoods based on Women's Human Development Index (WHDI) levels by using IBM SPSS software. A comprehensive sampling design section then covers the definition of both the population and target population, along with the methods used to determine sample size and sampling technique. Lastly, the chapter addresses data collection methods, distinguishing between objective secondary data collection and subjective primary data collection, which together contribute to a significant understanding of the urban experiences of women in the selected clusters.

### **5.1. Site Selection in the Context of the Capabilities-Based QoUL of Women**

As of 2015, gender equality is among the main concepts of the Sustainable Development Goals, which replaced the Millennium Development Goals, where gender equality is a leading development health goal. Becoming a part of the international conventions, Türkiye commits to the empowerment and advancement of women, the development of equality between genders, and the integration of a gender equality concept into main policies and programs. However, Türkiye has been quite underwhelming situation regarding gender equality.

The Gender Inequality Index (GII) which was first introduced in the UNDP Human Development Report in 2010 is used as a fundamental measurement method in terms of revealing the inequality in the distribution of achievements between women and men across countries (UNDP, 2010a). GII uses three dimensions: female reproductive health, female/male empowerment and female/male labour market. In the UNDP Human Development Index presented 2019 results, although Türkiye ranks 54<sup>th</sup> among 189 countries, Türkiye falls to 68<sup>th</sup> among 189 countries with an index value of 0.306 in the GII. According to the 2023/2024 Human Development Report, which presents 2022 results, Türkiye ranks 45<sup>th</sup> out of 193 countries in the Human Development Index; however, it ranks 63<sup>rd</sup> in the GII. The improvements in

human development in Türkiye have not occurred at the same pace as the reduction of gender inequality.

The Gender Development Index (GDI) which was first introduced in the UNDP Human Development Report in 2014 compares human development levels of the genders and reveals the gaps in gender inequalities. When the gender development perspective is included, the decline in human development achievement obtained by the majority of countries points to the problem of gender inequality. For Nussbaum (2011), some countries at the top of the HDI list, such as Japan, were surprised that they did not find themselves also at the top of the list in the GDI. According to the GDI measurement results, five different gender equality groups are defined in which the first group has the best performance in terms of gender equality. In the UNDP's GDI presenting 2019 results, Türkiye is classified in the 4<sup>th</sup> group for gender equality, with an index value of 0.924. According to the GDI groups, group 4 refers medium to low equality in human development achievements between women and men (UNDP, 2020).

Different from the GII and GDI produced by UNDP, World Economic Forum has also been documenting gender inequalities annually between countries with Global Gender Gap reports by indexing economic participation and opportunity, educational attainment, health and survival, and political empowerment data since 2006. According to the World Economic Forum - Global Gender Gap 2021 Report results, Türkiye ranks 136<sup>th</sup> among 156 countries. Same report shows that Türkiye ranked 105<sup>th</sup> among 115 countries in 2006 and 120<sup>th</sup> among 136 countries in 2013 (WEF, 2021). The increasingly worsening results reveal the need for Türkiye to take urgent action toward gender equality issues.

The concerning situation of Türkiye regarding gender equality, revealed through cross-national comparisons, continues intranationally as well. In 2019, the Economic Policy Research Foundation of Türkiye (TEPAV) published "Gender Equality Scorecard of Türkiye's 81 Provinces" in cooperation with the Union of Chambers and Commodity Exchanges (TOBB) and the Industrial Development Bank of Türkiye (TSKB). According to the results, 43 provinces in Türkiye fall below the

national average for gender equality, while 38 provinces exceed the average. The coastal provinces in the Marmara, Aegean, and Mediterranean regions generally perform better in gender equality compared to other regions, with some exceptions.

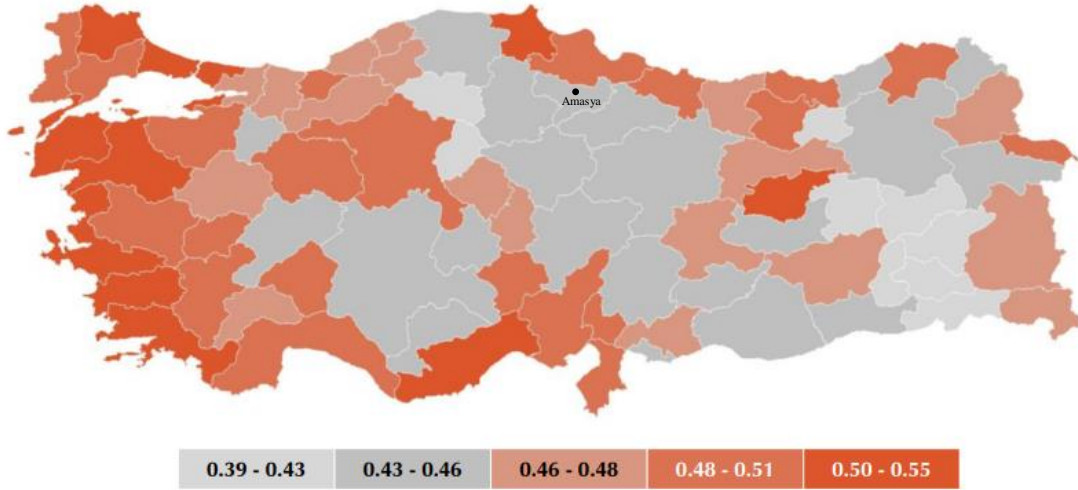


Figure 30: Gender Equality Index of 81 Provinces of Türkiye According to the Main Index Values (TEPAV, 2020)

Figure 30 presents that Amasya is among the provinces in Türkiye that scored below the national average on gender equality, according to the Gender Equality Scorecard results of 2019 (higher values show better performance in terms of gender equality) (TEPAV, 2020). The city's scores in all three sub-indexes (representation in politics and economy, participation in production, and educational attainment) are below the national average. In this thesis, Amasya was chosen as the province where the empirical study will be conducted. However, some issues need to be clarified in order to determine the exact location where the study will be conducted.

Early research has drawn attention to the importance of quality of urban life indicators varying according to the scale of the study area (e.g., from local level to the country level indicators). In a study conducted in mid-1970s, Wish (1976) revealed that most studies focusing on the measurement of the quality of urban life tend not to differentiate their research based on the geographic unit of analysis.

Nevertheless, the literature agrees that the indicators of quality of urban life studies should differ according to the scale of the study areas (Marans and Rodgers, 1975; Campbell et al., 1976; Wish, 1986; Pacione, 2003; Costanza, 2007; Tekeli, 2010a). In line with this emphasis on the importance of scale, McCrea et al. (2011a) define four different geographic scale categories for the measurement of the levels of satisfaction of people: housing, the neighborhood where people live, the community to which people relate, and the wider urban region in which people live.

Apart from the differentiation according to the level of territorial units, which refers also scale of the study area (NUTS or LAU), this study proposes that two other factors have an influence on the indicators of the quality of urban life: the size of city (small, medium-sized, metropolitan, large metropolitan), and the degree of urbanization of the area (for example urban center, urban cluster, and rural grid cells in the Settlement Model L1). The differentiation of both scale, size and urbanization level of the study area will also have an impact on the dimensions, indicators and methods of analysis of the gathered objective and subjective data.

According to the factors mentioned, the process of exact site selection in Amasya province included four stages. Firstly, it was determined whether the study would be conducted at the regional level covering the entire province of Amasya, at the sub-regional level covering its districts, at the district level by selecting a single district, or at the neighborhood level within the central district. Secondly, urban and rural areas in Amasya were classified at the selected scale, and rural areas were excluded from the scope of the study. Thirdly, after the scale and degree of urbanization of the study area were clearly defined, the size of the urban center in Amasya was determined. The fourth and last process was based on the determination of the urban center neighborhoods of the central district of Amasya according to the settlement typologies.

#### **5.1.1. The Determination of the Scale of the Study Area**

The territorial classifications for different scales, the size of the cities, and settlement typologies made by the European Union and OECD provide an important framework in this regard. The Nomenclature of Territorial Units for Statistics (NUTS) and the

Local Administrative Units (LAU) levels classify the different regional scales for European Union members and candidate countries, members of the European Free Trade Association (EFTA), and also 8 other European countries. Accordingly, NUTS-1, NUTS-2, and NUTS-3 levels correspond to the regions, sub-regions, and provinces, while LAU-1 and LAU-2 levels correspond to districts and municipalities respectively. For the determination of the statistical regions, the administrative boundaries of the countries are followed. In other words, the administrative areas that cover the whole territory of the countries are the basic components of all hierarchical levels and all statistical layers. However, NUTS classification of the territory can differ from the national administrative hierarchy. For example, in Türkiye, the administrative boundaries of the country were taken as a reference when determining NUTS and LAU levels. However, as shown in Figure 31, considering the regional hierarchy, there are two national administrative hierarchy of Türkiye, starting with the national border and ending with province level while there are three regional statistical classifications of Türkiye starting with the regional, following with sub-regional, and ending with provincial level.

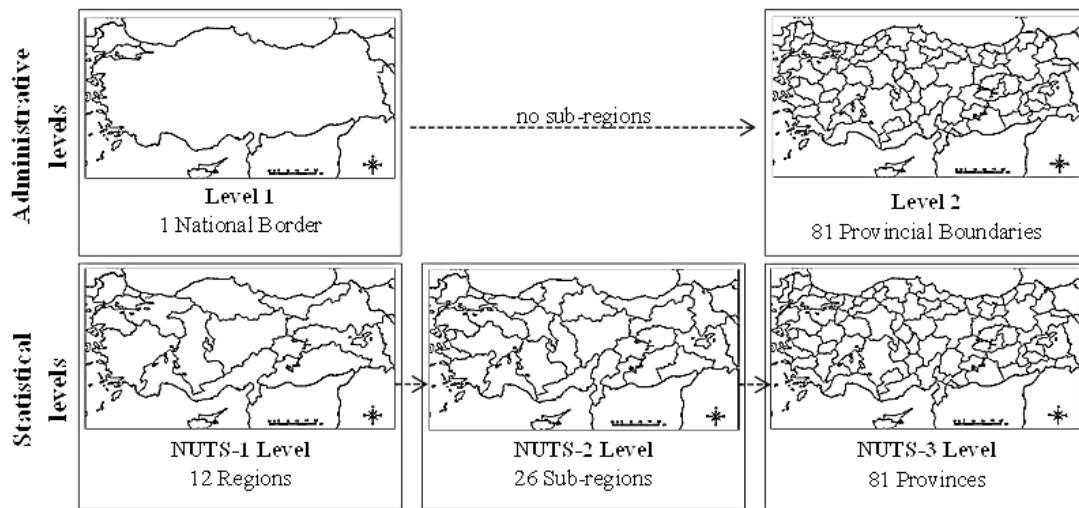


Figure 31: Statistical Levels Using ESPON NUTS Division 2010 at Levels 1, 2 and 3, and Türkiye's First Two Hierarchical Administrative Borders (Source: Author)



Using criteria that do not differ according to scale will not yield accurate and reliable results in the quality of urban life studies to be carried out at the regional, sub-regional, province, district, and neighborhood levels. When considering the objective and subjective dimensions of the concept of quality of urban life, it can be said that the emphasis on the objective aspect of the study based on the use of the secondary data will increase towards the regional level, and the opportunity to increase the emphasis on the subjective dimension and to produce primary data will strengthen towards the local level.

Considering the subject of the thesis, which focuses on measuring the quality of life of women by taking into account their capabilities and functionings in urban areas, this approach requires working at the closest level to the human scale. Thus, the selected scale for the study area will be the neighborhood scale, as it aligns with the requirements of the subject studied. This decision regarding the selection of the scale introduces another problem that needs to be addressed. This issue pertains to identifying which LAU-2 levels consist of urban areas and which consist of rural areas. As will be noted later in more detail, LAU-2 levels are defined based on administrative boundaries; however, these boundaries can produce misleading results when classifying areas as urban or rural. Therefore, in the next section, an attempt is made to integrate urban centers, rather than rural areas, using 1-square-kilometer grid cells that are independent of administrative boundaries, along with the LAU-2 levels of Amasya.

#### **5.1.2. The Determination of Urban Centers According to EU Method**

The criteria that determine rural and urban areas differ according to one country to another. Each country defines a settlement as urban or rural based on criteria established for that particular location. For countries, these criteria often include census data measured by using administrative boundaries. For example, a settlement with a minimum of 200 inhabitants in Denmark, with a minimum of 2,000 inhabitants in Argentina, with a minimum of 5,000 inhabitants in India, with a minimum of 50,000 inhabitants in Japan, and with a minimum of 100,000 inhabitants in China can be defined as an urban area (Dijkstra et al., 2020).

These differences show that the distribution of the country's population in terms of population size over the country's geography is an important factor affecting the population threshold value to be determined in the urban and rural area classification. For example, if a population threshold of 20,000 is universally accepted in the determination of urban areas, it will cause cities, as in most of Africa's cities whose urban population lives in small and intermediate urban centers spread over the continent to be classified as rural. Therefore, it would be more reasonable to set certain standards for geographies with similar characteristics regarding the spatial distribution of the country's population, than to set a global population threshold for urban and rural classification of settlements.

In the Turkish context, the Turkish Language Association defines urban as a settlement where most of the population is engaged in trade, industry, service, or administrative work, usually without agricultural activities. In contrast, rural refers to places in rural areas where few people live (Turkish Language Association, n.d.). In the same dictionary, rural areas refer to areas where production activities are based on agriculture, livestock breeding, and rural population lives and works (Turkish Language Association, n.d.). In rural areas, natural resources play a dominant role in shaping people's lives and economic activities. The impacts of economic, socio-cultural, and technological developments are slower to manifest in rural areas compared to urban areas.

The population of a settlement is the primary criterion distinguishing urban areas from rural areas. In the Turkish context, according to 'The Urban Threshold Research' conducted by the Ministry of Development and completed in 1982, the population of settlements with the lowest level of urban function in Türkiye was determined to be at least 20,000 inhabitants depending on the administrative boundaries (Cezik, 1982). In other words, settlements with a population of fewer than 20,000 people, based on administrative boundaries in Türkiye, are classified as rural areas, while those with a population exceeding 20,000 are classified as urban areas.

In recent decades, however, the determination of urban and rural areas has become quite complicated in Türkiye. There are two key legal regulations affecting the urban and rural distinction nationally: (1) the Municipality Law numbered 5393 (Date of Enactment:3/7/2005, published in the Official Gazette:13/7/2005), (2) with the amendment law numbered 6447 made at law numbered 6360 on the Establishment of Metropolitan Municipalities and Twenty-Seven Districts in Fourteen Provinces and Making of Amendments to Certain Laws and Decree Laws (Date of enactment: 12/11/2012, published in the Official Gazette: 6/12/2012; Date of enactment of amendment: 14/3/2013, published amendment in the Official Gazette: 22/3/2013).

When defining urban and rural areas, the Turkish Statistical Institute considers neighborhoods in provincial and district centers as urban areas, while towns and villages are classified as rural areas. Along with these laws, changes in Türkiye's administrative structure and boundaries have affected the distinction between urban and rural areas. After the law numbered 6360, which was amended by the law numbered 6447, the same classification continued to be used by the Turkish Statistical Institute for determining urban and rural areas. This issue caused Türkiye's urbanization rate to rise from 77 percent in 2012 to 91 percent in 2013, leading to an artificial 14 percent increase in the urban population within a one-year period. Due to changes in the boundaries of settlements, criteria based on population and administrative boundaries for determining urban and rural areas yield unrealistic results.

Apart from population data, urban areas can also be defined according to functional and historical. Dijkstra and Poelman (2012) state that city status in the United Kingdom has historically been granted by the Monarch since the 16<sup>th</sup> century. According to the explanations in this paper, St. Davids in Wales was classified as a city, despite having fewer than 2,000 inhabitants. Similarly, Armagh in Northern Ireland was granted city status in 1994 by Queen Elizabeth II, despite the settlement being classified as a rural town based on its population. The fact that the determination of urban and rural areas varies by country makes it difficult to draw comparisons between them.

The first of the three major problems identified regarding the separation of urban and rural areas in Türkiye is the lack of a clear, statistically valid, and comparable set of indicators for determining urban and rural areas, which results in the use of only population and population density data. As mentioned, the second major problem is that the population data for rural areas in the 30 metropolitan cities of Türkiye have not been recorded since 2012. The third major problem is that calculating population density data used in the determination of urban-rural areas based on administrative boundaries can yield misleading results. The changes in administrative boundaries complicate data collection for metropolitan and non-metropolitan provinces and hinder statistical comparisons in many respects.

The classification by the Turkish Statistical Institute (TurkStat) based on population data within administrative boundaries is insufficient to understand the urban-rural structure in Türkiye. Consequently, the institution is working to address this issue. In order to make statistical comparisons between settlements, TurkStat produces population density data using one-square-kilometer resolution grids through the areal interpolation method. This approach is not dependent on administrative boundaries and supports the development of a national urban-rural area definition aligned with EU standards. The province and district boundary maps, the Address-Based Population Registration System (ADNKS, in Turkish) census results, and the CORINE Land Cover/Use classification are used to produce 1-kilometer resolution grid cells showing population density. The 2021 population density data provided by 1-kilometer resolution grid cells became accessible via <https://basic.atlas.gov.tr> in 2022. However, these national data, which are not suitable for research purposes, have a relatively high margin of error.

TurkStat is currently working on the Spatial Address Registration System (MAKS, in Turkish) project undertaken by the Ministry of Interior to achieve precise and accurate results in determining urban-rural areas. This initiative aims to generate 1-kilometer resolution population density grids based on accurate population information linked to address points and geographic coordinates within settlements. The population density grids produced using this method will facilitate rural-urban classification according to the triple and seventh-class details specified in EU

standards for rural-urban definitions. However, the Spatial Address Registration System (MAKS) project, which is essential for advancing this work, is anticipated to be completed by 2025 (TurkStat, 2022a).

On the one hand, a clear spatial distinction cannot be made between the urban and rural areas due to the inadequacy of national standardized and statistically valid urban-rural definitions, the lack of recording the population data based on administrative boundaries at the same standard for each city, and the lack of national grid-based population and population density data. On the other hand, for the site selection, this thesis requires distinguishing urban areas from the rural areas in Amasya because the focus of the thesis on the quality of urban life of women by taking into their capabilities and functionings.

At the stage of identifying rural and urban areas, the Degree of Urbanization (DEGURBA) approach, jointly proposed by the European Commission Directorate-General for Regional and Urban Policy, the Directorate-General Joint Research Center, and the United Nations Human Settlements Program, was followed. This approach provides an opportunity to distinguish between rural and urban areas and to eliminate areas that are not urban centers within the focus of the thesis.

The Global Human Settlement Layer (GHSL) project globally produces spatial information to identify human presence on the planet (Florczyk et al., 2019). GHSL Data Package 2023 contains GHS Built-up surface grid (GHS-BUILT-S), GHS Population grid (GHS-POP), GHS Settlement Model grid (GHS-SMOD), and GHS Degree of Urbanization Classification (GHS-DUC) products. The GHS-BUILT-S is derived from both Sentinel-2 and Landsat; GHS-POP is derived from GPWv4.11; GHS-SMOD is derived from GHS-POP and GHS-BUILT-S; GHS-DUC is derived from GHS-POP and GHS-SMOD (Pesaresi et al., 2024).

GHS-POP, a spatial raster product, shows the distribution and density of the population, i.e., the number of people per grid cell. GHS-POP was developed by Freire et al. (2016) as a new multi-temporal global population grid, using continuous grids of global built-up and vector-based population estimates, following the population disaggregation model. The GHS-POP dataset is produced using the

CIESIN/SEDAC Gridded Population of the World (GPW) data, which is disaggregated from census or administrative units to grid cells by utilizing the distribution and density of built-up areas.

GHS-SMOD, one of the GHSL products derived from GHS-BUILT and GHS-POP, classifies the settlement typologies based on the ‘Degree of Urbanization’ method described by Eurostat. Since GHS-SMOD R2023A is the detailed version of the GHS-SMOD R2022A, the latter is treated as an obsolete dataset. The former, which is a more detailed classification of settlements, is composed of two levels: (1) the first level (L1) produced by aggregating the second level and showing the Degree of Urbanization adopted by Eurostat, and (2) the second level (L2) providing eight different levels of settlement typologies, as shown in Table 6.

Table 6: Grid Codes Showing GHS Settlement Model L1 and L2 Grid Level (Technical) Terms Prepared by Author According to the Pesaresi et al.’s GHSL Data Package 2023 Report (2024)

Class	Level 2 - Grid Level Term / <i>Technical Term</i>	Class	Level 1 - Grid Level Term / <i>Technical Term</i>
30	Urban Center / <i>Dense Large Cluster</i>	3	Urban Center / <i>High Density Cluster (HDC)</i>
23	Dense Urban Cluster / <i>Dense Medium-Sized Cluster</i>	2	Urban Cluster / <i>Moderate Density Cluster (MDC)</i>
22	Semi-Dense Urban Cluster / <i>Semi-Dense Medium-Sized Cluster</i>		
21	Suburban Grid Cell / <i>Semi-Dense Grid Cell near a Medium or Large Cluster</i>		
13	Rural Cluster / <i>Semi-Dense Small Cluster</i>	1	Rural Grid Cells / <i>Low Density Grid Cell (LDC)</i>
12	Low Density Rural Grid Cell / <i>Low Density Rural Grid Cell</i>		
11	Very Low Density Grid Cell / <i>Very Low Density Grid Cell</i>		
10	Water Grid Cell <i>Water</i>		

There are three basic criteria that shape the GHSL Settlement Model (SMOD): (1) local grid population density, (2) 4-connectivity rule to form grid cell clusters, and (3) cluster population size (Pesaresi et al., 2024). According to the model, local grid population density refers to the number of people per 1 km<sup>2</sup> grid cell while the 4-

connectivity rule refers to the contiguous population grid cells that need to be grouped to define the urban centers and urban clusters.

1	2	3
4		5
6	7	8

Figure 32: Contiguous Population Grid Cells Required to Define the Urban Centers and Urban Clusters for GHSL SMOD Classification (European Union, n.d.)

According to the Statistics Explained section on Eurostat’s webpage, two different types of contiguity are described (European Union, n.d.). The first one, contiguous including diagonals, is used for defining the urban clusters, i.e., moderate density clusters. As shown in the Figure 32, upon being above the density threshold, the central square grid cell is grouped with all other eight grid cells that exceed the density threshold. In this way, the grid cells from 1 and up to 8 can be grouped in the same cluster.

The second one, contiguous excluding diagonals, is used for defining the urban centers, i.e., high-density clusters. Different from the first, when above the density threshold, the central square is grouped with the cells touching directly the edge line of the central square that also exceed the density threshold. In other words, to define the contiguous excluding diagonals, the cells numbered 1, 3, 6, and 8 are excluded, while the cells numbered 2, 4, 5, and 7 are included in the same cluster (European Union, n.d.). Accordingly, for the first hierarchical level (L1), the GHSL Settlement Model denominates the 1 square kilometer grid cells as ‘Urban Center’, ‘Urban Cluster’ and ‘Rural Grid Cells’. The criteria denominating the spatial entities for L1 are shown in Table 7.

Table 7: The Criteria for the Definition of the Spatial Entities at the First Hierarchical Level (L1) (Tabulated According to Pesaresi et al., 2024)

<b>Class 3: Urban Center (<i>High Density Cluster-HDC</i>):</b>
-Minimum local grid population density (people/km <sup>2</sup> ): 1,500 -Minimum cluster population size (people): 50,000 -Minimum local share built-up area (km <sup>2</sup> ): average in HDC* -Maximum area for gap filling (km <sup>2</sup> ): 15 -Topological constraints: 4-connectivity clusters
<b>Class 2: Urban Cluster (<i>Moderate Density Cluster-MDC</i>):</b>
-Minimum local grid population density (people/km <sup>2</sup> ): 300 -Minimum cluster population size (people): 5,000 -Minimum local share of built-up area (km <sup>2</sup> ): none -Topological constraints: 8-connectivity clusters
<b>Class 1: Rural Grid Cells (<i>Low Density Grid Cell-LDC</i>):</b>
-Minimum local grid population density (people/km <sup>2</sup> ): none -Minimum cluster population size (people): none -Minimum local share built-up area (km <sup>2</sup> ): none -Topological constraints: none

\*HDC: High density cluster (Urban Center)

Accordingly, for the second hierarchical level (L2), the GHSL Settlement Model classifies the 1 square kilometer grid cells into seven levels excluding water surfaces. The first level is 'Urban Center'. The second level is 'Urban Cluster' which consists of 'Dense Urban Cluster' and 'Semi-dense Urban Cluster'. The 'Suburban or peri-urban grid cells' which classifies all other cells is also a part of the 'Urban Cluster' level. The third level is 'Rural grid cells' which consists of the 'Rural Cluster'. All the other cells except 'Rural Cluster' are grouped as 'Low density grid cells' and 'Very low density grid cells' considering their cell population. The criteria denominating the spatial entities for L2 are shown in Table 8.

As can be understood from the classifications, the first level of GHS-SMOD is obtained by aggregating the second level of GHS-SMOD. One of the L2 codes 30 is aggregated into the L1 class typology 3; the L2 codes 23, 22, and 21 are aggregated into L1 class typology 2; the L2 codes 13, 12, 11, and 10 are aggregated into L1 class typology 1. As shown in Table 9, the first level (L1) makes a less detailed classification and reduces urban cluster and rural cluster classifications to a single level. This level more clearly shows the urbanized areas, the areas that have not yet completed the urbanization phase, and the areas with rural characteristics. Therefore,



in this study, the L2 typology was included as it provides the opportunity for a more detailed interpretation.

Table 8: The Criteria for the Definition of the Spatial Entities at the Second Hierarchical Level (L2) (Tabulated According to Pesaresi et al., 2024)

<b>Class 30: Urban Center (<i>Dense Large Cluster</i>):</b>
-Minimum local grid population density (people/km <sup>2</sup> ): 1,500 -Minimum cluster population size (people): 50,000 -Minimum local share of built-up area (km <sup>2</sup> ): Average in HDC* -Maximum area for gap filling (km <sup>2</sup> ): 15 -Topological constraints: 4-connectivity clusters with at least 1 cell P <sub>dens</sub>
<b>Class 23: Dense Urban Cluster (<i>Dense Medium-Sized Cluster</i>):</b>
-Minimum local grid population density (people/km <sup>2</sup> ): 1,500 -Minimum cluster population size (people): 5,000 -Minimum local share of built-up area (km <sup>2</sup> ): Average in HDC* -Topological constraints: 4-connectivity clusters
<b>Class 22: Semi-Dense Urban Cluster (<i>Semi-Dense Medium-Sized Cluster</i>):</b>
-Minimum local grid population density (people/km <sup>2</sup> ): 900 -Minimum cluster population size (people): 2,500 -Minimum local share of built-up area (km <sup>2</sup> ): none -Topological constraints: 4-connectivity clusters; farther than 2km from 23 or 30
<b>Class 21: Suburban Grid Cell (<i>Semi-Dense Grid Cell near a Medium or Large Cluster</i>):</b>
-Minimum local grid population density (people/km <sup>2</sup> ): 300 -Minimum cluster population size (people): 5,000 -Minimum local share of built-up area (km <sup>2</sup> ): none -Topological constraints: 8-connectivity clusters
<b>Class 13: Rural Cluster (<i>Semi-Dense Small Cluster</i>):</b>
-Minimum local grid population density (people/km <sup>2</sup> ): 300 -Minimum cluster population size (people): 500 -Minimum local share of built-up area (km <sup>2</sup> ): none -Topological constraints: 8-connectivity clusters
<b>Class 12: Low Density Rural Grid Cell (<i>Low Density Rural Grid Cell</i>):</b>
-Minimum local grid population density (people/km <sup>2</sup> ): 50 -Minimum cluster population size (people): none -Minimum local share of built-up area (km <sup>2</sup> ): none -Topological constraints: none
<b>Class 11: Very Low Density Rural Grid Cell (<i>Very Low Density Rural Grid Cell</i>):</b>
-Minimum local grid population density (people/km <sup>2</sup> ): none -Minimum cluster population size (people): none -Minimum local share of built-up area (km <sup>2</sup> ): none -Topological constraints: On land (Land>=50%, Built-up>0%, Pop>0)
<b>Class 10: Water Grid Cell (<i>Water</i>):</b>
-Minimum local grid population density (people/km <sup>2</sup> ): none -Minimum cluster population size (people): none -Minimum local share of built-up area (km <sup>2</sup> ): none -Topological constraints: Not on land (Water>=50%, Built-up=0%, Pop=0)

\*HDC: High Density Cluster (Urban Center)

Table 9: Aggregation of GHS-SMOD L2 Class Typology to GHS-SMOD L1 Class Typology (Tabulated According to Pesaresi et al., 2024)

L2 class typology		L1 class typology
30	→	3
23 – 22 – 21	→	2
13 – 12 – 11 – 10	→	1

To determine the urban and rural areas, the dataset, which indicates the GHSL Settlement Model of the epoch 2025 with global extent released R2023A in Mollweide projection at 1 km resolution in GeoTiff format, was used. The obtained data were processed using ArcGIS Pro software. The provincial and district administrative boundaries of Türkiye were obtained as Esri shapefiles from the General Directorate of Mapping of the Ministry of National Defense. The shapefile including cells covering the European land territory were obtained from the European Commission's Geographic Information System (GISCO). 1 km<sup>2</sup> polygon grid data and the GHS-SMOD raster data was clipped with Türkiye's borders using ArcGIS Pro software for further processing.

The Figure 33 shows the urban and rural classifications of Türkiye in seven different hierarchical levels. Accordingly, out of 81 provinces, 89 percent of central provincial districts, which include both metropolitan and non-metropolitan cities, have urban centers. The central provincial districts without an urban center are Ardahan, Artvin, Bayburt, Bitlis, Gümüşhane, Sinop, Tunceli, Kırıkkale and Yozgat. In other words, those 9 provinces mentioned do not have urban centers coded as level 30 in GHS-SMOD in their central provincial districts. Amasya is one of the cities that have an urban center in their central provincial districts. The Figure 34 show GHS-SMOD L2 classification for the Province of Amasya in 1 km spatial resolution based on the GHSL Products Released in 2023.

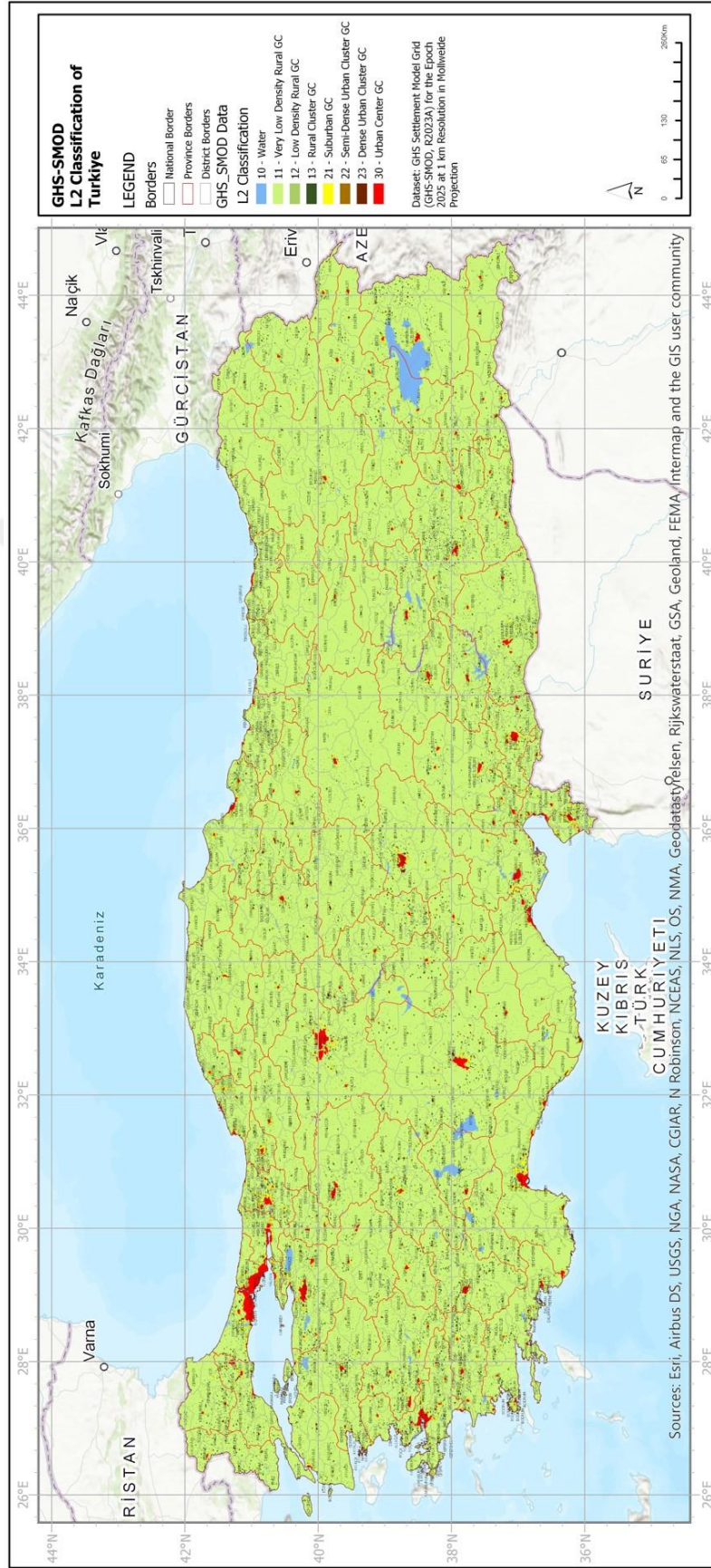


Figure 33: GHS-SMOD L2 Classification of Türkiye in 1 km Spatial Resolution (Prepared by the Author Based on the GHSL Products Released in 2023)

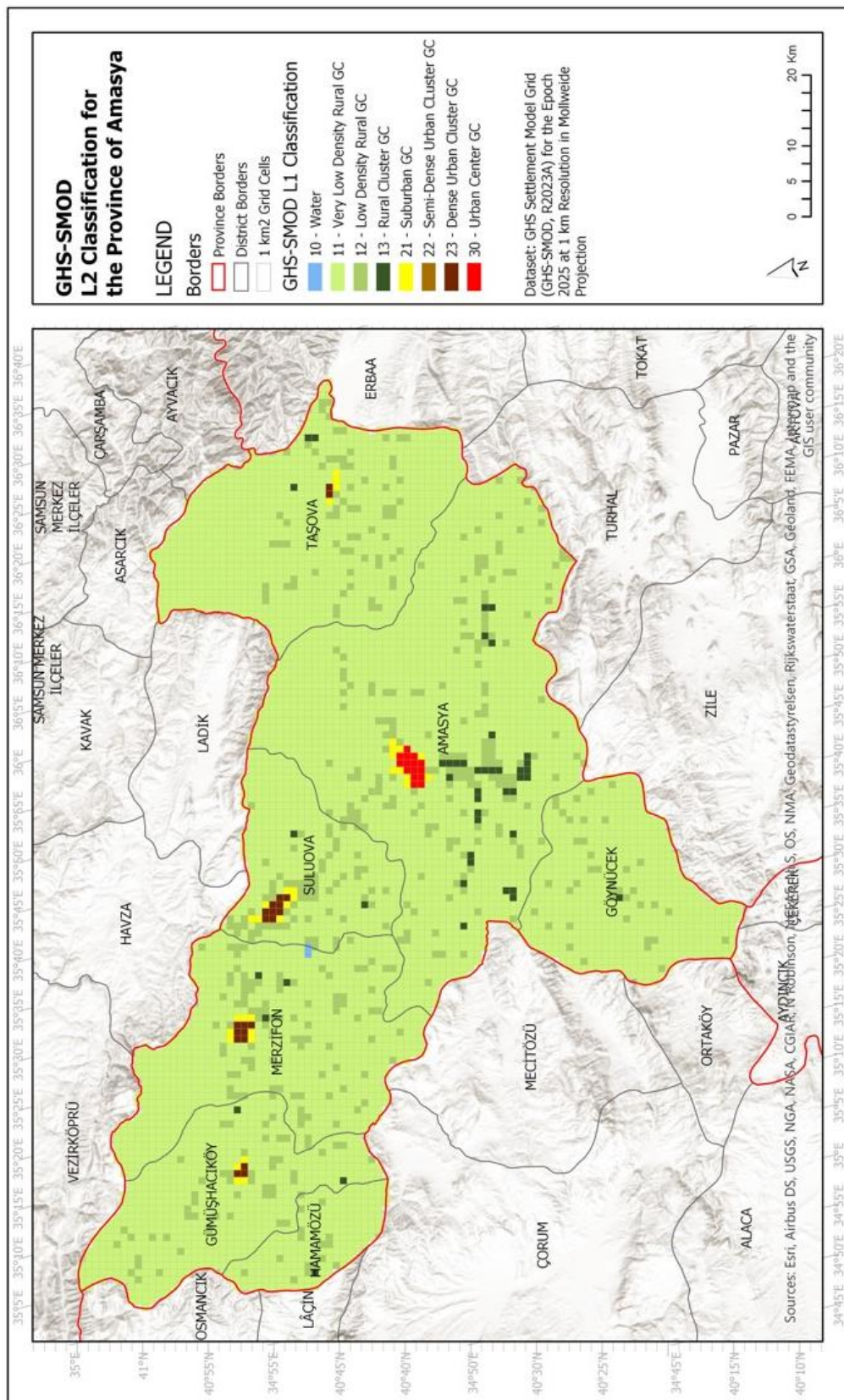


Figure 34: GHS-SMOD L2 Classification for the Province of Amasya in 1 km Spatial Resolution (Prepared by the Author Based on the GHSL Products Released in 2023)



Two of the seven district centers, Hamamözü and Göynücek, exhibit predominantly rural characteristics and are thus classified as rural clusters. Additionally, villages and other areas within Amasya's provincial borders, where rural attributes are more pronounced, are represented by rural grid cells. With the exception of the central district, none of the districts in Amasya demonstrate the defining features of urban centers. The district centers of Merzifon, Suluova, Taşova, and Gümüşhacıköy are primarily characterized by dense urban clusters and suburban grid cells. Given the focus of this thesis, the empirical analysis specifically concentrated on areas in Amasya identified and coded as urban centers.

### **5.1.3. The Determination of City Size According to OECD-EC Method**

Apart from the scale of the study area and the degree of urbanization, the size of the cities also plays a vital role in the analysis of the quality of urban life. However, determination of the size of the cities is not easy because there is no single and generally accepted method for classifying the size of the cities. In terms of the size of urban areas in Türkiye, the settlements with a population of more than 750,000 people are considered as metropolitan areas according to the administrative boundaries, and no size definition is made for settlements between 20,000 and 750,000 people for the Turkish cities.

The differing definitions of city sizes across countries pose challenges for comparing cities on an international scale. To address these challenges and facilitate cross-country comparability, in 2011, the Organization for Economic Cooperation and Development (OECD) and the European Commission (EC) introduced a new city definition, which is based on the presence of an urban center. According to the OECD's and EC's definition, European cities are classified into six categories based on the population size of their urban centers.

In this framework, OECD and EC define small cities (S) between 50,000 and 100,000 inhabitants in urban center, medium cities (M) between 100,000 and 250,000 inhabitants, large cities (L) between 250,000 and 500,000 inhabitants, extra-large cities (XL) between 500,000 and 1,000,000 inhabitants, extra-extra-large cities (XXL) between 1,000,000 and 5,000,000 inhabitants and global city of more than

5,000,000 inhabitants (Dijkstra and Poelman, 2012). This approach classifies cities based on the degree of population concentration within their urban centers, providing a standardized method for city size analysis. This standardized methodology enhances the consistency of city definitions across countries, allowing for more accurate and meaningful comparisons at the international level.

According to 2023 census results, the total population of the central district of Amasya based on administrative boundaries is 116,103 (TurkStat, 2024). The urban center (coded as 30 in the GHS-SMOD R2023A dataset) population of the central district of Amasya is 97,375 people. Based on the OECD and EC classification, the central district of Amasya qualifies as a small city and is a candidate to transition into a medium-sized city.

#### **5.1.4. Determination of the Urban Center Neighborhoods in the Central District of Amasya at LAU-2 Level Based on Settlement Typologies**

In this section, the neighborhoods in the central district of Amasya have been identified according to their corresponding GHS-SMOD L2 classification. There are three key considerations regarding neighborhood borders that overlap with settlement typologies. First, while the neighborhoods in Turkish cities are defined according to administrative boundaries, the settlement typologies for L1 and L2 are developed based on 1-square-kilometer grid cells. Second, Amasya is situated on a valley plain surrounded by high mountains. Due to this location, characterized by rugged topography and natural thresholds, population densities can drop sharply even within the urban core. This is particularly evident in calculations based on 1-square-kilometer grid cells. Third, population densities in urban areas generally decrease toward the urban peripheries. The calculations using 1-square-kilometer grid cells reveal variations in population density toward the urban periphery more clearly than calculations based on administrative boundaries. The differences caused by boundary-based calculations and the abundance of natural thresholds in the area result in some neighborhoods lacking a homogeneous settlement typology. Şeyhçui, Kirazlıdere, Dere and Fethiye neighborhoods, which include urban center grid cells (coded as 30), suburban grid cells (coded as 21), and low density rural grid cells

(coded as 12), can be given as examples of differentiated settlement typologies. The settlement typologies of these neighborhoods were determined based on their dominant typology.

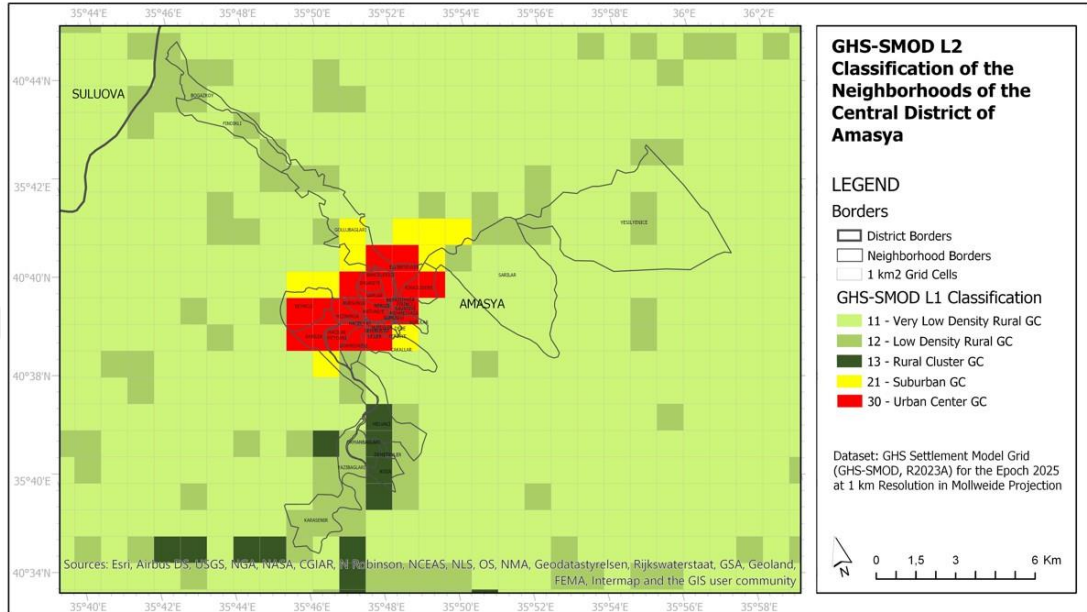


Figure 35: The Neighborhoods of the Central District of Amasya Overlapped with the GHS-SMOD L2 Classifications (Source: Author)

There are a total of 37 neighborhoods in the central district of Amasya at the LAU-2 level. The data shown in Figure 35 presents the classification of these neighborhoods based on the GHS-SMOD L2 typology, which categorizes them into different grid levels or settlement typologies. The urban center category (coded as 30) includes the most densely populated and urbanized neighborhoods: Akbilek, Bahçeleriçi, Beyazıtpaşa, Dere, Ellibeşevler, Fethiye, Gökmedrese, Gümüşlü, Hacı İlyas, Hacılar Meydanı, Hatuniye, Hızırpaşa, İhsaniye, Kirazlıdere, Kurşunlu, Mehmet Paşa, Nergiz, Pirinççi, Savadiye, Sofular, Şamlar, Şehirüstü, Şeyhcuı, Üçler, and Yüzevler. No neighborhoods fall under the dense urban cluster (coded as 23) or semi-dense urban cluster (coded as 22) categories. The rural cluster category (coded as 13) includes the neighborhoods of Helvacı, Demetevler, and Koza. The neighborhoods

such as Karasenir, Orman Baglari, Yazı Baglari, Bogazkoy, and Yesil Yenice are classified as low-density rural grid cells (coded as 12), while Sarilar and Findikli are categorized as very low-density grid cells (coded as 11).

Table 10: Neighborhoods in the Central District of Amasya at the LAU-2 Level Classified Based on GHS SMOD L2 Classification

Code	Grid Level Term / Technical Term	Neighborhoods of Amasya Central Municipality at the LAU-2 level
30	Urban Center / Large Cluster	Akbilek, Bahçelerici, Beyazıtpaşa, Dere, Ellibesevler, Fethiye, Gökmedrese, Gumuslu, Hacı İlyas, Hacılar Meydanı, Hatuniye, Hızırpaşa, İhsaniye, Kırazlıdere, Kursunlu, Mehmet Paşa, Nergiz, Pirincci, Savadiye, Sofular, Samlar, Şehirustu, Seyhici, Uçler, Yuzevler
23	Dense Urban Cluster / Dense Medium-Sized Cluster	-
22	Semi-Dense Urban Cluster / Semi-Dense Medium Sized Cluster	-
21	Suburban Grid Cell / Semi-Dense Grid Cell	Cakallar, Gollu Baglari,
13	Rural Cluster / Small Cluster	Helvacı, Demetevler, Koza
12	Low Density Rural Grid Cell / Low Density Rural Grid Cell	Karasenir, Orman Baglari, Yazı Baglari, Bogazkoy, Yesil Yenice
11	Very Low Density Grid Cell / Very Low Density Grid Cell	Sarilar Findikli,
10	Water	-

Accordingly, as shown in Table 10, out of the 37 neighborhoods in the central district of Amasya, 25 neighborhoods are classified as urban center grid cells, 3 neighborhoods as urban cluster grid cells, and 9 neighborhoods as rural grid cells. Since this study focuses on urban quality of life, neighborhoods that are not classified as urban centers were excluded from the analysis. These neighborhoods can be seen on the map in Figure 36.

In conclusion, this study argues that the criteria for assessing the quality of urban life cannot be considered independently of the scale of the area, degree of urbanization of the settlement, and the size of the settlement. Defining quality of urban life criteria without clarifying these three aspects may lead to deficient results. Based on the site selection analysis, the study was conducted at the LAU-2 level in Amasya's central district. According to the OECD and EC classification, the urban center of Amasya's central district is categorized as a small city and is a candidate for a medium-sized



city. It was determined that 25 out of 37 neighborhoods at the LAU-2 level exhibit urban center settlement typology.

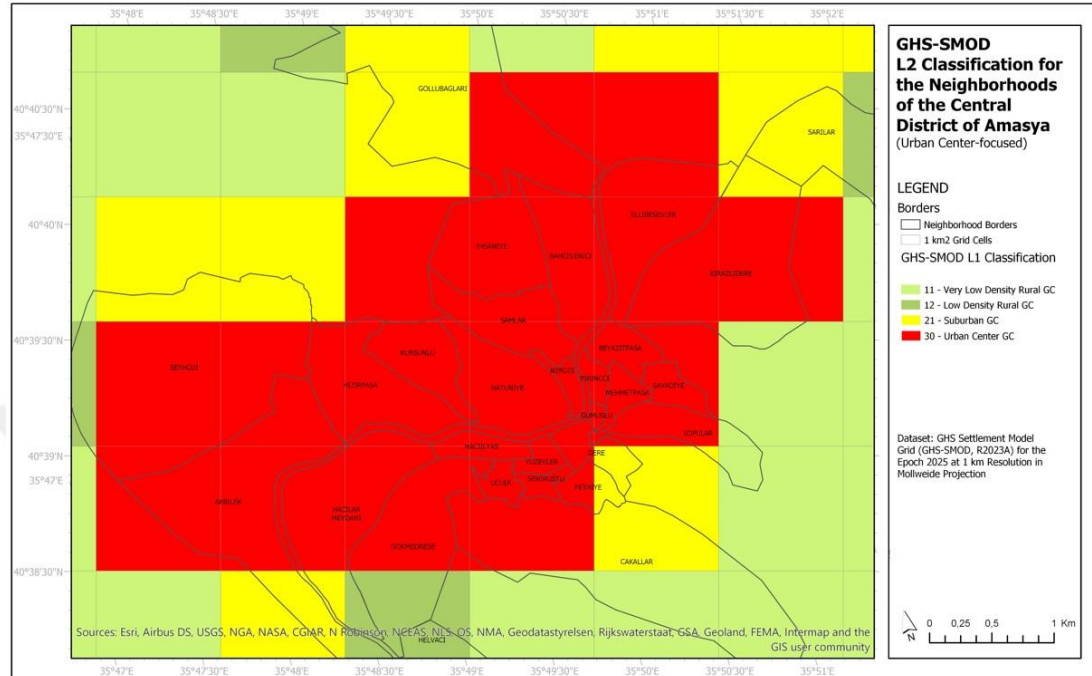


Figure 36: The Urban Center Neighborhoods of the Central District of Amasya Based on GHS-SMOD L2 Classifications (Source: Author)

It is important to note that some of these 25 urban center neighborhoods have a historical urban setting that still bears traces of the past. The indicator set created by Battis-Schinker et al. (2021) for assessing the quality of urban life in historical small and medium-sized towns (SMT) highlights that analyzing the quality of life in neighborhoods with historical and cultural significance should be differentiated from analyses of neighborhoods without these characteristics. Therefore, since the study of quality of urban life in historic neighborhoods requires a distinct approach beyond the scope and aims of this study, it was deemed appropriate to exclude neighborhoods with historical characteristics from the analysis. As a result, the historic urban neighborhoods of Hatuniye, Nergiz, Samlar, Gumuslu, and Sofular were excluded from the study. In this study, the methodology for evaluating the

quality of urban life has been shaped considering the factors highlighted in the site selection section.

## **5.2. Clustering Urban Center Neighborhoods Based on Women's Human Development**

This section aims to identify clusters within selected neighborhoods in Amasya's central district to explore differences in the capability-based quality of urban life among urban women. The clustering was carried out based on the women's Human Development Index (HDI) level at the neighborhood scale. Although the measurement method used to determine Women's HDI is based on human development calculations, the selection of indicators requires revision. The results of the human development calculation reveal the ranking of the measured elements relative to each other but do not provide insights into clusters with intragroup homogeneity and intergroup heterogeneity. In this context, the neighborhoods were clustered using SPSS Cluster Analysis based on the UNDP's Human Development dimensions.

### **5.2.1. Calculating Women's Human Development**

Since 1990 when Pakistani economist Mahbub ul Haq created it, human development has been measured across nations through three main dimensions: (a) a long and healthy life, (b) knowledge, and (c) a decent standard of living. The level of human development in a settlement is determined by calculating the geometric mean of three different dimension indices after normalizing them (UNDP, 2010a).

$$(I_{\text{Life}}^{1/3} \cdot I_{\text{Education}}^{1/3} \cdot I_{\text{Income}}^{1/3})$$

While the indicators used in the long and healthy life dimension remained the same, the indicators used in the knowledge and standard of living dimensions were changed after 2010 (UNDP, 2015). The long and healthy life dimension has been measured by the "life expectancy at birth" indicator. Following the 2010 modification, the knowledge dimension began to be measured by two indicators: the geometric

average of (a) mean years of schooling and (b) expected years of schooling (replacing the arithmetic average of a two-thirds weighting of the adult literacy rate, and a one-third weighting of the combined primary, secondary, and tertiary school enrollment rates) (Saisana, 2014). The last dimension, a decent standard of living, corresponds to income and has been measured by GNI per capita indicator (replacing GDP per capita) (UNDP, 2010a; UNDP, 2015).

One might question why the Human Development Index (HDI) is used instead of the Gender Inequality Index (GII) for women's human development index levels at neighborhood scale in the central district of Amasya. This choice is based on several important reasons. Three out of the five indicators of GII, namely (a) the maternal mortality ratio and (b) adolescent fertility rate for the health dimension, and (c) female and male labor force participation rates for labor market dimension, are difficult to obtain even at the provincial level in Türkiye. In general, gender-differentiated data of this type are collected at the national, regional, and provincial scales in Türkiye, often in irregular time intervals, making it challenging to apply the GII effectively at subscales. Moreover, one of the indicators in the empowerment dimension, (d) the female and male shares of parliamentary seats, is not meaningful at the neighborhood scale. Another indicator in empowerment dimension, (e) female and male population with at least secondary education, is the only indicator that can be found as a secondary data at neighborhood level. Considering all five indicators, the use of surrogate variables, determined based on data availability at the neighborhood scale, would fundamentally alter the dimension being measured.

Although the HDI is chosen instead of the GII, certain modifications are necessary to adapt the HDI calculations to the neighborhood level. There are several reasons why the indicators used in the HDI cannot be applied in the same way at the neighborhood level, necessitating adjustments in the measurement method. Firstly, the data for the four indicators used to measure human development for global comparisons at the national level are not retained at subnational scales in the Turkish context. For instance, the life expectancy at birth indicator is recorded by TurkStat only at the provincial level and in irregularly spaced time series, making it impossible to utilize this indicator at the district level or smaller subscales. Similarly,

TurkStat keeps data for mean years of schooling at the national and provincial levels and for expected years of schooling at the national level. However, data on adult literacy rate and school enrollment rate are available at provincial, district, and sometimes neighborhood levels. Consequently, some studies attempt to derive inferential calculations for the mean years of schooling and expected years of schooling at the provincial level using population and education data produced by TurkStat. Furthermore, as previously mentioned, a decent standard of living is currently measured by the GNI per capita indicator instead of GDP per capita. However, GNI per capita data is not statistically retained at the provincial or district levels in Türkiye; it is only available at the national level and used in international reports. Furthermore, because GDP per capita data is not retained for districts and is instead kept as unequally spaced time series for the province level, it presents a challenge when used in statistical computations. Since GDP typically measures the total economic activity of a region, it would not be particularly meaningful to track this data at the neighborhood level. Therefore, it would make more sense to measure the "decent standard of living" dimension at the neighborhood scale using proxy indicators, such as median household income, housing market values or socio-economic indicators, rather than GDP per capita. These proxies would better reflect local economic conditions and be more feasible to obtain at smaller scales.

Wong (2011), who studies on measuring human development in Baltimore neighborhoods and interpreting simulation of alternative measures, uses surrogate indicators at the neighborhood level apart from the life expectancy at birth indicator. Accordingly, he selects surrogate indicators such as the *High School Completion Rate* for the "knowledge" dimension, which represents the percentage of students who have received a high school diploma or equivalency certificate, and the *Housing Occupancy Rate* for "the decent standard of living" dimension, which represents the percentage of residential properties that are not vacant or abandoned. In the light of this information, by taking the Human Development Index dimensions and the data kept according to gender differentiation at neighborhood scale in Türkiye as a reference, it is decided to determine the surrogate indicators to measure women's human development level at the neighborhood scale. Table 11 shows the surrogate

indicators used for calculating women's human development level at neighborhood scale.

Table 11: The Surrogate Indicators Used for Calculating Women's Human Development Level at Neighborhood Scale

HDI Dimensions	Dimension Index	WHDI indicators at neighborhood scale	Relation*
Long and Healthy Life	Health Index	(1) The ratio of married women (+15 age)	(+) effect
Knowledge	Education Index	(2) Women literacy rate (+6 age)	(+) effect
		(3) Women's mean years of schooling (+6 age)	(+) effect
A Decent Standard of Living	Income Index	(4) Average price per square meter in housing	(+) effect
		(5) Women's dependency ratio	(-) effect

\* The relation column indicates the effect of the indicators on women's human development level.

Similar to Wong's study (2011), the theory-driven indicators had to be revised as data-driven indicators due to the limited availability of data at the neighborhood scale. Firstly, as noted, the life expectancy at birth indicator, which is used to measure the long and healthy life dimension, was replaced by a surrogate indicator. For the health dimension index, the ratio of married women indicator, which is statistically recorded for all Turkish neighborhoods by TurkStat for women aged 15 and above, was used as a substitute. Although Kulkarni and Doke (2015) found that the infant mortality rate and crude death rate could serve as good proxy indicators for life expectancy at birth, data for these indicators are also not statistically available at the neighborhood level in Türkiye.

#### (1<sup>st</sup> indicator)

$$\text{The ratio of married women (\%)} = \frac{\text{The total number of married women in the neighborhood}}{\text{The total number of women in the neighborhood over the age of 15}} \times 100$$

Marriage is recognized as one of the significant non-biological factors that contribute to increased life expectancy. Marital status has been shown to influence mortality, longevity, and health outcomes (Tatangelo et al., 2017). Verbrugge (1979) highlights that unmarried individuals have higher mortality rates compared to their married counterparts. Dupre et al. (2009) found that married individuals in the United States

tend to live longer. Similarly, Lawrance et al. (2019) also assert that married individuals are healthier and have greater longevity compared to those who are never married, divorced, or widowed. Based on these findings, the ratio of married women to the total number of women aged 15 and above in the neighborhood was selected as a surrogate indicator to represent the dimension of a long and healthy life at the neighborhood level. It is acknowledged that marriage before the age of 18 constitutes a violation of human rights for both women and men. However, since statistical data in Türkiye is recorded for marital status starting from the age of 15, the ratio of married women indicator was calculated for women aged 15 and above.

**(2<sup>nd</sup> indicator)**

$$\text{Women literacy rate (\%)} = \frac{\text{The total number of literate women in the neighborhood}}{\text{The total number of women in the neighborhood over the age of 6}} \times 100$$

Secondly, as stated, to measure the education index, the mean years of schooling and expected years of schooling indicators replaced adult literacy rate and school enrollment rate following the 2010 modifications of HDI measurement. Due to limited data availability at the neighborhood scale, the women literacy rate and women mean years of schooling were selected as surrogate indicators. The women literacy rate for those over the age of 6 at the neighborhood scale, provided by TurkStat as secondary data, was used.

**(3<sup>rd</sup> indicator)**

$$\text{Women's mean years of schooling (years)} = \sum_l HS_l \times YS_l$$

where

$HS_l$  Proportion of the women population for which the level of education  $l$  is the highest level attained

$YS_l$  Official duration of the level of education  $l$

Since the mean years of schooling data is not directly kept by TurkStat, inferential calculations were made using the available datasets. The women's mean years of

schooling after the age of 6 is calculated using the distribution of the female population across completed formal education levels, ranging from primary education to doctoral degrees. This calculation incorporates the official duration of each level in the Turkish national education system and corresponding time series data. According to the Turkish national education system, a person completes 8 years of education if s/he finishes primary education, 12 years for secondary education, an average of 16 years for undergraduate education, an average of 18 years for master's education, and an average of 22 years for doctoral education (Ministry of National Education of Türkiye, 2021). To formulate the equation for women's mean years of schooling data, the UNESCO Institute for Statistics Report on the UIS Methodology for Estimation of Mean Years of Schooling (UNESCO, 2013) was used.

To calculate the women's mean years of schooling for each neighborhood, the process involves multiplying the proportion of the women population at each educational level (denoted as  $l$ ) by the official duration of that education level ( $l$ ). After this multiplication, the results for each level are summed to obtain the total mean years of schooling.

Thirdly, in the Human Development Report, while a decent standard of living is associated with income, there is a lack of data on people's income levels. This necessitates the use of surrogate variables to measure the "decent standard of living" dimension. Thus, to assess this third index, the average price per square meter of housing and the women's dependency ratio were used. The average price per square meter of housing (4<sup>th</sup> indicator) is a key indicator of people's ability to afford the cost of living in a neighborhood. Additionally, this variable provides insights into the physical quality of the living environment (Lora & Powell, 2011). The neighborhoods with higher average prices per square meter likely have better physical conditions and infrastructure. The dependency ratio, on the other hand, indicates that both children under 15 years of age and individuals aged 65 and above are economically dependent (United Nations, 2021). A high dependency ratio also suggests a decline in per capita income and an increase in household poverty levels. While gender-specific calculations of the dependency ratio are often overlooked, it is a crucial variable in gender-sensitive statistics. When the dependency ratio is gender-

sensitized, the women's dependency ratio specifically reflects the average number of economically dependent female individuals in a given population. This ratio is calculated by summing the number of (a) girls under 15 years of age and (b) senior women aged 65 years and older, dividing this total by the total number of economically active females and males in the workforce (people aged 15-64), and multiplying the result by 100.

$$\text{Dependency ratio (\%)} = \text{Women's dependency ratio (\%)} + \text{Men's dependency ratio (\%)}$$

or

$$\text{Dependency ratio (\%)} = \frac{\text{The sum of the female population aged 0 – 14 and 65 and older}}{\text{The number of female and male population 15 – 64 years old}} \times 100$$

**(5<sup>th</sup> indicator)**

$$\text{Women's dependency ratio (\%)} = \frac{\text{The sum of 0 – 14 and + 65 years old female population}}{\text{The number of female and male population 15 – 64 years old}} \times 100$$

The women's dependency ratio highlights the potential economic dependency burden of the female population on the entire economically active population in a given geographic area. Since a higher women's dependency ratio indicates limited economic well-being and increased deprivation among women, this indicator is considered appropriate as a surrogate measure for assessing Women's HDI levels.

Before calculating women's human development level and cluster analysis, there is one important point concerning the relation column shown in Table 11. When calculating an index value, all indicators should influence the result in the same direction to ensure meaningful aggregation. If the indicators do not align directionally, their values are required to be transformed to achieve uniformity in interpretation.

The impact of the first four indicators on women's human development level is positive, while the impact of the fifth indicator (women's dependency ratio) is negative. Since an increase in all indicators except the women's dependency ratio



positively affects the result, it is necessary to revise the women's dependency ratio so that all indicators influence the result consistently in the same direction. However, inverting the 'women's dependency ratio' is not a meaningful approach and may lead to incorrect results. Therefore, since the women's dependency ratio could not be adjusted to positively correlate with the outcome, the other four indicators were transformed to have a negative correlation with the result. Since the revised indicators negatively impact the women's human development level, the resulting scores are calculated by subtracting them from 1.

Accordingly, the first indicator, the ratio of married women, has been revised to (1') the ratio of single, divorced, or widowed women to the total female population aged 15 and over. The second indicator, women's literacy rate, is revised to (2') the illiteracy rate of women aged 6 and above. The third indicator, women's mean years of schooling, is adjusted to (3') the extent to which the mean years of schooling fall short of the total maximum education duration of 22 years. The fourth indicator, average housing price per square meter, is revised to (4') the extent to which the neighborhood's price is below the maximum average price per square meter. After the revisions, all indicators influence the index value in the same direction. The revised formulas for the indicators used in the WHDI calculation can be found in the *Appendix F*.

The most recent data for 2023, used to calculate the indicators according to the previously mentioned formulas, were obtained from the Turkish Statistical Institute (TurkStat) at the neighborhood level. These data include population size by gender, age groups by gender, educational attainment by gender, and marital status by gender. The data on average price per square meter in housing was obtained from Endeksa, which provides real estate data for Türkiye as of May 2024.

Using the revised formulas (1', 2', 3', 4'), and the formula numbered 5, the subindices were calculated for 20 neighborhoods. Since the subindices have different units of measurement, they were normalized using the minimum and maximum values to transform the indicators into indices ranging from 0 to 1. The normalization formula for the sub-indices follows the HDI approach (UNDP, 2010a):

$$Dimension\ index = \frac{actual\ value - minimum\ value}{maximum\ value - minimum\ value}$$

For education index, after the normalization formula was applied to each of the two subindices (2' and 3'), a geometric mean of the resulting indices was calculated, and finally the normalization formula was reapplied to the geometric mean of the indices. The same process was applied for the income index. For income index, after the normalization formula was applied to each of the two subindices (4' and 5'), a geometric mean of the resulting indices was calculated, and finally the normalization formula was reapplied to the geometric mean of the indices. Since it consists of a single indicator (1'), there is no need to calculate the geometric mean for the health index. Therefore, only the normalization formula was applied for the health index. By following the HDI method *ad verbum*, the geometric mean of the health index, education index, and income index was calculated. However, since the inverted indicators negatively impact women's human development, the result scores were subtracted from 1 to adjust for this effect. This subtraction was applied to all twenty neighborhoods. In this way, the women's human development level by neighborhoods was found as follows:

Table 12: Women's HDI Results for the Urban Neighborhoods of the Central District of Amasya

Women's HDI	Neighborhoods
0,233	SAVADIYE
0,311	FETHIYE
0,383	UCLER
0,427	GOKMEDRESE
0,436	YUZEVLER
0,517	KURSUNLU
0,517	BEYAZITPASA
0,561	SEHIRUSTU
0,571	MEHMET PASA
0,612	DERE
0,655	IHSANIYE
0,662	HACILYAS
0,819	KIRAZLIDERE
0,839	SEYHCUI
0,863	AKBILEK
0,892	HIZIRPASA
0,961	BAHCELERICI
0,963	ELLIBESEVLER
0,979	PIRINCCI
0,987	HACILARMEYDANI

As can be seen from the Table 12, the urban neighborhood with the lowest level of women's human development was found to be Savadiye, and the neighborhood with the highest level was found to be Hacılar Meydanı. The women's human development levels for other neighborhoods were ranked between these two lowest and highest extremes.

The result obtained through the geometric mean of the three indices, as per the HDI method, only reveals the relative positions and rankings of the measured elements. While the normalized index scores for the dimensions provide insights, the HDI method is insufficient for determining how many distinct groups, with maximum intragroup similarity and intergroup differences, the urban neighborhoods can be classified into. Therefore, at this stage, the study needs additional analysis for the classification of the urban neighborhoods.

#### **5.2.2. Cluster Analysis for Classifying Neighborhoods by Women's HDI**

Classification of similar objects into groups has always played an essential role in various disciplines (e.g., biology for classifying species; medicine for classifying diseases; chemistry for classifying compounds; astronomy for classifying stars; sociology for classifying people's preferences; marketing for classifying market segments; history for classifying archaeological findings; and geography inter alia for clustering regions) (Kaufman and Rousseeuw, 2005).

The cluster analysis is one of the multivariate statistical analysis techniques that allow reorganizing these units into relatively homogeneous groups by starting with the data sets containing information about a sample of units (Aldenderfer and Blashfield, 1984). Kaufman and Rousseeuw (2005) defined cluster analysis as '*the art of finding groups in data*'. According to Everitt et al., cluster analysis explores data to determine if it can be divided into clusters of objects that are similar within groups and distinct from those in other groups.

Kaufman and Rousseeuw (2005) identified two primary types of clustering algorithms: partitioning methods and hierarchical methods. Partitioning methods are suitable when the number of clusters,  $k$ , is predetermined, allowing researchers to

classify objects into a fixed number of groups (Kaufman and Rousseeuw, 2005). In contrast, hierarchical methods are used when the number of clusters is unknown, constructing a hierarchy to reveal potential groupings without prior assumptions about the number of clusters in the data set (Kaufman and Rousseeuw, 2005). Çokluk et al. (2021) argue that hierarchical clustering methods are particularly suitable for smaller samples, specifically when the sample size is below 250. Additionally, they emphasize that these methods are appropriate when the number of groups in the data set is unknown (Anderberg, 1973, as cited in Çokluk et al., 2021). Based on this reasoning, hierarchical clustering methods were used in this study.

Hierarchical clustering methods can be categorized into two approaches: agglomerative and divisive (Kaufman and Rousseeuw, 2005). Agglomerative hierarchical clustering is based on merging the two most similar clusters at each step, starting with a clustering in which each object creates its own cluster  $n$  in the first step until all objects are joined into a single cluster (Hennig and Meila, 2016; Everitt et al., 2011).

Divisive hierarchical clustering, on the contrary, is based on splitting up one of the existing clusters at each step, starting with all objects in a single cluster until all objects disjoined into  $n$  clusters (Hennig and Meila, 2016). These two hierarchical techniques construct their hierarchy in opposite directions: agglomerative clustering builds the hierarchy bottom-up by merging individual objects or clusters, while divisive clustering works top-down by splitting larger clusters into smaller ones (Kaufman & Rousseeuw, 2005).

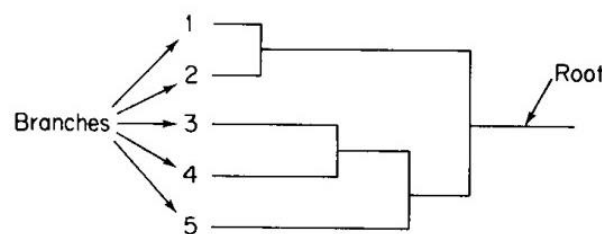


Figure 37: Anderberg's Tree for Hierarchical Clustering (Anderberg, 1973)

Anderberg (1973) illustrates the hierarchical clustering method with a tree shape, as shown in Figure 37, and states that moving down the tree from the branches toward the root depicts increasing aggregation of the entities into clusters while moving up the tree from the root to the branches depicts the divisive hierarchical methods. Similarly, as shown in Figure 38, Kaufman and Rousseeuw (2005) construct an evolutionary tree in the same manner to show the distinction between agglomerative and divisive techniques. This classification is represented by a two-dimensional diagram known as a *dendrogram* in the hierarchical cluster analysis (Everitt et al., 2011).

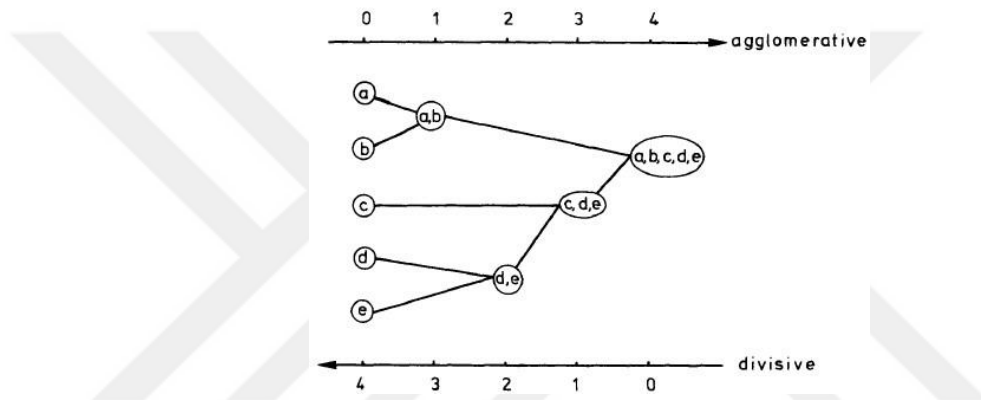


Figure 38: Kaufman and Rousseeuw's Evolutionary Tree Showing Two Distinct Hierarchical Clustering Techniques (Kaufman and Rousseeuw, 2005)

To combine the units with each other for clustering, different clustering methods are used. There are three methods which are suitable for clustering data units in hierarchical clustering: (1) linkage methods, (2) centroid methods, and (3) error sum of squares or variance methods (Anderberg, 1973). The linkage method consists of 3 different methods: (a) group average method, (b) nearest neighbor method (or single linkage method), and (c) furthest neighbor method (or complete linkage method) (Kaufman and Rousseeuw, 2005). All the three methods use a proximity matrix as input (Everitt et al., 2011), and they use different inter-cluster distances illustrated by Kaufman and Rousseeuw (2005) graphically in Figure 39.

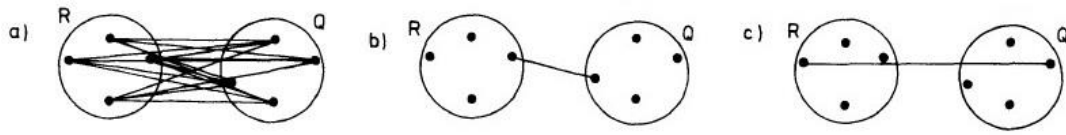


Figure 39: Representation of the Linkage Methods (Kaufman and Rousseeuw, 2005)

The centroid method, also known as the unweighted pair-group method, on the other hand, uses a data matrix instead of a proximity matrix and merges clusters with the most similar mean vectors (Everitt et al., 2011). The error sum of squares or variance methods, also known as Ward's method, is the fusion of two clusters based on the size of an error sum-of-squares criterion; this minimizes the increase in the total within-cluster error sum of squares (Everitt et al., 2011).

The result of clustering analysis made with linkage methods is quite open to the effect of extreme values in the data sets (Çokluk et al., 2021). Also, complete and average linkage techniques are *'equally unsuccessful in cluster recovery with or without intermediate points and whatever number of clusters is specified from two to five'* (Everitt et al., 2011). Although the centroid method is less affected by outliers than the linkage method, the centroid method is criticized because it often produces complex results (Çokluk et al., 2021). Ward's method is defined as a quite versatile technique for cluster analysis (Anderberg, 1973), and is aimed to construct clusters that have intragroup homogeneity and intergroup heterogeneity (Çokluk et al., 2021).

In this study, by using IBM SPSS 20.0 Software, agglomerative hierarchical clustering technique will be applied using Ward's method and squared Euclidean distance to cluster urban neighborhoods with maximum intragroup homogeneity and intergroup heterogeneity according to the normalized scale data of Women's HDI scores. According to the results, as shown in Figure 40, two distinct clusters of urban neighborhoods emerged to be compatible with Women's HDI scores.

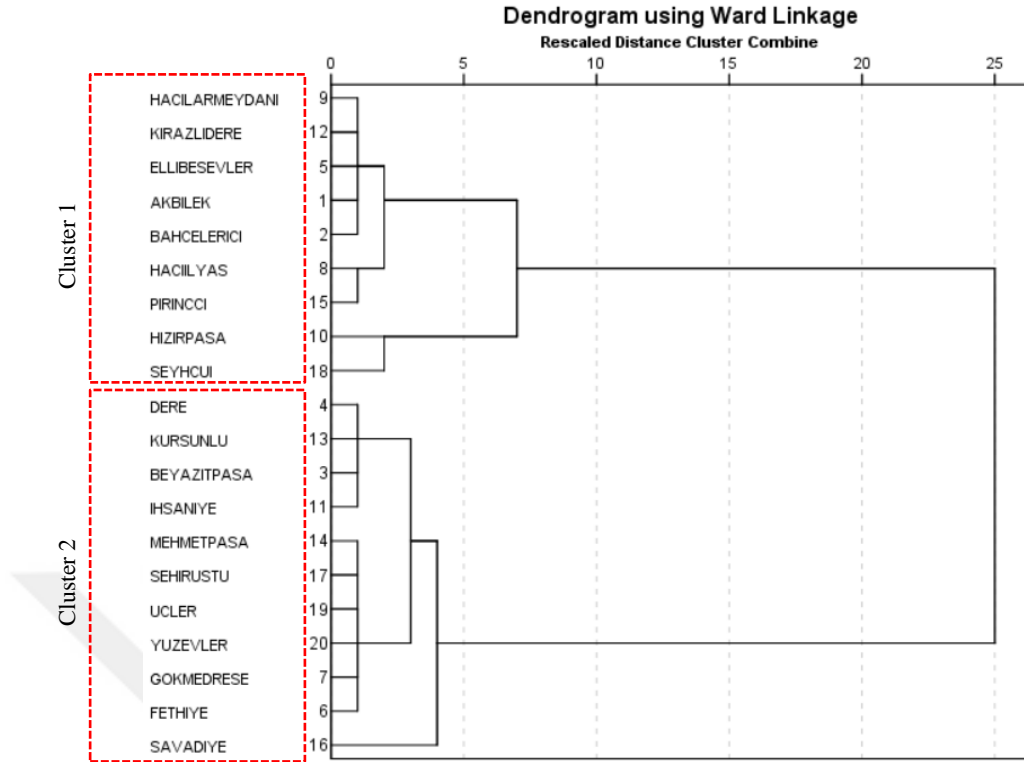


Figure 40: Dendrogram Showing Agglomerative Hierarchical Clustering of Urban Neighborhoods of the Central District of Amasya According to the Women's HDI

While the first cluster, consisting of 9 urban neighborhoods, Pirinççi, Hacı İlyas, Kirazlıdere, Hızırpaşa, Ellibeşevler, Akbilek, Şeyhcui, Bahçeleriçi, and Hacılar Meydanı, represents areas with a high level of women's human development, the second cluster, consisting of 11 urban neighborhoods, Savadiye, Fethiye, Üçler, Dere, Gökmedrese, Beyazıtpaşa, İhsaniye, Yüzevler, Kurşunlu, Mehmet Paşa, and Şehirüstü, corresponds to areas with a low level of women's human development.

As shown in Table 13 and Figure 41, the two distinct groups identified through the cluster analysis align with expectations when considering the observable physical and spatial characteristics of the neighborhoods. In the central district of Amasya, the neighborhoods are situated along the riverside, within the valley plain, and on the slopes of high-altitude mountainous terrain. The vast majority of urban neighborhoods characterized by a low level of women's human development are situated on the sloped areas of the region.

Table 13: Two Inter-Heterogeneous Clusters which are Emerged When Merging Women's HDI Results with Cluster Analysis Results

Women's HDI	Cluster with low WHDI										Cluster with high WHDI									
	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods	Neighborhoods
0,233	SAVADIYE																			
0,311	FETHIYE																			
0,383	UCLER																			
0,427	GOKMEDRESE																			
0,436	YUZEVLER																			
0,517	KURSUNLU																			
0,517	BEYAZITPASA																			
0,561	SEHIRUSTU																			
0,571	MEHMETPASA																			
0,612	DERE																			
0,655	IHSANIYE																			
0,662	HACILYAS																			
0,819	KIRAZLIDERE																			
0,839	SEYHCUI																			
0,863	AKBILEK																			
0,892	HIZIRPASA																			
0,961	BAHCELERICI																			
0,963	ELLIBESEVLER																			
0,979	PIRINCCI																			
0,987	HACILARMEYDANI																			

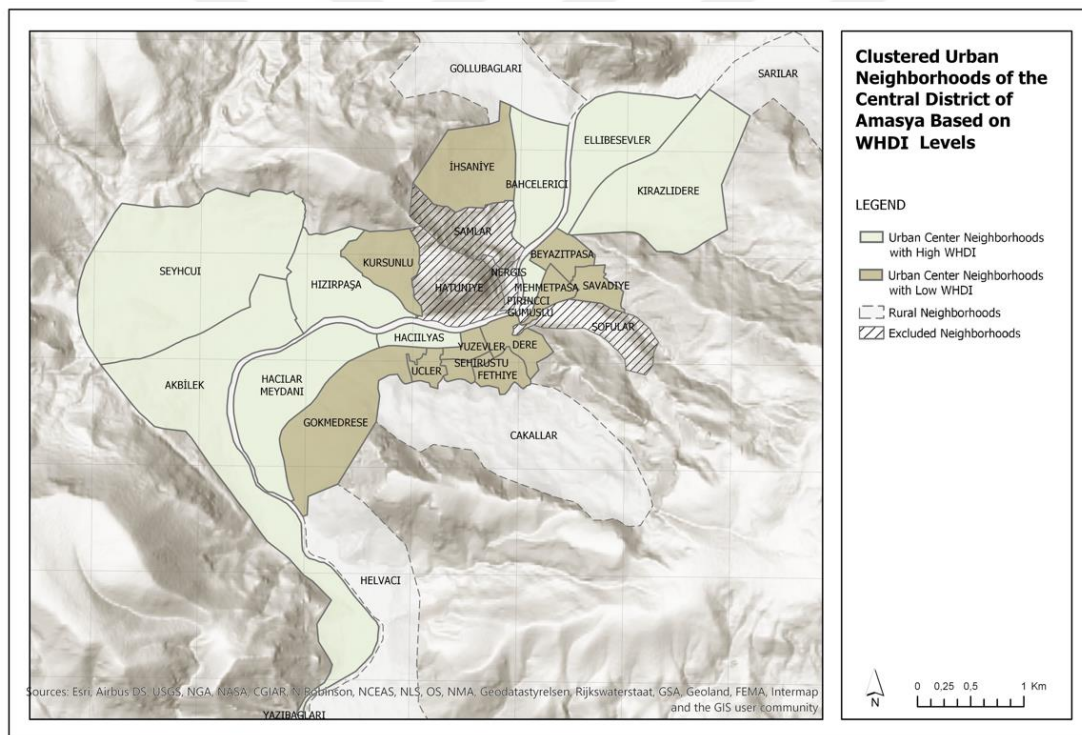


Figure 41: Spatial Representation of Clustered Urban Neighborhoods by Low and High Levels of Women's Human Development (Source: Author)

The urban neighborhoods with a low level of women's human development feature narrow, irregular streets and consist predominantly of closely packed, one- to three-



story buildings. In terms of their physical condition, the structures in these neighborhoods are often poorly constructed and considerably aged, highlighting the substandard living environment in these areas. Visuals of the neighborhoods in the low WHDI cluster are presented in *Appendix K*. On the other hand, although variations may exist at the sub-neighborhood level, urban neighborhoods with a high level of women's human development predominantly comprise four- to six-story apartment blocks developed within the last 25 years. These structures generally adhere to contemporary building and construction standards and are situated on valley plains along riversides. Visuals of the neighborhoods in the high WHDI cluster are presented in *Appendix J*.



Figure 42: The Angle of View in the Following Two Photographs

Figure 42, which serves as a visual guide to better comprehend the locations of the urban neighborhoods, presents the angle of view of the camera in the following two photographs as seen from Cakallar Hill and Amasya Castle.





Figure 43: Certain Urban Neighborhoods of the Central District of Amasya as Seen from Cakallar Hill (Source: Author)



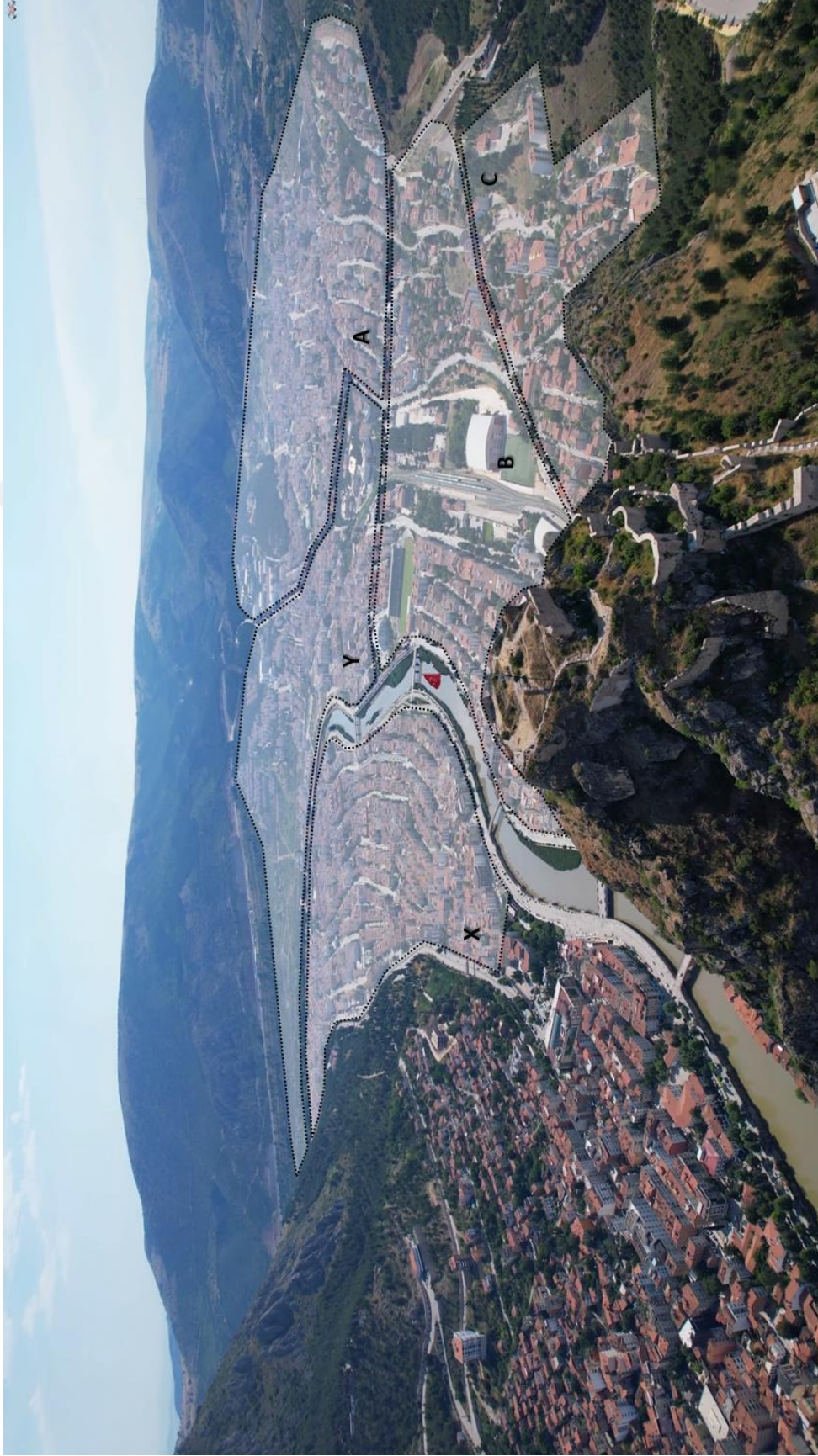


Figure 44: Certain Urban Neighborhoods of the Central District of Amasya Castle (Source: Author)

Figure 43 presents 22 out of 25 urban neighborhoods in the central district of Amasya. The letters correspond to the following neighborhoods: A: Şeyhcui, B: Hızırpaşa, C: Kurşunlu, D: Hatuniye, E: Nergiz, F: Şamlar, G: İhsaniye, H: Bahceleriçi, I: Ellibeşevler, J: Kirazlıdere, K: Beyazıtpaşa, L: Savadiye, M: Mehmet Paşa, N: Pirinççi, O: Gümüşlü, P: Dere, R: Fethiye, S: Şehirüstü, T: Yüzevler, U: Hacı İlyas, V: Üçler, W: Gökmedrese. Figure 44 presents following neighborhoods: A: Şeyhcui, B: Hızırpaşa, C: Kurşunlu, X: Hacılar Meydanı, Y: Akbilek.

### 5.3. Sampling Design

This section outlines the sampling design used to collect primary data for the study. To capture subjective evaluations regarding the quality of urban life, a questionnaire was administered to women aged between 18 and 65 residing in the 20 selected urban neighborhoods in the central district of Amasya. The sampling process includes determining the population, target population, sample size, and sampling technique. The details of the sampling design can be found in the following sections.

#### 5.3.1. Population and Target Population

According to 2023 census results, the total population of the central district of Amasya (37 neighborhoods) is 116,103; 58,810 of whom were women, and the rest were men (TurkStat, 2024).

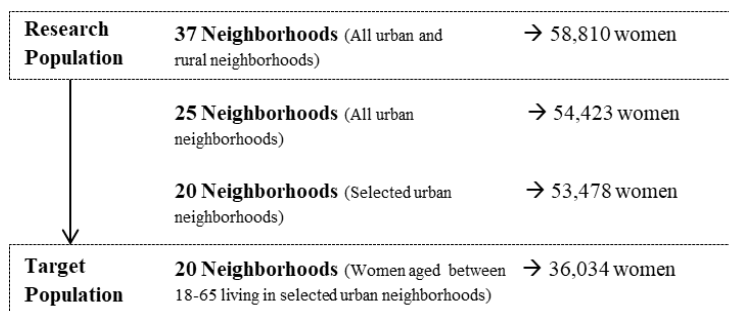


Figure 45: Determination Process of the Target Population (Source: Author)

As shown in Figure 45, the target population of the study was obtained by narrowing down the research population, which is 58,810 women, based on the age range of

women and whether the neighborhoods they live in have urban characteristics. Accordingly, the target population comprises women between the age of 18 and 65 living in the selected 20 urban neighborhoods of the central district of Amasya, totaling 36,034 individuals.

Table 14: Compilation of the Demographic Data for 20 Urban Neighborhoods  
(Source: Author)

	Neighborhoods	Total Population (2023)	Women Population (2023)	18+ Women Population (2023)	65+ Women Population (2023)	Women Population Aged 18-64 Size (2023)
Cluster with high women's HDI	Hacılar Meydanı	14988	7701	5585	636	4949
	Bahçeleriçi	10841	5556	4229	679	3550
	Şeyhçui	27428	15942	12838	915	11923
	Akbilek	9607	4684	3528	435	3093
	Ellibeşevler	9610	4945	3746	578	3168
	Hızırpaşa	5678	2974	2378	506	1872
	Kirazlıdere	4247	2193	1584	160	1424
	Hacı İlyas	1648	835	691	136	555
	Pirinççi	397	212	170	44	126
	sub-total	84444	45042	34749	4089	30660
Cluster with low women's HDI	Şehirüstü	1644	862	687	119	568
	Mehmet Paşa	1683	865	691	124	567
	Kurşunlu	2044	1039	795	162	633
	Yüzevler	1203	629	516	97	419
	İhsaniye	2338	1214	918	149	769
	Beyazıtpaşa	2701	1407	1082	205	877
	Gökmedrese	1104	557	455	85	370
	Dere	490	241	197	38	159
	Üçler	1182	597	469	85	384
	Fethiye	1161	602	468	99	369
	Savadiye	832	423	340	81	259
	sub-total	16382	8436	6618	1244	5374
	<b>Total</b>	<b>100826</b>	<b>53478</b>	<b>41367</b>	<b>5333</b>	<b>36034</b>

The data, shown in Table 14, was organized to provide a demographic breakdown of urban neighborhoods grouped into two clusters based on WHDI. The high WHDI cluster comprises nine neighborhoods with a total population of 84,444, including 45,042 women, of which 34,749 are aged 18 and above. Specifically, 4,089 women are aged 65 and above, while 30,660 are between 18 and 65 age groups. In contrast, the low WHDI cluster includes 11 neighborhoods with a smaller total population of

16,382, encompassing 8,436 women. Among them, 6,618 are aged 18 and above, with 1,244 women aged 65 and above and 5,374 falling into the 18–64 age range. The combined total for all selected neighborhoods is 100,826 individuals, with 53,478 women, including 36,034 aged between 18 and 65. This aggregated data highlights the distribution of populations across the two clusters, aiding in sample size calculations.

### 5.3.2. Determination of Sample Size and Sampling Technique

To understand the subjective evaluations of women's about the quality of urban life, the survey technique is conducted. Among the types of survey instruments, the questionnaire is used for the primary data collection from women. In determining the sample size, the following formula was used (Yıldız et al., 2002; Yazıcıoğlu and Erdoğan, 2014):

$$n = \frac{Nt^2 pq}{d^2(N - 1) + t^2 pq}$$

In the formula, the symbols correspond to following expressions:

$n$  = the sample size,

$N$  = the number of individuals in the target population,

$p$  = The frequency of occurrence of the event examined,

$q$  = The frequency of non-occurrence of the event,

$t$  = The theoretical value found from the  $t$  table at a certain level of significance, and

$d = \pm$  sampling error accepted according to the frequency of occurrence of the event.

When the confidence level is taken at 0.95, the  $t$  value is 1.96 according to the  $z$  table;  $p$  and  $q$  are both 0.50;  $d$  is 0.05. The target population is 36,034 women who are between the age of 18 and 65 and live in the selected 20 urban neighborhoods in the central district of Amasya. As a result of the equation, the sample size is found as 380 women covering all 20 urban neighborhoods.

In this study, the spatially stratified random sampling was used to distribute the sample size to the two neighborhood clusters, namely cluster with high WHDI, and cluster with low WHDI. The calculation logic of the sample sizes for the clusters can be found in Table 15. For Çubukçu (2019), in the stratified random sampling technique, the elements in the population are grouped around a chosen theme before random selection. Then, in the stratified random sampling technique, the number of elements to be selected from each group is determined according to the weight of the groups in the total target population, and the samples are created within the framework of these numbers of elements determined according to the weight of the groups.

Table 15: Calculation Logic of the Sample Sizes According to Pre-Defined Strata (Source: Author)

Strata number (i)	Clusters	Population (N <sub>i</sub> )	Weight of Strata (N <sub>i</sub> /N)=k <sub>i</sub>	Sample Sizes of Strata k <sub>i</sub> x n = n <sub>i</sub>
1	C <sub>1</sub>	N <sub>1</sub>	N <sub>1</sub> / N = k <sub>1</sub>	k <sub>1</sub> x n = n <sub>1</sub>
2	C <sub>2</sub>	N <sub>2</sub>	N <sub>2</sub> / N = k <sub>2</sub>	k <sub>2</sub> x n = n <sub>2</sub>
Total		Total population N <sub>1</sub> + N <sub>2</sub> = N	Total weight k <sub>1</sub> + k <sub>2</sub> = 1	Total sample size n <sub>1</sub> + n <sub>2</sub> = n

The sample sizes for each stratum or cluster (n<sub>i</sub>) are distributed proportionally based on the women's population between the age of 18 and 65, which represents the target population in the two neighborhood clusters. Initially, the sample size for the cluster with low WHDI was estimated at approximately 60, and the high WHDI cluster at 320. However, these figures did not meet the minimum sample size required for SmartPLS and PLS-SEM analysis, which demands at least ten times the number of independent variables in the most complex regression model (Hair et al., 2021). To address this, the sample size for the low WHDI cluster was adjusted to 120, while the high WHDI cluster was increased to 350, resulting in a total sample size of 470.

Since the sample sizes was stratified into two neighborhood clusters -high and low WHDI clusters- based on urban characteristics and demographic composition, in the study, quota sampling was employed as the sampling technique to ensure a balanced representation of participants across predefined demographic and spatial quotas.

## **5.4. Data Collection**

The empirical research part of the thesis requires both objective and subjective data. Objective secondary data are needed for site selection and for clustering urban neighborhoods based on women's human development index levels. Subjective primary data are required to understand women's evaluations regarding the capabilities-based quality of urban life.

### **5.4.1. The Objective Secondary Data Collection**

For the site selection, after the scale of the study is justified, the determination of the degree of urbanization of the area is needed for continuing the process. In the scope of the determination of the urban and rural areas, GHS-SMOD dataset provided by European Union was used. This dataset, which can be downloaded online in GeoTiff format, indicates the GHSL Settlement Model of the epoch 2025 with global extent released R2023A in Mollweide projection at 1-kilometer resolution.

After the determination of the urban center areas, the determination of the size of the city is also required for the site selection. Accordingly, in the scope of the determination of the size of the city, both GHS-POP and GHS-SMOD datasets were used. These datasets indicate the GHSL Population and Settlement Model of the epoch 2025 with global extent released R2023A in Mollweide projection at 1-kilometer resolution in GeoTiff format.

Both for the determination of the degree of urbanization and the determination of the size of the city, the provincial and district administrative boundaries of Türkiye and 1km<sup>2</sup> polygon grid cells covering national territory is required for processing them in ArcGIS Pro software. The provincial and district administrative boundaries of Türkiye were obtained as Esri shapefile from the General Directorate of Mapping of the Ministry of National Defense. 1 km<sup>2</sup> polygon grid cells covering the European land territory was obtained from European Commission the Geographic Information System of the Commission (GISCO).

The determination of the urban center neighborhoods of LAU-2 level in the central district of Amasya, according to settlement typologies, requires municipal and



neighborhood boundaries in shapefile format. This data was created in the Küre software of the General Directorate of Mapping under the Ministry of National Defense in .kml format and then exported to ArcGIS Pro software.

Table 16: The Data Source for the Indicators Used in Calculating Women's Human Development Level at Neighborhood Scale

<b>Data Sources for the Indicators Used in Measuring WHDI</b>			
	Indicators	Year	Source
<b>1. Long and Healthy Life Dimension (Health index)</b>			
*	The ratio of married women (+15 age)	2023	TurkStat
<b>2. Knowledge Dimension (Education index)</b>			
*	Women literacy rate (+6 age)	2023	TurkStat
*	Women's mean years of schooling (+6 age)	2023	TurkStat
<b>3. A Decent Standard of Living Dimension (Income index)</b>			
*	Average price per square meter in housing	2024	Endeksa
*	Women's dependency ratio	2023	TurkStat

For clustering urban neighborhoods based on women's human development index levels, surrogate indicators were used according to the data availability at the neighborhood scale. As shown in Table 16, the latest data, from 2023, on population size by gender, age groups by gender, educational attainment by gender, and marital status by gender at the neighborhood scale were obtained from TurkStat. The data on average price per square meter in housing was obtained from Endeksa, which provides data on real estate in Türkiye, as of May 2024.

#### 5.4.2. The Subjective Primary Data Collection

To understand women's evaluation on regarding the capabilities-based quality of urban life, the subjective primary data was collected for empirical research. The survey technique was conducted in the determined urban clusters to assess the subjective judgments, evaluations and feelings of women in the light of the capabilities-based quality of urban life.

The indicators of the subjective evaluation of women are handled in three categories: (i) the descriptive indicators, (ii) the indicators for main path model, and (iii) the indicators of the second-stage path model. The descriptive indicators aim to

understand female participants' demographic and socio-economic conditions and the burden of household responsibilities in high and low Women's Human Development Index (WHDI) clusters.

Table 17: The Indicators for the Descriptive Analysis

Indicators and Codes of Descriptive Analysis		
	Codes	Indicators
<b>1. Demographic characteristics</b>		
*	AGE	Age
*	MS	Marital status
*	CN	Number of children
*	CAA	Average age of children
<b>2. Socio-economic status</b>		
*	EDU	Education level
*	JOB	Employment status
*	JOBH	Type of work hours
*	JOBW	Type of salary
*	HHI	Household income group
*	HHN	Number of households
*	HOUT	Condition of residence
*	NC	Number of cars
<b>3. Household responsibilities and support</b>		
*	SICK	People needing care at home
*	HHW	Total average hours dedicated to housework in a week
*	SUPP	Frequency of receiving help with housework

The selection of indicators for descriptive analysis in this study is guided by the objective of capturing a comprehensive and multifaceted understanding of women's capabilities-based quality of urban life. The selected indicators, presented in Table 17, are categorized into three main dimensions: demographic characteristics, socio-economic status, and household responsibilities and support. The demographic characteristics include age (AGE), marital status (MS), number of children (CN), and the average age of children (CAA), providing insights into the basic personal and family structure of the female participants. The socio-economic status dimension encompasses education level (EDU), employment status (JOB), type of work hours (JOBH), type of salary (JOBW), household income group (HHI), number of households (HHN), condition of residence (HOUT), and the number of cars (NC), having a major impact on capabilities. Lastly, the household responsibilities and support dimension includes people needing care at home (SICK), total average hours

dedicated to housework in a week (HHW), and the frequency of receiving help with housework (SUPP), highlighting the domestic workload and support systems available to women. These indicators collectively enable a thorough descriptive analysis, identifying patterns and disparities that impact women's capabilities-based quality of urban life.

The main path model and the second-stage path model were developed based on the main research question of the thesis. Specifically, the thesis explores the relationships between women's resource perceptions, capabilities, and functionings in relation to their accessibility, safety, and participation in urban neighborhoods with different WHDI levels. The main path model was structured to examine the extent and significance of the relationships between women's overall resource perceptions, capabilities, and functionings. The second-stage path model, on the other hand, was designed to explore these relationships in more detail across eight sub-dimensions, as well as how they vary across neighborhoods with differing WHDI levels.

The main path model primarily aims to holistically analyze women's ability to convert resources into capabilities and functionings, and subsequently convert these capabilities into functionings, across two distinct WHDI-based clusters. As shown in Figure 46, this aim requires causal chain model including resources, capabilities, and functionings incorporating the accessibility, safety and participation dimensions. There are three constructs of the main path model which have been created to measure theoretical concepts, namely overall resource perception of women, overall capabilities of women, and overall functionings of women.

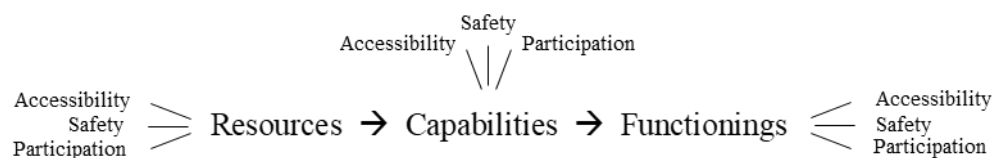


Figure 46: The Conceptual Representation of the Constructs and Dimensions of the Main Path Model

Table 18: Indicators for the Formatively Measured Constructs of the Main Path Model of the Capabilities-Based Quality of Urban Life of Women

<b>The Main Path Model for the Capabilities-Based Quality of Urban Life of Women</b>	
<i>Overall Resource Perception of Women Construct (16 indicators)</i>	
<i>-Resource Perception on Accessibility Dimension (8 indicators)</i>	
<b>OSA</b>	The perception of the availability of public open spaces
<b>OSS</b>	The perception of the sufficiency of public open spaces
<b>EA</b>	The perception of the availability of educational facilities
<b>ES</b>	The perception of the sufficiency of educational facilities
<b>HA</b>	The perception of the availability of healthy environment
<b>HS</b>	The perception of the sufficiency of healthy environment
<b>TA</b>	The perception of the availability of transportation facilities
<b>TS</b>	The perception of the sufficiency of transportation facilities
<i>-Resource Perception on Safety Dimension (4 indicators)</i>	
<b>PSS</b>	The perception of the safety of public open space
<b>PSSS</b>	The perception of the sufficiency of safety levels in public open spaces
<b>PTS</b>	The perception of the safety of public transportation
<b>PTSS</b>	The perception of the sufficiency of safety levels in public transportation
<i>-Resource Perception on Participation Dimension (4 indicators)</i>	
<b>EP</b>	The perception of the availability of opportunities for women to participate in economy
<b>EPS</b>	The perception of the sufficiency of opportunities for women to participate in economy
<b>PD</b>	The perception of the availability of opportunities for women to participate in decision-making
<b>PDS</b>	The perception of the sufficiency of opportunities for women to participate in decision-making
<i>Overall Capabilities of Women Construct (8 indicators)</i>	
<i>-Capabilities on Accessibility Dimension (4 indicators)</i>	
<b>OSAF</b>	Freedom to access to public open spaces
<b>EAF</b>	Freedom to access to educational facilities
<b>HAF</b>	Freedom to access to healthy environment
<b>TAF</b>	Freedom to access to mobility and transport
<i>-Capabilities on Safety Dimension (2 indicators)</i>	
<b>PSSF</b>	Freedom to be safe in public open spaces
<b>PTSF</b>	Freedom to be safe in public transport
<i>-Capabilities on Participation Dimension (2 indicators)</i>	
<b>EPF</b>	Freedom to participate in economy
<b>PDF</b>	Freedom to participate in decision-making processes
<i>Overall Functionings on Women Construct (8 indicators)</i>	
<i>-Functionings on Accessibility Dimension (4 indicators)</i>	
<b>FOSI</b>	Functionings on accessing public open spaces
<b>FEI</b>	Functionings on accessing education
<b>FHI</b>	Functionings on accessing healthy environment
<b>FTI</b>	Functionings on accessing mobility and transport
<i>-Functionings on Safety Dimension (2 indicators)</i>	
<b>FPSI</b>	Functionings on being safe in public open space
<b>FTSI</b>	Functionings on being safe in public transportation
<i>-Functionings on Participation Dimension (2 indicators)</i>	
<b>FEPI</b>	Functionings on participating in economy
<b>FPDI</b>	Functionings on participating in decision-making processes

The indicators of the main path model are presented in Table 18. The first construct of overall resource perception of women is structured into three dimensions. The first dimension, resource perception on accessibility dimension, consists of eight

indicators including the perception of the availability (OSA) and sufficiency (OSS) of public open spaces, the availability (EA) and sufficiency (ES) of educational facilities, the availability (HA) and sufficiency (HS) of a healthy environment, and the availability (TA) and sufficiency (TS) of transportation facilities. The second dimension, resource perception on safety dimension, includes four indicators: the perception of safety in public open spaces (PSS) and the sufficiency of safety levels in these spaces (PSSS), as well as the perception of safety in public transportation (PTS) and the sufficiency of safety levels in public transportation (PTSS). The third dimension, resource perception on participation dimension, is comprised of four indicators including the availability (EP) and sufficiency (EPS) of opportunities for women to participate in the economy, and the availability (PD) and sufficiency (PDS) of opportunities for women to participate in decision-making processes.

The second construct of the main path model, overall capabilities of women, is organized into three dimensions to measure women's capabilities in urban space regarding accessibility, safety and participation. The first dimension, the capabilities on accessibility, includes four indicators that assess women's freedom to access various resources: public open spaces (OSAF), educational facilities (EAF), a healthy environment (HAF), and mobility and transport (TAF). The second dimension, the capabilities on safety, consists of two indicators that evaluate women's freedom to feel safe in public open spaces (PSSF) and public transport (PTSF). The third dimension, the capabilities on participation, contains two indicators that measure women's freedom to participate in economic activities (EPF) and decision-making processes (PDF).

The third construct of the main path model, overall functionings on women, is structured into three dimensions, each comprising specific indicators that collectively measure women's functionings in urban space regarding accessibility, safety and participation. The first dimension, the functionings on accessibility, includes four indicators that assess functionings in accessing various resources: public open spaces (FOS1), education (FE1), a healthy environment (FH1), and mobility and transport (FT1). The second dimension, the functionings on safety, consists of two indicators that evaluate functionings in being safe in public open spaces (FPS1) and public

transportation (FTS1). The third dimension, the functionings on participation, contains two indicators that measure functionings in participating in economic activities (FEP1) and decision-making processes (FPD1).

The second-stage models aim to investigate the relationships between women's resource perception and their capabilities and functionings, as well as women's capabilities and their functionings, by incorporating conversion factors and agency/choice. It explores the specific aspects in which women are able or unable to convert resources into capabilities and capabilities into functionings. All the indicators in the second-stage model are assessed using a 5-point Likert scale.

The accessibility dimension of the second-stage model comprises four sub-dimensions (access to public open spaces, education, a healthy environment, and mobility and transport), the indicators of which are presented in Table 19. The first sub-dimension of accessibility is queried to gather information about women's functionings on *accessing urban public open spaces*. The participants are asked to consider urban public open spaces as areas such as parks, gardens, playgrounds, and riverbanks, which are publicly owned and freely accessible to everyone. The resource perception on accessing to public open spaces sub-dimension is captured by indicators of OSA and OSS, which assess the perception of availability and sufficiency of public open spaces. The capabilities and functionings are examined through OSAF (freedom to access public open spaces) and FOS1 (functionings on accessing these spaces). These indicators measure how freely women can access these spaces and the impact on their functionings. The social conversion factors are explored through indicators like SOS1 (the perception of social norms regarding women being alone in public spaces), SOS2 (the perception of norms favoring women staying at home), and SOS3 (the perceptions of safety in public open spaces). The environmental conversion factors are assessed by EOS1 (the perception of physical accessibility), EOS2 (the spatial size of the urban public open spaces), EOS3 (the adequacy of infrastructure), EOS4 (the perception of pollution), and EOS5 (the existence of spaces designed with mother and child sensitivity). The choice indicator (COS2) reflects the agency aspect of women influencing the functionings on access to public open spaces. Additionally, based on the results of

the choices, the personal conversion factors that restrict women's access to urban open spaces in their neighborhoods have been explored under the following indicators: HP1 (presence of health issues), CC1 (childcare responsibilities), PC1 (elderly/sick care responsibilities), WL1 (participation in working life), EL1 (presence of education life), HWI1 (intensity of housework), FP1 (family prevention), SP1 (security concerns), LSE1 (limited social environment), and UNW1 (personal unwillingness).

The second sub-dimension of accessibility is aimed to examine women's functionings on accessing education. Female participants are asked to answer the questions in this section considering the educational opportunities available in their area, such as public training centers, evening art schools, or courses, as well as opportunities to advance to the next educational level (e.g., continuing to undergraduate studies if they have completed high school). The resource perception on accessing to education sub-dimension is captured by indicators of EA and ES, which gauge the availability and sufficiency of educational facilities. The capabilities and functionings are examined through EAF (freedom to access to educational facilities) and FE1 (functionings on accessing education). The social conversion factors are explored through indicators SE1 (assessing societal attitudes toward educating girls), SE2 (exploring continuing education after marriage), SE3 (examining expectations regarding the economic contributions of girls and women). The environmental conversion factors are evaluated by EE1 (the perception of adequacy of educational facilities), EE2 (the perception of accessibility of educational facilities), EE3 (the perception of sufficiency of childcare services), and EE4 (the perception of adequacy of elder and sick care services). The choice indicator (CE2) assesses the agency aspect of women influencing the functionings on access to education. Furthermore, the personal conversion factors that restrict women's access to education, based on the results of the choices, are explored under the following indicators: HP2 (presence of health issues), CC2 (childcare responsibilities), PC2 (elderly/sick care responsibilities), WL2 (participation in working life), LEC2 (poor economic conditions), HWI2 (intensity of housework), FP2 (family prevention), and UNW2 (personal unwillingness).

Table 19: Indicators of Accessibility Dimension for the Formatively Measured Constructs of the Second-Stage Path Model

<b>The Accessibility Dimension of the Second-Stage Model</b>	
<i>Access to Public Open Spaces</i>	
<i>OSA</i>	The perception of the availability of public open spaces
<i>OSS</i>	The perception of the sufficiency of public open spaces
<i>OSAF</i>	Freedom to access to public open spaces
<i>FOS1</i>	Functionings on accessing public open spaces
<i>SOS1</i>	The perception of social norm for women to be alone in public spaces
<i>SOS2</i>	The perception of social norm for women to stay at home
<i>SOS3</i>	The perception of safety in public open spaces
<i>EOS1</i>	The perception of physical accessibility of public open spaces
<i>EOS2</i>	The perception of the spatial size of public open spaces
<i>EOS3</i>	The perception of the adequacy of infrastructure in public open spaces
<i>EOS4</i>	The perception of pollution (waste, noise, air) in public open green spaces
<i>EOS5</i>	The perception of the existence of public open spaces planned with mother and child sensitivity
<i>COS2</i>	The choice regarding the access to public open spaces
<i>Access to Education</i>	
<i>EA</i>	The perception of the availability of educational facilities
<i>ES</i>	The perception of the sufficiency of educational facilities
<i>EAF</i>	Freedom to access to educational facilities
<i>FE1</i>	Functionings on accessing education
<i>SE1</i>	The perception of social norm toward girls' education
<i>SE2</i>	The perception of social norm toward education attainment after marriage
<i>SE3</i>	The perception of social norm toward economic contribution expectations for girls
<i>EE1</i>	The perception of adequacy of educational facilities
<i>EE2</i>	The perception of accessibility of educational facilities
<i>EE3</i>	The perception of sufficiency of childcare services
<i>EE4</i>	The perception of adequacy of elder and sick care services
<i>CE2</i>	The choice regarding the access to education
<i>Access to Healthy Environment</i>	
<i>HA</i>	The perception of the availability of healthy environment
<i>HS</i>	The sufficiency of neighborhood in terms of being a clean and healthy place
<i>HAF</i>	Freedom to access to healthy environment
<i>FH1</i>	Functionings on accessing healthy environment
<i>SH1</i>	The perception of social norm of residential proximity due to family and kinship ties
<i>SH2</i>	The perception of social norm of expectation for newlyweds to reside near their relatives
<i>EH1</i>	The perception of pollution
<i>EH2</i>	The perception of access to clean water and sanitation
<i>EH3</i>	The perception of housing affordability in healthy environments
<i>EH4</i>	The perception of adequacy of green spaces
<i>EH5</i>	The perception of population density and spatial quality
<i>CH2</i>	The choice regarding the access to healthy environment
<i>Access to Mobility and Transport</i>	
<i>TA</i>	The perception of the availability of transportation facilities
<i>TS</i>	The perception of the sufficiency of transportation facilities
<i>TAF</i>	Freedom to access to mobility and transport
<i>FT1</i>	Functionings on accessing mobility and transport
<i>ST1</i>	The perception of social norm regarding women's car use
<i>ST2</i>	The perception of social norm for women to explain whom they are out with
<i>ST3</i>	The perception of social norm of women being accompanied by their relatives when going out
<i>ET1</i>	The perception of public transportation safety in evening
<i>ET2</i>	The perception of public transportation frequency
<i>ET3</i>	The perception of accessibility by public transportation
<i>ET4</i>	The perception of safety in streets and green spaces
<i>ET5</i>	The perception of safety for walking
<i>CT2</i>	The choice regarding the access to mobility and transport



The third sub-dimension of accessibility is aimed to examine women's functionings on *accessing healthy environment*. The purpose of the indicator-based questions in this section is to gather information about women's functionings on accessing a healthy environment, emphasizing that access to a clean and healthy environment is a fundamental human right. It has been clarified that the term healthy environment denotes an environment in which human health remains unaffected, free from air, water, soil, waste, and noise pollution, and where suitable and dignified housing conditions are ensured. The resource perception on accessing to healthy environment sub-dimension is captured by indicators of HA and HS which address the perception of availability of healthy environment the sufficiency of neighborhood in terms of being a clean and healthy place. The capabilities and functionings are examined through HAF (freedom to access to healthy environment) and FH1 (functionings on accessing healthy environment). The social conversion factors are explored through the following indicators: SH1 (the perception of social norm of residential proximity due to family and kinship ties) and SH2 (the perception of social norm of expectation for newlyweds to reside near their relatives). The environmental conversion factors are assessed by EH1 (the perception of pollution), EH2 (the perception of access to clean water and sanitation), EH3 (the perception of housing affordability in healthy environments), EH4 (the perception of adequacy of green spaces), and EH5 (The perception of population density and spatial quality). The choice indicator (CH2) reflects the agency aspect of women influencing the functionings on access to healthy environment. Additionally, depending on the result of choice, the personal conversion factors that restrict women's access to healthy environment in their neighborhoods have been explored under the following indicators: LEC3 (poor economic conditions), BR3 (sense of belonging to relatives/acquaintances), BN3 (sense of belonging to the neighborhood), CP3 (close proximity of our current home to work/school), FR3 (family's reluctance), UNW3 (personal unwillingness).

The fourth sub-dimension of accessibility is aimed to examine women's functionings on *accessing mobility and transport*. The resource perception on accessing to mobility and transport sub-dimension is captured by indicators of TA (which measure the availability of transportation systems and services) and TS (which

measure the sufficiency of transportation systems and services). The capabilities and functionings are examined through TAF (freedom to access to mobility and transport), and TF1 (functionings on accessing mobility and transport). The social conversion factors are explored through the following indicators: ST1 (the perception of social norm regarding women's car use), ST2 (the perception of social norm for women to explain whom they are out with), and ST3 (the perception of social norm of women being accompanied by their relatives when going out). The environmental conversion factors are assessed by ET1 (the perception of public transportation safety in evening), ET2 (the perception of public transportation frequency), ET3 (the perception of accessibility by public transportation, ET4 (the perception of safety in streets and green spaces), and ET5 (the perception of safety for walking). The choice indicator (CT2) reflects the agency aspect of women influencing the functionings on accessing mobility and transport. In addition, the personal conversion factors are assessed depending on the result of choice factor by HP4 (presence of health issues), HC4 (having child), CL4 (carrying heavy loads), LD4 (long distance to the destination), DP4 (visiting many different places), HLT4 (having lack of time), SC4 (safety concerns), UNW4 (personal unwillingness).

The safety dimension of the second-stage model comprises of two sub-dimensions (safety in public open spaces and safety in public transportation), whose indicators are presented in Table 20. The first sub-dimension of safety assesses women's functionings on *being safe in public open spaces* such as streets, green areas, and squares. The resource perception on being safe in urban public open spaces sub-dimension is captured by indicators of PSS (the perception of the safety of public open spaces) and PSSS (the perception of the adequacy of the security level of the public open spaces). The capabilities and functionings are examined through PSSF (freedom to be safe in public open spaces) and FPS1 (functionings on being safe in public open spaces). The social conversion factors are explored through the following indicators: SPS1 (the perception of social norm for women to go out in the evening), SPS2 (the perception of social norm for women's dress code), and SPS3 (the perception of social norm for women's being safe at home than on the street). The environmental conversion factors are assessed by EPS1 (the perception of the

adequacy of lighting in streets), EPS2 (the perception of safety for women in public open spaces), EPS3 (the perception of deserted public open spaces after evening), and EPS4 (the perception of the intimidation of public open spaces). The choice indicator (CPS2) reflects the agency aspect of women influencing the functionings on being safe in urban public open spaces. In addition, the personal conversion factors are assessed depending on the result of choice factor by CC5 (clothing choice), BON5 (being outside at night), WLD5 (walking long distance), BS5 (being single), FOH5 (fear of harassment), WA5 (walking alone), NSB5 (not feeling sense of belonging), FR5 (having few relatives).

Table 20: Indicators of Safety Dimension for the Formatively Measured Constructs of the Second-Stage Path Model

<b>The Safety Dimension of the Second-Stage Model</b>	
<i>Safety in Public Open Spaces</i>	
<b>PSS</b>	The perception of the safety of public open spaces
<b>PSSS</b>	The perception of the sufficiency of the safety level of the public open spaces
<b>PSSF</b>	Freedom to be safe in public open spaces
<b>FPS1</b>	Functionings on being safe in public open spaces
<b>SPS1</b>	The perception of social norm for women to go out in the evening
<b>SPS2</b>	The perception of social norm for women's dress code
<b>SPS3</b>	The perception of social norm for women's being safe at home than on the street
<b>EPS1</b>	The perception of the adequacy of lighting in streets
<b>EPS2</b>	The perception of safety for women in public open spaces
<b>EPS3</b>	The perception of deserted public open spaces after evening
<b>EPS4</b>	The perception of the intimidation of public open spaces
<b>CPS2</b>	The choice of being public open spaces considering safety
<i>Safety in Public Transportation</i>	
<b>PTS</b>	The perception of the safety of public transportation
<b>PTSS</b>	The perception of the sufficiency of the safety level of the public transportation
<b>PTSF</b>	Freedom to be safe in public transportation
<b>FTS1</b>	Functionings on being safe in public transportation
<b>STS1</b>	The perception of social norm toward women walking/using public transportation late at night
<b>STS2</b>	The perception of social norm toward women's clothing on public transportation
<b>ETS1</b>	The perception of the sufficiency of public transportation frequency late at night
<b>ETS2</b>	The perception of long walking distances to and from public transportation stops
<b>ETS3</b>	The perception of the crowdedness of public transportation vehicles
<b>ETS4</b>	The perception of public transportation services considering women's safety
<b>CTS2</b>	The choice of using public transportation considering safety

The second sub-dimension of safety explores women's functionings on *being safe in public transportation*. The resource perception on being safe in urban public transportation sub-dimension is captured by indicators of PTS (the perception of the safety of public transportation) and PTSS (the perception of the sufficiency of the

safety level of the public transportation). The capabilities and functionings are examined through PTSF (freedom to be safe in public transportation) and FTS1 (functionings on being safe in public transportation). The social conversion factors are explored through the following indicators: STS1 (the perception of social norm toward women walking/using public transportation late at night) and STS2 (the perception of social norm toward women's clothing on public transportation). The environmental conversion factors are assessed by ETS1 (the perception of the sufficiency of public transportation frequency late at night), ETS2 (the perception of long walking distances to and from public transportation stops), ETS3 (the perception of the crowdedness of public transportation vehicles), ETS4 (the perception of public transportation services considering women's safety). The choice indicator (CTS2) reflects the agency aspect of women influencing the functionings on being safe in urban public transportation. In addition, the personal conversion factors are assessed depending on the result of choice factor by FOH6 (fear of harassment), OFP6 (being the only female passenger in vehicle), CC6 (clothing choice), TA6 (concern about travelling alone on public transport), WTN6 (worrying about using public transport at night).

The participation dimension of the second-stage model comprises of two sub-dimensions (participation in economic activities and participation in decision-making processes), whose indicators are presented in Table 21. The first sub-dimension of participation assesses women's functionings on *participation in economic activities*. The resource perception on participating in economy sub-dimension is captured by indicators of EP and EPS which are the perception of the availability and sufficiency of opportunities to participate in the economic activities. The capabilities and functionings are examined through EPF (freedom to participate in economic activities) and FEP1 (functionings on participating in economic activities). The social conversion factors are explored through the following indicators: SEP1 (the perception of social norm regarding women staying at home, men working), SEP2 (the perception of social norm toward women's working after marriage and having child), and SEP3 (the perception of social norm of who has domestic responsibilities and childcare). The environmental conversion factors are assessed by EEP1 (the

perception of the sufficiency of job opportunities for women), EEP2 (the perception of the adequacy of childcare and daycare services), EEP3 (the perception of the fear of harassment while commuting or at work), and EEP4 (the perception of the distance between home and workplaces). The choice indicator (CEP2) reflects the agency aspect of women influencing the functionings on participating in economy. Additionally, the personal conversion factors are assessed depending on the result of choice factor by HP7 (presence of health issues), HLC7 (having little child), PC7 (elderly/sick care responsibilities), IE7 (insufficient education), IW7 (insufficient wages), the insufficient wages not compensating the labor and money spent), HWI7 (intensity of housework), FHW7 (fear of harassment at work), LSE7 (limited social environment), FP7 (family prevention), RC7 (religious concerns), and UNW7 (personal unwillingness).

The second sub-dimension of participation assesses women's functionings on *participating in decision-making processes*. Before the questions in this section, female participants were informed that providing opportunities for democratic participation at the local level and active citizen involvement in decision-making processes are rather crucial. They are also informed that the expression 'participation in decision-making processes' refers to the involvement of citizens in conveying individual requests and complaints to authorities, as well as having a say in decisions related to urban life. This includes participation in civil society organizations, municipal council meetings, specialized committee meetings, and other decision-making processes, as well as the right to objection. The resource perception on participating in decision-making sub-dimension is captured by indicators of PD and PDS which correspond to the perception of the availability and sufficiency of opportunities to participate in the decision-making processes. The capabilities and functionings are examined through PDF (freedom to participate in decision-making processes) and FPD1 (functionings on participating in decision-making processes). The social conversion factors are explored through the following indicators: SPD1 (the perception of social norm toward the value of women's opinions), SPD2 (the perception of social norm toward men's being primary decision-makers), and SPD3 (the perception of social norm toward women's

participation in civil society organizations). The environmental conversion factors are assessed by EPD1 (the perception of sufficiency of efforts to include women in participation processes), EPD2 (the perception of the presence of women's organizations in the community), EPD3 (the perception of the municipality's provision of urban facilities and services for women), and EPD4 (the perception of the municipality's consideration of women's opinions in urban planning decisions). The choice indicator (CPD2) reflects the agency aspect of women influencing the functionings on participating in decision-making processes. Furthermore, the personal conversion factors are assessed depending on the result of choice factor by IE8 (insufficient education), HLC8 (having little child), FP8 (family prevention), IK8 (insufficient knowledge), HWI8 (intensity of housework), WI8 (intensity of working life), LSE8 (limited social environment), RC8 (religious concerns) and UNW8 (unwillingness).

Table 21: Indicators of Participation Dimension for the Formatively Measured Constructs of the Second-Stage Path Model

<b>The Participation Dimension of the Second-Stage Model</b>	
<i>Participation in Economic Activities</i>	
<b>EP</b>	The perception of the availability of opportunities to participate in the economy
<b>EPS</b>	The perception of the sufficiency of opportunities to participate in the economy
<b>EPF</b>	Freedom to participate in economy
<b>FEP1</b>	Functionings on participating in economy
<b>SEPI</b>	The perception of social norm regarding women's staying at home, men's working
<b>SEP2</b>	The perception of social norm toward women's working after marriage and having child
<b>SEP3</b>	The perception of social norm of who has domestic responsibilities and childcare
<b>EEP1</b>	The perception of the sufficiency of job opportunities for women
<b>EEP2</b>	The perception of the adequacy of childcare and daycare services
<b>EEP3</b>	The perception of the fear of harassment while commuting or at work
<b>EEP4</b>	The perception of the distance between home and workplaces
<b>CEP2</b>	The choice regarding the participation in economic activities
<i>Participation in Decision-Making Processes</i>	
<b>PD</b>	The perception of the availability of opportunities to participate in the decision-making processes
<b>PDS</b>	The perception of the sufficiency of opportunities to participate in the decision-making processes
<b>PDF</b>	Freedom to participate in decision-making processes
<b>FPD1</b>	Functionings on participating in decision-making processes
<b>SPD1</b>	The perception of social norm toward the value of women's opinions
<b>SPD2</b>	The perception of social norm toward men's being primary decision-makers
<b>SPD3</b>	The perception of social norm toward women's participation in civil society organizations
<b>EPD1</b>	The perception of sufficiency of efforts to include women in participation processes
<b>EPD2</b>	The perception of the presence of women's organizations in the community
<b>EPD3</b>	The perception of the municipality's provision of urban facilities and services for women
<b>EPD4</b>	The perception of the municipality's consideration of women's opinions in urban planning decisions
<b>CPD2</b>	The choice regarding the participation in decision-making processes

The subjective primary data of the study is collected through questionnaire, whose form has been prepared according to the theory-driven indicators obtained by the literature reviews. The questionnaire consists of ten sections. The first section contains open-ended and close-ended questions aimed at understanding the demographic characteristics of women. The sections from two to six are concerned with women's capabilities and functionings related to accessibility, while sections six and seven address women's capabilities and functionings related to safety. The sections eight and nine focus on women's capabilities and functionings related to participation. The last section presents a general evaluation of women's social and environmental conversion factors regarding accessibility, safety, and participation. All sections except the first section consist of questions using a 5-point Likert scale. Within these eight sections, only the questions measuring personal conversion factors are designed as 'multi-response type' allowing respondents to select multiple personal conversion factors they believe restrict women's freedoms.

A pilot study was conducted with 15 people to test the clarity of the questionnaire. It has been determined that answering the questionnaire takes approximately 20-25 minutes. After the pilot study, the questionnaire was reviewed and necessary adjustments were made. The prepared questionnaire and informed consent form, which can be found in *Appendix G* and *Appendix H*, were approved by the METU Human Subjects Ethics Committee on August 16, 2023, with the protocol number 0386-ODTUIAEK-2023, which can found in *Appendix I*.

The quality of life studies can be cross-sectional or longitudinal with single or multiple variables (Dissart and Deller, 2000). The subject of this study has necessitated that the data collection method be cross-sectional. For Christensen et al. (2014), in cross-sectional studies, data are collected in a relatively short time in a single period from all of the participants. Accordingly, the subjective primary data of the study collected through questionnaire from 470 women with the age between 18 and 65 living in urban center neighborhoods of the central district of Amasya in between September 2023 and February 2024. Since one respondent was illiterate, the questions were asked to her directly, and her responses were recorded on the

questionnaire. Also, due to the length of the survey, 13 women abandoned it midway; therefore, their responses were not included in the study.





## **CHAPTER 6**

### **DATA ANALYSIS:**

#### **ANALYZING THE CAPABILITIES-BASED QUALITY OF URBAN LIFE OF WOMEN BY USING PARTIAL LEAST SQUARES STRUCTURAL EQUATION MODELING**

This chapter outlines the methodological approach employed in capabilities-based analysis of the quality of urban life women living in two urban neighborhood clusters in the central district of Amasya that differed in terms of the Women's Human Development Index (HDI) levels. It begins by addressing the analysis method, with discussing the limitations of first-generation multivariate data analysis techniques and the opportunities of the second-generation techniques. The chapter also highlights the importance of assessing formative measurement models, focusing on the validity of the datasets used in the analysis. Finally, the development of the path models and associated hypotheses is discussed, with a particular emphasis on the use of both the main path model and second-stage models to explore the relationships between key constructs.

##### **6.1. Determining the Analysis Method**

The limitations of first-generation multivariate data analysis techniques, such as the requirement for a simple model structure and the necessity for all variables to be observable, made them unsuitable for this research. The relationship 'A leads to B' can easily be analyzed using multivariate data analysis techniques; however, analyzing more complex structures, such as 'A leads to B, and B leads to C,' presents challenges because it requires piecewise estimation, which significantly impacts the quality of the results (Hair et al., 2021).

The analysis of factors that prevent women from achieving the capabilities and functionings that influence their quality of life in the urban spaces requires a 'causal chain model,' which is too complex to be explained by a simple model. Additionally, the inability to measure women's capabilities and functionings using observable variables necessitates the use of different techniques, as this analysis involves personal subjective evaluations, perceptions, and attitudes. To analyze the capabilities-based quality of urban life of women, a technique should be employed that estimates both observed and unobserved concepts, as well as the complex relationships among dependent and independent variables.

Structural Equation Modeling (SEM), a second-generation technique, meets the requirements for analyzing capabilities-based quality of urban life of women. SEM, a general term that encompasses various multivariate statistical techniques, enables researchers to test complex models involving both observed and latent variables (Hair et al., 2021). There are two methods of SEM in practice, namely Partial Least Squares Structural Equation Modeling (PLS-SEM), and Covariance-Based Structural Equation Modeling (CB-SEM). The statistical approaches underlying these two methods are quite different. According to Hair et al. (2021), CB-SEM is used to confirm or reject theories and related hypotheses, while PLS-SEM, a causal-predictive approach, focuses on explaining the variance in the model's dependent variables. In this study, PLS-SEM is chosen as the data analysis method. The data and model characteristics and the rationale for this selection are explained in the following paragraphs.

According to Hair et al. (2021), the data characteristics of PLS-SEM are as follows: (1) it achieves high levels of statistical power with small sample sizes, (2) it uses a nonparametric method with no distributional assumptions, (3) it is highly robust as long as missing values are less than 5%, and (4) it works with metric data and ordinal scaled variables. The model characteristics of PLS-SEM are as follows: (1) it measures constructs using both single-item and multi-item measures, (2) it combines reflective and formative measurement models, (3) it analyzes complex models with numerous structural model relationships, and (4) it does not allow circular relationships in the structural model.

One of the important features of PLS-SEM is its ability to simultaneously measure unobservable variables in two different ways, as illustrated in Figure 47. One way is reflective measurement, which assumes that the construct causes the measurement, so the direction of the arrows is from the construct to the indicators. The other way is formative measurement, which assumes that the causal relationship is from the indicators to the construct, with the arrows pointing in that direction (Hair et al., 2021). In reflective measurement models, the indicators of a variable are expected to exhibit high correlations with one another, whereas in formative measurement models, no such expectation exists for the indicators.

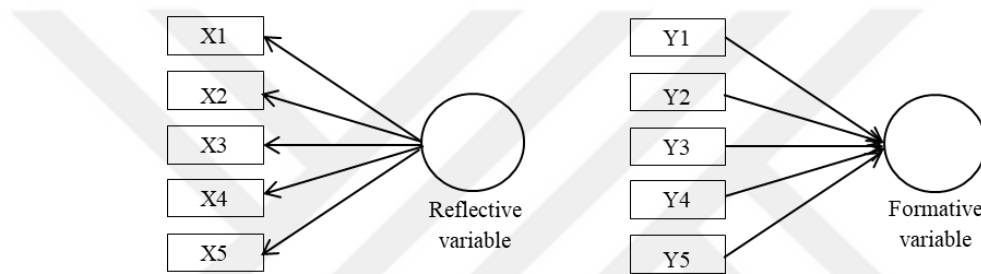


Figure 47: Different Causal Relationship of Reflective and Formative Variables  
(Source: Author)

The reasons for choosing PLS-SEM instead of CB-SEM can be explained as follows: (1) This analysis is based on testing the theoretical framework from a prediction perspective. (2) As aforementioned, developing the three mentioned theories and analyzing the capabilities and functionings of women are the theoretical and practical aims of this research. PLS-SEM is the recommended method when the research objective is theory development and about the explanation of the constructs (Hair et al., 2021). (3) Data on women's subjective evaluations were collected using Likert-type questions. Since Likert-type questions are considered ordinal data, non-parametric statistical tests are recommended for analyzing the data obtained from these questions. (4) This study aims to synthesize the concept of quality of urban life from the perspective of women in urban space, using the capabilities and functionings approach, and to empirically measure these concepts. In this regard, this

measurement requires complex causal chain models that include numerous constructs, indicators, and model relationships.

Resources → Capabilities → Functionings

The measurement model of capabilities-based quality of urban life of women includes latent variables that cannot be directly measured. The resource perceptions, capabilities, and functionings, which are the core elements of the model, are unobservable variables in the analysis. (6) PLS-SEM is capable of estimating formatively specified constructs. When the path model includes formatively measured constructs, PLS-SEM is the recommended method. The constructs in the path model of this research include formative measurements, where the causal relationship flows from the indicators to the construct. For these reasons, it is deemed appropriate to conduct the study using the PLS-SEM method.

## **6.2. The Assessment Procedure for the Formative Measurement Models**

Datasets that are not valid and reliable cannot be used in SEM analysis. The criteria for assessing validity and reliability in SEM vary depending on whether the measurement model is reflective or formative. In reflective measurement models, reliability is assessed through indicator reliability and internal consistency reliability, while validity is evaluated based on convergent validity and discriminant validity. In formative measurement models, since indicators measure distinct aspects of a variable and exhibit low correlations among them, only validity is assessed.

For the PLS-SEM analysis conducted using SmartPLS 4.1, the steps outlined by Hair et al. (2021) were followed to evaluate the data for this study. The first key step in evaluating formative measurement models is the assessment of convergent validity. This step aims to determine the extent to which a formative construct correlates with alternative reflectively measured variables representing the same concept. It is recommended that the correlation between the formative construct and reflectively measured indicators should be 0.708 or higher. The second key step in evaluating formative measurement models is the assessment of collinearity issues. Collinearity occurs when two or more indicators within the formative measurement model exhibit

high correlations. The variance inflation factor (VIF) is used to assess indicator collinearity. Higher VIF values indicate a greater degree of collinearity. VIF values between 3 and 5 suggest that collinearity issues are not critical, while VIF values below 3 indicate that collinearity is not a significant concern.

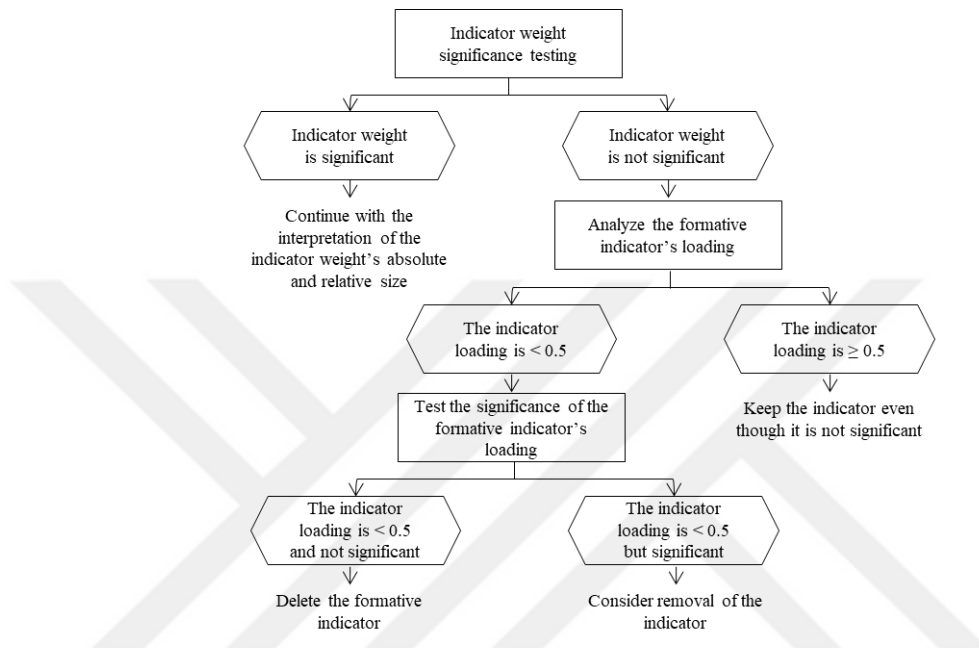


Figure 48: Suggested Decision-Making Process for Assessing the Statistical Significance and Relevance of the Formative Indicators (Hair et al., 2021)

The third key step in evaluating formative measurement models is assessing the statistical significance and relevance of the formative indicator weights. Indicator weights represent the importance and necessity of each indicator in shaping the construct. To test the significance of these weights, the bootstrapping procedure is employed. It is recommended by Hair et al. (2021) to use a minimum of 10,000 bootstrap subsamples. At a 95% confidence interval, if the t-value exceeds 1.96, the indicator weight is considered statistically significant, indicating that the formative indicator makes a strong contribution to the construct. When the t-value is below 1.96 and the indicator weight is not significant, Hair et al. (2021) recommend following a decision-making process to determine whether to retain or delete the formative indicators, as outlined in the accompanying Figure 48. In the bootstrapping

process, the percentile bootstrap method is employed, with a significance level of 0.05, two-tailed testing, and the fixed-seed option. When the weight of a formative indicator is not significant, it should not be immediately removed from the measurement model. Deleting even a single formative indicator can reduce the content validity of the measurement model. Therefore, the final decision should be made after carefully following the recommended decision-making steps.

### **6.3. The Development of the Path Models and Hypotheses**

The measurement of the capabilities-based quality of urban life for women in two previously defined urban clusters within the central district of Amasya adopted a causal-predictive approach and involved complex chain models requiring numerous constructs, indicators, and model relationships. The capabilities-based quality of urban life of women was evaluated by two separate models in succession: (1) the main path model, and (2) the second-stage path models. The first subsection provides a detailed description of the main path model and its associated hypotheses.

#### **6.3.1. The Main Path Models and Related Hypotheses**

The main path model was developed by synthesizing the literature on women and urban space, quality of urban life, and the capabilities and functionings approach. The model aims to holistically analyze whether women can convert resources into capabilities and functionings, and subsequently transform these capabilities into functionings within two distinct urban clusters.

As previously mentioned, this objective necessitates a causal chain model that integrates resources, capabilities, and functionings across the dimensions of accessibility, safety, and participation. The main path model includes three constructs designed to measure these theoretical concepts: the overall resource perception of women, the overall capabilities of women, and the overall functionings of women, as shown in Figure 49.

The constructs in the main path model were designed to measure theoretical concepts. Higher-order constructs (HOCs) were utilized in the model development

because they help reduce the number of relationships in the path model (Sarstedt et al., 2019) and make the PLS path model easier to comprehend (Hair et al., 2024).

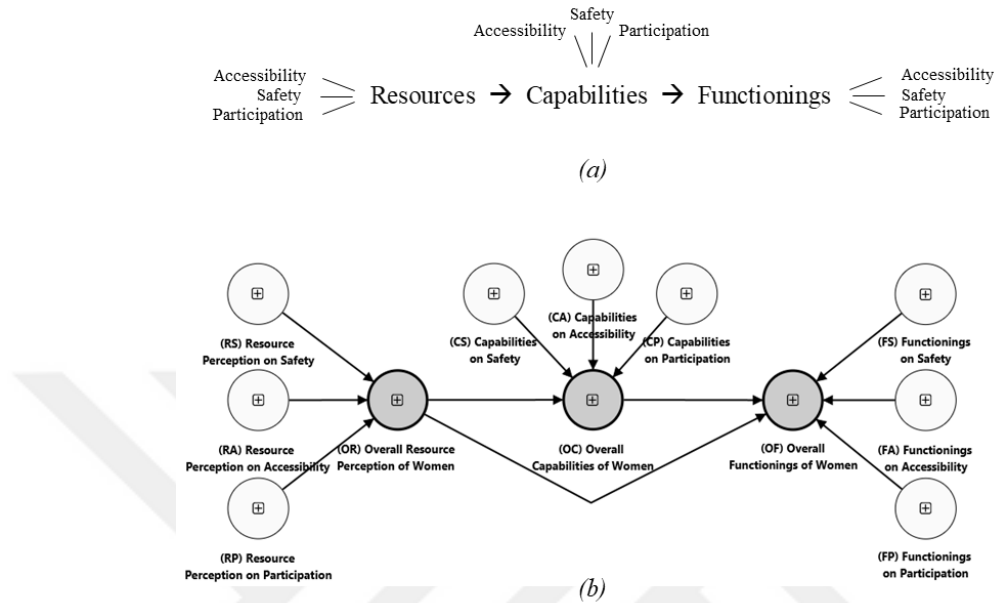


Figure 49: (a) The Conceptual Representation of the Theoretical Framework (b) The Constructs of the Main Path Model of the Empirical Study which is Drawn via SmartPLS 4.1 Software.

The type of hierarchical latent variable model used in this study is formative-formative. For specifying higher-order constructs, approaches such as the repeated indicator approach, extended repeated indicator approach, two-stage approach, and hybrid approach can be employed to estimate parameters in hierarchical latent variable models. However, the repeated indicator approach poses challenges when the higher-order construct is formative, as the variance of the higher-order construct is fully explained by its lower-order constructs (resulting in an R-squared value close to 1), and the path coefficients become nearly zero (Becker et al., 2012). Indeed, in this study, when the higher-order construct was established using the repeated indicators approach, the R-squared values were nearly 1, and the path coefficients were close to zero.

Furthermore, in hierarchical latent variable models employing the repeated indicators approach, the inclusion of the same indicators across both lower-order constructs (LOCs) and higher-order constructs (HOCs) can also result in statistically insignificant p-values. To overcome these problems, Becker et al. (2012) and Sarstedt et al. (2019) propose using the extended-repeated indicators approach, also known as the total effects analysis of collect-type hierarchical component model. However, even if the total effect values eliminate the disadvantage of the near-zero path coefficient values, the R-squared values remain excessively high, and the results of p-values remain unreliable. To resolve these limitations associated with the extended-repeated indicators approach, the two-stage approach is suggested as an alternative.

Therefore, the two-stage approach (*or the sequential latent variable score method*) was chosen for estimating the parameters in the hierarchical latent variable model of the study. There are two types of two-stage approach, namely embedded two stage approach and disjoint two-stage approach. In both of two approaches, the latent variable scores obtained in the Stage 1 are used as input for the assessment in the Stage 2. Unlike the embedded two-stage approach, the disjoint two-stage approach takes account only the lower-order constructs of the higher-order constructs in the Stage 1 rather than using the repeated indicators approach. Although the results of the embedded and disjoint two-stage approaches do not differ significantly, Hair et al. (2024) recommend using the disjoint two-stage method because it allows for validating the entire path model based on the original constructs in Stage 2. Therefore, in this study, the disjoint two-stage approach was used for analyzing the measurement and structural model of the main path model.

In the Stage 1 of the disjoint two-stage approach, the lower-order constructs should be directly connected to the other constructs that the higher-order construct is theoretically associated with. The latent variable scores (LVS) obtained in Stage 1 are used as new indicators in the dataset for further analysis in Stage 2 (Hair et al., 2024). Accordingly, in the Stage 1 of the disjoint two-stage approach, the HOCs



which can be seen from Figure 49, (b) section were removed from the model as recommended and all the lower-order constructs were directly associated with the other constructs that HOCs were theoretically related to. The Stage 1 model of the study is shown in Figure 50.

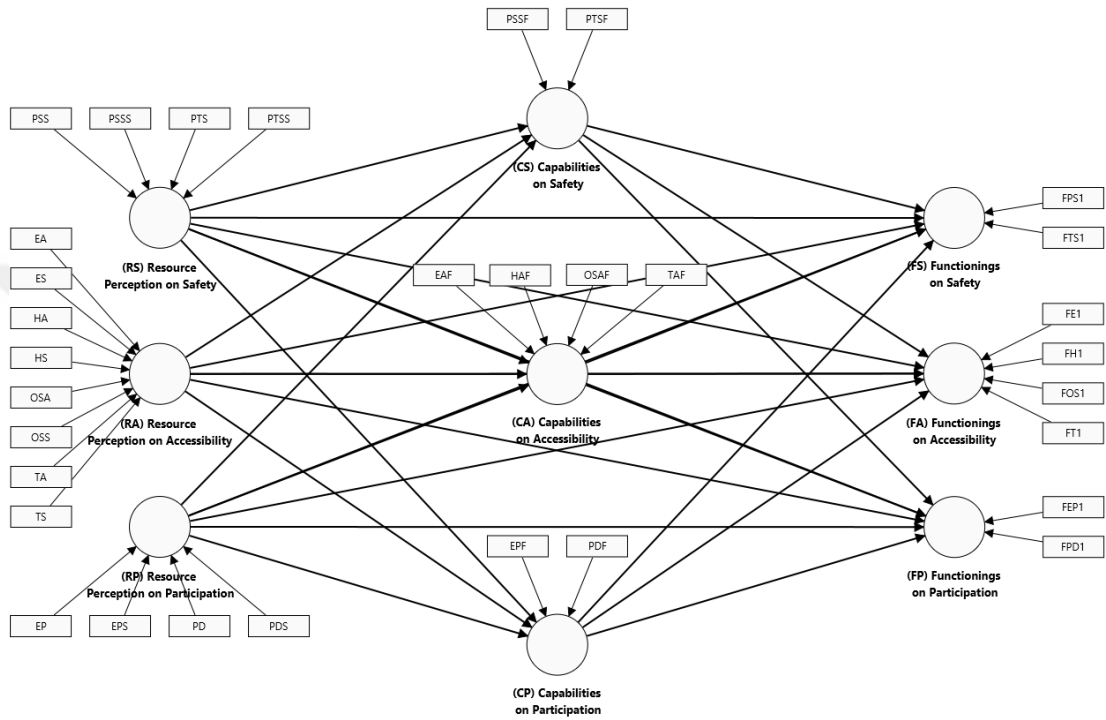


Figure 50: The Stage 1 of the Disjoint Two-Stage Approach for the Main Path Model of the Research Shows the Measurement Model Consisting of Formative LOCs Directly Linked to the Other Constructs that the HOCs are Theoretically Related to

As stated, HOCs provide a significant opportunity to reduce the number of path model relationships and overall model complexity. In the Stage 1 of the disjoint two-stage method, the requirement to remove HOCs (OR, OC, OF) from the measurement model increased the number of connections from 12 to 27. The lower-order constructs of OR are linked to the lower order constructs of OC and OF (18 connections). The lower-order constructs of OC are linked to the lower order constructs of OF (9 connections).

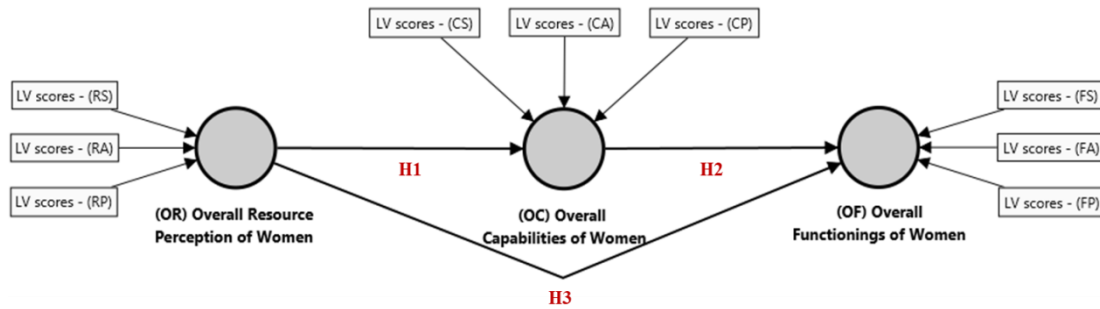


Figure 51: The Stage 2 of the Disjoint Two-Stage Approach – The LV Scores of LOCs Generated in the Stage 1 are New Formative Indicators of Related HOCs

In the Stage 2 of the disjoint two-stage approach, the higher-order constructs should be estimated to obtain the scores of the latent variables (LV Scores) which correspond to nine lower-order constructs (RA, RS, RP, CA, CS, CP, FA, FS, and FP) of the main path model. Figure 51 shows the converted version of the main path model into two-stage hierarchical latent variable model.

*(All statements correspond to  $H_a$  hypothesis.)*

Hypotheses of Overall Higher-Order Constructs:

- H1:** There is a significant relationship between women's overall resource perception and women's overall capabilities. (OR  $\rightarrow$  OC)
- H2:** There is a significant relationship between women's overall capabilities and women's overall functionings. (OC  $\rightarrow$  OF)
- H3:** There is a significant relationship between women's overall resource perception and women's overall functionings. (OR  $\rightarrow$  OF)

The hypotheses structured in the main path model were tested in neighborhood clusters measured as high levels of WHDI score and in neighborhood clusters measured as low levels of WHDI score in the central district of Amasya and the results were compared with each other.

### 6.3.2. The Second-Stage Path Models and Related Hypotheses

Similar to the main path model, the second-stage path models in this research were developed based on indicators identified through a comprehensive literature review. These models aim to investigate the factors that are related to women's resource perception and their capabilities and functionings, as well as the impact of women's capabilities on their functionings, by incorporating conversion factors and agency/choice. As previously mentioned, women's capabilities-based quality of urban life is evaluated across three core dimensions: accessibility, safety, and participation.

**Women's functioning achievements in accessibility dimension:** This dimension is analyzed across four sub-dimensions: (1) access to urban public open spaces, (2) access to education, (3) access to a healthy environment, and (4) access to mobility and transport. The following four figures illustrate the second-stage models for these sub-dimensions of women's functioning achievements within the accessibility dimension. These models were applied separately to neighborhood clusters in the central district of Amasya with high and low WHDI levels, and the results were compared to identify and analyze the differences between the clusters.

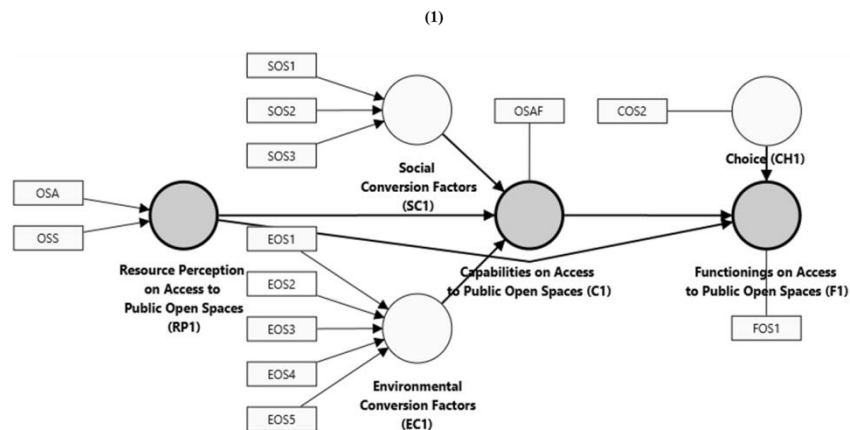


Figure 52: The Second-Stage Model of Women's Access to Public Open Spaces

The hypotheses of the first sub-dimension of accessibility, which is women's access to public open spaces, are:

(All statements correspond to  $H_a$  hypothesis.)

**H1<sub>1</sub>:** There is a relationship between women's resource perception and their capabilities regarding access to public open spaces. ( $RP1 \rightarrow C1$ )

**H1<sub>2</sub>:** There is a relationship between women's capabilities and their functionings regarding access to public open spaces. ( $C1 \rightarrow F1$ )

**H1<sub>3</sub>:** There is a relationship between women's resource perception and their functionings regarding access to public open spaces. ( $RP1 \rightarrow F1$ )

**H1<sub>4</sub>:** There is a relationship between social conversion factors and women's capabilities regarding access to public open spaces. ( $SC1 \rightarrow C1$ )

**H1<sub>5</sub>:** There is a relationship between environmental conversion factors and women's capabilities regarding access to public open spaces. ( $EC1 \rightarrow C1$ )

**H1<sub>6</sub>:** There is a relationship between women's choice and their functionings regarding access to public open spaces. ( $CH1 \rightarrow F1$ )

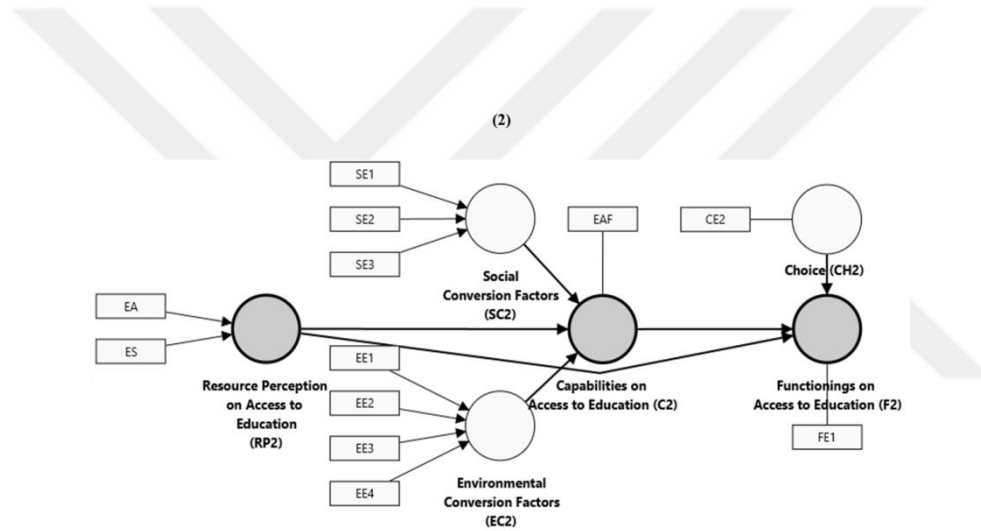


Figure 53: The Second-Stage Model of Women's Access to Education

The hypotheses of the second sub-dimension of accessibility, which is women's access to education, are:

(All statements correspond to  $H_a$  hypothesis.)

**H2<sub>1</sub>:** There is a relationship between women's resource perception and their capabilities regarding access to education. ( $RP2 \rightarrow C2$ )

**H2<sub>2</sub>:** There is a relationship between women's capabilities and their functionings regarding access to education. ( $C2 \rightarrow F2$ )

**H2<sub>3</sub>:** There is a relationship between women's resource perception and their functionings regarding access to education. ( $RP2 \rightarrow F2$ )

**H2<sub>4</sub>:** There is a relationship between social conversion factors and women’s capabilities regarding access to education. (SC2 → C2)

**H2<sub>5</sub>:** There is a relationship between environmental conversion factors and women’s capabilities regarding access to education. (EC2 → C2)

**H2<sub>6</sub>:** There is a relationship between women’s choice and their functionings regarding access to education. (CH2 → F2)

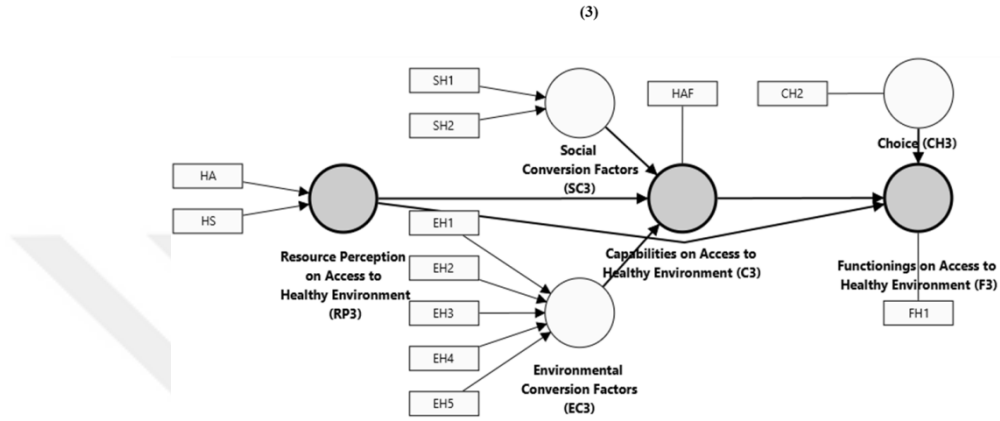


Figure 54: The Second-Stage Model of Women’s Access to Healthy Environment

The hypotheses of the third sub-dimension of accessibility, which is women’s access to healthy environment, are:

*(All statements correspond to H<sub>a</sub> hypothesis.)*

**H3<sub>1</sub>:** There is a relationship between women’s resource perception and their capabilities regarding access to healthy environment. (RP3 → C3)

**H3<sub>2</sub>:** There is a relationship between women’s capabilities and their functionings regarding access to healthy environment. (C3 → F3)

**H3<sub>3</sub>:** There is a relationship between women’s resource perception and their functionings regarding access to healthy environment. (RP3 → F3)

**H3<sub>4</sub>:** There is a relationship between social conversion factors and women’s capabilities regarding access to healthy environment. (SC3 → C3)

**H3<sub>5</sub>:** There is a relationship between environmental conversion factors and women’s capabilities regarding access to healthy environment. (EC3 → C3)

**H3<sub>6</sub>:** There is a relationship between women’s choice and their functionings regarding access to healthy environments. (CH3 → F3)

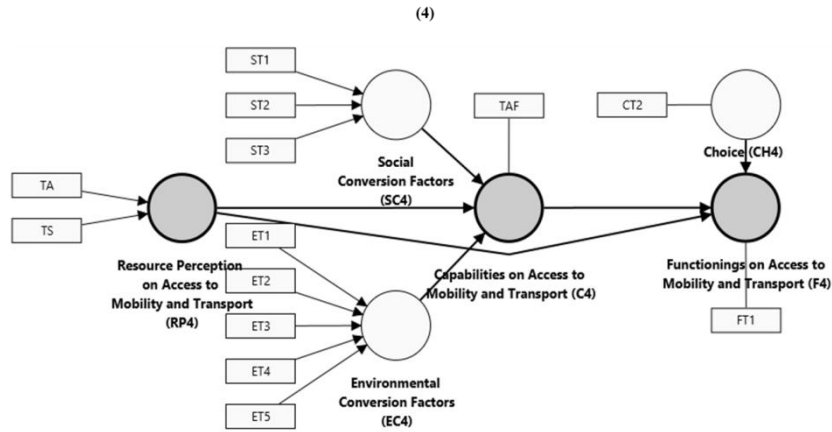


Figure 55: The Second-Stage Model of Women's Access to Mobility and Transport

The hypotheses of the fourth sub-dimension of accessibility, which is women's access to mobility and transport, are:

*(All statements correspond to  $H_a$  hypothesis.)*

**H4<sub>1</sub>:** There is a relationship between women's resource perception and their capabilities regarding access to mobility and transport. ( $RP4 \rightarrow C4$ )

**H4<sub>2</sub>:** There is a relationship between women's capabilities and their functionings regarding access to mobility and transport. ( $C4 \rightarrow F4$ )

**H4<sub>3</sub>:** There is a relationship between women's resource perception and their functionings regarding access to mobility and transport. ( $RP4 \rightarrow F4$ )

**H4<sub>4</sub>:** There is a relationship between social conversion factors and women's capabilities regarding access to mobility and transport. ( $SC4 \rightarrow C4$ )

**H4<sub>5</sub>:** There is a relationship between environmental conversion factors and women's capabilities regarding access to mobility and transport. ( $EC4 \rightarrow C4$ )

**H4<sub>6</sub>:** There is a relationship between women's choice and their functionings regarding access to mobility and transport. ( $CH4 \rightarrow F4$ )

**Women's functioning achievements in the safety dimension:** This dimension is analyzed under two sub-dimensions, namely (5) women's safety in urban public open spaces and (6) women's safety in urban public transport. The following two figures illustrate the second-stage models for these sub-dimensions of women's functioning achievements in the safety dimension. A dual analysis was conducted to compare the results between clusters in the central district of Amasya with high and low WHDI levels.

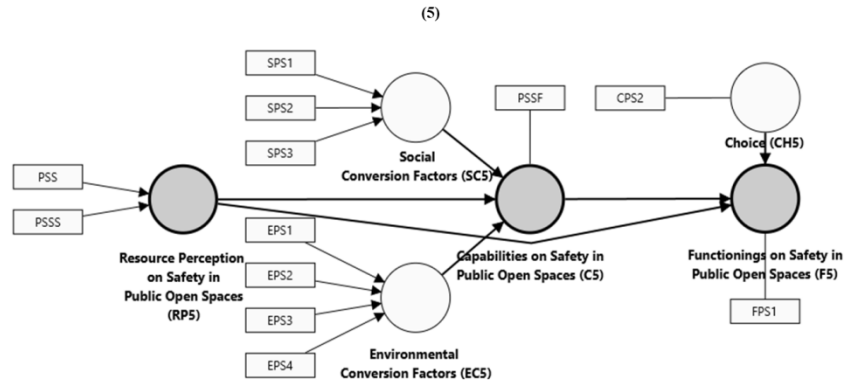


Figure 56: The Second-Stage Model of Women's Safety in Public Open Spaces

The hypotheses of the first sub-dimension of safety, which is women's safety in urban public open spaces, are:

(All statements correspond to  $H_a$  hypothesis.)

**H5<sub>1</sub>:** There is a relationship between women's resource perception and their capabilities regarding their safety in public open spaces. ( $RP5 \rightarrow C5$ )

**H5<sub>2</sub>:** There is a relationship between women's capabilities and their functionings regarding their safety in public open spaces. ( $C5 \rightarrow F5$ )

**H5<sub>3</sub>:** There is a relationship between women's resource perception and their functionings regarding their safety in public open spaces. ( $RP5 \rightarrow F5$ )

**H5<sub>4</sub>:** There is a relationship between social conversion factors and women's capabilities regarding their safety in public open spaces. ( $SC5 \rightarrow C5$ )

**H5<sub>5</sub>:** There is a relationship between environmental conversion factors and women's capabilities regarding their safety in public open spaces. ( $EC5 \rightarrow C5$ )

**H4<sub>6</sub>:** There is a relationship between women's choice and their functionings regarding their safety in public open spaces. ( $CH5 \rightarrow F5$ )

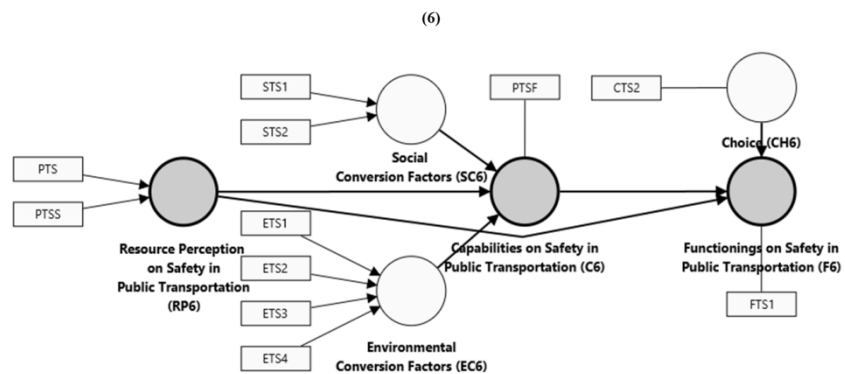


Figure 57: The Second-Stage Model of Women's Safety in Public Transport

The hypotheses of the second sub-dimension of safety, which is women's safety in urban public transport, are:

(All statements correspond to  $H_a$  hypothesis.)

**H6<sub>1</sub>:** There is a relationship between women's resource perception and their capabilities regarding their safety in public transport. (RP6  $\rightarrow$  C6)

**H6<sub>2</sub>:** There is a relationship between women's capabilities and their functionings regarding their safety in public transport. (C6  $\rightarrow$  F6)

**H6<sub>3</sub>:** There is a relationship between women's resource perception and their functionings regarding their safety in public transport. (RP6  $\rightarrow$  F6)

**H6<sub>4</sub>:** There is a relationship between social conversion factors and women's capabilities regarding their safety in public transport. (SC6  $\rightarrow$  C6)

**H6<sub>5</sub>:** There is a relationship between environmental conversion factors and women's capabilities regarding their safety in public transport. (EC6  $\rightarrow$  C6)

**H6<sub>6</sub>:** There is a relationship between women's choice and their functionings regarding their safety in public transport. (CH6  $\rightarrow$  F6)

**Women's functioning achievements in participation dimension** is analyzed under two sub-dimensions, namely (7) women's participation in economic activities, and (8) women's participation in decision-making processes. The following two figures show the second-stage models of two sub-dimensions of women's functioning achievements in participation dimension. Similar to the other sub-dimensions on accessibility and safety, a dual analysis were conducted for sub-dimensions of participation to compare the results in clusters in the central district of Amasya with high and low WHDI scores.

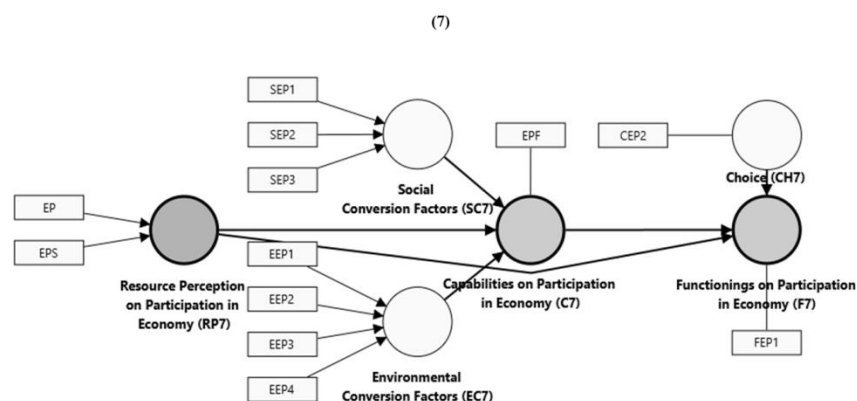


Figure 58: The Second-Stage Model of Women's Participation in Economic Activities



The hypotheses of the first sub-dimension of participation, which is women's participation in economic activities, are:

*(All statements correspond to  $H_a$  hypothesis.)*

**H7<sub>1</sub>:** There is a relationship between women's resource perception and their capabilities regarding participation in economic activities. (RP7  $\rightarrow$  C7)

**H7<sub>2</sub>:** There is a relationship between women's capabilities and their functionings regarding participation in economic activities. (C7  $\rightarrow$  F7)

**H7<sub>3</sub>:** There is a relationship between women's resource perception and their functionings regarding participation in economic activities. (RP7  $\rightarrow$  F7)

**H7<sub>4</sub>:** There is a relationship between social conversion factors and women's capabilities regarding participation in economic activities. (SC7  $\rightarrow$  C7)

**H7<sub>5</sub>:** There is a relationship between environmental conversion factors and women's capabilities regarding participation in economic activities. (EC7  $\rightarrow$  C7)

**H7<sub>6</sub>:** There is a relationship between women's choice and their functionings regarding participation in economic activities. (CH7  $\rightarrow$  F7)

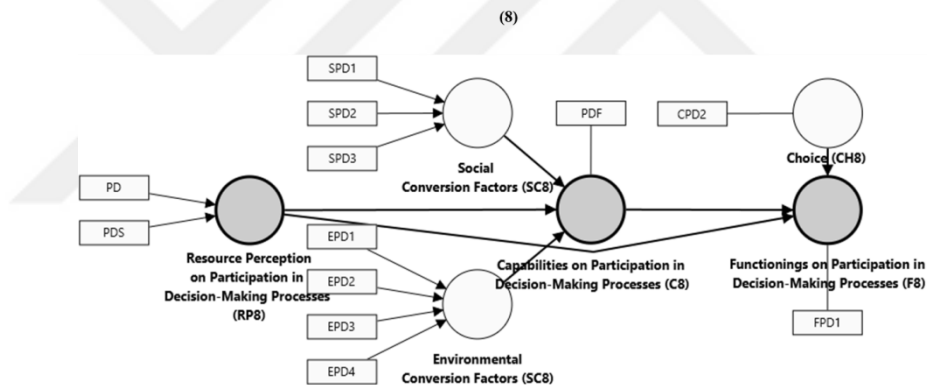


Figure 59: The Second-Stage Model of Women's Participation in Decision-Making Processes

The hypotheses of the second sub-dimension of participation, which is women's participation in decision-making processes, are:

*(All statements correspond to  $H_a$  hypothesis.)*

**H8<sub>1</sub>:** There is a relationship between women's resource perception and their capabilities regarding participation in decision-making processes. (RP8  $\rightarrow$  C8)

**H8<sub>2</sub>:** There is a relationship between women's capabilities and their functionings regarding participation in decision-making processes. (C8  $\rightarrow$  F8)

**H8<sub>3</sub>:** There is a relationship between women's resource perception and their functionings regarding participation in decision-making processes.(RP8→F8)

**H8<sub>4</sub>:** There is a relationship between social conversion factors and women's capabilities regarding participation in decision-making processes.(SC8 → C8)

**H8<sub>5</sub>:** There is a relationship between environmental conversion factors and women's capabilities regarding participation in decision-making processes. (EC8 → C8)

**H8<sub>6</sub>:** There is a relationship between women's choice and their functionings regarding participation in decision-making processes. (CH8 → F8)

As can be seen from the second-stage models, the conversion factors are addressed in terms of external (social and environmental) aspects. The internal conversion factors were examined according to the outcomes of the choice factors of each sub-dimension that affects functionings, through women's personal characteristics influencing their choices and constraining them from obtaining functionings.

#### **6.4. Validation of the Main and the Second-Stage Path Models**

In light of the main research question of the thesis, which explores the relationships between women's resource perception, capabilities, and functionings regarding accessibility, safety, and participation, which are key determinants of their quality of urban life (QoUL), in urban neighborhoods classified by Women's HDI, sub-research questions were formulated to guide the empirical study. The main path model and second-stage path models were structured to address the previously mentioned sub-research questions.

To analyze the subjective primary data obtained from women participants through the survey conducted in twenty selected urban neighborhoods in the central district of Amasya, SmartPLS 4.1 software was used. In the following sections, the validation results of the main path model and the second-stage path models are presented for the urban cluster with high WHDI and the urban cluster with low WHDI respectively.

#### **6.4.1. Validation of the Main Path Models**

As previously stated, since the repeated indicator approach can lead to misleading results for R-squared values, path coefficients, and p-values, the disjoint two-stage approach was used to analyze the measurement and structural model of the main path model. Validating the chosen approach for evaluating a model incorporating HOCs requires special attention. In the disjoint two-stage approach, all measurement models should be assessed for reliability and validity in both Stage 1 and Stage 2. Additionally, the structural model should be evaluated based on the Stage 2 results (Hair et al., 2024). At this point, the steps outlined by Hair et al. (2021; 2024) were followed for assessing the main path models for the high and low WHDI clusters.

##### **6.4.1.1. Validation of the Main Path Model for the High WHDI Cluster**

In the evaluation of the main path model for the urban cluster with high WHDI in the central district of Amasya, the model was assessed in the Stage 1 and the Stage 2, respectively. In the Stage 1, as mentioned under the title '*The Main Path Models and Related Hypotheses*', the formative measurement model without HOCs was developed. To assess the formative measurement model, the outer model needed to be evaluated for validity. In this evaluation, the steps recommended by Hair et al. (2021) were followed.

The first key step in assessing the formative measurement model is evaluating convergent validity through redundancy analysis. The nine lower-order constructs of the main path model for the high WHDI cluster are RA, RS, RP, CA, CS, CP, FA, FS, and FP. In the redundancy analysis of the formatively measured constructs, each measurement model consists of two constructs: (1) a construct measured by formative indicators, and (2) a construct measured by a single item (*see Appendix D1*).

The redundancy analysis results, presented in Table 22, for the nine formatively measured constructs indicate that their correlations with reflectively measured single items exceed the recommended threshold of 0.708, as suggested by Hair et al. (2021).

Table 22: Redundancy Analysis Results for the Formatively Measured Constructs of Main Path Model in the High WHDI Cluster

Constructs	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	p-values
RA_F → RA_SI	0.863	0.866	0.015	57.951	0.000
RS_F → RS_SI	0.890	0.891	0.013	71.051	0.000
RP_F → RP_SI	0.919	0.920	0.009	102.880	0.000
CA_F → CA_SI	0.894	0.895	0.012	74.078	0.000
CS_F → CS_SI	0.932	0.932	0.010	98.069	0.000
CP_F → CP_SI	0.910	0.911	0.011	84.842	0.000
FA_F → FA_SI	0.896	0.897	0.012	73.871	0.000
FS_F → FS_SI	0.922	0.922	0.011	87.282	0.000
FP_F → FP_SI	0.931	0.931	0.009	105.887	0.000

Table 23 presents the Stage 1 results on the validity of the indicators used in the main path model for the high WHDI cluster. Specifically, the table reports the VIF values, significance of indicator weights, outer loadings, and significance of indicator loadings.

The indicator collinearity of the formative measurement model was assessed by checking the VIF values. As shown in Table 23, collinearity is not a problematic issue for the measurement model, as all the VIF values for the indicators are below 3. The final decision to delete or retain indicators was made based on the suggested decision-making process for assessing the statistical significance and relevance of the formative indicators.

When examining the values in the table, there are 6 indicators with a significance of indicator weight which are greater than 0.05. One of these indicators was retained in the model because its outer loading value was greater than 0.5. It was decided to keep the other five indicators in the model because their significance of indicator loadings was less than 0.05.

In conclusion, to avoid decreasing the content validity of the measurement model, the formative indicators were retained even if the indicator loadings were below 0.5 but still significant. The graphical output of the Stage 1 results for the assessment of the urban cluster with high WHDI can be found in *Appendix A1*.

Table 23: The Stage 1 Results of the Assessment of the Formative Measurement Model of the Urban Cluster with High WHDI

Lower-Order Constructs (LOCs)	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception on Accessibility (RA)	OSA	1.123	0.167	0.357	<b>0.000</b>
	OSS	1.216	<b>0.001</b>	0.574	0.000
	EA	1.375	0.093	0.489	<b>0.000</b>
	ES	1.436	<b>0.018</b>	0.549	0.000
	HA	1.503	<b>0.020</b>	0.685	0.000
	HS	1.475	<b>0.000</b>	0.749	0.000
	TA	1.090	0.186	0.226	<b>0.021</b>
	TS	1.176	<b>0.027</b>	0.500	0.000
Resource Perception on Safety (RS)	PSS	1.215	<b>0.003</b>	0.616	0.000
	PSSS	1.425	<b>0.000</b>	0.805	0.000
	PTS	1.128	<b>0.041</b>	0.495	0.000
	PTSS	1.308	<b>0.000</b>	0.794	0.000
Resource Perception on Participation (RP)	EP	1.160	0.439	0.408	<b>0.000</b>
	EPS	1.267	<b>0.000</b>	0.793	0.000
	PD	1.297	<b>0.000</b>	0.742	0.000
	PDS	1.342	<b>0.004</b>	0.683	0.000
Capabilities on Accessibility (CA)	OSAF	1.243	<b>0.020</b>	0.622	0.000
	EAF	1.431	0.409	<b>0.608</b>	0.000
	HAF	1.419	<b>0.000</b>	0.872	0.000
	TAF	1.393	<b>0.002</b>	0.746	0.000
Capabilities on Safety (CS)	PSSF	1.386	<b>0.000</b>	0.865	0.000
	PTSF	1.386	<b>0.000</b>	0.883	0.000
Capabilities on Participation (CP)	EPF	1.149	<b>0.003</b>	0.656	0.000
	PDF	1.149	<b>0.000</b>	0.940	0.000
Functionings on Accessibility (FA)	FOS1	1.230	<b>0.016</b>	0.576	0.000
	FE1	1.137	<b>0.001</b>	0.491	0.000
	FH1	1.155	<b>0.000</b>	0.744	0.000
	FT1	1.109	<b>0.000</b>	0.737	0.000
Functionings on Safety (FS)	FPS1	1.229	<b>0.000</b>	0.907	0.000
	FTS1	1.229	<b>0.000</b>	0.772	0.000
Functionings on Participation (FP)	FEP1	1.008	0.118	0.380	<b>0.049</b>
	FPD1	1.008	<b>0.000</b>	0.955	0.000

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section.)

In Stage 2, the latent variable scores of the nine lower-order constructs of the model (RA, RS, RP, CA, CS, CP, FA, FS, and FP) obtained from Stage 1 were used as the formative indicators of three HOCs (OR, OC, and OF). The measurement and structural model of the HOCs with latent variable scores as formative indicators were assessed. Table 24 presents the measurement model results of Stage 2. The graphical output of the measurement model results of the Stage 2 of the main path model of the cluster with high WHDI can be found in *Appendix A2*.

Table 24: The Stage 2 Results of the Assessment of the Formative Measurement Model of the Urban Cluster with High WHDI

Higher-Order Constructs (HOCs)	LV Scores of LOCs	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Overall Resource Perception (OR)	LV scores – (RA)	1.320	<b>0.000</b>	0.837	0.000
	LV scores – (RS)	1.351	<b>0.000</b>	0.789	0.000
	LV scores – (RP)	1.213	<b>0.000</b>	0.669	0.000
Overall Capabilities (OC)	LV scores – (CA)	1.437	<b>0.000</b>	0.819	0.000
	LV scores – (CS)	1.426	<b>0.000</b>	0.891	0.000
	LV scores – (CP)	1.281	<b>0.036</b>	0.591	0.000
Overall Functionings (OF)	LV scores – (FA)	1.184	<b>0.000</b>	0.881	0.000
	LV scores – (FS)	1.132	<b>0.000</b>	0.726	0.000
	LV scores – (FP)	1.056	<b>0.025</b>	0.344	0.000

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section.)

The assessment of the structural model in Stage 2 was conducted by applying the bootstrapping procedure, taking 10,000 bootstrap subsamples from the sample. This allowed for the calculation of path coefficients' significance, standard deviations, T statistics, and p-values.

Table 25: The Stage 2 Results of the Assessment of the Structural Model of the Urban Cluster with High WHDI

Hypotheses	Paths	Beta Coefficients	Standard Deviation	T statistics	p-values	Results
H1 - <i>highWHDI</i>	OR→OC	0.573	0.033	17.119	0.000	Accept
H2 - <i>highWHDI</i>	OC→OF	0.391	0.057	6.825	0.000	Accept
H3 - <i>highWHDI</i>	OR→OF	0.411	0.054	7.636	0.000	Accept

(OR: Overall Resource Perception of Women; OC: Overall Capabilities of Women; OF: Overall Functionings of Women)

According to the results of the structural model assessment and hypothesis testing presented in Table 25, significant positive relationships were found for the OR–OC path ( $\beta=0.573$ ,  $p=0.000$ ), the OC–OF path ( $\beta=0.391$ ,  $p=0.000$ ), and the OR–OF path ( $\beta=0.411$ ,  $p=0.000$ ). Since all p-values do not exceed the accepted significance level of 0.05, the alternative hypotheses ( $H_a$ ) are accepted, and the null hypotheses ( $H_0$ ) are rejected. Therefore, it can be concluded that the following hypotheses are accepted for the urban cluster with high WHDI:

**H1** (*for high WHDI*): There is a significant relationship between women's overall resource perception and women's overall capabilities. (OR  $\rightarrow$  OC)

**H2** (*for high WHDI*): There is a significant relationship between women's overall capabilities and women's overall functionings. (OC  $\rightarrow$  OF)

**H3** (*for high WHDI*): There is a significant relationship between women's overall resource perception and women's overall functionings. (OR  $\rightarrow$  OF)

The R-squared, a measure of a model's explanatory power (Hair et al., 2021), was found to be 0.328 for the endogenous variable of OC and 0.506 for the endogenous variable of OF (see *Appendix A3*). R-squared values are considered weak when  $0.25 \leq R^2 < 0.50$ , moderate when  $0.50 \leq R^2 < 0.75$ , and substantial when  $R^2 \geq 0.75$  (Hair et al., 2011). Furthermore, in social sciences, an R-squared of 0.2 or 20% of the variability explained by the model can be considered a substantial effect. In urban studies, as pointed out in Jingwen et al.'s study (2022), R-squared values are considered weak when  $0.02 \leq R^2 < 0.12$ , moderate when  $0.12 \leq R^2 < 0.25$ , and strong when  $R^2 \geq 0.25$ . Therefore, the obtained R-squared values indicate a strong level of variability explained by the model.

#### **6.4.1.2. Validation of the Main Path Model for the Low WHDI Cluster**

In this section, the evaluation of the main path model for the urban cluster with low WHDI in the central district of Amasya was conducted in two stages respectively: Stage 1 and Stage 2. The disjoint two-stage approach was used to analyze the measurement and structural models for the urban cluster with low WHDI. First, in Stage 1, after removing the HOCs from the model, the formative measurement model was assessed for validity. This is followed by the validity assessment of the measurement and structural model of Stage 2.

Assessing convergent validity through redundancy analysis is the first key step in evaluating the formative measurement models. The nine lower-order constructs of the main path model for the low WHDI cluster are RA, RS, RP, CA, CS, CP, FA, FS, and FP.

Table 26: Redundancy Analysis Results for the Formatively Measured Constructs of Main Path Model of the Cluster with Low WHDI

Constructs	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	p-values
RA_F → RA_SI	0.822	0.835	0.035	23.593	0.000
RS_F → RS_SI	0.881	0.884	0.022	39.358	0.000
RP_F → RP_SI	0.864	0.868	0.025	35.003	0.000
CA_F → CA_SI	0.829	0.834	0.025	33.036	0.000
CS_F → CS_SI	0.856	0.856	0.030	28.458	0.000
CP_F → CP_SI	0.914	0.915	0.017	53.799	0.000
FA_F → FA_SI	0.847	0.851	0.028	29.795	0.000
FS_F → FS_SI	0.890	0.890	0.025	36.078	0.000
FP_F → FP_SI	0.726	0.727	0.043	16.996	0.000

The graphical output of the redundancy analysis results can be seen in *Appendix D2*. The results for the redundancy analysis of the nine formatively measured constructs, presented in Table 26, indicate that the correlation of the formatively measured constructs with reflectively measured single items exceeds the recommended threshold of 0.708, as suggested by Hair et al. (2021).

Table 27 presents the results regarding the validity of the indicators used in the main path model of the urban cluster with low WHDI. For the formative measurement model, since all VIF values of the indicators are below 3, collinearity is not a problematic issue. Following Hair et al.'s (2021) advice, the formative indicators are either retained or removed based on the results of the recommended decision-making process for assessing their statistical significance and relevance.

To avoid decreasing the content validity of the measurement model, three formative indicators (OSA, TA, and FE1) were retained, even though their indicator loadings were below 0.5 but still significant. The graphical output of the Stage 1 results for the assessment of the urban cluster with low WHDI can be found in *Appendix B1*.



Table 27: The Results of the Assessment of the Formative Measurement Model of the Cluster with Low WHDI

Lower-Order Constructs (LOCs)	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception on Accessibility (RA)	OSA	1.303	0.847	0.442	<b>0.001</b>
	OSS	1.226	0.090	<b>0.500</b>	0.000
	EA	1.498	<b>0.019</b>	0.743	0.000
	ES	1.144	<b>0.013</b>	0.519	0.000
	HA	1.564	0.061	<b>0.706</b>	0.000
	HS	1.459	0.552	<b>0.559</b>	0.000
	TA	1.131	0.348	0.333	<b>0.011</b>
	TS	1.254	0.093	<b>0.543</b>	0.000
Resource Perception on Safety (RS)	PSS	1.251	<b>0.001</b>	0.700	0.000
	PSSS	1.193	0.069	<b>0.603</b>	0.000
	PTS	1.265	0.078	<b>0.629</b>	0.000
	PTSS	1.167	<b>0.000</b>	0.713	0.000
Resource Perception on Participation (RP)	EP	1.210	0.054	<b>0.619</b>	0.000
	EPS	1.154	<b>0.043</b>	0.651	0.000
	PD	1.407	<b>0.015</b>	0.780	0.000
	PDS	1.227	<b>0.022</b>	0.679	0.000
Capabilities on Accessibility (CA)	OSAF	1.312	<b>0.034</b>	0.689	0.000
	EAF	1.252	0.116	<b>0.639</b>	0.000
	HAF	1.341	<b>0.014</b>	0.739	0.000
	TAF	1.217	<b>0.005</b>	0.758	0.000
Capabilities on Safety (CS)	PSSF	1.225	<b>0.000</b>	0.921	0.000
	PTSF	1.225	<b>0.011</b>	0.747	0.000
Capabilities on Participation (CP)	EPF	1.185	0.055	<b>0.684</b>	0.000
	PDF	1.185	<b>0.000</b>	0.940	0.000
Functionings on Accessibility (FA)	FOS1	1.331	<b>0.045</b>	0.702	0.000
	FE1	1.110	0.364	0.378	<b>0.007</b>
	FH1	1.390	<b>0.014</b>	0.777	0.000
	FT1	1.367	<b>0.000</b>	0.842	0.000
Functionings on Safety (FS)	FPS1	1.173	<b>0.000</b>	0.961	0.000
	FTS1	1.173	0.208	<b>0.624</b>	0.001
Functionings on Participation (FP)	FEP1	1.430	<b>0.037</b>	0.790	0.000
	FPD1	1.430	<b>0.000</b>	0.946	0.000

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section.)

In Stage 2 of the disjoint two-stage model for the urban cluster with low WHDI, the latent variable scores of the LOCs from Stage 1 are used as input for the measurement model of Stage 2. The measurement and structural model of the HOCs with latent variable scores as formative indicators are assessed.

Table 28 shows the measurement model results of the Stage 2. The graphical output of the measurement model results of the Stage 2 of the main path model of the cluster with low WHDI can be found in *Appendix B2*.

Table 28: The Stage 2 Results of the Assessment of the Formative Measurement Model of the Urban Cluster with Low WHDI

Higher-Order Constructs (HOCs)	LV Scores of LOCs	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Overall Resource Perception (OR)	LV scores – (RA)	1.508	<b>0.001</b>	0.848	0.000
	LV scores – (RS)	1.338	<b>0.009</b>	0.764	0.000
	LV scores – (RP)	1.258	<b>0.000</b>	0.726	0.000
Overall Capabilities (OC)	LV scores – (CA)	1.383	<b>0.000</b>	0.867	0.000
	LV scores – (CS)	1.421	0.052	<b>0.732</b>	0.000
	LV scores – (CP)	1.178	0.051	<b>0.686</b>	0.000
Overall Functionings (OF)	LV scores – (FA)	1.139	<b>0.000</b>	0.866	0.000
	LV scores – (FS)	1.067	<b>0.014</b>	0.470	0.001
	LV scores – (FP)	1.081	<b>0.028</b>	0.655	0.000

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section.)

The hypotheses of the main path model for measuring women's capabilities-based quality of urban life in the low WHDI cluster are based on examining the significant relationships among women's overall resource perception, overall capabilities, and overall functionings.

In Stage 2, the beta coefficients, standard deviations, T statistics, and p-values were calculated, and the structural model was assessed using 10,000 bootstrap subsamples. Table 29 presents the results of the structural model assessment of the Stage 2.

Table 29: The Stage 2 Results of the Assessment of the Structural Model of the Urban Cluster with Low WHDI

Hypotheses	Paths	Beta Coefficients	Standard Deviation	T statistics	p-values	Results
H1 - <i>lowWHDI</i>	OR→OC	0.659	0.058	11.292	0.000	Accept
H2 - <i>lowWHDI</i>	OC→OF	0.386	0.175	2.208	0.027	Accept
H3 - <i>lowWHDI</i>	OR→OF	0.469	0.154	3.055	0.002	Accept

(OR: Overall Resource Perception of Women; OC: Overall Capabilities of Women; OF: Overall Functionings of Women)

According to the results of the assessment of structural model, significant positive relationships were found for the OR-OC path ( $\beta=0.659$ ,  $p=0.000$ ), OC-OF path ( $\beta=0.386$ ,  $p=0.027$ ), and OR-OF path ( $\beta=0.469$ ,  $p=0.002$ ). All the alternative hypotheses ( $H_a$ ) were accepted, and the null hypotheses ( $H_0$ ) are rejected since all p-values are lower than 0.05. To put it more clearly, the following hypotheses were accepted for the urban cluster with low WHDI:

**H1** (*for low WHDI*): There is a significant relationship between women's overall resource perception and women's overall capabilities. (OR → OC)

**H2** (*for low WHDI*): There is a significant relationship between women's overall capabilities and women's overall functionings. (OC → OF)

**H3** (*for low WHDI*): There is a significant relationship between women's overall resource perception and women's overall functionings. (OR → OF)

The R-squared, which indicates the explanatory power of the model (Hair et al., 2021), was found 0.434 for the endogenous variable of OC, and 0.608 for the endogenous variable of OF (see *Appendix B3*). By referencing Jingwen et al.'s study (2022) for urban studies, the found R-squared values indicate the strong variability explained by the model.

#### 6.4.2. Validation of the Second-Stage Path Models

The everyday problems women experience in urban spaces have a significant impact on their quality of life. As previously mentioned in Chapter 4, these problems are mainly shaped by issues of accessibility, safety, and participation in urban spaces. Accordingly, for this study, the second-stage models were structured by incorporating the core dimensions (resource perception, capabilities, conversion

factors, agency/choice, and functionings) of the capabilities and functionings approach, along with eight sub-dimensions categorized under accessibility, safety, and participation. The sub-dimensions of accessibility are women's access to (1) public open spaces, (2) education, (3) a healthy environment, and (4) mobility and transport. The sub-dimensions of safety are women's safety in (5) public open spaces, and (6) public transportation. The sub-dimensions of participation are women's participation in (7) economic activities, and (8) decision-making processes. The validity assessments of the second-stage models for the eight mentioned sub-dimensions were conducted separately for high and low WHDI clusters under the relevant headings. The graphical output of the results can be found in *Appendix C*.

#### **6.4.2.1. Validation of the Second-Stage Path Models for the Accessibility Dimension in High and Low WHDI Clusters**

The second-stage path models for the accessibility dimension include four sub-dimensions: access to urban public open spaces, education, healthy environment, and mobility and transport. The validity assessment of the formative second-stage models was conducted separately for the high and low WHDI clusters in the central district of Amasya. Since all the constructs in the second-stage models of the sub-dimensions consist of formative indicators, the steps for evaluating formative models proposed by Hair et al. (2021) were followed.

##### **6.4.2.1.1. Accessibility to Public Open Spaces**

In this section, the validation results of the second-stage model for women's access to urban public open spaces are presented separately for the high and low WHDI clusters.

*For high WHDI cluster*, the measurement model results will be presented, followed by the path model results for the cluster with high WHDI. For the high WHDI cluster, the redundancy analysis results for the RP1, SC1, and EC1 constructs show path coefficients of 0.853, 0.828, and 0.710, respectively, all of which exceed the recommended threshold of 0.708. The graphical output of the redundancy analysis results is presented in *Appendix E1*.

Table 30 displays the validity results of the indicators used in the second-stage model for the accessibility to urban public open spaces sub-dimension of the high WHDI cluster. It includes VIF values, the significance of indicator weights, outer loadings, and the significance of indicator loadings. Since all VIF values of the indicators are below 3, collinearity does not pose a problem. Although not all indicator weights are statistically significant ( $p < 0.05$ ), all indicators are retained because their outer loadings exceed 0.5 and their indicator loadings are statistically significant.

Table 30: The Results of the Second-Stage Measurement Model of Accessibility to Urban Public Open Space Sub-Dimension of the Cluster with High WHDI

Constructs on Access to Public Open Spaces	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP1)	OSA	1.089	<b>0.000</b>	0.787	0.000
	OSS	1.089	<b>0.000</b>	0.816	0.000
Capability (C1)	OSAF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC1)	SOS1	1.666	<b>0.036</b>	0.564	0.000
	SOS2	1.655	0.285	0.498	<b>0.000</b>
	SOS3	1.041	<b>0.000</b>	0.907	0.000
Environmental Conversion Factors (EC1)	EOS1	1.215	<b>0.000</b>	0.750	0.000
	EOS2	2.187	0.189	<b>0.714</b>	0.000
	EOS3	1.679	0.060	<b>0.741</b>	0.000
	EOS4	1.338	0.118	0.437	<b>0.002</b>
	EOS5	1.687	0.672	<b>0.514</b>	0.000
Choice (CH1)	COS2	1.000	n/a	1.000	n/a
Functioning (F1)	FOS1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

According to the bootstrapping analysis with 10,000 sub-samples, the results of the second-stage structural model for the accessibility to urban public open spaces sub-dimension in the high WHDI cluster are presented in Table 31. In the high WHDI cluster, all hypotheses (H1<sub>1</sub>, H1<sub>2</sub>, H1<sub>3</sub>, H1<sub>4</sub>, H1<sub>5</sub>, and H1<sub>6</sub>) are accepted, indicating significant relationships among the constructs. This section focuses solely on the validity assessment of the structural model, while a detailed interpretation of the hypotheses results can be found in the Findings chapter.

Table 31: The Results of the Second-Stage Structural Model of Accessibility to Urban Public Open Space Sub-Dimension of the Cluster with High WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H1 <sub>1</sub> - high	RP1 $\rightarrow$ C1	0.147	0.064	2.296	0.022	Accept
H1 <sub>2</sub> - high	C1 $\rightarrow$ F1	0.240	0.055	4.330	0.000	Accept
H1 <sub>3</sub> - high	RP1 $\rightarrow$ F1	0.255	0.052	4.874	0.000	Accept
H1 <sub>4</sub> - high	SC1 $\rightarrow$ C1	-0.300	0.056	5.338	0.000	Accept
H1 <sub>5</sub> - high	EC1 $\rightarrow$ C1	-0.169	0.060	2.802	0.005	Accept
H1 <sub>6</sub> - high	CH1 $\rightarrow$ F1	-0.257	0.066	3.888	0.000	Accept

(RP1: Resource perception on access to public open spaces, C1: Capabilities on access to public open spaces, F1: Functionings on access to public open spaces, SC1: Social conversion factors, EC1: Environmental conversion factors, CH1: Choice)

**For the low WHDI cluster**, the measurement model results will be presented first, followed by the path model results. Since the path coefficients for the RP1, SC1, and EC1 constructs are 0.892, 0.890, and 0.886, respectively, convergent validity is ensured for the low WHDI cluster. The graphical output of the results of redundancy analysis can be seen in *Appendix E2*.

Table 32: The Results of the Second-Stage Measurement Model of Accessibility to Urban Public Open Space Sub-Dimension of the Cluster with Low WHDI

Constructs on Access to Public Open Spaces	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP1)	OSA	1.079	<b>0.000</b>	0.926	0.000
	OSS	1.079	<b>0.015</b>	0.614	0.000
Capability (C1)	OSAF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC1)	SOS1	1.841	<b>0.000</b>	0.594	0.000
	SOS2	2.696	<b>0.006</b>	0.423	0.015
	SOS3	1.708	<b>0.000</b>	0.728	0.000
Environmental Conversion Factors (EC1)	EOS1	1.305	<b>0.009</b>	0.742	0.000
	EOS2	1.547	0.612	0.499	<b>0.003</b>
	EOS3	1.841	0.566	<b>0.682</b>	0.000
	EOS4	1.361	<b>0.012</b>	0.509	0.004
	EOS5	1.807	<b>0.023</b>	0.632	0.000
Choice (CH1)	COS2	1.000	n/a	1.000	n/a
Functioning (F1)	FOS1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

As shown in Table 32, since the VIF values, outer loadings, and significance of indicator loadings meet the validity requirements, none of the indicators have been removed.

Table 33: The Results of the Second-Stage Structural Model of Accessibility to Urban Public Open Space Sub-Dimension of the Cluster with Low WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H1 <sub>1</sub> - low	RP1 $\rightarrow$ C1	0.152	0.103	1.482	0.138	Reject
H1 <sub>2</sub> - low	C1 $\rightarrow$ F1	0.049	0.097	0.503	0.615	Reject
H1 <sub>3</sub> - low	RP1 $\rightarrow$ F1	0.311	0.087	3.577	0.000	Accept
H1 <sub>4</sub> - low	SC1 $\rightarrow$ C1	-0.294	0.082	3.585	0.000	Accept
H1 <sub>5</sub> - low	EC1 $\rightarrow$ C1	-0.238	0.100	2.376	0.017	Accept
H1 <sub>6</sub> - low	CH1 $\rightarrow$ F1	-0.087	0.076	1.137	0.256	Reject

(RP1: Resource perception on access to public open spaces, C1: Capabilities on access to public open spaces, F1: Functionings on access to public open spaces, SC1: Social conversion factors, EC1: Environmental conversion factors, CH1: Choice)

The results of the second-stage structural model for the accessibility to urban public open spaces sub-dimension in the low WHDI cluster are presented in Table 33, based on the bootstrapping analysis with 10,000 sub-samples. According to the structural model results for women's access to public open spaces in the low WHDI cluster, H1<sub>3</sub>, H1<sub>4</sub>, and H1<sub>5</sub> are accepted, while H1<sub>1</sub>, H1<sub>2</sub>, and H1<sub>6</sub> are rejected. Further interpretation of the results and a comparison of these results with the high WHDI cluster can be found in the Findings chapter.

#### 6.4.2.1.2. Accessibility to Education

The literature indicates that women's access to education leads to remarkable improvement in their empowerment and living conditions (Stromquist, 2015; Tuncer, 2018; Engida, 2021). This section presents the validation results of the second-stage model for women's access to education in both high and low WHDI clusters.

**For the high WHDI cluster,** the results of the measurement model and path model will be presented first. For the high WHDI cluster, the redundancy analysis results for the RP2, SC2, and EC2 constructs show path coefficients of 0.904, 0.914, and 0.753, respectively, all of which exceed the recommended threshold of 0.708. The graphical output of the redundancy analysis results is presented in *Appendix E1*.

Table 34: The Results of the Second-Stage Measurement Model of Accessibility to Education Sub-Dimension of the Cluster with High WHDI

Constructs on Access to Education	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP2)	EA	1.314	<b>0.000</b>	0.832	0.000
	ES	1.314	<b>0.000</b>	0.891	0.000
Capability (C2)	EAF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC2)	SE1	1.526	0.073	<b>0.909</b>	0.000
	SE2	1.465	0.572	<b>0.703</b>	0.003
	SE3	1.420	0.364	<b>0.772</b>	0.003
Environmental Conversion Factors (EC2)	EE1	1.600	0.010	0.812	0.000
	EE2	1.568	<b>0.004</b>	0.764	0.000
	EE3	1.388	<b>0.012</b>	0.712	0.000
	EE4	2.137	0.472	<b>0.643</b>	0.000
Choice (CH2)	CE2	1.000	n/a	1.000	n/a
Functioning (F2)	FE1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

Table 34 displays the validity results of the indicators used in the second-stage model for accessibility to education. As all VIF values of the indicators are below 3, collinearity is not an issue. While not all indicator weights are statistically significant ( $p < 0.05$ ), all indicators are retained since their outer loadings are above 0.5 and their indicator loadings are below 0.05.

Table 35: The Results of the Second-Stage Structural Model of Accessibility to Education Sub-Dimension of the Cluster with High WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H2 <sub>1</sub> - high	RP2 $\rightarrow$ C2	0.252	0.049	5.115	0.000	Accept
H2 <sub>2</sub> - high	C2 $\rightarrow$ F2	0.202	0.057	3.511	0.000	Accept
H2 <sub>3</sub> - high	RP2 $\rightarrow$ F2	0.217	0.054	4.013	0.000	Accept
H2 <sub>4</sub> - high	SC2 $\rightarrow$ C2	-0.121	0.048	2.492	0.013	Accept
H2 <sub>5</sub> - high	EC2 $\rightarrow$ C2	-0.204	0.051	3.967	0.000	Accept
H2 <sub>6</sub> - high	CH2 $\rightarrow$ F2	-0.178	0.059	3.005	0.003	Accept

(RP2: Resource perception on access to education, C2: Capabilities on access to education, F2: Functionings on access to education, SC2: Social conversion factors, EC2: Environmental conversion factors, CH2: Choice)



Table 35 is created by the results of the bootstrapping analysis with 10,000 sub-samples. In the high WHDI cluster, all hypotheses (H2<sub>1</sub>, H2<sub>2</sub>, H2<sub>3</sub>, H2<sub>4</sub>, H2<sub>5</sub>, and H2<sub>6</sub>) are accepted.

*For the cluster with low WHDI*, the measurement and path model results of the second-stage measurement model of accessibility to education will be presented. For the low WHDI cluster, the convergent validity is ensured because the path coefficients are found 0.846, 0.877 and 0.839 respectively for RP2, SC2, and EC2 constructs. The graphical output of the results of redundancy analysis can be seen in *Appendix E2*. As shown in Table 36, the VIF values are below 3, except for the SE2 indicator. According to Hair et al. (2021), a VIF value between 3 and 5 indicates that collinearity issues are not critical, while a VIF value of 5 or higher suggests collinearity problems. Since the VIF value of the SE2 indicator is 3.829, this indicator is not removed from the model. All indicators in the model are retained, as their outer loadings exceed 0.5, even though the significance of their indicator weights is greater than 0.05.

Table 36: The Results of the Second-Stage Measurement Model of Accessibility to Education Sub-Dimension of the Cluster with Low WHDI

Constructs on Access to Education	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP2)	EA	1.046	<b>0.027</b>	0.708	0.001
	ES	1.046	<b>0.001</b>	0.840	0.000
Capability (C2)	EAF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC2)	SE1	2.365	<b>0.000</b>	0.844	0.000
	SE2	3.829	0.098	<b>0.612</b>	0.002
	SE3	2.063	<b>0.006</b>	0.713	0.000
Environmental Conversion Factors (EC2)	EE1	1.290	<b>0.000</b>	0.898	0.000
	EE2	1.703	0.487	<b>0.560</b>	0.009
	EE3	1.457	0.403	<b>0.649</b>	0.000
	EE4	2.231	0.499	<b>0.729</b>	0.000
Choice (CH2)	CE2	1.000	n/a	1.000	n/a
Functioning (F2)	FE1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

Table 37: The Results of the Second-Stage Structural Model of Accessibility to Education Sub-Dimension of the Cluster with Low WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H2 <sub>1</sub> - low	RP2 $\rightarrow$ C2	0.157	0.088	1.783	0.075	Reject
H2 <sub>2</sub> - low	C2 $\rightarrow$ F2	0.096	0.108	0.887	0.375	Reject
H2 <sub>3</sub> - low	RP2 $\rightarrow$ F2	0.265	0.102	2.598	0.009	Accept
H2 <sub>4</sub> - low	SC2 $\rightarrow$ C2	-0.287	0.087	3.287	0.001	Accept
H2 <sub>5</sub> - low	EC2 $\rightarrow$ C2	-0.247	0.093	2.666	0.008	Accept
H2 <sub>6</sub> - low	CH2 $\rightarrow$ F2	-0.054	0.092	0.586	0.558	Reject

(RP2: Resource perception on access to education, C2: Capabilities on access to education, F2: Functionings on access to education, SC2: Social conversion factors, EC2: Environmental conversion factors, CH2: Choice)

Based on the bootstrapping analysis with 10,000 sub-samples, the following table shows the results of the second-stage structural model for the accessibility to education sub-dimension in the low WHDI cluster. Table 37 presents the hypotheses, path names, the beta coefficients, standard deviation, T statistics, p-values and hypothesis results. According to the bootstrapping results of the structural model, while the hypotheses H2<sub>1</sub>, H2<sub>2</sub>, H2<sub>6</sub> are rejected, the hypotheses H2<sub>3</sub>, H2<sub>4</sub>, and H2<sub>5</sub> are accepted. A more detailed interpretation of the results and a comparison with the high WHDI cluster are provided in the Findings chapter.

#### 6.4.2.1.3. Accessibility to Healthy Environment

The access to healthy environment is critical for all, and their overall functionings. The fact that women spend more time in their living environment than men causes them to be more affected by the quality of the environment they live in (Rakodi, 2002; Garcia-Ramon, 2004; OECD, 1994). In this section, the validation results of the second-stage model for women's access to healthy environment in both high and low WHDI clusters will be presented respectively.

**For the high WHDI cluster**, the validation results of the measurement model and path model will be explained. The path coefficients of RP3, SC3, and EC3 constructs are found 0.934, 0.890 and 0.742 respectively; therefore, the convergent validity is ensured for the model. The graphical output of the results of redundancy analysis can be seen in *Appendix E1*. Table 38 displays the PLS-SEM algorithm results for the

access to a healthy environment model in the high WHDI cluster. As the model meets the validity criteria, no indicators have been removed.

Table 38: The Results of the Second-Stage Measurement Model of Accessibility to Healthy Environment Sub-Dimension of the Cluster with High WHDI

Constructs on Access to Healthy Environment	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP3)	HA	1.415	<b>0.000</b>	0.846	0.000
	HS	1.415	<b>0.000</b>	0.906	0.000
Capability (C3)	HAF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC3)	SH1	1.815	0.064	<b>0.965</b>	0.000
	SH2	1.815	0.421	<b>0.841</b>	0.000
Environmental Conversion Factors (EC3)	EH1	1.218	<b>0.000</b>	0.725	0.000
	EH2	1.122	<b>0.034</b>	0.481	0.000
	EH3	1.701	0.729	<b>0.629</b>	0.000
	EH4	1.217	<b>0.000</b>	0.711	0.000
	EH5	1.324	0.494	0.439	<b>0.002</b>
Choice (CH3)	CH2	1.000	n/a	1.000	n/a
Functioning (F3)	FH1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

Table 39 shows the results of the bootstrapping analysis of the model with 10,000 sub-samples. In the high WHDI cluster, H3<sub>1</sub>, H3<sub>2</sub>, H3<sub>3</sub>, H3<sub>4</sub>, H3<sub>5</sub>, and H3<sub>6</sub> are all accepted.

Table 39: The Results of the Second-Stage Structural Model of Accessibility to Healthy Environment Sub-Dimension of the Cluster with High WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H3 <sub>1</sub> - high	RP3 → C3	0.396	0.051	7.824	0.000	Accept
H3 <sub>2</sub> - high	C3 → F3	0.249	0.059	4.193	0.000	Accept
H3 <sub>3</sub> - high	RP3 → F3	0.351	0.055	6.393	0.000	Accept
H3 <sub>4</sub> - high	SC3 → C3	-0.137	0.047	2.889	0.004	Accept
H3 <sub>5</sub> - high	EC3 → C3	-0.201	0.050	4.057	0.000	Accept
H3 <sub>6</sub> - high	CH3 → F3	-0.205	0.052	3.965	0.000	Accept

(RP3: Resource perception on access to healthy environment, C3: Capabilities on access to healthy environment, F3: Functionings on access to healthy environment, SC3: Social conversion factors, EC3: Environmental conversion factors, CH3: Choice)

*For the low WHDI cluster*, the validity assessment results of the measurement model and path model in regard to women's accessing healthy environment will be explained. The convergent validity is ensured, as the path coefficients of RP3, SC3, and EC3 constructs are found 0.935, 0.865 and 0.757 respectively. The graphical output of the results of redundancy analysis is provided in *Appendix E2*.

As shown in Table 40, although the significance of the indicator weights is greater than 0.05, all indicators in the model are retained since their outer loadings exceed 0.5.

Table 40: The Results of the Second-Stage Measurement Model of Accessibility to Healthy Environment Sub-Dimension of the Cluster with Low WHDI

Constructs on Access to Healthy Environment	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP3)	HA	1.332	<b>0.000</b>	0.955	0.000
	HS	1.332	<b>0.033</b>	0.734	0.000
Capability (C3)	HAF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC3)	SH1	2.440	0.072	<b>0.994</b>	0.000
	SH2	2.440	0.802	<b>0.692</b>	0.019
Environmental Conversion Factors (EC3)	EH1	1.432	0.071	<b>0.578</b>	0.001
	EH2	1.220	0.083	<b>0.609</b>	0.000
	EH3	1.884	0.969	<b>0.661</b>	0.000
	EH4	1.138	<b>0.005</b>	0.655	0.000
	EH5	1.222	0.143	<b>0.585</b>	0.001
Choice (CH3)	CH2	1.000	n/a	1.000	n/a
Functioning (F3)	FH1	1.000	n/a	1.000	n/a

*(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)*

The structural model is assessed by applying bootstrapping procedure with 10,000 sub-samples. Table 41 shows the structural model results of the accessibility to healthy environment sub-dimension.

Table 41: The Results of the Second-Stage Structural Model of Accessibility to Healthy Environment Sub-Dimension of the Cluster with Low WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H3 <sub>1</sub> - low	RP3 $\rightarrow$ C3	0.330	0.093	3.552	0.000	Accept
H3 <sub>2</sub> - low	C3 $\rightarrow$ F3	0.178	0.097	1.834	0.067	Reject
H3 <sub>3</sub> - low	RP3 $\rightarrow$ F3	0.317	0.096	3.287	0.001	Accept
H3 <sub>4</sub> - low	SC3 $\rightarrow$ C3	0.137	0.089	1.536	0.125	Reject
H3 <sub>5</sub> - low	EC3 $\rightarrow$ C3	-0.272	0.088	3.098	0.002	Accept
H3 <sub>6</sub> - low	CH3 $\rightarrow$ F3	-0.263	0.095	2.759	0.006	Accept

(RP3: Resource perception on access to healthy environment, C3: Capabilities on access to healthy environment, F3: Functionings on access to healthy environment, SC3: Social conversion factors, EC3: Environmental conversion factors, CH3: Choice)

The bootstrapping results indicate that H3<sub>1</sub>, H3<sub>3</sub>, H3<sub>5</sub>, and H3<sub>6</sub> hypotheses are accepted, while H3<sub>2</sub> and H3<sub>4</sub> hypotheses are rejected. The results of the hypotheses and their comparison with high WHDI cluster will be interpreted in the Findings chapter.

#### 6.4.2.1.4. Accessibility to Mobility and Transport

Women's access to mobility and transport is critical for quality of urban life by enabling women to participate fully in society, as it directly affects their ability to seek employment, access healthcare, attend educational institutions, and engage in social activities. This section provides the validation of the second-stage model of women's access to mobility and transport in both high and low WHDI clusters.

**For the high WHDI cluster**, the validation results of the measurement model and path model will be presented. As shown in Table 42, since all VIF values of the indicators are below 2, collinearity does not pose a problem. Although not all indicator weights are statistically significant ( $p < 0.05$ ), all indicators are retained because their indicator loadings are statistically significant ( $p < 0.05$ ). The convergent validity is assessed for the formatively measured RP4, SC4, and EC4 constructs. The path coefficients are found 0.872, 0.881 and 0.714 respectively; therefore, the convergent validity is ensured for the model. The graphical output of the results of redundancy analysis can be seen in *Appendix E1*.

Table 42: The Results of the Second-Stage Measurement Model of Accessibility to Mobility and Transport Sub-Dimension of the Cluster with High WHDI

Constructs on Access to Mobility and Transport	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP4)	TA	1.058	<b>0.001</b>	0.551	0.000
	TS	1.058	<b>0.000</b>	0.940	0.000
Capability (C4)	TAF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC4)	ST1	1.565	0.971	<b>0.603</b>	0.001
	ST2	1.860	0.257	<b>0.821</b>	0.000
	ST3	1.946	<b>0.001</b>	0.967	0.000
Environmental Conversion Factors (EC4)	ET1	1.209	<b>0.028</b>	0.651	0.000
	ET2	1.525	0.220	0.386	<b>0.011</b>
	ET3	1.249	<b>0.000</b>	0.755	0.000
	ET4	1.199	0.181	0.384	<b>0.006</b>
	ET5	1.224	<b>0.003</b>	0.664	0.000
Choice (CH4)	CT2	1.000	n/a	1.000	n/a
Functioning (F4)	FT1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

The following table shows the results of the bootstrapping analysis with 10,000 sub-samples for the access to mobility and transport in the high WHDI cluster. In this cluster, H4<sub>1</sub>, H4<sub>2</sub>, H4<sub>3</sub>, H4<sub>4</sub>, and H4<sub>5</sub> hypotheses are accepted, but H4<sub>6</sub> hypothesis is rejected.

Table 43: The Results of the Second-Stage Structural Model of Accessibility to Mobility and Transport Sub-Dimension of the Cluster with High WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H4 <sub>1</sub> - high	RP4 → C4	0.208	0.059	3.520	0.000	Accept
H4 <sub>2</sub> - high	C4 → F4	0.179	0.059	3.010	0.003	Accept
H4 <sub>3</sub> - high	RP4 → F4	0.380	0.046	8.322	0.000	Accept
H4 <sub>4</sub> - high	SC4 → C4	-0.185	0.048	3.890	0.000	Accept
H4 <sub>5</sub> - high	EC4 → C4	-0.220	0.056	3.942	0.000	Accept
H4 <sub>6</sub> - high	CH4 → F4	-0.006	0.050	0.115	0.908	Reject

(RP4: Resource perception on access to mobility and transport, C4: Capabilities on access to mobility and transport, F4: Functionings on access to mobility and transport, SC4: Social conversion factors, EC4: Environmental conversion factors, CH4: Choice)

*For the cluster with low WHDI*, the measurement and path model results of the second-stage measurement model of accessibility to mobility and transport will be presented. For low WHDI cluster, according to the redundancy analysis results of the RP4, SC4, and EC4 constructs, the path coefficients are found 0.861, 0.873 and 0.782 respectively, which are higher than the recommended threshold of 0.708. The graphical output of the results of redundancy analysis can be seen in *Appendix E2*. As shown in Table 44, the VIF values are under 3 except for the ST2 indicator. For Hair et al. (2021), if the VIF value is between 3 and 5, it is accepted that collinearity issues are not critical; VIF value of 5 or above shows collinearity problems. Therefore, ST2 indicator do not removed from the model. Also, since the outer loadings and the significance of indicator loadings meet the validity requirements, all of the indicators have been kept in the analysis.

Table 44: The Results of the Second-Stage Measurement Model of Accessibility to Mobility and Transport Sub-Dimension of the Cluster with Low WHDI

Constructs on Access to Mobility and Transport	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP4)	TA	1.095	<b>0.011</b>	0.681	0.000
	TS	1.095	0.000	0.900	0.000
Capability (C4)	TAF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC4)	ST1	2.609	0.373	<b>0.866</b>	0.018
	ST2	4.739	0.660	<b>0.740</b>	0.023
	ST3	2.689	0.310	<b>0.838</b>	0.014
Environmental Conversion Factors (EC4)	ET1	1.428	0.348	<b>0.585</b>	0.000
	ET2	1.948	<b>0.029</b>	0.431	0.001
	ET3	1.728	<b>0.007</b>	0.648	0.000
	ET4	1.285	<b>0.034</b>	0.617	0.000
	ET5	1.624	<b>0.001</b>	0.838	0.000
Choice (CH4)	CT2	1.000	n/a	1.000	n/a
Functioning (F4)	FT1	1.000	n/a	1.000	n/a

*(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)*

Table 45 shows results of the bootstrapping analysis of the second-stage model for the access to mobility and transport in the low WHDI cluster with 10,000 sub-

samples. According to the results, while the hypotheses H4<sub>1</sub>, H4<sub>2</sub>, H4<sub>3</sub>, and H4<sub>5</sub> are accepted, the hypotheses H4<sub>4</sub> and H4<sub>6</sub> are rejected.

Table 45: The Results of the Second-Stage Structural Model of Accessibility to Mobility and Transport Sub-Dimension of the Cluster with Low WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H4 <sub>1</sub> - low	RP4 → C4	0.203	0.093	2.186	0.029	Accept
H4 <sub>2</sub> - low	C4 → F4	0.204	0.096	2.424	0.015	Accept
H4 <sub>3</sub> - low	RP4 → F4	0.342	0.092	3.730	0.000	Accept
H4 <sub>4</sub> - low	SC4 → C4	0.023	0.110	0.205	0.838	Reject
H4 <sub>5</sub> - low	EC4 → C4	-0.408	0.095	4.296	0.000	Accept
H4 <sub>6</sub> - low	CH4 → F4	-0.046	0.089	0.521	0.602	Reject

(RP4: Resource perception on access to mobility and transport, C4: Capabilities on access to mobility and transport, F4: Functionings on access to mobility and transport, SC4: Social conversion factors, EC4: Environmental conversion factors, CH4: Choice)

#### 6.4.2.2. Validation of the Second-Stage Path Models for the Safety Dimension in High and Low WHDI Clusters

Women's safety in urban areas is one of the key factors influencing their quality of urban life. The safety dimension explores how safety concerns affect women's capabilities and functionings across neighborhood clusters in the central district of Amasya. This dimension is assessed in terms of safety in urban public open spaces and safety in urban public transportation. To gain a deeper understanding of the factors that hinder some women from fully realizing their capabilities or translating them into functionings regarding safety in these areas, second-stage models are developed.

##### 6.4.2.2.1 Safety in Public Open Spaces

Being safe in urban areas is one of the most important issues affecting women's access to urban open spaces, education, and mobility, as well as their active participation in the economy and decision-making processes. Addressing safety concerns promotes a more inclusive urban environment, where women can move and engage without constraints based on gender. The indicators and hypotheses are designed to measure how women perceive safety and how it influences their freedom



and functionings in these spaces. With this scope, the validation results of the second-stage model on women's safety in public open spaces in both high and low WHDI clusters will be explained.

*For the high WHDI cluster*, firstly, the validation results of the measurement model and path model for the high WHDI cluster will be explained. For high WHDI cluster, according to the redundancy analysis results of the RP5, SC5, and EC5 constructs, the path coefficients are found 0.869, 0.837 and 0.764 respectively, which are above the recommended threshold of 0.708. The graphical output of the results of redundancy analysis can be seen in *Appendix E1*. According to the PLS-SEM algorithm results, since all the VIF values are below 2 and the significance of indicator loadings are higher than 0.05, all indicators are kept in the model.

Table 46: The Results of the Second-Stage Measurement Model of Safety in Urban Public Open Spaces Sub-Dimension of the Cluster with High WHDI

Constructs on Safety in Public Open Spaces	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP5)	PSS	1.185	<b>0.000</b>	0.803	0.000
	PSSS	1.185	<b>0.000</b>	0.865	0.000
Capability (C5)	PSSF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC5)	SPS1	1.682	0.162	<b>0.811</b>	0.000
	SPS2	1.765	0.270	<b>0.799</b>	0.000
	SPS3	1.810	<b>0.017</b>	0.915	0.000
Environmental Conversion Factors (EC5)	EPS1	1.593	0.670	<b>0.560</b>	0.000
	EPS2	1.686	<b>0.000</b>	0.986	0.000
	EPS3	1.631	0.234	<b>0.616</b>	0.000
	EPS4	1.359	0.872	0.438	<b>0.001</b>
Choice (CH5)	CPS2	1.000	n/a	1.000	n/a
Functioning (F5)	FPS1	1.000	n/a	1.000	n/a

*(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)*

Table 47 shows the results of the bootstrapping analysis with 10,000 sub-samples for the safety in urban public open spaces in high WHDI cluster. Accordingly, all the hypotheses (H5<sub>1</sub>, H5<sub>2</sub>, H5<sub>3</sub>, H5<sub>4</sub>, H5<sub>5</sub> and H5<sub>6</sub>) are accepted.

Table 47: The Results of the Second-Stage Structural Model of Safety in Urban Public Open Spaces Sub-Dimension of the Cluster with High WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H5 <sub>1</sub> - high	RP5 $\rightarrow$ C5	0.330	0.051	6.410	0.000	Accept
H5 <sub>2</sub> - high	C5 $\rightarrow$ F5	0.378	0.059	6.362	0.000	Accept
H5 <sub>3</sub> - high	RP5 $\rightarrow$ F5	0.189	0.054	3.492	0.000	Accept
H5 <sub>4</sub> - high	SC5 $\rightarrow$ C5	-0.180	0.050	3.615	0.000	Accept
H5 <sub>5</sub> - high	EC5 $\rightarrow$ C5	-0.210	0.060	3.529	0.000	Accept
H5 <sub>6</sub> - high	CH5 $\rightarrow$ F5	-0.160	0.056	2.877	0.004	Accept

(RP5: Resource perception on safety in public open spaces, C5: Capabilities on safety in public open spaces, F5: Functionings on safety in public open spaces, SC5: Social conversion factors, EC5: Environmental conversion factors, CH5: Choice)

**For the cluster with low WHDI**, secondly, the measurement and path model results of the second-stage measurement model of safety in urban public open spaces will be presented. The convergent validity is assessed for the RP5, SC5, and EC5 constructs. The path coefficients are found 0.886, 0.893, and 0.887 respectively; thus, the convergent validity is ensured. The graphical output of the results of convergent validity results (redundancy analysis) can be seen in *Appendix E2*.

Table 48: The Results of the Second-Stage Measurement Model of Safety in Urban Public Open Spaces Sub-Dimension of the Cluster with Low WHDI

Constructs on Safety in Public Open Spaces	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP5)	PSS	1.125	<b>0.001</b>	0.789	0.000
	PSSS	1.125	<b>0.000</b>	0.842	0.000
Capability (C5)	PSSF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC5)	SPS1	1.579	<b>0.000</b>	0.922	0.000
	SPS2	1.587	0.702	<b>0.534</b>	0.011
	SPS3	1.292	0.060	<b>0.729</b>	0.000
Environmental Conversion Factors (EC5)	EPS1	1.517	0.652	<b>0.634</b>	0.000
	EPS2	1.642	<b>0.000</b>	0.972	0.000
	EPS3	1.126	0.091	0.407	<b>0.005</b>
	EPS4	1.297	0.875	0.435	<b>0.000</b>
Choice (CH5)	CPS2	1.000	n/a	1.000	n/a
Functioning (F5)	FPS1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

As shown in Table 48, all VIF values are below 2, indicating that collinearity is not a concern. Although not all indicator weights are statistically significant ( $p < 0.05$ ), all indicators are retained in the model since their loadings are statistically significant ( $p < 0.05$ ).

In the study area, urban neighborhoods where women with low WHDI reside correspond to environments with lower physical quality compared to those in the high WHDI cluster. The analysis made for the low WHDI cluster examines the safety concerns of women living in an urban environment with low physical quality.

Table 49: The Results of the Second-Stage Structural Model of Safety in Urban Public Open Spaces Sub-Dimension of the Cluster with Low WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H5 <sub>1</sub> - low	RP5 $\rightarrow$ C5	0.208	0.082	2.549	0.011	Accept
H5 <sub>2</sub> - low	C5 $\rightarrow$ F5	0.480	0.77	6.273	0.000	Accept
H5 <sub>3</sub> - low	RP5 $\rightarrow$ F5	0.052	0.079	0.659	0.510	Reject
H5 <sub>4</sub> - low	SC5 $\rightarrow$ C5	-0.138	0.083	1.673	0.094	Reject
H5 <sub>5</sub> - low	EC5 $\rightarrow$ C5	-0.334	0.092	3.629	0.000	Accept
H5 <sub>6</sub> - low	CH5 $\rightarrow$ F5	-0.251	0.097	2.591	0.010	Accept

(RP5: Resource perception on safety in public open spaces, C5: Capabilities on safety in public open spaces, F5: Functionings on safety in public open spaces, SC5: Social conversion factors, EC5: Environmental conversion factors, CH5: Choice)

Table 49 presents the results of the bootstrapping analysis with 10,000 sub-samples for safety in urban public open spaces within the low WHDI cluster. According to the results, while the hypotheses H5<sub>1</sub>, H5<sub>2</sub>, H5<sub>5</sub>, and H5<sub>6</sub> are accepted, the hypotheses H5<sub>3</sub> and H5<sub>4</sub> are rejected. Further interpretation of the results of the structural models both for high and low WHDI clusters will be provided in the Findings chapter.

#### 6.4.2.2.2 Safety in Public Transport

The safety of women in urban public transportation has critical importance and affects almost all other sub-dimensions. Ensuring safe public transportation is essential for promoting spatial justice, fostering inclusive and accessible cities, and enhancing women's quality of urban life. When public transportation is perceived as

unsafe, women may limit their travel, avoid certain routes or times, and miss out on opportunities for education, work, and social activities. Accordingly, the indicators and hypotheses are formed to measure how women perceive safety of urban public transportation and how it influences their freedom and functionings. Under this heading, the validation results of the second-stage model on women's safety in public transport in both high and low WHDI clusters will be explained.

**For the high WHDI cluster** the validation results of the measurement and structural model will first be presented. Convergent validity is assessed for the formatively measured RP6, SC6, and EC6 constructs. The path coefficients are 0.836, 0.862, and 0.760, respectively, ensuring convergent validity for the model. The graphical output of the redundancy analysis results is provided in *Appendix E1*.

Table 50: The Results of the Second-Stage Measurement Model of Safety in Urban Public Transportation Sub-Dimension of the Cluster with High WHDI

Constructs on Safety in Public Transportation	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP6)	PTS	1.085	<b>0.000</b>	0.684	0.000
	PTSS	1.085	<b>0.000</b>	0.891	0.000
Capability (C6)	PTSF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC6)	STS1	1.709	<b>0.012</b>	0.932	0.000
	STS2	1.709	0.073	<b>0.877</b>	0.000
Environmental Conversion Factors (EC6)	ETS1	1.153	0.397	<b>0.491</b>	0.001
	ETS2	1.022	<b>0.037</b>	0.418	0.007
	ETS3				
	ETS4	1.136	<b>0.000</b>	0.927	0.000
Choice (CH6)	CTS2	1.000	n/a	1.000	n/a
Functioning (F6)	FTS1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

The measurement model results indicate that one environmental conversion factor, ETS3 (the perception of crowdedness in public transportation vehicles), does not meet the required criteria. The results for the ETS3 indicator are as follows: VIF value=1.031, significance of indicator weight=0.744, outer loading=0.106 and

significance of indicator loading=0.532. Given its weak contribution to the construct, the ETS3 indicator was excluded from the model. After its removal, the measurement model was recalculated, confirming that the VIF values of all indicators remain below 3, and all other indicators meet the required criteria.

The structural model of safety in public transportation sub-dimension is assessed by applying bootstrapping procedure with 10,000 sub-samples. Table 51 shows that H6<sub>1</sub>, H6<sub>2</sub>, H6<sub>3</sub>, H6<sub>4</sub>, H6<sub>5</sub>, and H6<sub>6</sub> hypotheses are accepted.

Table 51: The Results of the Second-Stage Structural Model of Safety in Urban Public Transportation Sub-Dimension of the Cluster with High WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H6 <sub>1</sub> - <i>high</i>	RP6 → C6	0.329	0.045	7.317	0.000	Accept
H6 <sub>2</sub> - <i>high</i>	C6 → F6	0.364	0.058	6.299	0.000	Accept
H6 <sub>3</sub> - <i>high</i>	RP6 → F6	0.154	0.052	2.936	0.003	Accept
H6 <sub>4</sub> - <i>high</i>	SC6 → C6	-0.209	0.053	3.971	0.000	Accept
H6 <sub>5</sub> - <i>high</i>	EC6 → C6	-0.194	0.052	3.704	0.000	Accept
H6 <sub>6</sub> - <i>high</i>	CH6 → F6	-0.249	0.057	6.299	0.000	Accept

(RP6: Resource perception on safety in public transport, C6: Capabilities on safety in public transport, F6: Functionings on safety in public transport, SC6: Social conversion factors, EC6: Environmental conversion factors, CH6: Choice)

**For the low WHDI cluster**, the validation assessment results of the measurement and path model for safety in urban public transport will be presented. Redundancy analysis was conducted for the RP6, SC6, and EC6 constructs, with path coefficients of 0.889, 0.909, and 0.827, respectively, confirming convergent validity. The graphical output and additional details are provided in *Appendix E2*. Similar to the findings for the high WHDI cluster, the measurement model results for the low WHDI cluster indicate that the ETS3 indicator (the perception of crowdedness in public transportation vehicles) does not meet the required validity criteria. In this cluster, the ETS3 indicator has a VIF value of 1.103, an indicator weight significance of 0.124, an outer loading of -0.159, and an indicator loading significance of 0.579. Since ETS3 weakly contributes to the environmental conversion factor construct, it was removed from the model. After recalculating the model, all VIF values remain below 3, and the outer loadings exceed 0.5, confirming the validity of the model.

Table 52: The Results of the Second-Stage Measurement Model of Safety in Urban Public Transportation Sub-Dimension of the Cluster with Low WHDI

Constructs on Safety in Public Transportation	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP6)	PTS	1.114	0.015	0.688	0.000
	PTSS	1.114	<b>0.000</b>	0.907	0.000
Capability (C6)	PTSF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC6)	STS1	2.522	<b>0.003</b>	0.971	0.000
	STS2	2.522	0.495	<b>0.603</b>	0.023
Environmental Conversion Factors (EC6)	ETS1	2.389	0.407	<b>0.715</b>	0.001
	ETS2	2.497	0.745	<b>0.613</b>	0.015
	ETS3				
	ETS4	1.632	<b>0.004</b>	0.976	0.000
Choice (CH6)	CTS2	1.000	n/a	1.000	n/a
Functioning (F6)	FTS1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

Table 53 presents the bootstrapping results of the structural model of women's safety in urban public transport. Accordingly, while the hypotheses H61, H62, and H66 are accepted, the hypotheses H63, H64 and H65 are rejected. The interpretation of the results and differences between the high and low WHDI clusters will be presented in the Findings chapter.

Table 53: The Results of the Second-Stage Structural Model of Safety in Urban Public Transportation Sub-Dimension of the Cluster with Low WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H6 <sub>1</sub> - low	RP6 → C6	0.354	0.083	4.245	0.000	Accept
H6 <sub>2</sub> - low	C6 → F6	0.308	0.105	2.921	0.003	Accept
H6 <sub>3</sub> - low	RP6 → F6	0.012	0.091	0.132	0.895	Reject
H6 <sub>4</sub> - low	SC6 → C6	-0.190	0.099	1.928	0.054	Reject
H6 <sub>5</sub> - low	EC6 → C6	-0.169	0.099	1.714	0.087	Reject
H6 <sub>7</sub> - low	CH6 → F6	-0.286	0.085	3.348	0.001	Accept

(RP6: Resource perception on safety in public transport, C6: Capabilities on safety in public transport, F6: Functionings on safety in public transport, SC6: Social conversion factors, EC6: Environmental conversion factors, CH6: Choice)

#### **6.4.2.3. Validation of the Second-Stage Path Models for the Participation Dimension in High and Low WHDI Clusters**

The participation dimension is assessed through second-stage path models, focusing on women's participation in economic activities and decision-making processes. This dimension explores the relationships between women's resource perceptions, capabilities, and functionings in the context of economic and decision-making participation across neighborhood clusters in Amasya's central district, focusing on how social and environmental conversion factors influence capabilities and how agency and choice shape functionings.

##### **6.4.2.3.1 Participation in Economic Activities**

Impoverished urban women who face challenges such as insufficient education and knowledge, along with limited access to productive resources, become vulnerable to the negative impacts of urban life and live in environments with a low quality of life (UN-Habitat, 2013). Thus, women's participation in the paid and formal employment is quite crucial for women's empowerment and overall functionings. The validation results of the second-stage model of participation in economic activities sub-dimension in both high and low WHDI clusters will be explained respectively.

*For the high WHDI cluster*, the validation assessment results of the measurement and path model for the second-stage measurement model of participation in economic activities will first be presented. In the redundancy assessment, the path coefficients of the RP7, SC7, and EC7 constructs are found to be 0.854, 0.864, and 0.814, respectively, ensuring the convergent validity of the model. The graphical output of the redundancy analysis results is provided in *Appendix E1*. Table 54 shows that all VIF values are below 3, except for the SEP2 indicator, which pertains to the perception of social norms regarding women working after marriage and having children. According to Hair et al. (2021), collinearity issues are not considered critical if the VIF value falls between 3 and 5. Therefore, the SEP2 indicator is retained in the model. Additionally, since the outer loadings and the significance of indicator loadings meet the validity requirements, no indicators have been removed.

Table 54: The Results of the Second-Stage Measurement Model of Participation in Economic Activities Sub-Dimension of the Cluster with High WHDI

Constructs on Participation in Economy	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP7)	EP	1.120	<b>0.000</b>	0.813	0.000
	EPS	1.120	<b>0.000</b>	0.816	0.000
Capability (C7)	EPF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC7)	SEP1	2.701	<b>0.000</b>	0.991	0.000
	SEP2	3.168	0.452	<b>0.695</b>	0.000
	SEP3	2.075	0.855	<b>0.616</b>	0.000
Environmental Conversion Factors (EC7)	EEP1	1.223	0.142	<b>0.625</b>	0.000
	EEP2	1.235	<b>0.001</b>	0.784	0.000
	EEP3	1.126	0.311	0.476	<b>0.011</b>
	EEP4	1.105	<b>0.037</b>	0.461	0.013
Choice (CH7)	CEP2	1.000	n/a	1.000	n/a
Functioning (F7)	FEP1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

The following table shows the results of the bootstrapping analysis with 10,000 sub-samples for the participation in economic activities in the high WHDI cluster. In this cluster, H7<sub>1</sub>, H7<sub>2</sub>, H7<sub>4</sub>, H7<sub>5</sub>, and H7<sub>6</sub> hypotheses are accepted, whereas H7<sub>3</sub> hypothesis is rejected.

Table 55: The Results of the Second-Stage Structural Model of Participation in Economic Activities Sub-Dimension of the Cluster with High WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H7 <sub>1</sub> - high	RP7 $\rightarrow$ C7	0.232	0.050	4.605	0.000	Accept
H7 <sub>2</sub> - high	C7 $\rightarrow$ F7	0.166	0.050	3.309	0.001	Accept
H7 <sub>3</sub> - high	RP7 $\rightarrow$ F7	0.090	0.052	1.1731	0.083	Reject
H7 <sub>4</sub> - high	SC7 $\rightarrow$ C7	-0.254	0.050	5.070	0.000	Accept
H7 <sub>5</sub> - high	EC7 $\rightarrow$ C7	-0.151	0.054	2.789	0.005	Accept
H7 <sub>6</sub> - high	CH7 $\rightarrow$ F7	-0.411	0.043	9.567	0.000	Accept

(RP7: Resource perception on participation in economic activities, C7: Capabilities on participation in economic activities, F7: Functionings on participation in economic activities, SC7: Social conversion factors, EC7: Environmental conversion factors, CH7: Choice)



*For the low WHDI cluster*, the validation results of the measurement and structural models regarding women's participation in economic activities will be presented. The convergent validity is assessed for the formatively measured RP7, SC7, and E87 constructs. Since the path coefficients are found 0.806, 0.858 and 0.715 respectively, the convergent validity is ensured for the model. The graphical output and further information can be found in *Appendix E2*.

Table 56: The Results of the Second-Stage Measurement Model of Participation in Economic Activities Sub-Dimension of the Cluster with Low WHDI

Constructs on Participation in Economy	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP7)	EP	1.034	<b>0.033</b>	0.727	0.002
	EPS	1.034	<b>0.016</b>	0.808	0.002
Capability (C7)	EPF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC7)	SEP1	2.308	0.128	<b>0.950</b>	0.000
	SEP2	2.876	0.306	<b>0.904</b>	0.000
	SEP3	1.826	0.706	<b>0.555</b>	0.025
Environmental Conversion Factors (EC7)	EEP1	1.576	<b>0.000</b>	0.906	0.000
	EEP2	1.520	0.574	0.438	<b>0.049</b>
	EEP3	1.429	0.159	0.433	<b>0.031</b>
	EEP4	1.603	0.732	<b>0.545</b>	0.013
Choice (CH7)	CEP2	1.000	n/a	1.000	n/a
Functioning (F7)	FEP1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

Table 56 presents the results of the second-stage measurement model for the participation in economic activities sub-dimension. As shown, even if not all indicator weights are statistically significant ( $p < 0.05$ ), all indicators are retained because their outer loadings exceed 0.5 and their indicator loadings are statistically significant ( $p < 0.05$ ).

The structural model is assessed by applying bootstrapping procedure with 10,000 sub-samples. Table 57 shows the structural model results of the participation in economic activities sub-dimension for the cluster with low WHDI.

Table 57: The Results of the Second-Stage Structural Model of Participation in Economic Activities Sub-Dimension of the Cluster with Low WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H7 <sub>1</sub> - low	RP7 $\rightarrow$ C7	0.094	0.086	1.089	0.276	Reject
H7 <sub>2</sub> - low	C7 $\rightarrow$ F7	0.193	0.079	2.448	0.014	Accept
H7 <sub>3</sub> - low	RP7 $\rightarrow$ F7	0.143	0.094	1.513	0.130	Reject
H7 <sub>4</sub> - low	SC7 $\rightarrow$ C7	-0.207	0.078	2.645	0.008	Accept
H7 <sub>5</sub> - low	EC7 $\rightarrow$ C7	-0.291	0.087	3.357	0.001	Accept
H7 <sub>6</sub> - low	CH7 $\rightarrow$ F7	-0.384	0.083	4.618	0.000	Accept

(RP7: Resource perception on participation in economic activities, C7: Capabilities on participation in economic activities, F7: Functionings on participation in economic activities, SC7: Social conversion factors, EC7: Environmental conversion factors, CH7: Choice)

The H7<sub>2</sub>, H7<sub>4</sub>, H7<sub>5</sub>, and H7<sub>6</sub> hypotheses are accepted, whereas H7<sub>1</sub> and H7<sub>3</sub> hypotheses are rejected. The detailed interpretation of the hypotheses results both for high and low WHDI clusters will be presented in the Findings chapter.

#### 6.4.2.3.2 Participation in Decision-Making Processes

Everyone has the right to participate in decision-making processes in order to express their individual needs, demands, and concerns to the authorities and to influence decisions that affect their lives. The indicators and hypotheses are designed to measure women's perception on the availability and sufficiency of opportunities to participate in the decision-making processes and how it influences their capabilities and functionings in urban neighborhood clusters in the central district of Amasya. In this section, the validation results of the second-stage model of participation in decision-making processes sub-dimension in both clusters will be explained.

**For the cluster with high WHDI**, the validity assessment results of the measurement and path model for women's participation in decision-making processes will be presented. The convergent validity is assessed for the formatively measured RP8, SC8, and EC8 constructs. The path coefficients are found 0.900, 0.846 and 0.822 respectively; thus, the convergent validity is ensured for the model. The graphical output of the results of redundancy analysis can be seen in *Appendix E1*. According to the measurement model results, as presented in Table 58, the validity is ensured; therefore, all the indicators are kept in the model.

Table 58: The Results of the Second-Stage Measurement Model of Participation in Decision-Making Sub-Dimension of the Cluster with High WHDI

Constructs on Participation in Decision-Making	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP8)	PD	1.233	<b>0.000</b>	0.875	0.000
	PDS	1.233	<b>0.000</b>	0.817	0.000
Capability (C8)	EPF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC8)	SPD1	2.534	0.650	<b>0.722</b>	0.000
	SPD2	2.658	<b>0.015</b>	0.917	0.000
	SPD3	1.960	<b>0.013</b>	0.904	0.000
Environmental Conversion Factors (EC8)	EPD1	1.144	<b>0.000</b>	0.857	0.000
	EPD2	1.450	<b>0.038</b>	0.533	0.001
	EPD3	1.680	0.859	<b>0.511</b>	0.003
	EPD4	1.197	0.143	<b>0.544</b>	0.001
Choice (CH8)	CPD2	1.000	n/a	1.000	n/a
Functioning (F8)	FPD1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

For the high WHDI cluster, the structural model of women's participation in decision-making processes is analyzed by applying bootstrapping procedure with 10,000 sub-samples. According to the path coefficient results, as shown in Table 59, the H8<sub>1</sub>, H8<sub>2</sub>, H8<sub>3</sub>, H8<sub>4</sub>, and H8<sub>6</sub> hypotheses are accepted, while H8<sub>5</sub> hypothesis is rejected.

Table 59: The Results of the Second-Stage Structural Model of Participation in Decision-Making Sub-Dimension of the Cluster with High WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H8 <sub>1</sub> - high	RP8 → C8	0.395	0.040	9.920	0.000	Accept
H8 <sub>2</sub> - high	C8 → F8	0.252	0.059	4.294	0.000	Accept
H8 <sub>3</sub> - high	RP8 → F8	0.137	0.055	2.471	0.013	Accept
H8 <sub>4</sub> - high	SC8 → C8	-0.208	0.0048	4.360	0.000	Accept
H8 <sub>5</sub> - high	EC8 → C8	-0.093	0.050	1.850	0.064	Reject
H8 <sub>6</sub> - high	CH8 → F8	-0.250	0.061	4.105	0.000	Accept

(RP8: Resource perception on participation in decision-making processes, C8: Capabilities on participation in decision-making processes, F8: Functionings on participation in decision-making processes, SC8: Social conversion factors, EC8: Environmental conversion factors, CH8: Choice)

**For the low WHDI cluster**, the validation of the measurement and structural model for women's participation in decision-making processes will be explained. Since the path coefficients of RP8, SC8, and EC8 constructs are found 0.869, 0.877 and 0.785 respectively, the convergent validity is ensured for the model. The graphical output of the results of redundancy analysis is provided in *Appendix E2*.

Table 60 displays the validity results of the indicators used in the second-stage model for the participation in decision-making processes sub-dimension of the high WHDI cluster. It includes VIF values, the significance of indicator weights, outer loadings, and the significance of indicator loadings. All the VIF values except for the SPD1 and SPD2 indicators are under 3. For Hair et al. (2021), if the VIF value is between 3 and 5, it is accepted that collinearity issues are not critical. Although not all indicator weights are statistically significant ( $p < 0.05$ ), all indicators are retained because their outer loadings exceed 0.5.

Table 60: The Results of the Second-Stage Measurement Model of Participation in Decision-Making Sub-Dimension of the Cluster with Low WHDI

Constructs on Participation in Decision-Making	Formative Indicators	VIF values	Significance of indicator weights	Outer loadings	Significance of indicator loadings
Resource Perception (RP8)	PD	1.168	<b>0.004</b>	0.797	0.000
	PDS	1.168	<b>0.000</b>	0.861	0.000
Capability (C8)	EPF	1.000	n/a	1.000	n/a
Social Conversion Factors (SC8)	SPD1	3.270	0.424	<b>0.617</b>	0.016
	SPD2	3.314	0.136	<b>0.865</b>	0.000
	SPD3	1.863	0.064	<b>0.881</b>	0.000
Environmental Conversion Factors (EC8)	EPD1	1.711	0.057	<b>0.894</b>	0.000
	EPD2	1.806	0.266	<b>0.602</b>	0.041
	EPD3	2.751	0.766	<b>0.708</b>	0.010
	EPD4	1.604	0.645	<b>0.647</b>	0.033
Choice (CH8)	CPD2	1.000	n/a	1.000	n/a
Functioning (F8)	FPD1	1.000	n/a	1.000	n/a

(The values at which a decision is made about the indicators are highlighted in bold. – The graphical output of the results can be found in the Appendices section. The significance of indicator weights and loadings are n/a due to the constructs being single-item.)

Table 61: The Results of the Second-Stage Structural Model of Participation in Decision-Making Sub-Dimension of the Cluster with Low WHDI

Hypothesis	Path	$\beta$	Standard Deviation	T statistics	p-values	Result
H8 <sub>1</sub> - low	RP8 → C8	0.361	0.078	4.612	0.000	Accept
H8 <sub>2</sub> - low	C8 → F8	0.849	0.045	18.859	0.000	Accept
H8 <sub>3</sub> - low	RP8 → F8	0.004	0.054	0.069	0.945	Reject
H8 <sub>4</sub> - low	SC8 → C8	-0.157	0.090	1.750	0.080	Reject
H8 <sub>5</sub> - low	EC8 → C8	-0.116	0.088	1.314	0.189	Reject
H8 <sub>6</sub> - low	CH8 → F8	0.021	0.039	0.548	0.584	Reject

(RP8: Resource perception on participation in decision-making processes, C8: Capabilities on participation in decision-making processes, F8: Functionings on participation in decision-making processes, SC8: Social conversion factors, EC8: Environmental conversion factors, CH8: Choice)

For the low WHDI cluster, the structural model of women's participation in decision-making processes is analyzed by applying bootstrapping procedure with 10,000 sub-samples. According to the results shown in Table 61, H8<sub>1</sub> and H8<sub>2</sub> hypotheses are accepted while H8<sub>3</sub>, whereas H8<sub>4</sub>, H8<sub>5</sub>, and H8<sub>6</sub> hypotheses are rejected. A more detailed interpretation of the hypotheses results of the low WHDI cluster, along with a comparison with the high WHDI cluster, is presented in the Findings chapter.



## **CHAPTER 7**

### **FINDINGS**

This chapter aims to present the findings for the research questions posed in this thesis. The main research question of the thesis is "What are the relationships between women's resource perception, capabilities, and functionings regarding accessibility, safety, and participation in urban neighborhoods with varied WHDI levels?" The main research question guides the formulation of the sub-research questions of the thesis, which in turn shape the design of the main path model and second-stage path models. To address all the research questions, subjective primary data were collected from women living in high and low WHDI clusters in the central district of Amasya. The collected data, after validation, were analyzed using SmartPLS 4.1 software.

The chapter starts with a descriptive analysis of the characteristics of women participants living in the high and low WHDI clusters. In this section, the high and low WHDI clusters will be comparatively analyzed in terms of their demographic and socio-economic conditions, as well as household responsibilities and support. This section will be followed by the findings of the main path models for the two clusters. After presenting the analysis results of the main path model for the two clusters, the analysis results of the second-stage path models on women's accessibility, safety, and participation for the two clusters will be presented comparatively.

#### **7.1. Descriptive Analysis of the Characteristics of Women Participants**

The descriptive analysis was conducted to describe the characteristics of the sample based on their demographic and socio-economic conditions, as well as household responsibilities and support. As discussed in Chapter 5, nine neighborhoods were

classified as having high WHDI levels, while eleven neighborhoods were classified as having low WHDI levels. The descriptive analysis was carried out according to these neighborhood classifications of high and low WHDI levels.

This analysis aims to (1) understand and compare how demographic factors differ between clusters with high and low WHDI levels, (2) examine and compare socio-economic conditions and identify disparities between high and low WHDI neighborhood clusters, and (3) assess and compare the burden of household responsibilities and availability of support for domestic work in high and low WHDI clusters.

Table 62: Demographic Information of the Sample

		in High WHDI Cluster			in Low WHDI Cluster		
		Freq.	Pct.	Mean±SD	Freq.	Pct.	Mean±SD
Age (AGE)	18-24	24	6.86	38.15±9.53	13	10.83	38.45±11.4
	25-34	105	30.00		36	30.00	
	35-44	136	38.86		40	33.33	
	45-54	67	19.14		18	15.00	
	55-64	18	5.14		13	10.83	
Marital status (MS)	Not married	45	12.86	-	26	21.67	-
	Married	291	83.14		87	72.50	
	Widowed	3	0.86		1	0.83	
	Divorced	11	3.14		6	5.00	
Number of children (CN)	0	55	15.71	1.70±1.03	32	26.67	1.47±1.11
	1	74	21.14		21	17.50	
	2	157	44.86		51	42.50	
	3	50	14.29		12	10.00	
	+4	14	4.00		4	3.33	
Average age of children (CAA)	No children	55	15.71	-	32	26.67	-
	Infant (0-1 years)	4	1.14		1	0.83	
	Toddlers (1-3 years)	17	4.86		4	3.33	
	Preschoolers (3-5 years)	42	12.00		11	9.17	
	School aged (5-12 years)	106	30.29		23	19.17	
	Teenagers (12-18 years)	56	16.00		16	13.33	
	Adults (+18 years)	70	20.00		33	27.50	

(Freq: Frequency; Pct: Percentage; SD: Standard Deviation; WHDI: Women's Human Development Index)



Table 62 shows the demographic data for the sample across different clusters. According to the age range distribution data of the participants, approximately 69% of the participants in the high WHDI cluster and 63% in the low WHDI cluster fall within the age range of 25-44. In the high WHDI cluster, the mean age is 38.15 years with a standard deviation of 9.53, while, in the low WHDI cluster, the mean age is slightly higher at 38.45 years, but with a larger standard deviation of 11.4.

The analysis of marital status within clusters underscores a strong prevalence of marriage. For the -not married- category, the clusters show differences. In the high WHDI cluster, 12.86% of the individuals are not married, whereas this percentage is markedly higher in the low WHDI cluster, at 21.67%. The percentages of widowed and divorced women are relatively small in both clusters.

The number of children and the average age of children are important factors in analyzing women's quality of life, as the number of children (Grimshaw & Rubery, 2015) and having children in different age ranges (Agüero, 2011) significantly impact women's daily lives by requiring more direct care.

The number of children results indicate that the high WHDI cluster has a higher average number of children per family (mean: 1.70) compared to the low WHDI cluster (mean: 1.47). In both clusters, women with two children constitute the largest group, accounting for 44.86% and 42.5% of the population, respectively. Notably, a significant proportion of women in the low WHDI cluster (26.67%) report having no children, compared to 15.71% in the high WHDI cluster. This difference suggests that childlessness is more prevalent among women in the low WHDI neighborhoods.

The distribution of the average age of children across the clusters shows differences. The -no children- category reveals that childlessness is more prevalent among women in low WHDI neighborhoods. The results for the age groups of children indicate that the high WHDI cluster has a notable concentration in the school-aged category (5-12 years) at 30.29%, whereas the low WHDI cluster shows a higher prevalence of women with adult children (18+ years) at 27.5%. Although the mean age is slightly higher at 38.45 years in the low WHDI cluster, the greater prevalence

of adult children suggests that women in this cluster became mothers at a younger age.

Secondly, the socio-economic status data for the sample across different clusters is presented in Table 63 and Table 64. The data on the education levels indicate that the most prevalent education level in the high WHDI cluster is a bachelor's degree, attained by 48.29% of women. Similarly, the low WHDI cluster has a significant proportion of women with a bachelor's degree, accounting for 40.00%. Notably, a substantial number of women in both clusters have completed high school, with this being more common in the low WHDI cluster at 36.67%. Given that compulsory education in Türkiye is 12 years, the rate of women who drop out of education is 16.3% in the high WHDI cluster and 16.67% in the low WHDI cluster.

The data on employment status reveal that a significant proportion of women in both clusters are not part of the labor force (41.43% in the high WHDI cluster and 39.16% in the low WHDI cluster). Civil servants represent the second-largest group in the high WHDI cluster, with 30.29% of women employed in this sector, compared to 16.67% in the low WHDI cluster. Additionally, wage workers are more prevalent in the low WHDI cluster, accounting for 19.17% of women.

The distribution of work hours among women in clusters highlights similarities in employment patterns. The proportion of -not working- category indicates that about half of the women in both clusters are not engaged in paid work. Full-time employment is relatively common in both clusters with 40.00% of women in the high WHDI cluster and 38.33% in the low WHDI cluster working full-time. Part-time work is more prevalent in the high WHDI cluster with 5.14% of women working part-time compared to 4.17% in the low WHDI cluster. Flexible work arrangements are reported by 4.57% of women in the high WHDI cluster and 5.00% in the low WHDI cluster. Seasonal work is the least common type of employment in both clusters.

The data on salary types among women reflects similar patterns in both high and low WHDI clusters. In the high WHDI cluster, 44.86% of women report having no salary, which is closely mirrored by 45.83% in the low WHDI cluster. Monthly

wages are the most common type of salary for women who are employed in both clusters. Payment for hours, daily wage and weekly wage which are not stable and well-compensated compared to monthly wage are reported by 8.28% in high WHDI cluster, and by 9.17% in low WHDI cluster.

Table 63: Socio-Economic Status of the Sample

		in High WHDI Cluster			in Low WHDI Cluster		
		Freq.	Pct.	Mean±SD	Freq.	Pct.	Mean±SD
Education level (EDU)	Not literate	1	0.29		0	0	
	Literate*	0	0		3	2.50	
	Primary school	33	9.43		11	9.17	
	Secondary school	23	6.58	-	6	5.00	-
	High school	104	29.71		44	36.67	
	Bachelor's degree	169	48.29		48	40.00	
	Master's degree	16	4.57		6	5.00	
	Doctorate degree	4	1.13		2	1.67	
Employment status (JOB)	Not working	145	41.43		47	39.16	
	Civil servant	106	30.29		20	16.67	
	Worker	26	7.43		14	11.66	
	Self-employment	11	3.14		2	1.67	
	Wage worker	37	10.57	-	23	19.17	-
	Student-not working	13	3.71		8	6.67	
	Student-working	1	0.29		1	0.83	
	Retired-not working	9	2.57		5	4.17	
	Retired-working	2	0.57		0	0	
Type of work hours (JOBH)	Not working	167	47.71		60	50.00	
	Full-time	140	40.00		46	38.33	
	Part-time	18	5.14	-	5	4.17	-
	Flexible	16	4.57		6	5.00	
	Seasonal	9	2.58		3	2.50	
Type of salary (JOBW)	No salary	157	44.86		55	45.83	
	Payment for hours	17	4.86	-	4	3.33	-
	Daily wage	8	2.28		5	4.17	
	Weekly wage	4	1.14		2	1.67	
	Monthly wage	164	46.86		54	45.00	
Household income group (HHI)	Low income	173	49.43		80	66.67	
	Middle-income	172	49.14	-	39	32.50	-
	High-income	5	1.43		1	0.83	

Table 64: (Cont'd) Socio-Economic Status of the Sample

Number of households (HHN)	1	11	3.14		3	2.50	
	2	36	10.29		17	14.17	
	3	98	28.00		30	25.00	
	4	130	37.14	3.72±1.20	47	39.17	3.67±1.19
	5	57	16.29		15	12.50	
	+6	18	5.14		8	6.66	
Condition of residence (HOUT)	Own house	209	59.72		75	62.50	
	Rent, someone's house	128	36.57		38	31.67	
	Rent, relative's house	5	1.43		4	3.33	
	No rent, relative's house	6	1.71	-	3	2.50	-
	Rent, guesthouse	2	0.57		0	0	
	No rent, guesthouse	0	0		0	0	
Number of cars (NC)	0	70	20.00		31	25.83	
	1	247	70.57	0.90±0.54	81	67.50	0.81±0.54
	2	32	9.14		8	6.67	
	3	1	0.29		0	0	

(\*Literate but not finished a school; Freq: Frequency; Pct: Percentage; SD: Standard Deviation; WHDI: Women's Human Development Index)

The household income data has been categorized into three levels: 1) low-income family with a household income of 0-35,000 TL, 2) middle-income family with a household income of 35,000-80,000 TL, and 3) high-income family with a household income of +80,000 TL. These categories were determined based on the Turkish Confederation of Trade Unions' (Türk-İş) poverty threshold data for June 2023 and the maximum monthly net household income criteria for applying to middle-income housing project of Housing Development Administration of Türkiye (TOKİ) in 2023.

The distribution of household income groups among women in clusters reveals, nearly half of the households (49.43%) fall into the low-income category in the high WHDI cluster. This is a substantial proportion, but it is notably lower than the 66.67% of households in the low WHDI cluster that are classified as low-income. This significant difference suggests that economic conditions are generally more challenging in the low WHDI neighborhoods with a greater prevalence of households struggling with financial constraints. The middle-income group is almost equally represented in the high WHDI cluster with 49.14%. In contrast, only 32.50% of

households in the low WHDI cluster are middle-income. High-income households are rare in both clusters but are slightly more prevalent in the high WHDI cluster.

The distribution of household sizes reveals similarities in clusters. In both clusters, the most common household size is four members. In the high WHDI cluster, 37.14% of households consist of four members, while in the low WHDI cluster, 39.17% of households have four members. The mean household size is also similar with  $3.72 \pm 1.20$  in the high WHDI cluster and  $3.67 \pm 1.19$  in the low WHDI cluster, indicating that the typical household size is relatively consistent across both clusters. Households with three members are the second most common in both clusters with 28.00% in the high WHDI cluster and with 25.00% in the low WHDI cluster.

The distribution of condition of residence among women has similar characteristics in clusters. A substantial majority of women own their homes in high and low WHDI clusters with 59.72% and 62.5% respectively, which provides them with a sense of security and long-term stability. Also, in both clusters, the percentage of women living in rented guesthouse or relative's house or without paying rent in relative's house and guesthouse is relatively low.

The data on number of cars provides information on the mobility and transport and economic conditions of families in the clusters. In the high WHDI cluster, 20% of families do not own a car, while in the low WHDI cluster, 25.83% of families do not have a car. This indicates that car ownership is less common in the low WHDI cluster, which may reflect lower income levels or a greater reliance on public transportation. The majority of families in both clusters own one car with 70.57% in the high WHDI cluster and 67.50% in the low WHDI cluster. Multiple car ownership is more common in the high WHDI cluster with 9.43% possibly reflecting higher disposable incomes and greater economic stability.

Thirdly, the data of household responsibilities and support on the sample of different clusters is presented in Table 65. The presence of people needing care at home, such as elderly, sick, or disabled individuals, significantly influences other people living in the same home, especially women who often take on caregiving responsibilities. In the low WHDI cluster, 8.33% of women have caregiving responsibilities at home.

This higher percentage compared to the high WHDI cluster, which is 5.14%, suggests that women in the low WHDI cluster are more likely to face the burden of caring for a dependent, which can affect their overall quality of life.

The data of total average hours dedicated to housework in a week reveals that women in both high and low WHDI clusters dedicate a considerable amount of time to housework. The distribution shows that, in both clusters, a significant number of women spend between 15 to 29 hours weekly on housework, suggesting this is a common range for housework duties. Approximately 30% of women in the high WHDI cluster dedicate two full days of the week, whereas 23.3% of women in the low WHDI cluster dedicate the same amount of time to housework.

Table 65: Household Responsibilities and Support Information of the Sample

		in High WHDI Cluster			in Low WHDI Cluster		
		Freq.	Pct.	Mean±SD	Freq.	Pct.	Mean±SD
People needing	No	332	94.86		110	91.67	
care at home (SICK)	Yes	18	5.14	-	10	8.33	-
Total average	0	10	2.86		6	5.00	
hours dedicated	1-14 hours	62	17.71		22	18.33	
to housework	15-29 hours	117	33.43		43	35.83	
on weekdays	30-44 hours	56	16.00		21	17.50	
and weekends	45-59 hours	53	15.14	-	14	11.67	-
(HHW)	60-74 hours	16	4.57		4	3.33	
	75-89 hours	15	4.29		3	2.50	
	+90 hours	21	6.00		7	5.83	
Frequency of	No support	242	69.14		93	77.50	
receiving help	Everyday	22	6.29		7	5.84	
with housework	Once a week	22	6.29	-	10	8.33	-
(SUPP)	Once a month	35	10.00		6	5.00	
	Once a year	29	8.28		4	3.33	

(Freq: Frequency; Pct: Percentage; SD: Standard Deviation; WHDI: Women's Human Development Index)

The data on the frequency of receiving help with housework indicates a significant lack of support for women in both clusters with a more pronounced issue in the low WHDI cluster. This data shows the burden of household responsibilities on women,

impacting their overall daily life. Additionally, daily, monthly and yearly help with housework is slightly more common in the high WHDI cluster, whereas there is a marginally higher level of weekly support in the low WHDI cluster.

To conclude, the two clusters have similar and distinct characteristics as will be explained separately below. In the one hand, in the high WHDI cluster, the age distribution of women shows a predominant age range of 35-44 years with a mean age of 38.15 years. The majority is married (83.14%) and has an average of two children. Educational attainment is high with nearly half holding a bachelor's degree and a significant portion having advanced degrees. Employment status reveals that 41.43% of women are not working, while a substantial 30.29% are civil servants. Full-time employment is the most common among working women. Monthly wage earners make up the largest salary group, indicating relatively stable employment. Household income is predominantly low (0-35,000TL) to middle (35,000-80,000TL) with only a small fraction in the high-income group (+80,000TL). Most households consist of three to four members, and a majority owns their homes (59.72%). Car ownership is high with 80% of households having at least one car. A small percentage (5.14%) of households has a lower caregiving burden. Housework occupies a considerable amount of time for these women with 33.43% dedicating 15-29 hours per week. However, support for housework is minimal with 69.14% receiving no help. These factors suggest that women in high WHDI cluster, despite better educational and employment status, face significant challenges in balancing work and domestic responsibilities.

On the other hand, in the low WHDI cluster the age distribution of women shows a predominant age range of 35-44 years with a mean age of 38.45 years. Similar to the high WHDI cluster, most women are married (72.50%) and have an average of two children. Educational levels are slightly lower with a higher proportion of high school graduates and fewer women holding advanced degrees. Employment rates show 39.16% are not working, while civil servants and wage workers are more common compared to the high WHDI cluster. Monthly wages are also prevalent, indicating job stability, but overall household income tends to be lower with a significant 66.67% in the low-income group (0-35,000TL). Household sizes are

comparable with most having three to four members, but fewer women own their homes (62.50%). Car ownership is slightly lower with 74.17% having at least one car. A higher percentage (8.33%) of households has members needing care, suggesting a greater caregiving burden. Housework demands are substantial with 35.83% of women dedicating 15-29 hours weekly, and support is limited with 77.50% receiving no help. This indicates that women in low WHDI clusters face greater socio-economic challenges and caregiving burdens.

## 7.2. Findings on the Main Path Models

The main path models are structured separately for high and low WHDI clusters in the central district of Amasya to answer the following sub-research question derived from the main research question of the thesis:

- To what extent and how significantly are women's overall resource perception and overall capabilities related to their overall functionings in terms of accessibility, safety, and participation in urban areas?

The analyses of the main path models assessed the overall capabilities-based quality of urban life for women in two urban clusters -one with high WHDI and the other with low WHDI- using Partial Least Squares Structural Equation Modeling (PLS-SEM). The beta coefficient results of HOCs are presented in Table 60.

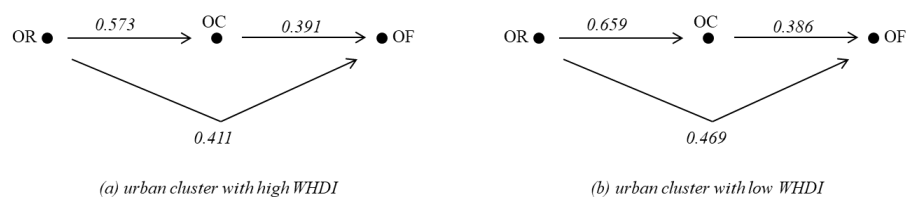


Figure 60: The Beta Coefficient Results of the Paths of HOCs for (a) the Urban Cluster with High WHDI, and (b) the Urban Cluster with Low WHDI

The models developed for these clusters examine the relationships between three overall higher-order constructs (HOCs): resource perception (OR), capabilities (OC),



and functionings (OF), incorporating the dimensions of accessibility, safety, and participation for each. Table 66 comparatively presents the structural model results of the main path models for the high and low WHDI clusters.

Table 66: The Structural Model Results of the Main Path Models for the High and Low WHDI Clusters

Hypothesis	Path	In High WHDI Cluster			In Low WHDI Cluster		
		$\beta$	p-values	Result	$\beta$	p-values	Result
H1	OR $\rightarrow$ OC	0.573	0.000	Accept	0.659	0.000	Accept
H2	OC $\rightarrow$ OF	0.391	0.000	Accept	0.386	0.027	Accept
H3	OR $\rightarrow$ OF	0.411	0.000	Accept	0.469	0.002	Accept

(OR: Overall Resource Perception of Women; OC: Overall Capabilities of Women; OF: Overall Functionings of Women)

**H1 hypothesis:** In the urban cluster with high WHDI, H1 hypothesis (OR $\rightarrow$ OC: There is a significant relationship between women's overall resource perception and women's overall capabilities) is accepted. The high T-statistic (17.119) and very low p-value (0.000) confirm the robustness of this relationship. The path coefficient ( $\beta=0.573$ ) indicates a strong and significant positive relationship between resource perception and capabilities for women in this cluster. The strong positive relationship between overall resource perception and capabilities suggests that women who perceive resources as available and sufficient in terms of accessibility, safety, and participation tend to have higher capabilities in the high WHDI cluster.

H1 hypothesis (OR $\rightarrow$ OC: There is a significant relationship between women's overall resource perception and women's overall capabilities) is also accepted with the high T-statistics (11.292) and very low p-value (0.000) in the urban cluster with low WHDI. The path coefficient ( $\beta=0.659$ ) shows a stronger and significant positive relationship between women's overall resource perception and capabilities compared to the high WHDI cluster. This implies that the availability and sufficiency of resources is even more critical in influencing capabilities in the low WHDI cluster.

As indicated, the relationship between resource perception and capabilities is stronger in the low WHDI cluster ( $\beta=0.659$ ) compared to the high WHDI cluster ( $\beta=0.573$ ). This suggests that in neighborhoods with lower WHDI, improving availability, accessibility and sufficiency of resources can have a more substantial effect on enhancing women's capabilities. Also, the path from OR to OC should be interpreted alongside the possibility that conversion factors have a negative relationship with capabilities because even with a strong resource perception, if the conversion factors are negative, they might constrain the effectiveness of these resources in enhancing capabilities, though the overall relationship remains positive.

**H2 hypothesis:** In the urban cluster with high WHDI, H2 hypothesis (OC $\rightarrow$ OF: There is a significant relationship between women's overall capabilities and women's overall functionings) is accepted. The path coefficient ( $\beta=0.391$ ) shows a moderate and statistically significant positive relationship between women's capabilities and their functionings (T-Statistics=6.825, p-value=0.000). This suggests that as women's capabilities improve in terms of accessibility, safety, and participation, their functionings also increase in this respect, although the effect is less strong than in H1 hypothesis.

H2 hypothesis (OC $\rightarrow$ OF: There is a significant relationship between women's overall capabilities and women's overall functionings) is also accepted with the T-statistics (2.208) and p-value (0.027) in the urban cluster with low WHDI. The path coefficient ( $\beta=0.386$ ) shows a similar relationship between capabilities and functionings as in the high WHDI cluster, but with a weaker statistical significance. This might indicate that while capabilities are important for improving functionings, their effect is somewhat less pronounced in the low WHDI cluster.

Both clusters show a significant positive relationship between women's capabilities and their functionings, but the effect is slightly stronger in the high WHDI cluster ( $\beta=0.391$ ) compared to the low WHDI cluster ( $\beta=0.386$ ).

Also, the statistical significance is less robust in the low WHDI cluster, possibly indicating variability in how capabilities convert into functionings in different contexts. The internal factors play an important role for the conversion of capabilities into functionings. The significant, though slightly weaker, relationship between capabilities and functionings in both high and low WHDI clusters can be due to stronger personal choice effects which can lead women to make choices that limit the full utilization of their capabilities, thereby weakening the overall relationship with functionings.

**H3 hypothesis:** In the urban cluster with high WHDI, H3 hypothesis (OR→OF: There is a significant relationship between women's overall resource perception and women's overall functionings) is accepted with the T-statistics (7.636) and p-value (0.000). The path coefficient ( $\beta=0.411$ ) indicates a moderate and significant direct relationship with resource perception and functionings. This path shows that better resource perception contributes directly to improving women's functionings, alongside the indirect effect through capabilities.

H3 hypothesis (OR→OF: There is a significant relationship between women's overall resource perception and women's overall functionings) is also accepted with the T-statistics (3.055) and p-value (0.002) in the urban cluster with low WHDI. The path coefficient ( $\beta=0.469$ ) indicates a stronger relationship with women's resource perception and their functionings in the low WHDI cluster. This suggests that in cluster with low WHDI, resource perception plays an even more vital role in enhancing women's functionings.

The relationship with women's resource perception and their functionings is stronger in the low WHDI cluster ( $\beta=0.469$ ) than in the high WHDI cluster ( $\beta=0.411$ ). This indicates that in the low WHDI cluster, resource perception plays a more critical role in directly influencing women's functionings. In the cluster with low WHDI, how women perceive their environment has a significant positive relationship with their ability to function in that environment. In both clusters, the positive relationship between resource

perception and functionings implies that resource perception contributes directly to better functionings. However, the role of conversion factors and personal choice should be considered. If conversion factors are detrimental, they may weaken the relationship with women's resource perception and their functionings. Additionally, women's personal choices which are influenced by their perceptions and social and environmental contexts can either increase or diminish this relationship.

### **7.3. Findings on the Second-Stage Path Models**

The second-stage path models were designed to examine the relationships between women's resource perception, capabilities, and functionings across eight sub-dimensions within the accessibility, safety, and participation dimensions. Additionally, these analyses aimed to assess the relationships between conversion factors and women's capabilities to better understand why some women may face challenges in fully realizing their capabilities. Furthermore, the role of personal choice was considered, as it may influence the extent to which capabilities are exercised and converted into functionings in urban life. This comprehensive approach provides insights into the underlying dynamics within high and low WHDI clusters, informing targeted interventions to enhance the quality of urban life for women in these neighborhoods.

#### **7.3.1. Findings on Accessibility to Public Open Spaces**

In this section, the findings on women's accessibility to public open spaces in urban neighborhoods of the central district of Amasya, which were clustered based on their Women's HDI, are presented in Table 67. The sub-questions regarding women's accessibility to public open spaces are as follows:

- What are the relationships between women's resource perception, capabilities, and functionings regarding their accessibility to public open spaces, and how do these relationships vary across neighborhoods with different WHDI levels?

- . What is the relationship between women's capabilities regarding accessibility to public open spaces and the related conversion factors?
- . What is the relationship between women's functionings regarding accessibility to public open spaces and agency/choice factor?

Table 67: The Structural Model Results of the Second-Stage Path Models for Women's Access to Public Open Spaces in the High and Low WHDI Clusters

Hypothesis	Path	In High WHDI Cluster			In Low WHDI Cluster		
		$\beta$	p-values	Result	$\beta$	p-values	Result
H1 <sub>1</sub>	RP1 $\rightarrow$ C1	0.147	0.022	Accept	0.152	0.138	Reject
H1 <sub>2</sub>	C1 $\rightarrow$ F1	0.240	0.000	Accept	0.049	0.615	Reject
H1 <sub>3</sub>	RP1 $\rightarrow$ F1	0.255	0.000	Accept	0.311	0.000	Accept
H1 <sub>4</sub>	SC1 $\rightarrow$ C1	-0.300	0.000	Accept	-0.294	0.000	Accept
H1 <sub>5</sub>	EC1 $\rightarrow$ C1	-0.169	0.005	Accept	-0.238	0.017	Accept
H1 <sub>6</sub>	CH1 $\rightarrow$ F1	-0.257	0.000	Accept	-0.087	0.256	Reject

(RP1: Resource perception on access to public open spaces, C1: Capabilities on access to public open spaces, F1: Functionings on access to public open spaces, SC1: Social conversion factors, EC1: Environmental conversion factors, CH1: Choice)

**H1<sub>1</sub> (RP1  $\rightarrow$  C1) hypothesis:** For the high WHDI cluster, the resource perception of women on access to public open spaces has a significant positive relationship with their capabilities to access these spaces, with a path coefficient ( $\beta$ ) of 0.147, T-statistics of 2.296, and a p-value of 0.022. This indicates that the perceived availability (OSA) and sufficiency (OSS) of urban public open spaces significantly enhance women's freedom to access these spaces (OSAF). Women in high WHDI neighborhoods tend to experience a low but statistically significant positive relationship between their perception of resource availability and their capabilities for accessing public open spaces.

In the low WHDI cluster, the resource perception of women on access to public open spaces does not have a significant relationship with women's capabilities, with a  $\beta$  of 0.152, T-statistics of 1.482, and a p-value of 0.138. This implies that the perceived availability and sufficiency of spaces (OSA, OSS) do not substantially enhance women's freedom to access (OSAF) in the low WHDI neighborhoods.

**H1<sub>2</sub> (C1 → F1) hypothesis:** In high WHDI cluster, the capabilities of women have significant positive relationship with their functionings, with a  $\beta$  of 0.240, T-statistics of 4.330, and a p-value of 0.000. This demonstrates that the freedom to access public open spaces (OSAF) significantly enhances women's functionings (FOS1). When women have higher capabilities, their actual functionings in utilizing these spaces also increase.

In low WHDI cluster, the capabilities of women do not have significant relationship with their functionings in this cluster, with a  $\beta$  of 0.049, T-statistics of 0.503, and a p-value of 0.615. Women's freedom to access public open spaces (OSAF) does not strongly translate into accessing there (functionings) (FOS1).

**H1<sub>3</sub> (RP1 → F1) hypothesis:** For the high WHDI cluster, the resource perception of women on access to public open spaces has significant positive relationship with women's functionings for accessing there, with a  $\beta$  of 0.255, T-statistics of 4.874, and a p-value of 0.000. This suggests that even without increased capabilities, perceptions of public space availability and sufficiency directly improve functionings (FOS1). The availability and sufficiency of spaces (OSA and OSS) contribute not only to women's capabilities but also women's ability to function within these spaces.

For the low WHDI cluster, the resource perception of women on access to public open spaces has significant positive relationship with women's functionings with a  $\beta$  of 0.311, T-statistics of 3.577, and a p-value of 0.000. This indicates that the perception of resource availability and sufficiency (OSA, OSS) is crucial for improving functionings (FOS1) directly. In low WHDI neighborhoods, the availability of spaces has a strong relationship with women's ability to function in these spaces.

**H1<sub>4</sub> (SC1 → C1) hypothesis:** In the high WHDI cluster, the social conversion factors have negative relationship with women's capabilities, with a  $\beta$  of -0.300, T-statistics of 5.338, and a p-value of 0.000. Perceptions of restrictive social norms, such as women being discouraged from being alone in public spaces (SOS1) or pressured to stay at home (SOS2), as well as safety concerns (SOS3), hinder

women's freedom to access public spaces. In high WHDI cluster, strong social constraints diminish women's capabilities despite resource availability.

It is crucial to understand why the resource perception of women on access to public open spaces does not have a significant relationship with women's capabilities, and also the capabilities of women do not have significant relationship with women's functionings in the low WHDI cluster. The social conversion factors have negative relationship with women's capabilities, with a  $\beta$  of -0.294, T-statistics of 3.585, and a p-value of 0.000. Perceptions of restrictive social norms (SOS1, SOS2, and SOS3) severely hinder women's freedom to access public spaces (OSAF). This effect is similar to that in the high WHDI cluster, emphasizing that social barriers are critical in both clusters.

**H1<sub>5</sub> (EC1 → C1) hypothesis:** In the high WHDI cluster, beside the social conversion factors, the environmental conversion factors also have negative relationship with women's capabilities, with a  $\beta$  of -0.169, T-statistics of 2.802, and a p-value of 0.005. This suggests that environmental barriers like physical accessibility (EOS1), insufficiencies in spatial size (EOS2), perceived inadequacies in infrastructure (EOS3), pollution (EOS4), and lack of mother and child-friendly planning (EOS5) reduce women's capabilities. In high WHDI neighborhoods, environmental factors, though less impactful than social ones, still play a significant role in limiting women's capabilities.

In the low WHDI cluster, the environmental conversion factors have a strong but negative significant relation with women's capabilities, with a  $\beta$  of -0.238, T-statistics of 2.376, and a p-value of 0.017. As expected, in low WHDI clusters, environmental conditions are more of a barrier compared to high WHDI cluster.

**H1<sub>6</sub> (CH1 → F1) hypothesis:** In the high WHDI cluster, the choice factor has a significant yet negative relationship with women's functionings on accessing to public open spaces, with a  $\beta$  of -0.257, T-statistics of 3.888, and a p-value of 0.000. Women's personal choices on accessing to public open spaces, potentially influenced by social or environmental contexts, may limit their actual functionings in accessing

public spaces. Even though the availability of resources may be high, personal constraints limit women's utilization of these resources.

In the low WHDI cluster, the choice factor does not have significant relationship with women's functionings on accessing public open spaces, with a  $\beta$  of -0.087, T-statistics of 1.137, and a p-value of 0.256. In other words, women's personal choice does not play a critical role in determining functionings (FOS1) in the low WHDI neighborhoods.

Table 68: Personal Conversion Factors Affecting Women's Freedom to Access to Public Open Spaces in High and Low WHDI Clusters

		High WHDI	Low WHDI
Code	Personal conversion factors	Pct.	Pct.
<i>HPI</i>	Presence of health issues	4.00%	5.83%
<i>CCI</i>	Childcare responsibilities	22.57%	20.83%
<i>PCI</i>	Elderly/sick care responsibilities	1.71%	5.00%
<i>WLI</i>	Participation in working life	31.43%	25.83%
<i>ELI</i>	Presence of education life	4.29%	4.17%
<i>HWII</i>	Intensity of housework	36.86%	26.67%
<i>FPI</i>	Family prevention	2.57%	5.83%
<i>SPI</i>	Safety concerns	14.29%	31.67%
<i>LSEI</i>	Limited social environment	9.14%	14.17%
<i>UNWI</i>	Personal unwillingness	16.29%	25.00%

*(The questions regarding personal conversion factors were asked as multiple-select questions in the questionnaire)*

Table 68 comparatively presents the personal conversion factors affecting women's freedom to access to public open spaces in both clusters. In the high WHDI cluster, the major personal conversion factors that hinder women's access to urban public open spaces are the intensity of housework (chosen by 36.86% of women), the presence of working life (chosen by 31.43% of women), and childcare responsibilities (chosen by 22.57% of women). In the low WHDI cluster, the safety concerns (chosen by 31.67% of women), the intensity of housework (chosen by 26.67% of women), the presence of working life (chosen by 25.83% of women), personal unwillingness (chosen by 25% of women), and childcare responsibilities (chosen by 20.83% of women) are the key personal conversion factors influencing women's freedom to access to public open spaces. Apart from the statistical significant impacts of social and environmental conversion factors, the burden of



household work and childcare responsibilities, combined with the presence of work outside the home, creates significant internal factors that restrict women's access to public open spaces for both clusters. Additionally, it is necessary to draw attention to the safety concerns experienced by women in the low WHDI cluster.

To conclude, in both clusters, the social and environmental conversion factors constrain women's capabilities to access urban public open spaces. However, in the cluster where WHDI level is high, although the current conversion factors have a negative relationship with women's freedom to access urban public open spaces in their neighborhood, women still *'are able to access public open spaces'*. The same cannot be said for the cluster where women have low WHDI level; the link between the perceived availability and sufficiency of resources on urban public open spaces, such as parks, gardens, playgrounds, and riverbanks, and freedom to access public open spaces is weak possibly due to the stronger conversion factors. Social conversion factors have a negative relationship with women's capabilities in both clusters. The results show that social norms and perceptions about women's roles (e.g., norms discouraging women from being alone in public open spaces or encouraging them to stay at home or unsafe public open spaces) significantly decrease all women's capabilities in Amasya to access public open spaces. Environmental factors have a more pronounced negative effect in the low WHDI cluster, highlighting the greater environmental barriers present in less developed neighborhoods. The lack of sufficient environmental provisions (e.g., clean, safe spaces, decent infrastructure, easy access or child-friendly planning) exacerbates the already existing barriers in low WHDI areas, making environmental issues a critical factor in reducing capabilities. While, despite the presence of a negative personal choice factor, women in high WHDI cluster can convert their *'ability to access to urban public open spaces'* into *'accessing'* there (capability → functioning), women in low WHDI cluster cannot achieve this functioning on this regard. Choice has a significant negative relationship with women's functionings in the high WHDI cluster but is not significant in the low WHDI cluster. This suggests that in high WHDI neighborhoods, personal decisions may limit the full utilization of available resources, whereas in low WHDI neighborhoods, external barriers, such as

environmental and social factors, play a larger role than personal choice in determining women's functionings. The lack of resources and infrastructure, combined with societal norms, leaves little room for women's personal choice to play a role in their functionings in accessing public spaces.

### 7.3.2. Findings on Accessibility to Education

This section presents the findings on women's accessibility to education in urban neighborhoods of Amasya's central district, clustered by their Women's HDI, as shown in Table 69. The sub-questions regarding women's accessibility to education are as follows:

- What are the relationships between women's resource perception, capabilities, and functionings regarding their accessibility to education, and how do these relationships vary across neighborhoods with different WHDI levels?
  - . What is the relationship between women's capabilities regarding accessibility to education and the related conversion factors?
  - . What is the relationship between women's functionings regarding accessibility to education and agency/choice factor?

Table 69: The Structural Model Results of the Second-Stage Path Models for Women's Access to Education in the High and Low WHDI Clusters

Hypothesis	Path	In High WHDI Cluster			In Low WHDI Cluster		
		$\beta$	p-values	Result	$\beta$	p-values	Result
H2 <sub>1</sub>	RP2 $\rightarrow$ C2	0.252	0.000	Accept	0.157	0.075	Reject
H2 <sub>2</sub>	C2 $\rightarrow$ F2	0.202	0.000	Accept	0.096	0.375	Reject
H2 <sub>3</sub>	RP2 $\rightarrow$ F2	0.217	0.000	Accept	0.265	0.009	Accept
H2 <sub>4</sub>	SC2 $\rightarrow$ C2	-0.121	0.013	Accept	-0.287	0.001	Accept
H2 <sub>5</sub>	EC2 $\rightarrow$ C2	-0.204	0.000	Accept	-0.247	0.008	Accept
H2 <sub>6</sub>	CH2 $\rightarrow$ F2	-0.178	0.003	Accept	-0.054	0.558	Reject

(RP2: Resource perception on access to education, C2: Capabilities on access to education, F2: Functionings on access to education, SC2: Social conversion factors, EC2: Environmental conversion factors, CH2: Choice)

In the survey, women participants were requested to respond to the questions by reflecting on the educational opportunities available in their area, including options

like public training centers, evening art schools, or courses, as well as opportunities for advancing to the next educational level (e.g., pursuing undergraduate studies after completing high school).

**H2<sub>1</sub> (RP2 → C2) hypothesis:** For the high WHDI cluster, The resource perception of women regarding access to education has a significant positive relationship with their capabilities to access educational facilities, with a path coefficient ( $\beta$ ) of 0.252, T-statistics of 5.115, and a p-value of 0.000. This indicates that the perceived availability (EA) and sufficiency (ES) of educational facilities significantly enhance women's capabilities (C2) to access education.

For the low WHDI cluster, the resource perception of women regarding access to education does not have significant relationship with their capabilities to access educational facilities, with a path coefficient ( $\beta$ ) of 0.157, T-statistics of 1.783, and a p-value of 0.075. This suggests that the perceived availability (EA) and sufficiency (ES) of educational facilities do not significantly enhance women's capabilities in this cluster.

**H2<sub>2</sub> (C2 → F2) hypothesis:** For the high WHDI cluster, the capabilities of women to access education have positive relationship with their functionings in this area, with a path coefficient ( $\beta$ ) of 0.202, T-statistics of 3.511, and a p-value of 0.000. This demonstrates that women who feel capable of accessing education (EAF) are more likely to achieve positive outcomes (FE1) related to their education.

For the low WHDI cluster, the capabilities of women to access education also show no significant effect on their functionings, with a path coefficient ( $\beta$ ) of 0.096, T-statistics of 0.887, and a p-value of 0.375. This indicates that women in low WHDI areas may struggle to translate capabilities (EAF) into positive outcomes (FE1).

**H2<sub>3</sub> (RP2 → F2) hypothesis:** For the high WHDI cluster, the resource perception of women on access to education also has a significant positive relationship with their functioning achievements, with a path coefficient ( $\beta$ ) of 0.217, T-statistics of 4.013, and a p-value of 0.000. This emphasizes that the perception of educational resources is directly related to functioning outcomes (FE1).

For the low WHDI cluster, the resource perception of women on access to education does have a significant positive relationship with their functioning achievements, with a path coefficient ( $\beta$ ) of 0.265, T-statistics of 2.598, and a p-value of 0.009. This underscores the importance of perceived educational resources on achieving functioning outcomes in this cluster.

**H2<sub>4</sub> (SC2 → C2) hypothesis:** For the high WHDI cluster, the social conversion factors have negative relationship with the capabilities of women to access education, with a path coefficient ( $\beta$ ) of -0.121, T-statistics of 2.492, and a p-value of 0.013. This suggests that societal norms regarding women's education (SE1, SE2, and SE3) can hinder women's capabilities to pursue education.

In the low WHDI cluster, women face difficulties in converting resources into capabilities and capabilities into functions in terms of accessing education. Social and environmental factors may contribute to the barrier to this conversion. Accordingly, the social conversion factors have a significant negative relationship with the capabilities of women to access education, with a path coefficient ( $\beta$ ) of -0.287, T-statistics of 3.287, and a p-value of 0.001. This indicates that societal attitudes toward women's education are strong barriers in low WHDI neighborhoods.

**H2<sub>5</sub> (EC2 → C2) hypothesis:** For the high WHDI cluster, the environmental conversion factors also have negative relationship with women's capabilities, with a path coefficient ( $\beta$ ) of -0.204, T-statistics of 3.967, and a p-value of 0.000. This reflects concerns about the adequacy of educational facilities and available childcare and elder/sick care services impacting women's educational access.

For the low WHDI cluster, the environmental conversion factors also significantly hinder capabilities, with a path coefficient ( $\beta$ ) of -0.247, T-statistics of 2.666, and a p-value of 0.008. This indicates that perceived inadequacies in educational facilities in terms of adequacy and accessibility (EE1 and EE2) and inadequacies in childcare, elder and sick care services (EE3 and EE4) restrict women's educational opportunities.

**H2<sub>6</sub> (CH2 → F2) hypothesis:** For the high WHDI cluster, the choice of women regarding access to education has a significant negative relationship with their functionings, with a path coefficient ( $\beta$ ) of -0.178, T-statistics of 3.005, and a p-value of 0.003. This highlights that perceived limitations in personal agency can adversely have a relationship with women's educational functionings.

In the low WHDI cluster, the choice of women regarding access to education does not significantly affect their functionings, with a path coefficient ( $\beta$ ) of -0.054, T-statistics of 0.586, and a p-value of 0.558. This suggests that personal agency has a weaker relationship with women's educational functionings in the low WHDI cluster.

Table 70: Personal Conversion Factors Affecting Women's Freedom to Access to Education in High and Low WHDI Clusters

		High WHDI	Low WHDI
Code	Personal conversion factors	Pct.	Pct.
<b>HP2</b>	Presence of health issues	4.57%	6.67%
<b>CC2</b>	Childcare responsibilities	30.00%	23.33%
<b>PC2</b>	Elderly/sick care responsibilities	2.00%	5.83%
<b>WL2</b>	Participation in working life	34.29%	30.00%
<b>LEC2</b>	Poor economic conditions	14.29%	33.33%
<b>HWI2</b>	Intensity of housework	32.86%	27.50%
<b>FP2</b>	Family prevention	3.14%	4.17%
<b>UNW2</b>	Personal unwillingness	14.57%	21.67%

*(The questions regarding personal conversion factors were asked as multiple-select questions in the questionnaire)*

Table 71 comparatively presents the personal conversion factors affecting women's freedom to access education in both clusters. In the high WHDI cluster, the participation in working life (selected by 34.29% of women), the intensity of housework (selected by 32.86% of women), and childcare responsibilities (selected by 30% of women) are the key personal conversion factors that hinder women from pursuing opportunities to advance to the next educational level. In the low WHDI cluster, poor economic conditions (selected by 33.33% of women), participation in working life (selected by 30% of women), the intensity of housework (selected by 27.50% of women), and childcare responsibilities (selected by 23.33% of women) are the major personal conversion factors that prevent women's freedom to access education. In both clusters, participation in working life, housework intensity, and

childcare responsibilities are the top factors limiting time and energy that women have for educational advancement. However, in the low WHDI cluster, poor economic conditions and personal unwillingness play a more prominent role.

To conclude, the results of women's access to education reveal notable differences between the high and low WHDI clusters. In the high WHDI cluster, resource perception of women on availability and sufficiency of educational facilities has positive relationship with women's capabilities and capabilities have positive relationship with women's functioning achievements. The social and environmental conversion factors consistently act as barriers in both clusters; however, they have a more pronounced negative relationship in the low WHDI cluster, which blocks the capabilities and functionings of women on accessing education. The social conversion factors (e.g., social norm toward girls' education, social norm toward education attainment after marriage, social norm toward economic contribution expectations for girls) are significantly stronger in the low WHDI cluster, compared to the high one. This result indicates that social attitudes toward education present a more considerable barrier for women's accessing education in low WHDI neighborhoods. The results regarding environmental conversion factors suggest that women's perceptions of inadequacies in and inaccessibility of educational facilities, and also insufficiencies of childcare, elder and sick care services are more pronounced barriers for women in low WHDI neighborhoods. This result underscores the necessity for improvements in the educational infrastructure in low WHDI areas to enhance women's access to education. Overall, while women can convert their capability to access to education into functionings on pursuing the educational advancement; women, in low WHDI cluster, cannot achieve this functioning on this regard. The findings show that while women in high WHDI cluster encounter some barriers, the challenges are significantly more severe and multifaceted in low WHDI neighborhoods.

### **7.3.3. Findings on Accessibility to Healthy Environment**

In this section, the findings on women's accessibility to healthy environment in urban neighborhoods of the central district of Amasya, which were clustered based on their

Women's HDI, are presented in Table 71. The sub-questions regarding women's accessibility to healthy environment are as follows:

- What are the relationships between women's resource perception, capabilities, and functionings regarding their accessibility to healthy environment, and how do these relationships vary across neighborhoods with different WHDI levels?
- What is the relationship between women's capabilities regarding accessibility to healthy environment and the related conversion factors?
- What is the relationship between women's functionings regarding accessibility to healthy environment and agency/choice factor?

Table 71: The Structural Model Results of the Second-Stage Path Models for Women's Access to Healthy Environment in the High and Low WHDI Clusters

Hypothesis	Path	In High WHDI Cluster			In Low WHDI Cluster		
		$\beta$	p-values	Result	$\beta$	p-values	Result
H3 <sub>1</sub>	RP3 $\rightarrow$ C3	0.396	0.000	Accept	0.330	0.000	Accept
H3 <sub>2</sub>	C3 $\rightarrow$ F3	0.249	0.000	Accept	0.178	0.067	Reject
H3 <sub>3</sub>	RP3 $\rightarrow$ F3	0.351	0.000	Accept	0.317	0.001	Accept
H3 <sub>4</sub>	SC3 $\rightarrow$ C3	-0.137	0.004	Accept	0.137	0.125	Reject
H3 <sub>5</sub>	EC3 $\rightarrow$ C3	-0.201	0.000	Accept	-0.272	0.002	Accept
H3 <sub>6</sub>	CH3 $\rightarrow$ F3	-0.205	0.000	Accept	-0.263	0.006	Accept

(RP3: Resource perception on access to healthy environment, C3: Capabilities on access to healthy environment, F3: Functionings on access to healthy environment, SC3: Social conversion factors, EC3: Environmental conversion factors, CH3: Choice)

**H3<sub>1</sub> (RP3  $\rightarrow$  C3) hypothesis:** For the high WHDI cluster, the results of the structural model indicate that the resource perception of women on access to a healthy environment has a significant positive relationship with their capabilities to access these spaces, with a path coefficient ( $\beta$ ) of 0.396, T-statistics of 7.824, and a p-value of 0.000. This indicates that the perceived availability (HA) and sufficiency (HS) of a healthy environment significantly enhance women's capabilities for accessing a healthy environment (HAF). Women in high WHDI neighborhoods

experience a strong positive relationship between their resource perception and their capabilities.

For the low WHDI cluster, the structural model results obtained by bootstrapping procedure indicate that the resource perception of women on access to a healthy environment has a significant positive relationship with their capabilities, with a path coefficient ( $\beta$ ) of 0.330, T-statistics of 3.552, and a p-value of 0.000. This suggests that women's perception of the availability (HA) and sufficiency (HS) of a healthy environment significantly enhances their capabilities to access these environments.

**H3<sub>2</sub> (C3 → F3) hypothesis:** For the high WHDI cluster, the capabilities of women on access to a healthy environment have a significant positive relationship with their functionings, with a path coefficient ( $\beta$ ) of 0.249, T-statistics of 4.193, and a p-value of 0.000. This suggests that enhanced capabilities contribute positively to women's functionings (FH1) in accessing a healthy environment.

For the low WHDI cluster, the capabilities of women on access to a healthy environment do not have significant relationship with their functionings, with a path coefficient ( $\beta$ ) of 0.178, T-statistics of 1.834, and a p-value of 0.067. This indicates that the relationship is weak and not statistically significant, suggesting that women in low WHDI neighborhoods may struggle to translate capabilities into actual functionings.

**H3<sub>3</sub> (RP3 → F3) hypothesis:** For the high WHDI cluster, the resource perception of women on access to a healthy environment also has a significant positive relationship with their functionings, with a path coefficient ( $\beta$ ) of 0.351, T-statistics of 6.393, and a p-value of 0.000. This shows that the availability and sufficiency of a healthy environment directly enhance women's functionings.

For the low WHDI cluster, the resource perception of women on access to a healthy environment has a significant positive relationship with their functionings, with a path coefficient ( $\beta$ ) of 0.317, T-statistics of 3.287, and a p-value of 0.001. This reinforces the notion that resource availability directly enhances women's functionings.



**H3<sub>4</sub> (SC3 → C3) hypothesis:** For the high WHDI cluster, the social conversion factors have a significant negative relationship with the capabilities of women on access to a healthy environment, with a path coefficient ( $\beta$ ) of -0.137, T-statistics of 2.889, and a p-value of 0.004. This indicates that social norms regarding residential proximity (SH1 and SH2) may hinder women's capabilities.

For the low WHDI cluster, the social conversion factors have no significant relationship with the capabilities of women, with a path coefficient ( $\beta$ ) of 0.137, T-statistics of 1.536, and a p-value of 0.125. This suggests that social norms do not significantly hinder capabilities in this cluster.

**H3<sub>5</sub> (EC3 → C3) hypothesis:** For the high WHDI cluster, the environmental conversion factors have also negative relationship with the capabilities of women, with a path coefficient ( $\beta$ ) of -0.201, T-statistics of 4.057, and a p-value of 0.000. This suggests that factors such as pollution perception (EH1) and lack of access to affordable housing in healthy neighborhoods (EH3) negatively affect women's capabilities to access a healthy environment.

For the low WHDI cluster, the environmental conversion factors have a significant negative relationship with women's capabilities, with a path coefficient ( $\beta$ ) of -0.272, T-statistics of 3.098, and a p-value of 0.002. This indicates that women in low WHDI neighborhoods face significant challenges related to environmental factors affecting their capabilities.

**H3<sub>6</sub> (CH3 → F3) hypothesis:** For the high WHDI cluster, the choice of women has a significant negative relationship with their functionings, with a path coefficient ( $\beta$ ) of -0.205, T-statistics of 3.965, and a p-value of 0.000. This indicates that limited choice regarding access to a healthy environment restricts women's functionings.

For the low WHDI cluster, the choice of women has a significant negative relationship with their functionings, with a path coefficient ( $\beta$ ) of -0.263, T-statistics of 2.759, and a p-value of 0.006. This suggests that limited choices restrict women's achievements in accessing a healthy environment.

Table 72 comparatively presents the personal conversion factors affecting women's freedom to access a healthy environment in both clusters. The personal conversion factors have relationship with the women's choices. In the low WHDI cluster, poor economic conditions (chosen by 65% of women), close proximity of current home to work/school (chosen by 21.67% of women) and the sense of belonging to neighborhood (chosen by 12.50% of women) are indicated as the key personal conversion factors that limit women's capabilities to access to healthy environment. In the high WHDI cluster, poor economic conditions (chosen by 41.11% of women), close proximity of current home to work/school (chosen by 30.29% of women), and the sense of belonging to neighborhood (chosen by 14% of women) are the major personal conversion factors.

Table 72: Personal Conversion Factors Affecting Women's Freedom to Access to Healthy Environment in High and Low WHDI Clusters

		High WHDI	Low WHDI
Code	Personal conversion factors	Pct.	Pct.
<b>LEC3</b>	Poor economic conditions	41.11%	65.00%
<b>BR3</b>	Sense of belonging to relatives/acquaintances	11.43%	10.83%
<b>BN3</b>	Sense of belonging to neighborhood	14.00%	12.50%
<b>CP3</b>	Close proximity of current home to work/school	30.29%	21.67%
<b>FR3</b>	Family's reluctance	4.86%	3.33%
<b>UNW3</b>	Personal unwillingness	9.14%	7.50%

*(The questions regarding personal conversion factors were asked as multiple-select questions in the questionnaire)*

The descriptive analyses show that a significantly higher proportion of women in the low WHDI cluster belong to the low-income group (66.67%) compared to those in the high WHDI cluster (49.43%), suggesting greater economic challenges in both WHDI clusters. According to the results, the most prominent internal factor that prevents women from affording a house in neighborhoods with a clean and healthy environment is poor economic conditions.

To conclude, the perception of the presence and sufficiency of a clean and healthy environment positively contributes to the freedom of women in all neighborhoods to access a clean and healthy environment. In high WHDI cluster, although the social and environmental conversion factors which limit women's capability are effective, women are still capable of accessing clean and healthy environment. In low WHDI

cluster, the environmental factors are also effective on women's capabilities. This result show that women have negative environmental perception on their neighborhoods on the issues regarding pollution, adequacy of green spaces, population density, and spatial quality, and the housing affordability in healthy neighborhoods, and believe these negativities hinder them to access to clean and healthy environment. To reiterate, the clusters also reflect the environmental and physical quality of that neighborhoods. As expected, women in low WHDI neighborhoods face significant environmental challenges that limit their capabilities more than those in high WHDI areas, making this a critical area for intervention.

While capabilities matter for functionings, their influence is only effective in high WHDI neighborhoods. Women in low WHDI neighborhoods struggle to convert capabilities into accessing healthy environment (functionings). The choice factor shows a significant negative relationship with women's functionings in both clusters, but it is stronger in the low WHDI cluster than in the high WHDI cluster. This suggests that women in lower WHDI neighborhoods face greater restrictions in their choices, affecting their overall functionings.

#### **7.3.4. Findings on Accessibility to Mobility and Transport**

In this section, the findings on women's accessibility to mobility and transport in urban neighborhoods of the central district of Amasya, which were clustered based on their Women's HDI, are presented in Table 73. The sub-questions regarding women's accessibility to mobility and transport are as follows:

- What are the relationships between women's resource perception, capabilities, and functionings regarding their accessibility to mobility and transport, and how do these relationships vary across neighborhoods with different WHDI levels?
  - . What is the relationship between women's capabilities regarding accessibility to mobility and transport and the related conversion factors?
  - . What is the relationship between women's functionings regarding accessibility to mobility and transport and agency/choice factor?

**H4<sub>1</sub> (RP4 → C4) hypothesis:** For the high WHDI cluster, the bootstrapping results indicate that the resource perception of women on access to mobility and transport has a significant positive relationship with their capabilities to access these facilities, with a path coefficient ( $\beta$ ) of 0.208, T-statistics of 3.520, and a p-value of 0.000. This means that the availability (TA) and sufficiency (TS) of transportation services have positive relationship with women's freedom to access them (TAF).

In the low WHDI cluster, resource perception has a significant positive relationship with women's capabilities, with a path coefficient ( $\beta$ ) of 0.203, T-statistics of 2.186, and a p-value of 0.029. Similar to the high WHDI cluster, women's perception of transport availability and sufficiency has relationship with their freedom to access mobility services.

Table 73: The Structural Model Results of the Second-Stage Path Models for Women's Access to Mobility and Transport in the High and Low WHDI Clusters

Hypothesis	Path	In High WHDI Cluster			In Low WHDI Cluster		
		$\beta$	p-values	Result	$\beta$	p-values	Result
H4 <sub>1</sub>	RP4 → C4	0.208	0.000	Accept	0.203	0.029	Accept
H4 <sub>2</sub>	C4 → F4	0.179	0.003	Accept	0.204	0.015	Accept
H4 <sub>3</sub>	RP4 → F4	0.380	0.000	Accept	0.342	0.000	Accept
H4 <sub>4</sub>	SC4 → C4	-0.185	0.000	Accept	0.023	0.838	Reject
H4 <sub>5</sub>	EC4 → C4	-0.220	0.000	Accept	-0.408	0.000	Accept
H4 <sub>6</sub>	CH4 → F4	-0.006	0.908	Reject	-0.046	0.602	Reject

(RP4: Resource perception on access to mobility and transport, C4: Capabilities on access to mobility and transport, F4: Functionings on access to mobility and transport, SC4: Social conversion factors, EC4: Environmental conversion factors, CH4: Choice)

**H4<sub>2</sub> (C4 → F4) hypothesis:** For the high WHDI cluster, the capabilities of women on access to mobility and transport have a significant positive relationship with their functionings in accessing these facilities, with a path coefficient ( $\beta$ ) of 0.179, T-statistics of 3.010, and a p-value of 0.003. This suggests that having the freedom to access transportation (TAF) translates into achieving functionings related to transport access (FT1).

For the low WHDI cluster, women's capabilities on access to mobility and transport have a significant positive relationship with their functionings on this regard, with a path coefficient ( $\beta$ ) of 0.204, T-statistics of 2.424, and a p-value of 0.015. Freedom to access mobility services translates into achieving functionings in this cluster as well, though with a slightly higher coefficient than in the high WHDI cluster.

**H4<sub>3</sub> (RP4 → F4) hypothesis:** For the high WHDI cluster, the resource perception of women on access to mobility and transport has a significant positive relationship with their functionings, with a path coefficient ( $\beta$ ) of 0.380, T-statistics of 8.322, and a p-value of 0.000. This indicates a strong positive relationship between women's perception of transport resources (TA, TS) and their functionings on transport access (FT1).

For the low WHDI cluster, the resource perception has significant positive relationship with women's functionings, with a path coefficient ( $\beta$ ) of 0.342, T-statistics of 3.730, and a p-value of 0.000. Similar to the high WHDI cluster, perceptions of transportation resources have relationship with women's functionings.

**H4<sub>4</sub> (SC4 → C4) hypothesis:** For the high WHDI cluster, the social conversion factors have a negative relationship with women's capabilities in this cluster, with a path coefficient ( $\beta$ ) of -0.185, T-statistics of 3.890, and a p-value of 0.000. This suggests that societal norms such as expectations regarding car use or accompaniment when going out (ST1, ST2, and ST3) restrict women's freedom to access mobility services.

For the low WHDI cluster, the social conversion factors and choice have no significant effect whereas the environmental conversion factors have. The social conversion factors do not have a significant relationship with capabilities in this cluster, with a path coefficient ( $\beta$ ) of 0.023, T-statistics of 0.205, and a p-value of 0.838. This suggests that societal norms (ST1, ST2, and ST3) are not perceived as barriers in this context.

**H4<sub>5</sub> (EC4 → C4) hypothesis:** For the high WHDI cluster, the environmental conversion factors also have a negative relationship with women's capabilities, with

a path coefficient ( $\beta$ ) of -0.220, T-statistics of 3.942, and a p-value of 0.000. The safety perceptions of women when using public transport in the evening and when walking through the streets (ET1 and ET5) reduce women's access to transport facilities.

For the low WHDI cluster, the environmental conversion factors have a strong negative relationship with women's capabilities, with a path coefficient ( $\beta$ ) of -0.408, T-statistics of 4.296, and a p-value of 0.000. The perceptions of women regarding public transport safety, frequency, and accessibility (ET1-ET5) heavily constrain their access to transport facilities in low WHDI neighborhoods.

**H4<sub>6</sub> (CH4 → F4) hypothesis:** For the high WHDI cluster, the choice factor does not have significant relationship with women's functionings in accessing mobility and transport, with a path coefficient ( $\beta$ ) of -0.006, T-statistics of 0.115, and a p-value of 0.908. This means that personal agency regarding transportation access (CT2) does not notably have relationship with their functionings.

For the low WHDI cluster, the choice factors do not have a significant relationship with women's functionings in this cluster, with a path coefficient ( $\beta$ ) of -0.046, T-statistics of 0.521, and a p-value of 0.602, similar to the high WHDI cluster.

Table 74: Personal Conversion Factors Affecting Women's Freedom to Access to Mobility and Transport in High and Low WHDI Clusters

		High WHDI	Low WHDI
Code	Personal conversion factors	Pct.	Pct.
<b>HP4</b>	Presence of health issues	4.00%	10.00%
<b>HC4</b>	Having child	25.71%	25.83%
<b>CL4</b>	Carrying heavy loads	4.86%	9.17%
<b>LD4</b>	Long distance to the destination	14.86%	23.33%
<b>DP4</b>	Visiting many different places	13.71%	11.67%
<b>HLT4</b>	Having lack of time	23.14%	25.83%
<b>SC4</b>	Safety concerns	8.86%	25.00%
<b>UNW4</b>	Personal unwillingness	10.00%	21.67%

*(The questions regarding personal conversion factors were asked as multiple-select questions in the questionnaire)*

Table 74 indicates that, in the high WHDI cluster, women participants identify having child (25.71%), and having lack of time (23.14%) are the key personal conversion factors that limit their freedom to access to public transportation, cycling

and walking. On the other hand, in the low WHDI cluster, women indicate having child (25.83), having lack of time (25.83), safety concerns (25%) and long distance to the destination (23.33%) are the major personal conversion factors limiting their capabilities on this regard. According to the results, the improvements should be made to alleviate the barriers women face in accessing urban mobility, providing a more inclusive and safe transportation system that addresses diverse needs.

To conclude, accessibility to mobility and transport means that individuals living in a city can easily access transportation infrastructure, such as public transit, pedestrian pathways, and bike lanes. This concept refers to having the necessary transportation options for people to reach workplaces, schools, healthcare services, and social spaces within the city. In both clusters, women are capable of being access to mobility and transport, and convert these capabilities into functionings. Nonetheless, the social conversion factors have a negative relationship with women's capabilities in the high WHDI cluster. This suggests that social norms (such as women's car use, women explaining whom they are out with, and being accompanied by relatives when going out) pose more restrictions on women's transport access in higher WHDI neighborhoods.

Surprisingly, in low WHDI cluster, it is found that the social conversion factors have no significant relationship with women's capabilities. As noticed during the survey data collection process in the field, the reason for this may be that women are unaware of the oppressive conditions they are in, have normalized this situation, and do not feel discomfort from it.

The environmental concerns are a barrier to women's transport access in both high and low WHDI clusters, but their negative influence is more pronounced in low WHDI neighborhoods. This could be due to greater infrastructure deficiencies and safety concerns in lower WHDI areas, which exacerbate barriers to accessing mobility and transport. As expected, in both clusters, personal choice factors do not have significant relationship with women's functionings in accessing mobility and transport, because access to mobility and transportation is more than just a matter of agencies' choice; it is an obligation in urban life.

### 7.3.5. Findings on Safety in Public Open Spaces

In this section, the findings on women's safety in public open spaces in urban neighborhoods of the central district of Amasya, which were clustered based on their Women's HDI, are presented in Table 75. The sub-questions regarding women's safety in public open spaces are as follows:

- What are the relationships between women's resource perception, capabilities, and functionings regarding their safety in public open spaces, and how do these relationships vary across neighborhoods with different WHDI levels?
- What is the relationship between women's capabilities regarding safety in public open spaces and the related conversion factors?
- What is the relationship between women's functionings regarding safety in public open spaces and agency/choice factor?

Table 75: The Structural Model Results of the Second-Stage Path Models for Women's Safety in Public Open Spaces in the High and Low WHDI Clusters

Hypothesis	Path	In High WHDI Cluster			In Low WHDI Cluster		
		$\beta$	p-values	Result	$\beta$	p-values	Result
H5 <sub>1</sub>	RP5 $\rightarrow$ C5	0.330	0.000	Accept	0.208	0.011	Accept
H5 <sub>2</sub>	C5 $\rightarrow$ F5	0.378	0.000	Accept	0.480	0.000	Accept
H5 <sub>3</sub>	RP5 $\rightarrow$ F5	0.189	0.000	Accept	0.052	0.510	Reject
H5 <sub>4</sub>	SC5 $\rightarrow$ C5	-0.180	0.000	Accept	-0.138	0.094	Reject
H5 <sub>5</sub>	EC5 $\rightarrow$ C5	-0.210	0.000	Accept	-0.334	0.000	Accept
H5 <sub>6</sub>	CH5 $\rightarrow$ F5	-0.160	0.004	Accept	-0.251	0.010	Accept

(RP5: Resource perception on safety in public open spaces, C5: Capabilities on safety in public open spaces, F5: Functionings on safety in public open spaces, SC5: Social conversion factors, EC5: Environmental conversion factors, CH5: Choice)

**H5<sub>1</sub> (RP5  $\rightarrow$  C5) hypothesis:** For the high WHDI cluster, the results of the structural model indicate that the resource perception of women's safety in urban public open spaces has a significant positive relationship with their capabilities to be safe in these spaces, with a path coefficient ( $\beta$ ) of 0.330, T-statistics of 6.410, and a p-value of 0.000. This shows that women's perception of the safety and adequacy of



the security level of the public open spaces (PSS, PSSS) are strongly linked to their freedom to feel safe (PSSF) in high WHDI neighborhoods.

For the low WHDI cluster, according to the bootstrapping results, the resource perception of women's safety in public open spaces has a significant positive but weaker relationship with their capabilities, with a path coefficient ( $\beta$ ) of 0.208, T-statistics of 2.549, and a p-value of 0.011. Women's perceptions of safety resources (PSS, PSSS) still affect their safety capabilities (PSSF), but less so in low WHDI neighborhoods compared to high WHDI areas.

**H5<sub>2</sub> (C5 → F5) hypothesis:** For the high WHDI cluster, the capabilities of women to be safe in public open spaces have a significant positive relationship with functionings (FPS1) regarding safety, with a path coefficient ( $\beta$ ) of 0.378, T-statistics of 6.362, and a p-value of 0.000. This suggests that women's actual ability to experience safety directly enhances their functionings in urban public spaces.

For the low WHDI cluster, the capabilities of women to feel safe in public open spaces have a significant positive and stronger relationship with their functionings on this regard, with a path coefficient ( $\beta$ ) of 0.480, T-statistics of 6.273, and a p-value of 0.000. In low WHDI neighborhoods, women's ability to stay safe (PSSF) plays an even more crucial role in ensuring their functionings (FPS1).

**H5<sub>3</sub> (RP5 → F5) hypothesis:** For the high WHDI cluster, the resource perception of women's safety has a significant positive but weaker relationship with their functionings, with a path coefficient ( $\beta$ ) of 0.189, T-statistics of 3.492, and a p-value of 0.000. In high WHDI areas, while safety perceptions are important, they do not directly contribute as strongly to women's safety achievements compared to their capabilities (PSSF).

In the low WHDI cluster, the direct effect of resource perception on functionings is insignificant, with a path coefficient ( $\beta$ ) of 0.052, T-statistics of 0.659, and a p-value of 0.510. In low WHDI neighborhoods, simply perceiving safety resources does not directly lead to better safety outcomes for women.

**H5<sub>4</sub> (SC5 → C5) hypothesis:** In high WHDI cluster, the social conversion factors have a significant negative relationship with women's safety capabilities, with a path coefficient ( $\beta$ ) of -0.180, T-statistics of 3.615, and a p-value of 0.000. In this cluster, restrictive social norms (SPS1, SPS2, and SPS3) significantly limit women's freedom to feel safe, despite the fact that public open spaces are perceived as safe.

In low WHDI cluster, the social conversion factors have an insignificant relationship with women's capabilities, with a path coefficient ( $\beta$ ) of -0.138, T-statistics of 1.673, and a p-value of 0.094. This suggests that in low WHDI neighborhoods, social norms (SPS1, SPS2, and SPS3) do not play as significant a role in limiting women's safety capabilities.

**H5<sub>5</sub> (EC5 → C5) hypothesis:** For the high WHDI cluster, the environmental conversion factors (e.g., lighting and perceptions of deserted areas) have a significant negative relationship with women's safety capabilities, with a path coefficient ( $\beta$ ) of -0.210, T-statistics of 3.529, and a p-value of 0.000. This indicates that in high WHDI neighborhoods, environmental factors such as poor lighting and deserted spaces significantly hinder women's freedom to feel safe.

For the low WHDI cluster, the environmental conversion factors have a significant negative relationship with women's safety capabilities, with a path coefficient ( $\beta$ ) of -0.334, T-statistics of 3.629, and a p-value of 0.000. In low WHDI neighborhoods, poor environmental conditions, such as lack of adequate lighting (EPS1), unsafe public spaces (EPS2), and deserted areas (EPS3), significantly hinder women's ability to feel safe.

**H5<sub>6</sub> (CH5 → F5) hypothesis:** For the high WHDI cluster, the choice of women regarding safety in public open spaces has a significant negative relationship with their functionings, with a path coefficient ( $\beta$ ) of -0.160, T-statistics of 2.877, and a p-value of 0.004. This suggests that in high WHDI neighborhoods, even when women have the capabilities to access public open spaces, their safety concerns have relationship with their choices to use these spaces (functionings).

For the low WHDI cluster, the choice of women regarding safety in public open spaces has a significant negative relationship with their functionings, with a path coefficient ( $\beta$ ) of -0.251, T-statistics of 2.591, and a p-value of 0.010. Similar to the high WHDI cluster, women's choices about safety measures in low WHDI areas do not necessarily lead to better safety outcomes, and may even reflect limited available options for ensuring safety.

Women's personal choice to avoid public open spaces due to concerns for their safety diminishes their functionings in this regard. Table 76 shows that no one is less important than the other, there are three key factors limit women's freely to access to and to be in urban public open spaces in neighborhoods of Amasya: concern about being outside at night, walking alone, and fear of harassment. In the high WHDI cluster, the key personal conversion factors affecting women's freedom to be safe in public open spaces are indicated by women participants as concern about being outside at night (chosen by 34% of women), walking alone (chosen by 24.29% of women), and fear of harassment (chosen by 23.43% of women). In the low WHDI cluster, concern about being outside at night (chosen by 50% of women), fear of harassment (chosen by 38.17% of women), and walking alone (chosen by 30% of women) are the major factors indicated by women affecting their safety in public open spaces.

Table 76: Personal Conversion Factors Affecting Women's Freedom to be Safe in Public Open Spaces in High and Low WHDI Clusters

		High WHDI	Low WHDI
Code	Personal conversion factors	Pct.	Pct.
CC5	Clothing choice	7.71%	15.83%
BON5	Concern about being outside at night	34.00%	50.00%
WLD5	Walking long distance	8.00%	13.33%
BS5	Being single	2.57%	9.17%
FOH5	Fear of harassment	23.43%	39.17%
WA5	Walking alone	24.29%	30.00%
NSB5	Not feeling sense of belonging	6.86%	11.67%
FR5	Having few relatives	12.57%	17.50%

*(The questions regarding personal conversion factors were asked as multiple-select questions in the questionnaire)*

To conclude, according to the analysis results in the two separate clusters in the central district of Amasya, the existence of safe urban physical spaces merely does

not always enable the functioning of women being safe in urban areas. It is highly important to enhance women's capability to feel safe in urban public open spaces by reducing the negative relationship with personal, social, and environmental conversion factors. In high WHDI cluster, women indicate that social norms on women's presence in public open spaces (such as women's going out in the evening, women's dress code, and women's being safe at home than on the street) have relationship with women's capabilities on being safe. In contrast, although gender roles and the restrictions women face in public spaces may be more pronounced in socio-economically disadvantaged areas, the results show that the social norms are not a significant barrier to women's safety capabilities in low WHDI. During the fieldwork where the surveys were applied, it was observed that social norms regarding women's safety in urban spaces were more effective in some neighborhoods in low WHDI cluster. However, the results were not statistically significant. This may be because women tend to ignore or accept the situation rather than confronting challenges. Environmental barriers to women's safety capabilities are present in both high and low WHDI neighborhoods, but their relationship is stronger in low WHDI areas, as expected. This suggests that physical infrastructure play a more critical role in shaping women's safety in lower-income areas. Furthermore, the negative effect of women's choices regarding safety on their functionings is significant in both clusters, but it is stronger in the low WHDI cluster.

### **7.3.6. Findings on Safety in Public Transport**

In this section, the findings on women's safety in public transport in urban neighborhoods of the central district of Amasya, which were clustered based on their Women's HDI, are presented in Table 77. The sub-questions regarding women's safety in public transport are as follows:

- What are the relationships between women's resource perception, capabilities, and functionings regarding their safety in public transport, and how do these relationships vary across neighborhoods with different WHDI levels?
- . What is the relationship between women's capabilities regarding safety in public transport and the related conversion factors?

- What is the relationship between women's functionings regarding safety in public transport and agency/choice factor?

Table 77: The Structural Model Results of the Second-Stage Path Models for Women's Safety in Public Transport in the High and Low WHDI Clusters

Hypothesis	Path	In High WHDI Cluster			In Low WHDI Cluster		
		$\beta$	p-values	Result	$\beta$	p-values	Result
H6 <sub>1</sub>	RP6 $\rightarrow$ C6	0.329	0.000	Accept	0.354	0.000	Accept
H6 <sub>2</sub>	C6 $\rightarrow$ F6	0.364	0.000	Accept	0.308	0.003	Accept
H6 <sub>3</sub>	RP6 $\rightarrow$ F6	0.154	0.003	Accept	0.012	0.895	Reject
H6 <sub>4</sub>	SC6 $\rightarrow$ C6	-0.209	0.000	Accept	-0.190	0.054	Reject
H6 <sub>5</sub>	EC6 $\rightarrow$ C6	-0.194	0.000	Accept	-0.169	0.087	Reject
H6 <sub>6</sub>	CH6 $\rightarrow$ F6	-0.249	0.000	Accept	-0.286	0.001	Accept

(RP6: Resource perception on safety in public transport, C6: Capabilities on safety in public transport, F6: Functionings on safety in public transport, SC6: Social conversion factors, EC6: Environmental conversion factors, CH6: Choice)

**H6<sub>1</sub> (RP6  $\rightarrow$  C6) hypothesis:** For the high WHDI cluster, the bootstrapping results show that, in the high WHDI cluster, the relationship between resource perception of women's safety in urban public transportation (RP6) and capabilities (C6) is significant and positive, with a path coefficient of  $\beta = 0.329$ , a T-statistic of 7.317, and a p-value of 0.000. This indicates that women's perception of safe public transportation has a strong positive relationship with their capabilities in transportation safety.

In the low WHDI cluster, the relationship between resource perception (RP6) and capabilities (C6) is significant and positive ( $\beta = 0.354$ ,  $T = 4.245$ ,  $p = 0.000$ ). Similar to the high WHDI cluster, women's perception of safe public transportation has positive relationship with their capabilities in public transportation safety. However, the relationship is slightly stronger than in the high WHDI cluster.

**H6<sub>2</sub> (C6  $\rightarrow$  F6) hypothesis:** For the high WHDI cluster, the relationship between capabilities (C6) and functionings (F6) is also significant and positive, with a path coefficient ( $\beta$ ) of 0.364, T-statistics of 6.299, and a p-value of 0.000. This result shows that when women have the capability to feel safe in public transportation, it

significantly enhances their functionings related to safety. As capabilities increase, functionings improve accordingly.

For the low WHDI cluster, the relationship between capabilities (C6) and functionings (F6) is significant and positive but weaker ( $\beta = 0.308$ ,  $T = 2.921$ ,  $p = 0.003$ ) compared to the high WHDI cluster. This suggests that while increased capabilities do lead to improved functionings in the low WHDI cluster, the effect is not as strong or robust.

**H6<sub>3</sub> (RP6 → F6) hypothesis:** For the high WHDI cluster, the direct path from resource perception (RP6) to functionings (F6) is significant with a weaker path coefficient ( $\beta = 0.154$ ,  $T = 2.936$ ,  $p = 0.003$ ). Although the relationship between resource perception and functionings is weaker compared to the indirect effect through capabilities, it still directly contributes to functionings in the high WHDI cluster.

For the low WHDI cluster, the direct effect of resource perception (RP6) on functionings (F6) is insignificant in the low WHDI cluster with a path coefficient ( $\beta$ ) of -0.012, T-statistics of 0.132, and a p-value of 0.895. This means that in this cluster, the perception of resources alone does not directly improve women's functionings, highlighting the stronger role of intermediate factors like conversion or choice in this cluster.

**H6<sub>4</sub> (SC6 → C6) hypothesis:** For the high WHDI cluster, the relationship between social conversion factors (SC6) and capabilities (C6) is significant but negative ( $\beta = -0.209$ ,  $T = 3.971$ ,  $p = 0.000$ ). This suggests that social norms have negative relationship with women's capabilities regarding safety in public transportation. For instance, restrictive social attitudes toward women's clothing or their movement late at night reduce their capabilities to use public transportation safety.

In the low WHDI cluster, the relationship with social conversion factors (SC6) and capabilities (C6) is insignificant in the low WHDI cluster ( $\beta = -0.190$ ,  $T = 1.928$ ,  $p = 0.054$ ). Thus, norms about women's clothing and mobility do not have a significant relationship with women's capabilities in this cluster.

**H6<sub>5</sub> (EC6 → C6) hypothesis:** For the high WHDI cluster, the environmental conversion factors (EC6) also have a significant but negative relationship with women's capabilities ( $\beta = -0.194$ ,  $T = 3.704$ ,  $p = 0.000$ ). This implies that factors like public transportation frequency, and walking distances to stops have a negative relationship with women's ability to convert resources into capabilities in urban transportation safety.

For the low WHDI cluster, the relationship between environmental conversion factors (EC6) and capabilities (C6) is statistically insignificant ( $\beta = -0.169$ ,  $T = 1.714$ ,  $p = 0.087$ ). This suggests that issues like the perception of the sufficiency of public transportation frequency late at night or long walking distances do not significantly hinder capabilities in this cluster, although a marginal negative effect is observed.

**H6<sub>6</sub> (CH6 → F6) hypothesis:** For the high WHDI cluster, the role of choice (CH6) in functionings (F6) is significant but negative ( $\beta = -0.249$ ,  $T = 6.299$ ,  $p = 0.000$ ). This indicates that the personal choices women make, such as choosing not to use public transportation for fear of safety, limit their ability to achieve high levels of functionings in terms of safety. The personal factors like fear of harassment play a key role in limiting women's functionings.

For the low WHDI cluster, the relationship between choice (CH6) and functionings (F6) is significant and negative ( $\beta = -0.286$ ,  $T = 3.348$ ,  $p = 0.001$ ). Similar to the high WHDI cluster, personal choices like avoiding public transportation due to safety concerns strongly limit women's functionings in terms of transportation safety.

Table 78: Personal Conversion Factors Affecting Women's Freedom to be Safe in Public Transport in High and Low WHDI Clusters

		High WHDI	Low WHDI
Code	Personal conversion factors	Pct.	Pct.
<b>FOH6</b>	Fear of harassment	26.29%	40.00%
<b>OFP6</b>	Being the only female passenger in vehicle	54.86%	57.50%
<b>CC6</b>	Clothing choice	6.29%	15.83%
<b>TA6</b>	Concern about travelling alone on public transport	21.43%	23.33%
<b>WTN6</b>	Worrying about using public transport at night	40.57%	50.83%

*(The questions regarding personal conversion factors were asked as multiple-select questions in the questionnaire)*

Table 78 shows that, in high WHDI cluster, women participants identify being the only female passenger in public transportation vehicle (selected by 54.86% of women), worrying about using public transportation at night (selected by 40.57% of women), and fear of harassment in public transportation vehicle (selected by 26.29% of women) are the major personal conversion factors limiting their freedom to be safe in urban public transportation. In the low WHDI cluster, being the only female passenger in the public transportation vehicle (selected by 57.50% of women), worrying about using public transportation at night (selected by 50.83% of women), fear of harassment in public transportation vehicle (selected by 40% of women) are the key personal conversion factors on this topic.

In both clusters, there is a significant positive relationship between the availability and sufficiency of safe public transport and women's capability of using urban public transport. This indicates that improving the safety level of public transport services can have a more pronounced effect on enhancing women's capabilities on this regard. While social and environmental conversion factors are significant barriers to women's capabilities in the high WHDI cluster, but insignificant in the low WHDI cluster. Therefore, to increase women's capability to feel safe on public transportation in the high WHDI cluster, social norms regarding women walking or using public transit late at night, as well as norms concerning women's clothing on public transportation, should be addressed. Additionally, there should be an increase in the frequency of public transportation services late at night, a reduction in long walking distances to and from public transportation stops, measures to address the overcrowding of public transportation vehicles, and improvements to ensure that services prioritize women's safety. In both clusters, women's decisions (not preferring to use public transportation because of safety issues), likely influenced by safety concerns, limit their active usage of public transportation (functionings).

### **7.3.7. Findings on Participation in Economic Activities**

In this section, the findings on women's participation in economic activities in urban neighborhoods of the central district of Amasya, which were clustered based on their



Women's HDI, are presented in Table 79. The sub-questions regarding women's participation in economic activities are as follows:

- What are the relationships between women's resource perception, capabilities, and functionings regarding their participation in economic activities, and how do these relationships vary across neighborhoods with different WHDI levels?
- What is the relationship between women's capabilities regarding participation in economic activities and the related conversion factors?
- What is the relationship between women's functionings regarding participation in economic activities and agency/choice factor?

Table 79: The Structural Model Results of the Second-Stage Path Models for Women's Participation in Economic Activities in the High and Low WHDI Clusters

Hypothesis	Path	In High WHDI Cluster			In Low WHDI Cluster		
		$\beta$	p-values	Result	$\beta$	p-values	Result
H7 <sub>1</sub>	RP7 → C7	0.232	0.000	Accept	0.094	0.276	Reject
H7 <sub>2</sub>	C7 → F7	0.166	0.001	Accept	0.193	0.014	Accept
H7 <sub>3</sub>	RP7 → F7	0.090	0.083	Reject	0.143	0.130	Reject
H7 <sub>4</sub>	SC7 → C7	-0.254	0.000	Accept	-0.207	0.008	Accept
H7 <sub>5</sub>	EC7 → C7	-0.151	0.005	Accept	-0.291	0.001	Accept
H7 <sub>6</sub>	CH7 → F7	-0.411	0.000	Accept	-0.384	0.000	Accept

(RP7: Resource perception on participation in economic activities, C7: Capabilities on participation in economic activities, F7: Functionings on participation in economic activities, SC7: Social conversion factors, EC7: Environmental conversion factors, CH7: Choice)

**H7<sub>1</sub> (RP7 → C7) hypothesis:** For the high WHDI cluster, according to the bootstrapping results of the structural model, in the high WHDI cluster, the relationship between the resource perception of women's participation in the economy (RP7) and capabilities (C7) is significant and positive with a path coefficient of  $\beta = 0.232$ , a T-statistic of 4.605, and a p-value of 0.000. This indicates that women's perception of available job opportunities has positive relationship with their capabilities to participate in the economy. In other words, women who perceive

a sufficient availability of economic opportunities are more likely to develop the necessary capabilities to engage in economic activities.

For the low WHDI cluster, the structural model results obtained by bootstrapping procedure indicate that, in the low WHDI cluster, the relationship between the resource perception of women's participation in the economy (RP7) and capabilities (C7) is not significant, with a path coefficient of  $\beta = 0.094$ , a T-statistic of 1.089, and a p-value of 0.276. This suggests that women's perception of available job opportunities does not significantly enhance their capabilities to participate in the economy. This indicates a systemic issue where resources may not be perceived as sufficient or available.

**H7<sub>2</sub> (C7 → F7) hypothesis:** For the high WHDI cluster, the relationship between capabilities (C7) and functioning achievements in economic participation (F7) is significant and positive in the high WHDI cluster, with a path coefficient of  $\beta = 0.166$ , a T-statistic of 3.309, and a p-value of 0.001. This shows that as women develop their capabilities, they achieve higher levels of functioning in economic participation. The ability to act upon these capabilities contributes positively to their economic involvement.

For the low WHDI cluster, the relationship between capabilities (C7) and functioning achievements in economic participation (F7) is significant and positive, with a path coefficient of  $\beta = 0.193$ , a T-statistic of 2.448, and a p-value of 0.014. This indicates that even in low WHDI neighborhoods, developing capabilities has a positive effect on women's functioning achievements in economic participation.

**H7<sub>3</sub> (RP7 → F7) hypothesis:** For the high WHDI cluster, the path from resource perception (RP7) to functioning achievements (F7) has a path coefficient of  $\beta = 0.090$ , a T-statistic of 1.173, and a p-value of 0.083. This relationship is not significant, indicating that while women perceive available economic resources; this perception alone does not significantly convert into functioning achievements women, reflecting the importance of women's capabilities on economic empowerment.

For the low WHDI, the path from resource perception (RP7) to functioning achievements (F7) shows a path coefficient of  $\beta = 0.143$ , a T-statistic of 1.513, and a p-value of 0.130, which is not significant. This highlights that the perceived availability of resources does not translate significantly into functioning achievements in the low WHDI cluster.

**H7<sub>4</sub> (SC7 → C7) hypothesis:** For the high WHDI cluster, the relationship between social conversion factors (SC7) and capabilities (C7) is significant but negative, with a path coefficient of  $\beta = -0.254$ , a T-statistic of 5.070, and a p-value of 0.000. This suggests that negative social norms regarding women's roles substantially hinder their capabilities to participate in the economy. The prevailing belief that women should prioritize domestic roles impacts their ability to engage economically.

In the low WHDI cluster, the relationship between social conversion factors (SC7) and capabilities (C7) is significant but negative, with a path coefficient of  $\beta = -0.207$ , a T-statistic of 2.645, and a p-value of 0.008. This indicates that negative social norms around women's roles hinder their capabilities to participate in the economy, similar to the high WHDI cluster.

**H7<sub>5</sub> (EC7 → C7) hypothesis:** For the high WHDI cluster, the path from environmental conversion factors (EC7) to capabilities (C7) is significant but negative, with a path coefficient of  $\beta = -0.151$ , a T-statistic of 2.789, and a p-value of 0.005. This indicates that negative perceptions of environmental factors, such as job availability and childcare services, limit women's capabilities in the high WHDI cluster.

For the low WHDI, the path from environmental conversion factors (EC7) to capabilities (C7) is significant but negative, with a path coefficient of  $\beta = -0.291$ , a T-statistic of 3.357, and a p-value of 0.001. This suggests that negative perceptions regarding job opportunities and childcare services significantly limit women's capabilities in the low WHDI cluster.

**H7<sub>6</sub> (CH7 → F7) hypothesis:** For the high WHDI cluster, the relationship between choice (CH7) and functioning achievements (F7) is significant but negative, with a

path coefficient of  $\beta = -0.411$ , a T-statistic of 9.567, and a p-value of 0.000. This strong negative association indicates that women's choices, shaped by various barriers such as fear of harassment and domestic responsibilities, have a severe relationship with their functioning in economic participation.

For the low WHDI cluster, the relationship between choice (CH7) and functioning achievements (F7) is significant but negative, with a path coefficient of  $\beta = -0.384$ , a T-statistic of 4.618, and a p-value of 0.000. This indicates that women's choices, influenced by various barriers, have a strong negative relationship with their economic participation in the low WHDI cluster.

The question was asked to women to learn about the personal conversion factors that affect their capability to advance in their careers, even if they are working. Table 80 shows that, in the high WHDI cluster, the major personal conversion factors limiting women's freedom to participate in economy are having little child (chosen by 36.57% of women), the insufficient wages not compensating the labor and money spent (chosen by 28.86% of women), and intensity of housework (chosen by 19.71% of women). In the low WHDI cluster, women indicate that the insufficient wages not compensating the labor and money spent (chosen by 46.67% of women), having little child (chosen by 29.17% of women), intensity of housework (chosen by 23.33% of women) and insufficient education (chosen by 21.67% of women) are the key factors.

Table 80: Personal Conversion Factors Affecting Women's Freedom to Participate in Economic Activities in High and Low WHDI Clusters

		High WHDI	Low WHDI
Code	Personal conversion factors	Pct.	Pct.
HP7	Presence of health issues	8.00%	10.00%
HLC7	Having little child	36.57%	29.17%
PC7	Elderly/sick care responsibilities	1.43%	5.00%
IE7	Insufficient education	13.14%	21.67%
IW7	Insufficient wages	28.86%	46.67%
HWI7	Intensity of housework	19.71%	23.33%
FHW7	Fear of harassment at work	1.71%	5.83%
LSE7	Limited social environment	7.71%	18.33%
FP7	Family prevention	3.14%	6.67%
RC7	Religious concerns	1.14%	1.67%
UNW7	Personal unwillingness	9.14%	10.83%

(The questions regarding personal conversion factors were asked as multiple-select questions in the questionnaire)

To conclude, it is important to note that, according to the descriptive results, excluding students and retirees, 41.43% of women in the high WHDI cluster and 39.16% of women in the low WHDI cluster are not engaged in any form of employment. The reflection of the opportunities provided for economic participation on women's capabilities on working is not the same for both clusters.

Women, in the low WHDI cluster, face more barriers that prevent them from perceiving available economic opportunities. The social and environmental conversion factors are associated with women's freedom to participate in economy; however, this relationship is strong enough to hinder women's freedom to participate in working life in low WHDI cluster. The social norm regarding women's staying at home, men's working, and the social norm toward women's working after marriage and having child, and the social norm of who has domestic/childcare responsibilities are important issues to deal with in both clusters. In addition, women in the low WHDI cluster face more severe environmental conversion factors, emphasizing the challenges posed by inadequate job opportunities and childcare services.

#### **7.3.8. Findings on Participation in Decision-Making Processes**

In this section, the findings on women's participation in decision-making processes in urban neighborhoods of the central district of Amasya, which were clustered based on their Women's HDI, are presented in Table 81. The sub-questions regarding women's participation in decision-making processes are as follows:

- What are the relationships between women's resource perception, capabilities, and functionings regarding their participation in decision-making processes, and how do these relationships vary across neighborhoods with different WHDI levels?
- . What is the relationship between women's capabilities regarding participation in decision-making processes and the related conversion factors?
- . What is the relationship between women's functionings regarding participation in decision-making processes and agency/choice factor?

Table 81: The Structural Model Results of the Second-Stage Path Models for Women's Participation in Decision-Making Processes in the High and Low WHDI Clusters

Hypothesis	Path	In High WHDI Cluster			In Low WHDI Cluster		
		$\beta$	p-values	Result	$\beta$	p-values	Result
H8 <sub>1</sub>	RP8 $\rightarrow$ C8	0.395	0.000	Accept	0.361	0.000	Accept
H8 <sub>2</sub>	C8 $\rightarrow$ F8	0.252	0.000	Accept	0.849	0.000	Accept
H8 <sub>3</sub>	RP8 $\rightarrow$ F8	0.137	0.013	Accept	0.004	0.945	Reject
H8 <sub>4</sub>	SC8 $\rightarrow$ C8	-0.208	0.000	Accept	-0.157	0.080	Reject
H8 <sub>5</sub>	EC8 $\rightarrow$ C8	-0.093	0.064	Reject	-0.116	0.189	Reject
H8 <sub>6</sub>	CH8 $\rightarrow$ F8	-0.250	0.000	Accept	0.021	0.584	Reject

(RP8: Resource perception on participation in decision-making processes, C8: Capabilities on participation in decision-making processes, F8: Functionings on participation in decision-making processes, SC8: Social conversion factors, EC8: Environmental conversion factors, CH8: Choice)

**H8<sub>1</sub> (RP8  $\rightarrow$  C8) hypothesis:** For the high WHDI cluster, the structural model results indicate that the resource perception of women's participation in decision-making processes has a significant positive relationship with their capabilities ( $\beta = 0.395$ ,  $T = 9.920$ ,  $p = 0.000$ ). This indicates that women who perceive ample opportunities for participation are more likely to develop their capabilities in decision-making processes.

Similar to the high WHDI cluster, in the low WHDI cluster, the resource perception of women's participation in decision-making processes has a significant positive relationship with women's capabilities ( $\beta = 0.361$ ,  $T = 4.612$ ,  $p = 0.000$ ). Women perceive opportunities for participation, which aids in developing capabilities.

**H8<sub>2</sub> (C8  $\rightarrow$  F8) hypothesis:** For the high WHDI cluster, the capabilities of women's participation in decision-making processes have a significant positive relationship with their functionings ( $\beta = 0.252$ ,  $T = 4.294$ ,  $p = 0.000$ ). This suggests that as women's capabilities improve, their actual functioning in decision-making increases.

For the low WHDI cluster, the capabilities of women's participation have a strong and significant positive relationship with their functionings ( $\beta = 0.849$ ,  $T = 18.859$ ,  $p$

= 0.000). This indicates a robust link; as capabilities increase, so does actual functioning.

**H8<sub>3</sub> (RP8 → F8) hypothesis:** For the high WHDI cluster, the resource perception also has a significant positive relationship with women's functionings ( $\beta = 0.137$ ,  $T = 2.471$ ,  $p = 0.013$ ). However, the relationship is weaker than that of capabilities, indicating that resource perception alone is not sufficient for achieving substantial functioning without corresponding capabilities.

For the low WHDI cluster, the relationship between resource perception and functioning is not significant ( $\beta = 0.004$ ,  $T = 0.069$ ,  $p = 0.945$ ). This highlights a critical gap; resource perception alone does not translate into functionings in this cluster, suggesting other barriers might exist.

**H8<sub>4</sub> (SC8 → C8) hypothesis:** For the high WHDI cluster, the social conversion factors have a negative relationship with women's capabilities ( $\beta = -0.208$ ,  $T = 4.360$ ,  $p = 0.000$ ). This suggests that negative societal norms about women's opinions diminish their capabilities in decision-making.

For the low WHDI cluster, the social conversion factors have a negative but not significant effect on capabilities ( $\beta = -0.157$ ,  $T = 1.750$ ,  $p = 0.080$ ). This indicates that negative social norms might hinder women's capabilities but not decisively.

**H8<sub>5</sub> (EC8 → C8) hypothesis:** For the high WHDI cluster, the environmental conversion factors show a negative but not statistically significant relationship ( $\beta = -0.093$ ,  $T = 1.850$ ,  $p = 0.064$ ). This indicates that while the environment has a role, it may not be a critical barrier in this cluster.

For the low WHDI cluster, environmental conversion factors also do not have a significant relationship with women's capabilities ( $\beta = -0.116$ ,  $T = 1.314$ ,  $p = 0.189$ ). This suggests that the environment is not a major factor that has a relation with capabilities in this cluster.

**H8<sub>6</sub> (CH8 → F8) hypothesis:** For the high WHDI cluster, the choice factor has a negative relationship with women's functionings ( $\beta = -0.250$ ,  $T = 4.105$ ,  $p = 0.000$ ).

This suggests that the choices of women regarding participation may be constrained, affecting their actual functioning in decision-making.

For the low WHDI cluster, the results of choice factor on women's functionings ( $\beta = 0.021$ ,  $T = 0.548$ ,  $p = 0.584$ ) indicate that personal choices may not have a relationship with functioning outcomes.

Women are asked about internal factors they believe limit their participation in decision-making processes in the city. Table 82 shows that, in the high WHDI cluster, women identify having little child (selected by 24% of women), insufficient knowledge (selected by 23.71% of women), intensity of working life (selected by 22.86% of women), and intensity of housework (selected by 21.14% of women) as the primary personal conversion factors limiting their freedom to participate in decision-making processes in the city. In the low WHDI cluster, the insufficient knowledge (selected by 41.67% of women), having little child (selected by 22.5% of women), intensity of working life (selected by 22.5% of women), and insufficient education (selected by 21.67% of women) are indicated as the key personal conversion factors.

Table 82: Personal Conversion Factors Affecting Women's Freedom to Participate in Decision-Making Processes in High and Low WHDI Clusters

		High WHDI	Low WHDI
Code	Personal conversion factors	Pct.	Pct.
<b>IE8</b>	Insufficient education	11.43%	21.67%
<b>HLC8</b>	Having little child	24.00%	22.50%
<b>FP8</b>	Family prevention	2.00%	4.17%
<b>IK8</b>	Insufficient knowledge	23.71%	41.67%
<b>HWI8</b>	Intensity of housework	21.14%	19.17%
<b>WI8</b>	Intensity of working life	22.86%	22.50%
<b>LSE8</b>	Limited social environment	10.57%	18.33%
<b>RC8</b>	Religious concerns	3.43%	2.50%
<b>UNW8</b>	Personal unwillingness	14.00%	20.00%

(The questions regarding personal conversion factors were asked as multiple-select questions in the questionnaire)

To conclude, through the survey, women participants were informed that "participation in decision-making processes" refers to citizens having the opportunity to convey their personal requests and concerns to authorities while also contributing to decisions that shape urban life. This participation includes engaging in civil



society organizations, attending municipal council and specialized committee meetings, taking part in other decision-making platforms, and exercising the right to object. The analysis indicates that women in both clusters recognize the importance of participation in decision-making processes. According to the results, in both clusters, women are capable of participating decision-making processes and have functionings on this regard. Since social norms can hinder women's empowerment and engagement in decision-making, even in a relatively higher WHDI cluster, addressing entrenched attitudes regarding the value of women's opinions relative to men, men as primary decision-makers, and women's participation in civil society organizations is crucial.

#### **7.4. Conclusion**

The findings of the main path models address the research question by demonstrating that women's overall resource perception and overall capabilities are significantly related to their overall functionings in both the high and low WHDI clusters within the central district of Amasya, particularly in terms of accessibility, safety, and participation. The hypotheses results of the main path models are consistent with the initial expectations. The findings of the main path models indicate that women's overall resource perception has significant positive relationship with both their capabilities and functionings, with these relationships being more pronounced in neighborhoods with lower WHDI. Specifically, the relationship between resource perception and capabilities is stronger in the low WHDI cluster, highlighting the importance of improving resource availability and sufficiency in these areas. Also, the relationship between resource perception and functionings is also stronger in the low WHDI cluster, suggesting that in more disadvantaged areas, women's perceptions of their environment are more closely tied to their ability to function. Regarding the link between capabilities and functionings, both clusters demonstrate a significant positive relationship, slightly stronger in the high WHDI cluster.

The findings of the accessibility dimension addressing the sub-research questions for the second-stage path models highlight significant disparities in women's accessibility outcomes between high and low WHDI clusters within the central

district of Amasya. Firstly, in high WHDI neighborhoods, women generally demonstrate a greater ability to convert their perceived resources into real access across all four domains of urban accessibility. Although social and environmental conversion factors still pose barriers (such as societal expectations that limit women's presence in public spaces or environmental deficiencies like inadequate infrastructure) women are largely able to access public open spaces and maintain functionings in this domain. In terms of education, women's positive perceptions of educational facilities translate into increased capabilities and functioning outcomes, despite the continued presence of moderate social norms. Access to a clean and healthy environment also remains achievable, as women in these neighborhoods perceive environmental resources more favorably and can transform their capabilities into functionings. While social norms regarding women's independent mobility are somewhat restrictive, women in high WHDI areas still succeed in accessing transport services and converting this access into functionings. Overall, high WHDI neighborhoods foster more enabling environments, where women's capabilities are more likely to be actualized across all accessibility dimensions. Secondly, in contrast, women in low WHDI neighborhoods face significantly more severe challenges in accessibility, with persistent barriers across all four domains. While women may perceive the presence of public spaces such as parks or riverbanks, these do not easily translate into capabilities or functionings due to the stronger influence of restrictive social norms and environmental limitations. In the domain of education, resource perception alone is insufficient to empower women, as intensified social norms regarding women's education and infrastructural deficiencies (limited childcare or eldercare services) substantially hinder both their capabilities and functioning. Similarly, access to a healthy environment is severely obstructed by women's negative perceptions of their surroundings, including pollution, overcrowding, and unaffordable housing in better areas, leaving them unable to convert their capabilities into related functionings. In the area of mobility and transport, women in low WHDI neighborhoods again struggle with environmental obstacles such as unsafe infrastructure and limited services. Interestingly, social norms appear to have no significant measurable impact, possibly because women have internalized or are unaware of the constraints they face. Ultimately, low WHDI

clusters present a compounded landscape of social, environmental, and structural limitations where women's agency is muted, and capabilities often fail to materialize into functionings.

The findings of the safety dimension indicate important disparities across high and low WHDI clusters within the central district of Amasya. Firstly, in high WHDI neighborhoods, women generally possess stronger capabilities to feel and be safe in public spaces and on public transportation, yet these capabilities are still influenced by prevailing social, environmental, and personal conversion factors. Although women report relatively better urban conditions, social norms regarding women's presence in public spaces (such as expectations around not going out at night, dressing conservatively, or staying home) negatively affect their perceived safety. These norms significantly constrain their sense of autonomy and personal safety. Environmental factors, including poorly lit areas or isolated streets, also act as barriers, though to a lesser extent than in low WHDI areas. When it comes to public transportation, women's safety capabilities are closely tied to the adequacy of infrastructure and services. In this cluster, social and environmental norms (e.g., discomfort about women traveling alone at night or lack of safe transport stops) are significant impediments to achieving functioning. Nevertheless, women in high WHDI neighborhoods can often convert their capabilities into functionings, though personal choices (such as opting out of transit due to fear) can still hinder full participation. These findings suggest that even in more developed areas, ensuring safe access requires tackling gendered social norms and improving infrastructure reliability, especially in transport services operating at night. Secondly, in contrast, women living in low WHDI neighborhoods face more severe environmental and structural challenges that directly compromise their safety in both public open spaces and transportation systems. The social norms did not emerge as statistically significant barriers to women's safety capabilities in the analysis. This could point to a normalization of restrictive conditions, where women internalize or overlook limitations on their safety. However, environmental barriers are more pronounced in these areas. Inadequate lighting, poor street design, lack of secure public infrastructure, and unsafe housing environments significantly erode women's sense

of safety and reduce their ability to transform capabilities into functionings. In public transportation, although women perceive a positive relationship between safe transit services and their capability to use them, social and environmental norms were not found to significantly influence their capabilities, again possibly due to internalized acceptance. Nonetheless, in both domains, personal choices shaped by safety fears strongly constrain actual behavior, particularly in low WHDI neighborhoods, where women are less likely to act on their capabilities due to real or perceived risks. These findings underscore the need for urgent infrastructure improvements and community-based interventions to challenge normalized restrictions and enable safer urban participation for women.

Lastly, the findings of the participation dimension demonstrate important differences across high and low WHDI clusters within the central district of Amasya. Firstly, in high WHDI neighborhoods, women display a relatively stronger ability to engage in economic activities and decision-making processes, although notable social and environmental conversion barriers persist. Despite nearly 41% of women not being economically active (excluding students and retirees), those who perceive the availability of opportunities generally report higher levels of capability to work. Yet, social norms around traditional gender roles still negatively impact women's working capabilities and achievements. Moreover, insufficient childcare services and limited job diversity within the urban context further constrain women's ability to convert economic potential into functionings. On the other hand, women in high WHDI neighborhoods show clear capabilities and functionings regarding participation in decision-making processes. They not only perceive their right to engage but are also able to act on it, thanks in part to more accessible civic platforms and a higher baseline of civic awareness. Nevertheless, prevailing social attitudes (such as undervaluing women's opinions or favoring male authority in governance) continue to challenge full equality in public voice. These findings suggest that while structural conditions in high WHDI areas support greater inclusion, overcoming persistent gendered expectations is essential to enhance women's full participation in both economic and decision-making processes. Secondly, in low WHDI neighborhoods, women face more substantial challenges that limit both their economic engagement

and their inclusion in decision-making processes. Despite a comparable share of economically inactive women (39.16%), those in low WHDI areas are significantly less likely to perceive or access employment opportunities due to stronger external constraints (such as lack of affordable childcare, limited job availability, and spatial exclusion from economic hubs). More critically, deeply rooted social norms exert a stronger negative influence here. Expectations that women should prioritize domestic responsibilities, refrain from working after marriage or childbirth, and defer to men in household and community roles significantly reduce women's capabilities and achievements in economic participation. When it comes to decision-making, women in low WHDI neighborhoods are able to reach participation functionings in decision-making processes. Surprisingly, there is no relationship between the social and environmental conversion factors and women's capabilities to participate in decision-making processes in the low WHDI cluster, due to unawareness of the conditions they are in. The structural and normative barriers underscore the urgent need for policy interventions that improve access to employment resources, promote gender-equitable caregiving infrastructure, and actively challenge discriminatory social attitudes in low WHDI neighborhoods.



## CHAPTER 8

### CONCLUSION

In recent decades, significant progress has been made on women's rights. Despite these significant advances, the problems faced by women in both the private and public spaces have not completely resolved. A good life in a good place is still an ideal that should be provided for all people, but especially for women who are overlooked in this regard.

A good life in a good place is considered as a matter of quality of urban life. Although discussions on what constitutes a good life date back centuries (Sen, 1987; Nussbaum, 1987; Megone, 1990; Waterman, 1990; Nussbaum and Sen, 1993; Van Riel, 2000), the literature review reveals ongoing definitional, conceptual, and methodological challenges in assessing both quality of life (Dissart and Deller, 2000; Das, 2008; Lotfi and Koohsari, 2009; Pennacchini et al., 2011; Pazhuhan et al., 2020) and quality of urban life (Wish, 1986; Veenhoven, 1999; Evcil-Türksever and Atalık, 2001; Costanza, 2007; Lula and Hamerska, 2016; Sarı and Kındap, 2018).

Apart from these challenges, the differed normative frameworks shaping the understanding of development have influence on the concept quality of (urban) life. Contemporary studies measuring quality of life largely derive their normative foundation from utilitarian philosophy. This study questioned the methodological use of a utilitarian perspective in measuring the quality of life, as it (i) prioritizes whether the greatest number of people obtain the greatest utility at the end without addressing the injustices experienced in the process, (ii) overlooks the distribution of total utility among individuals, (iii) disregards the challenges faced during the process by selecting alternatives based solely on the maximum utility they yield, and (iv)

neglects individual differences by emphasizing the presence of commodities rather than the diverse needs and capabilities of individuals.

Although the quality of urban life studies shaped by a utilitarian perspective focus on both objective and subjective factors, they often (i) prioritize the number of people living in the city who are happy/satisfied with urban life, (ii) present satisfaction above a predefined threshold as success while overlooking the dissatisfied minority, (iii) neglect the environmental, social, economic, and personal causes of dissatisfaction, and (iv) overlook individual differences (such as those of children, women, the elderly, and disabled individuals) in the use of urban amenities by emphasizing the mere presence of these amenities.

In the early 1990s, Sen's (1993) redefinition of quality of life as an individual's freedom to utilize their capabilities to take action, produce outcomes, and achieve personally meaningful goals brought about a significant shift in the understanding of the concept. This study argues that the significant transformation of the quality of life concept alongside the concept of human development in the 1990s has not been reflected in quality of urban life studies. Therefore, this study proposes the integration of the spatial dimension of the quality of life concept with the capabilities and functioning approach.

This study addressed capabilities-based quality of urban life concept through the lens of women, who encounter significant challenges in urban spaces that negatively impact their quality of life. Considering that the inclusion of social phenomena in spatial analysis began in the late 1960s (see the works of neo-Marxist urban scholars, such as Castells (1972), Harvey (1973), and Lefebvre (1974)), the exploration of the relationship between women and urban space emerged shortly thereafter. The discipline of feminist geography has played a pioneering role in the gender-based analysis of space; a significant body of literature has accumulated in the field in the short period of time up to the 1990s (Burnett, 1973; Hayden, 1980; Lopata, 1980; Freeman, 1980; Gordon et al., 1980; Saegert, 1980; Monk and Hanson, 1982; Bowlby et al., 1982; Wekerle, 1984; Little et al., 1988; Franck and Paxson, 1989; Valentine, 1990). Until today, a substantial body of literature has accumulated on



the examination of urban space through a gender perspective, and the subject continues to maintain its relevance.

The Capabilities-Based Quality of Urban Life, introduced as a new concept in this thesis, refers an urban environment where people have freedom to use their capabilities to act on in it according to their goals that are valued. Since a study that aims to understand how satisfied women are with their living environment often overlooks the challenges they face in urban spaces, this study focuses on how free women are in their living environment through the lens of women's quality of urban life, using a capabilities-based understanding.

The conclusion chapter includes four parts. The first part includes a discussion of the results from the main path model and second-stage path model, which compared women's functionings in two urban clusters differentiated according to WHDI levels. Here, the findings will be discussed in relation to the existing literature. It is believed that the findings presented in this thesis are important for assessing issues related to the urban physical and social structure, and hence may shape future policies aimed at addressing these challenges. Therefore, the second part of this chapter discusses the future policies to eliminate the problems which are identified in the study area. The third part focuses on the limitations of this study. Lastly, the recommendations for further studies on 'the Capabilities-Based Quality of Urban Life' concept will be made for disadvantaged and vulnerable groups, and the importance of this subject will be touched upon.

### **8.1. Discussion of the Key Findings of the Study**

The empirical part of the study aimed to address the following main research question: What are the relationships between women's resource perception, capabilities, and functionings regarding accessibility, safety, and participation in urban neighborhoods with varied WHDI levels? To respond this question, the author structured the sub-questions which guide the formation of the main path models and second-stage path models of the study. To answer this question, the author formulated sub-questions that guided the development of both the main path models and the second-stage path models of the study. The main path models explored how

women's overall resource perception and overall capabilities regarding accessibility, safety, and participation in urban areas are related to their overall functionings. The second-stage path models were designed to analyze the relationships between women's resource perception, capabilities, and functionings across the sub-dimensions of accessibility, safety, and participation in urban areas. These sub-dimensions include access to public open spaces, access to education, access to a healthy environment, access to mobility and transport, safety in public open spaces, safety in public transport, participation in economic activities, and participation in decision-making processes.

The study area was determined by excluding neighborhoods that have rural characteristics using ArcGIS Pro software. The selected urban neighborhoods were clustered into two groups based on their WHDI scores, determined through Cluster Analysis via IBM SPSS software. The primary cross-sectional data were collected through a questionnaire, developed based on a comprehensive literature review. The questionnaire was administered to 470 women aged between 18 and 65 years, residing in 20 urban neighborhoods within the central district of Amasya. The survey responses were coded in IBM SPSS software and subsequently analyzed using SmartPLS 4.1. Accordingly, by reviewing the current literature, the following sections will discuss the findings of the main path models and the second-stage path models, with a specific focus on the high and low WHDI clusters.

#### **8.1.1. Discussion of the Key Findings of the Main Path Models**

This section focuses on discussing the findings regarding the relationships between women's overall resource perception, overall capabilities, and overall functionings in the central district neighborhoods of Amasya. The resource perception of women construct reflects women's overall perception of the availability and sufficiency of resources across the eight sub-dimensions under the accessibility, safety, and participation dimensions in urban space (e.g., the perception of the availability and sufficiency of public open spaces, the perception of safety and the sufficiency of safety levels in public transport, and the perception of the availability and sufficiency of opportunities to participate in economic activities). The results consistently show

that there is a significant positive relationship between the overall resource perception of women and their overall capabilities in both clusters. However, the relationship is stronger in the low WHDI cluster compared to the high WHDI cluster. This highlights a critical difference between clusters: in the low WHDI cluster, women's overall capabilities are more negatively influenced by the unavailability and insufficiency of resources they perceive. In the high WHDI cluster, although resource perception of women remains important, the slightly weaker effect may suggest that women in these areas have relatively more stable access to resources, meaning their capabilities are less dependent on resources. These results align with Sen's (2000) and Nussbaum's (2001) statements on the differing resource needs of individuals and their varying abilities to convert resources into capabilities. This study revealed that women with differing levels of human development in urban areas convert resources into capabilities in distinct ways.

In both clusters, women's overall capabilities are significantly related to women's overall functionings, but the relationship is slightly stronger in the high WHDI cluster compared to the low WHDI cluster. This indicates that while improving women's overall capabilities leads to better outcomes (functionings) in both clusters, women in the high WHDI cluster are better able to convert their capabilities into functionings in urban life. These findings are similar to the findings of Jasek-Rysdahl (2001), who found that the levels of functioning achievement among those living in the low-income neighborhoods in Modesto, California, are relatively low.

As indicated by Sen (1984), in capabilities and functionings approach, the resources have instrumental value (see also Sen, 1999 for bicycle example). Therefore, the instrumental effect of resources on functioning was also measured in the model. The moderate positive relationship between women's overall resource perception and their overall functionings in both clusters shows that women's overall resource perception on availability and sufficiency is important factor to improving their quality of urban life. The direct relationship between women's overall resource perception and their overall functionings is stronger in the low WHDI cluster than in the high WHDI cluster. This suggests that while women in the low WHDI cluster rely more directly on resources to achieve functionings, women in the high WHDI

cluster may have more autonomy to convert capabilities into functionings without being solely reliant on resources. As Binder and Robeyns (2019) emphasize the importance of material resources, exemplifying a child who is able to attend school but lacks school books, urban resources (available in physical forms (e.g., green spaces, libraries, public transport), as opportunities (e.g., economic opportunities, social and political inclusion), or as senses (e.g., safety, vibrancy, belonging)) play a crucial role in enabling residents to achieve functionings.

### **8.1.2. Discussion of the Key Findings of the Second-Stage Path Models**

As Nussbaum (2001), Sen (2000), Binder and Robeyns (2019) indicated, each person has distinct abilities to convert resources into capabilities; therefore, focusing solely on the availability and sufficiency of resources may not provide an effective understanding of the quality of urban life of people. As indicated in early chapters, the different abilities of people to convert resources into capabilities are called conversion factors (Robeyns, 2003, 2017). In this respect, the second-stage path models were developed to assess the relationship between conversion factors and women's capabilities, and also the relationship between choice factor and women's functionings in high and low WHDI clusters across the eight sub-dimensions under the accessibility, safety, and participation dimensions.

**Access to public open spaces:** The results show that, in the high WHDI cluster, although the current conversion factors have negative relationship with women's capabilities to access urban public open spaces in their neighborhood, women are still able to access these spaces. The same cannot be said for the low WHDI cluster; the link between the perceived availability and sufficiency of public open spaces (such as parks, gardens, playgrounds, and riverbanks) and capabilities to access public open spaces is weak possibly due to the stronger conversion factors. In both clusters, the social and environmental conversion factors were found to have negative relationship with women's capabilities to access urban public open spaces. Women's capabilities in all neighborhoods in Amasya, regardless of their human development level, are found to be influenced by social norms regarding women's capabilities to access public open spaces. These results support previous studies

highlighting the negative relationship between social norms and women's access to public open spaces (see the social norm regarding women's alone presence in public open spaces in Franck and Paxson (1989), Massey (1994), and Hubbard (2005); the expectation that women should spend their leisure time at home rather than outdoors in Fraser (1989) and Alkan (2000); and the perception that outdoor spaces are unsafe for women in Fenster (2010), Bravo (2022), and Manyani et al. (2021)). In addition, the environmental conversion factors have negative relationship between women's capabilities in both clusters. It was found that physically inaccessible public open spaces (see Biagi et al.'s (2018) study for their relation to the quality of urban life), insufficient spatial size relative to the population, inadequate infrastructure, and designs that fail to consider the needs of women and children reduce all women's capabilities to access public open spaces. In the high WHDI cluster, the main personal conversion factors restricting women's access to urban public open spaces were found to be the intensity of housework, the presence of working life, and childcare responsibilities. These findings support the literature, which highlights domestic workload (Franck & Paxson, 1989) and childcare obligations (Kern, 2019) as barriers to women's access to public open spaces. In the low WHDI cluster, safety concerns emerged as the most significant barrier, followed by the intensity of housework, the presence of working life, personal unwillingness, and childcare responsibilities. These results are consistent with the literature, which identifies unsafe public spaces (Gordon et al., 1980; Ranade, 2007; Phadke, 2012) and domestic responsibilities (Franck & Paxson, 1989) as key obstacles to women's access to public open spaces.

**Access to education:** The findings indicate that in the high WHDI cluster, despite the negative impact of conversion factors on women's capabilities to access education, women are still able to access. However, this pattern does not hold for the low WHDI cluster, where the connection between the perceived availability and sufficiency of education facilities and women's capabilities to access them appears weaker. Similar with the findings in earlier research (Nussbaum, 1999; Hannan, 2007; UN-Habitat, 2013; Gleick et al., 2020), which indicate that social norms negatively influence women's educational attainment, the social conversion factors

(e.g., assessing societal attitudes toward educating girls, exploring continuing education after marriage, expectations regarding the economic contributions of girls and women) have negative relationship with women's capabilities to access education in both clusters, but it is significantly stronger in the low WHDI cluster. This result may be explained by the socio-economic status of the sample, which shows nearly half of the households in the high WHDI cluster (49.43%) are low-income, compared to 66.67% in the low WHDI cluster. In addition, in both clusters, the environmental conversion factors were found to have a negative relationship with women's capabilities to access education. Women's perception of the adequacy, accessibility of educational facilities, and their perception of sufficiency of childcare and elder/sick care services were the factors that have negative relationship between their capabilities on access to education. Similar to Hannan's (2007) points regarding the lack of kindergartens as a barrier to women's access to education, this study also yielded similar findings. In the high WHDI cluster, key personal conversion factors hindering women's educational advancement include participation in working life, intensity of housework, and childcare responsibilities. In the low WHDI cluster, these factors are joined by poor economic conditions, with working life participation, housework intensity, and childcare responsibilities were found as major barriers.

**Access to healthy environment:** The findings of this study indicates that women's perception the presence and sufficiency of a clean and healthy environment have positive relationship with capabilities of women in all neighborhoods to access a clean and healthy environment. Surprisingly, the social conversion factors (e.g., residential close proximity due to family and kinship ties, and expectation for newlyweds to reside near their relatives) limit women's capabilities only in the high WHDI cluster. This results may be explained by women living in the low WHDI cluster internalize these social norms. The environmental conversion factors have negative relationships with women's capabilities to access healthy environments in both clusters, but particularly in the low WHDI cluster. This result is as expected because the clusters also reflect the environmental and physical quality of the neighborhoods. In the high WHDI cluster, the primary personal conversion factors limiting women's access to a healthy environment were poor economic conditions,

proximity to work or school, and a sense of neighborhood attachment. These results align with the literature, which highlights economic challenges (Adewale et al., 2020) and social ties (Hannan, 2007; UN-Habitat, 2013) as major barriers to relocation to cleaner, healthier neighborhoods. In the low WHDI cluster, poor economic conditions, proximity to work or school, and a strong sense of neighborhood attachment were also significant personal conversion factors. These findings support the literature that suggests economic hardship (OECD, 1994; Rakodi, 2002) and place attachment (Garcia-Ramon et al., 2004) as key constraints for women's capability to access healthier environments. In this study, women's capabilities on access to healthy environment have significant positive relationship with their functionings only in the high WHDI cluster. The personal conversion factors and choice factor of women can be the obstacles to achieve functionings on access to healthy environment in the low WHDI cluster.

**Access to mobility and transport:** The findings regarding women's access to mobility and transport showed that women are capable of being access to mobility and transport and are able to convert their capabilities into functionings in both clusters. In the literature, social norms concerning society's perception of women's car use (Wekerle, 1980; Franck and Paxson, 1989; Hannan, 2007), the expectation that women should explain whom they are out with (Franck and Paxson, 1989), and the norm that women should be accompanied by their relatives when going out (Gordon et al., 1980; Taylor, 2011) are stated factors constraining women's mobility. In this study, the social conversion factors have negative relationship with only the high WHDI cluster. While social norms regarding women's mobility were expected to have a greater impact on the capabilities of women living in the low WHDI cluster, surprisingly, it was found that these social norms did not have a relationship with women's capabilities in this cluster. This may be because women are unaware of the restrictive conditions they experience, have internalized these circumstances as normal, and do not perceive them as a source of discomfort. In addition, the environmental conversion factors are a barrier to women's transport access in both high and low WHDI clusters, but their negative influence is more pronounced in low WHDI neighborhoods. The literature highlights several factors constraining women's

mobility, including the decreased frequency of public transport services (Altay-Baykan, 2015), unsafe public spaces (Valentine, 1990; Hyndman, 2004; Taylor, 2011; Bravo, 2022), unsafe public transportation (Buckingham, 2010; UN-Habitat, 2013), and the lack of safety when walking (Taylor, 2011; UN-Habitat, 2020). In this study, these factors were found as environmental conversion factors constraining women's capabilities in both clusters. In the high WHDI cluster, the main personal conversion factors restricting women's mobility and transport were found as having children, and a lack of time. These findings support the literature which highlights household and childcare obligations significantly influencing women's travel patterns (McGukin and Nakamoto, 2005). In the low WHDI cluster, women report that personal conversion factors such as having children, lack of time, safety concerns, and long distances to destinations significantly restrict their mobility. Similar with the findings in earlier research (Brown and Lloyd-Jones, 2002), which found that women are more exposed to crime and violence when walking in low-income cities, this study found that safety concerns are one of the prominent factor that limit women's mobility in low WHDI neighborhoods.

**Safety in public open spaces:** The results of this study show that women's perception of safety and the sufficiency of safety levels in public open spaces have positive relationship with capabilities of women in both clusters. However, it is important to note that, in the low WHDI cluster, women's perception of safety and the sufficiency of safety levels in public open spaces do not always enable women to feel safe in urban areas; therefore, women's capabilities must be strengthened by reducing the negative influence of environmental conversion factors, which have a significant negative relationship with women's capabilities. This study found that environmental conversion factors (e.g., women's perception of the adequacy of lighting in streets, safety of public open spaces for women, deserted public open spaces after evening, the intimidation of public open spaces) have negative relationship with women's capabilities in all neighborhoods. This finding is similar to the studies that indicate inadequate lighting in public spaces (Valentine, 1990; Buckingham, 2010; Taylor, 2011; Phadke, 2012; Altay-Baykan, 2015), deserted streets during the evening hours (Valentine, 1990), and narrow, dark, and



intimidating streets (Valentine, 1990; Fenster, 2010)), restrict women's freedom to feel safe in public spaces. In addition, the social conversion factors (e.g., social norms regarding women going out in the evening, women's dress code, and the perception that women are safer at home than on the street) have a negative relationship with women's capabilities only in the high WHDI cluster. It is surprising that, in the low WHDI cluster, women's capabilities to feel safe in public open spaces are not influenced by the social norms related to this issue. There may be various reasons for this finding. A study conducted by Roy and Bailey (2021) in Kolkata shows that women tend to take charge of their safety to avoid unsafe places and normalize and ignore or accept the situation rather than confronting problems. In addition, in the study by Roman and Chalfin (2008), it was found that individuals who had lived in the same neighborhood for a longer period were less likely to feel fear while walking in that area. In this study, the average duration of women's residence was found to be 12.1 years in the low WHDI cluster, compared to 8.8 years in the high WHDI cluster. Furthermore, another reason could be that, in low-income neighborhoods, community ties are much stronger, which may lead people not to perceive problems in public spaces despite their physical, social, and economic disadvantages (see, for example, children's active participation in community life and adapted lifestyles in Tarlabası, Istanbul, Mızrak et al., 2014). In the high WHDI cluster, the key personal conversion factors affecting women's freedom to be safe in urban public open spaces (capabilities) are concern about being outside at night, walking alone, and fear of harassment, whereas in the low WHDI cluster, concern about being outside at night, fear of harassment, and walking alone are the major factors indicated by women respectively. These results are similar with the scholars who state women's being alone in the evening (Gordon et al., 1980; Franck and Paxson, 1989; Taylor, 2011; Whitzman, 2013), women's fear of harassment and concern of unsafe areas (Fenster, 2005; Gordon et al., 1980; Ranade, 2007; Fenster, 2010) affect their safety in urban public spaces.

**Safety in public transport:** According to the findings, there is a significant positive relationship between women's perception of safety and the sufficiency of safety levels in public transport and women's capability of using urban public transport.

This indicates that as women's perceptions of the safety of public transportation improve, their capabilities to use urban public transportation will increase in both clusters. The social (e.g., social norm toward women's using public transportation late at night and women's clothing on public transportation) and environmental conversion factors (e.g., the perception of the sufficiency of public transportation frequency late at night, long walking distances to public transportation stops, public transportation services considering women's safety) are found as significant barriers to women's capabilities only in the high WHDI cluster. The factors highlighted by the authors, such as the decreased frequency of public transport services in the evening (Buckingham, 2010; UN-Habitat, 2013; Altay-Baykan, 2015), the necessity of long walks before and after using public transport (Lachapelle and Noland, 2014), along with concerns about using public transportation in the evening (Fenster, 2005; Taylor, 2011), have been found to affect women's capabilities to feel safe in public transportation only in the high WHDI cluster. In the low WHDI cluster, women's capabilities to feel safe in public transport are not influenced by the mentioned social and environmental norms related to this issue. One reason for this result may be explained by Lachapelle and Noland's (2014) study, which indicates that people adapt to the crime levels in their neighborhood and may adjust their walking patterns to avoid walking at night or on more isolated routes. Both in high and low WHDI cluster, all women participants indicate that being the only female passenger in public transportation vehicle, worrying about using public transportation at night, and fear of harassment in public transportation vehicle are the major personal conversion factors limiting their freedom to be safe in urban public transportation. The findings of this study showed that, in both clusters, women's choices of not preferring to use public transportation due to safety concerns limit their active use of public transportation (functionings). Gardner et al.'s (2017) study shows that women's fear of becoming victims of crime is one of the most important reasons for their choice not to use public transportation. This study's results align with Gardner et al.'s (2017) findings, as the choice factor has a negative relationship with women's functionings in all neighborhoods.

**Participation in economic activities:** The results of this study show that, while in the high WHDI cluster, there is a significant positive relationship between women's perceptions of the availability and sufficiency of opportunities to participate in economic activities and their capability, this is not the case in the low WHDI cluster. It is important to note that, in both clusters, women's perception of the availability and sufficiency of opportunities to participate in economic activities does not always enable women to participate in economic activities. Therefore, women's capabilities must be strengthened by reducing the negative influence of social and environmental conversion factors, which have a significant negative relationship with women's capabilities. The social and environmental conversion factors were found to be associated with women's freedom to participate in the economic activities in both clusters; however, this relationship is strong enough to hinder women's freedom to participate in economic activities only in the low WHDI cluster. Similar to the studies which state the social norms (see, men as breadwinner and women as caregiver Fraser, 1989; Franck and Paxson, 1989; Bondi, 1992; Healey, 2003; Fenster, 2005; Taylor, 2011; ILO, 2019; Jayachandran, 2021, women's not working after marriage or have children Cowan, 1983; domestic responsibilities as belonging to women Franck and Paxson, 1989) limit women's participate in economic activities, this study found that these norms have negatively influence women's capabilities. In addition, the environmental conversion factors were found to have a greater impact on the capabilities of women living in the low WHDI cluster regarding their participation in economic activities. The personal conversion factors were identified by asking women about the factors constraining their capability to advance in their careers, even if they are employed. In both the high and low WHDI clusters, the major personal conversion factors limiting women's freedom to participate in the economy are having little child, insufficient wages that do not compensate for their labor and time, and the intensity of housework. Additionally, in the low WHDI cluster, insufficient education was indicated by women as one of the constraining factors. These findings for both clusters support the literature, which highlights that having preschool children (Wekerle, 1980; Hannan, 2007), household responsibilities (UN-Habitat, 2013; ILO, 2019), along with reproductive workloads (Chant, 2006; Buckingham, 2010; Mackenzie, 2014), influence women's working

conditions. Inadequate education (UN-Habitat, 2013; Tuncer, 2018), which constrains women from working, is found to be a critical factor only in the low WHDI cluster in this study.

**Participation in decision-making processes:** The results showed that women in both clusters are capable of participating in decision-making processes and achieving functionings. However, it is important to note that in the low WHDI cluster, women's perceptions of the availability and sufficiency of opportunities to participate in decision-making processes do not always convert into actual participation (functionings). Therefore, women's capabilities, serving as a means between resource perception and functionings, must be strengthened in the low WHDI cluster. The social conversion factors (e.g., the perception of social norms regarding the value of women's opinions, men's role as primary decision-makers, and women's participation in civil society organizations) were found to be negatively associated with women's capabilities only in the high WHDI cluster. In addition to social conversion factors, environmental factors (such as the perception of the sufficiency of efforts to include women in participation processes, the presence of women's organizations in the community, the municipality's provision of urban facilities and services for women, and the municipality's consideration of women's opinions in urban planning decisions) were not found to be associated with women's capabilities in the high WHDI cluster. Surprisingly, there is no relationship between the social and environmental conversion factors and women's capabilities to participate in decision-making processes in the low WHDI cluster. This result can be explained by Sen (2008), who highlights that people in chronically deprived positions, such as women in sexist societies or workers in exploitative conditions, tend to adjust their desires and expectations to what they perceive as feasible, thus making their deprivation more bearable. The personal conversion factors that limit women's participation in decision-making processes in the high WHDI cluster are having little child, insufficient knowledge, the intensity of working life, and the intensity of housework. In the low WHDI cluster, the most prominent factor was found to be insufficient knowledge, followed by having little child, the intensity of working life, and insufficient education. Similar to Altay-Baykan's study (2015), insufficient

education and knowledge were found to be prominent in women's participation in decision-making processes in both clusters.

## **8.2. Policy Implications**

Enhancing women's capabilities and functionings in accessibility, safety, and participation across high and low WHDI clusters in the central district of Amasya requires the development of comprehensive policies that address the adverse effects of social, economic, and personal conversion factors on women's capabilities, alongside targeted interventions to mitigate the limiting influence of the choice factor on their functionings in urban life.

The results showed that the negative impact of social conversion factors on women's access to public open spaces is consistently stronger across both high and low WHDI clusters, suggesting that societal norms limiting women's access to public open spaces are pervasive. Although changing deep-rooted social norms is a gradual process, this effort can significantly impact women's long-term freedom to participate in urban life. Awareness campaigns can reduce negative impact of social conversion factors and encourage more women to engage with public spaces. Over the last years, Orange Night Walking is also organized in Amasya as part of the campaign launched by the United Nations against gender-based violence on November 25, the International Day for the Elimination of Violence against Women. Implementing public awareness campaigns in the central district of Amasya can help challenge traditional gender roles and encourage the normalization of women's (alone) presence in public spaces any time of the day, but especially at night.

Although shifting entrenched social norms about women's presence in public open spaces may take a long time, Irschik and Kail (2013) provides a compelling case of how rapid and effective results can be achieved through the improvement of public open spaces via inclusive urban design. The gender-sensitive park design initiative in Vienna represents a pioneering approach to integrating gender mainstreaming into urban public spaces. The project emerged from the recognition that girls and young women were significantly underrepresented in public parks, particularly in densely built-up districts where public open spaces were often dominated by boys and male

adolescents. Socio-scientific studies conducted in 1996/1997 revealed that girls' presence in public parks decreased sharply from the age of ten, negatively impacting their self-confidence and body awareness. Through participatory processes, girls highlighted the need for retreat areas, non-male-dominated sports zones, and social interaction spaces. The redesign of Einsiedlerpark and Bruno-Kreisky Park are important cases for setting a model for gender-sensitive urban planning (Irschik and Kail, 2013). In this study, the negative effect of environmental conversion factors is stronger in the low WHDI cluster in Amasya, highlighting that in less developed areas, poor environmental conditions and inadequate infrastructure are major barriers to women's access to public open spaces. Priority can be given to implementing improvements addressing the environmental challenges that hinder women's access to urban open spaces in the cluster with a low WHDI level.

In high WHDI areas, despite better resources and capabilities, women's personal choices or internal factors may limit their ability to fully realize their functionings in accessing public spaces. In developing policies for improving women's access to public spaces in Amasya's central district, the methodology used by Li et al. (2024) offers valuable insights. Their approach, which combines the Kano model with Importance-Performance Analysis (IPA), can be applied to evaluate the current state of public spaces from a female-friendly perspective. By conducting field research, including surveys and interviews with female residents, the specific needs and preferences of women can be identified. Li et al.'s research (2024) provides valuable insights for urban planners and policymakers aiming to revitalize public spaces in a way that is inclusive and responsive to the needs of female residents, ultimately supporting the broader goal of sustainable and human-centered urban development.

The descriptive analysis shows that the high WHDI cluster has a high percentage of married women (83.14%) and a larger proportion of women with two or more children (63.15%). Marriage and the number of children may be one of the significant factors that increase women's household responsibilities. Interventions targeting personal conversion factors may be the most challenging, as they are influenced by intra-household and family dynamics. The commonality among all personal conversion factors (such as heavy domestic burdens, childcare, and working

life) is that they create a time scarcity problem for women. Therefore, the existence of urban open spaces which are close to residential areas, easily accessible, planned with the needs of women and children in mind, and perceived as safe is of great importance.

Based on the findings of this study regarding women's access to education in high and low WHDI clusters, policy implications addressing the barriers identified are crucial for fostering more equitable educational opportunities. The results indicate that prevailing social norms and expectations, especially in low WHDI neighborhoods, significantly hinder women's access to education. These norms often dictate that women's educational pursuits should cease after marriage or prioritize immediate economic contributions over further education. Therefore, a multi-faceted policy approach is required to challenge deeply ingrained social norms while improving access to educational services.

A good practice example of combating social norms and improving access to education is Mexico's Prospera Program (Davila Larraga, 2016). This conditional cash transfer program encourages families to invest in children's education by providing direct financial assistance to mothers. Prospera's success, replicated in 52 countries around the world, lies in its holistic approach that combines financial aid with health, nutrition, and education services. The program has led to higher school enrollment rates, especially for girls, and contributed to breaking the cycle of poverty. The model demonstrates the importance of integrating financial support with social inclusion measures to address the structural barriers preventing women's access to education (Davila Larraga, 2016).

Similar programs tailored to the socio-economic and cultural context of Amasya could significantly improve educational outcomes for women in low WHDI neighborhoods, fostering greater women's access to education. It is important to specifically target women in low WHDI neighborhoods who have not completed the mandatory 12 years of education. The campaigns can challenge patriarchal social norms that primarily position women as caregivers, while emphasizing the long-term benefits of women's education for both individual and community quality of life.

Collaborations with local community leaders, NGOs, and women's organizations can strengthen the outreach and effectiveness of these campaigns. Additionally, informing women about available educational opportunities, such as public training centers, evening art schools, and courses, may increase their awareness of existing services. Moreover, findings from the environmental conversion factors highlight that women in low WHDI neighborhoods face greater challenges due to inadequate educational facilities and insufficient caregiving services. To alleviate these burdens, the establishment of affordable childcare and eldercare facilities in low WHDI neighborhoods is vital. These facilities would enable women to dedicate time and energy to their educational advancement without being constrained by caregiving responsibilities. Economic assistance programs, such as scholarships and transportation subsidies, can further support women's educational participation in financially disadvantaged areas.

A clean, healthy and sustainable environment is closely linked to the quality of its built physical environment and infrastructure. In both clusters, environmental conversion factors can be addressed to enhance women's capabilities to access a healthy environment. However, in the urban neighborhoods of the central district of Amasya with low WHDI, the policies to be produced to improve environmental quality are more urgent. Thus, priority can be given to implementing improvements addressing the environmental challenges limiting women's access to healthy environment in the cluster with a low WHDI level.

Mainstreaming gender in urban renewal projects in Latin America and the Caribbean (LAC) (Inter American Development Bank, 2016), Gender Mainstreaming in Urban Planning and Development in Vienna (Damyanovic et al., 2013), and Gender Mainstreaming in Development Programmes and Projects in Finland (Haataja et al., 2011) illustrate good cases in which gender-sensitive approaches in urban planning address inequalities, enhance social inclusion, and promote equitable access to resources and opportunities. In the central district of Amasya, focusing only on the partial improvement of the environmental quality of neighborhoods becomes insufficient to effectively solve the problems. In low WHDI cluster, including Savadiye, Fethiye, Üçler, Dere, Gökmedrese, Beyazıtpaşa, İhsaniye, Yüzevler,



Kurşunlu, Mehmet Paşa and Şehirüstü neighborhoods, the urban renewal project can be supported primarily for the most degraded zones with aim to enhance infrastructure and environmental quality while preserving affordability, local identity, and residents' rights to remain in their neighborhood. It is important to engage all residents but especially women living in low WHDI cluster actively in the renewal planning process to ensure their needs and concerns shape their living environment. In this way, it can be contributed to the increase in functionings of women regarding their participation in decision-making processes. To develop clean and healthy environment, the urban green spaces have an important role. The existing urban fabric in the mentioned neighborhoods is significantly lacking in green spaces. An urban renewal project may contribute to improving green areas. Developing or improving green spaces with accessible pedestrian ways and playgrounds increases environmental quality. Safe and well-lit parks with adequate infrastructure and sufficient areal size for population within walking distance to residential areas may contribute to strengthening the perception of resources of the residents and positively affecting the capabilities and functionings of access to a clean and healthy environment. The poor economic condition (indicated by 65% of women) is the prominent factor that prevents families to afford housing located in clean and healthy environments. Also, 23.33% of women indicate that the sense of belonging to relatives and current neighborhood is the internal factor that hinders them to move another neighborhood. Therefore, implementing policies that prevent rent increases and speculative buying during and after urban renewal project can provide families to stay in their neighborhoods and prevent them from displacement. The presence of housing in these neighborhoods along the valley slopes should be preserved in harmony with the topography, with careful attention to the relationship between the neighborhoods' silhouette in the low WHDI cluster and the historic environment, and urban renewal should be achieved without increasing development rights. Furthermore, supporting an urban renewal project in low WHDI cluster focused on a clean and healthy environment may positively contribute to women's capabilities to access urban public open spaces and to be safe in there, because it reduces the negative impact of environmental conversion factors.

Women's access to urban mobility and transportation cannot be considered separately from their access to and safety in public open spaces. Ensuring women have equal access to public transport, walking, and biking options challenges social norms that dictate women belong in the private space and promotes women's empowerment. It is important to note that although women's having freedom to use private cars is quite important, this study does not endorse private car use due to its impacts on a sustainable urban environment. To increase women's capabilities on access to mobility and transport, the social conversion factors can be improved primarily in the neighborhoods of the high WHDI cluster.

To promote women's access to mobility, community engagement programs, such as women-only events in public spaces, community-led safety audits, and social gatherings in public parks, can be developed. The Fancy Women Bike Ride (SKBT), initiated in 2013 by Sema Gür and Pınar Pinzuti in İzmir, Türkiye, has expanded to over 200 cities across 30 countries, emerging as a grassroots women's movement that promotes women's sustainable urban mobility and empowerment (Fancy Women Bike Ride, 2024). Over the past decade, SKBT, held during European Mobility Week, has created a significant global impact by raising awareness of sustainable transport, advocating for safe cycling infrastructure, and fostering women's participation in public life. The movement, recognized by the United Nations with the World Bicycle Day Special Award in 2023, has encouraged women to learn cycling, overcome social barriers, and embrace freedom in urban spaces. In 2023, SKBT was also organized in Amasya, where women cycled to raise awareness of women's presence and freedom in public spaces. Increasing the number and frequency of such events, along with their regular organization, can contribute to building a supportive community, overcoming social barriers that limit women's capabilities in accessibility, safety, and participation, and fostering a sense of ownership and belonging among women in Amasya.

According to this study's findings, the environmental conversion factors impact women's mobility and transport in both clusters, but more strongly in low WHDI clusters. Therefore, the policy implications can primarily start with the low WHDI cluster. Similar to many cities around the world, transportation planning in the

central district of Amasya is also gender-blind and overlooks the problems and needs of women. The gender-inclusive urban transportation which addresses the specific needs and challenges that women face in accessing mobility and transport can be adopted for improving women's access to mobility and transport in the central district of Amasya. Since Amasya is a small-medium sized city, it is possible to reach many points by walking. However, walking is often hindered by unsafe and poorly designed urban environments, especially in low WHDI neighborhoods. It is opportunity that there is a separated bike lane on one side of motorized vehicle road that continues along the river in the central district of Amasya. However, the number of cyclists using the bike lane for transportation purposes is quite low. In addition, the public transportation is a critical mode of travel for women, who often rely on it more than men. Therefore, the urban transportation system of Amasya can be redesigned with a focus on gender inclusivity. Data-driven planning that captures the travel patterns, transportation usage, barriers, and safety concerns of women, as well as those of individuals with children, elderly people, and people with disabilities, can be adopted to enhance mobility for these groups.

The findings regarding women's safety in public open spaces showed that, surprisingly, women living in high rather than low WHDI cluster indicate that social norms shape their freedom to be safe in public open spaces and discourage them from using public open spaces freely. The campaigns and programs may gradually break down the social norms for women to go out in the evening, women's dress code, and women's being safe at home than on the street.

In addition, the results highlight the need for targeted interventions to enhance women's safety and their capability to feel safe in public spaces, particularly by addressing physical barriers. For both clusters, but primarily in the low WHDI cluster, the physical environment can be designed to increase women's safety in urban areas and to prevent crime against them. Crowe (2000) defines Crime Prevention Through Environmental Design (CPTED) as the thoughtful design and effective utilization of the built environment that can help reduce crime and fear of crime, while enhancing the overall quality of life. According to Ceccato's (2020) bibliometric analysis, 65% of 49 articles indicate that CPTED features have a

positive impact on crime and fear of crime. The CPTED framework can ensure women's safety in public open spaces by integrating physical design, social strategies, and active participation to diminish crime and fear of crime in the central district of Amasya. The narrow, dark, and deserted streets, the lack of mixed-use development, and the deprived built environment in need of urban renewal increase the possibility of sense of fear in neighborhoods with low WHDI, namely Savadiye, Fethiye, Üçler, Dere, Gökmedrese, Beyazıtpaşa, İhsaniye, Yüzevler, Kurşunlu, Mehmet Paşa and Şehirüstü. As stated under the policy implications for accessibility to the healthy environment, these neighborhoods require urban renewal that can be integrated with crime prevention strategies for women.

Within the framework of crime prevention through environmental design strategies, it is important to take action to ensure natural, organized and mechanical surveillance (see, 'eyes on the street' Jacobs, 1961; 'defensible space' Newman, 1972; 'crime prevention through environmental design' Jeffery, 1977; 'safegrowth' Saville, 2018) in the neighborhoods. The crime against women and women's fear of crime can be reduced by adopting urban planning and design principles. Johansson et al.'s (2014) study conducted in Sweden found a positive effect of lighting on accessibility and perceived safety of people. In low WHDI neighborhoods, the lighting can be improved by installing evenly distributed and adequate lighting in open spaces, pathways, parks and transit stops to reduce women's fear of being outside at night. The clear and open sightlines are also important for safety in public open spaces. The overgrown vegetation, high walls, large structures and wrongly placed street furniture block the clear views of surrounding environment and increase the likelihood of crime (Bogacka, 2020). In addition, the permeable streets and active use of space which allow frequent encounters in public and semipublic spaces and reduce desertification can be provided by supporting mixed-use development. A part of the Dere neighborhood and the Yüzevler neighborhood located within the low WHDI cluster are the main commercial district of the city. However, the other neighborhoods of the low WHDI cluster (Savadiye, Fethiye, İhsaniye, Kurşunlu, Şehirüstü, and the vast majority of Üçler, Gökmedrese, Beyazıtpaşa and Mehmet Paşa) lacking mixed-use development and consisting entirely of residential areas are

more prone to safety issues. Without commercial areas and recreational spaces to attract people during the evening, these areas become deserted and dark, decreasing natural surveillance –no eyes on the street- and creating environments conducive to fear and crime. Even if actual crime rates are low in these neighborhoods, the lack of people and diverse use of spaces can make women feel isolated, amplifying fear of crime. Therefore, incorporating mixed-use developments into urban renewal projects planned for these deprived neighborhoods may significantly enhance safety and reduce women's fear of crime.

Both in high and low WHDI urban clusters, the key personal conversion factors affecting women's freedom to be safe in urban public open spaces are indicated by women participants as the concern about being outside at night, walking alone, and fear of harassment. If campaigns and programs focused on breaking down social norms about 'women on the streets' and environmental design strategies are implemented, women's fear of crime which constrains their capabilities to be safe in public open spaces and public transport may gradually decrease in these neighborhoods.

The safe urban public transportation which increases accessibility and mobility is important not only for women but also for all people living in the central district of Amasya. The findings on safety in public transportation highlight critical areas for policy interventions to enhance women's capabilities and freedom to use public transit safely and confidently. In both clusters, it was found that women's fear of becoming victims of crime is one of the most important reasons for their choice not to use public transportation. Therefore, ensuring the safety of public transportation in Amasya is a critical issue that should be addressed at the city level when considered in the context of scale. In the central district of Amasya, there are no public transportation alternatives other than the private public buses operated by the Amasya Municipality. The frequency of services increases depending on the characteristics of the route, and the buses operate between 6:30 a.m. and 11:30 p.m. The design of public transportation buses, service frequency, and start and end times have been planned not with women in mind, but rather based on the needs of the general urban population. Additionally, the buses used for public transportation in

the central district of Amasya are quite old, dirty, and lack comfort, which increases public dissatisfaction. Public transportation fares are criticized by the public for being high, considering the low service quality and the short distances of the routes. These factors contribute to a decrease in public transportation usage across the city. As is commonly practiced, no fees are charged for children aged 0-7, students, individuals with disabilities and their companions. While no fees were previously charged for individuals aged 65 and over, in recent years, a decision by the Private Public Bus Union has introduced charges nationwide. In the central district of Amasya, there are no initiatives or actions aimed at encouraging women to use public transportation or ensuring their safety on public transport vehicles. The findings of this study emphasize the need for targeted interventions to enhance women's safety in public transportation. To make public transport safer for women in the central district of Amasya, both improving the public transport availability and accessibility and also redesigning public transport vehicles with women's safety in mind are important. As stated, the lack of public transport service in urban areas after 11:30 pm has negative effects on the safety and mobility of women. The lack of public transportation at night may restrict women's mobility, limiting their participation in socio-cultural activities and working life, and forcing them to walk or rely on private vehicles. Within the context of 'forced mobility' (Whitzman, 2013), walking, especially in poorly lit or deserted areas, may increase women's vulnerability to harassment. Therefore, expanding the frequency of public transportation services during late hours to reduce waiting times, and establishing additional stops and routes to minimize long walks to and from transit stations may improve public transport availability and accessibility for women. Redesigning public transport vehicles is crucial for ensuring women's safety in public transportation. The old, malfunctioning, dirty, and uncomfortable vehicles in the central district of Amasya can be replaced or overhauled. Key measures include increasing the number and capacity of vehicles to reduce overcrowding on busy routes, ensuring adequate interior lighting in buses to eliminate dark areas, equipping buses with CCTV cameras to address safety concerns, and redesigning buses to accommodate mothers with baby carriages. In addition, according to Lea et al.'s study, the smart phone location reporting apps such as Safecity app in Delhi,

HarassMap app in Cairo, Hollaback app in New York and London (also Ateş Böcekleri in Türkiye can be added), make it possible to hear victims' own accounts of these incidents, which is uncommon because street assaults are usually not reported to the police. Similar app can be developed for the central district of Amasya. These improvements are essential for enhancing women's to be safe in public transportation in Amasya.

The vast majority of women participants indicate that being the only female passenger in public transport limits their freedom to be safe in there. However, it is crucial to note that women-only (pink or purple) public transportation, intended to increase women's mobility and reduce potential threats, should not be promoted. In Amasya, the policy implications should focus on advancing transportation planning based on gender equality, rather than isolating women from society.

According to the findings, the capabilities and functionings of women in low WHDI clusters on participation in economic activities is quite more challenging. However, it would be more meaningful to seek solutions to the problems of women's participation in working life at the urban scale rather than the neighborhood. To enhance women's economic participation in the central district of Amasya, a dual approach is essential: increasing job opportunities and improving women-friendly working conditions while simultaneously empowering women through education and skills development.

Unless job opportunities are increased, it may not be possible for anyone, including women, to participate in the economy. Therefore, the primary goal can be to determine strategies that increase economic activities in upper-scale plans and create job opportunities in different sectors. While increasing job opportunities is crucial for broader economic participation, it is not the only factor enabling women to participate in the economy. Structural barriers, such as social norms, inadequate education, unequal access to resources, and lack of supportive infrastructure (e.g., childcare facilities, public transportation), also play a significant role, particularly for women. A study conducted by McKinsey Global Institute (2016) in the UK estimated that reducing the time women spend on unpaid work from five hours to

three hours corresponds to a 10% increase in their participation in the paid workforce. According to Perez (2019), a study found that increasing childcare facilities more than doubled the likelihood of mothers continuing their jobs. It is also indicated that, following the Quebec government's introduction of a childcare subsidy program in 1997, the employment rate of mothers with at least one child aged 1-5 had increased by 8%, and their annual working hours had risen by 231 hours by 2002. In addition, while strategies to increase economic activities and diversify job opportunities at the upper-scale level are important, they can be complemented by policies that address these barriers to ensure that new opportunities are accessible and inclusive. Without a comprehensive approach, only increasing jobs might not result in equitable economic participation.

Empowering women through education and skills development are crucial to access better employment opportunities. The literature showed that the increase in women's education level leads to remarkable improvement in women's status in society (Tuncer, 2018), their participation in working life (Aslam et al., 2012) and their mobility (Alkan, 2005). In low WHDI cluster, almost a quarter of women indicate that insufficient education is the factor limiting their freedom to participate in economy. Therefore, women's participation in the next level of education, adult literacy programs, and vocational training may contribute to empowering them to access better employment opportunities. In this respect, it can be determined in which neighborhood the education of women should be focused on first. TurkStat publishes education data by gender at the neighborhood level every year at the beginning of June. Accordingly, it would be important to start with the neighborhoods in the central district of Amasya where the rate of illiterate women is higher and the women's means year of schooling is shorter.

Although the term 'participation in decision-making processes' was explained in the questionnaire survey as involvement in civil society organizations, municipal council meetings, specialized committee meetings, and other decision-making processes, it can be one of the limitations that the women in the study area generally associated it with voting in local and general elections, which occur every five years. Therefore,



the research findings have shown that women's freedom and functionings in participation in decision-making processes have been revealed to be high.

The UN-Habitat (2021) 'Her City' project serves as a vital model for incorporating women, particularly girls and young women, into the urban planning and development process, demonstrating how participatory planning that actively involves women leads to more inclusive, sustainable, and resilient urban environments, as evidenced by the successful results obtained in Lima (Peru), Botkyrka (Sweden), and Johannesburg (South Africa). As of 2024, in the central district of Amasya, 28 out of the 32 municipal council members are men. Among the 26 directorates in the municipality, only one is headed by a woman. Additionally, there is one female elected neighborhood representative/heads in the central district of Amasya. In this district, it is important for women to go beyond merely voting in elections and actively participate in local decision-making processes, not only as voters but also as candidates, to play an influential role in the decisions being made.

Unless there is an understanding that includes a gender equality perspective in local policies and governance, it is argued that change in urban space may be challenging. Therefore, one of the most important steps to be taken within the policy framework for promoting gender equality and enhancing women's quality of urban life in Amasya could be the preparation of the Local Equality Action Plan.

In accordance with CEDAW and other international and national policy documents, Local Equality Action Plans are prepared under six headings (education, health, employment, participation in management mechanisms, violence against women and urban services) with the participation of all stakeholders in the province. The Amasya Municipality can initiate efforts to achieve gender equality at the local level in line with CEDAW, which was signed by Türkiye in 1985; Article 10 of the Constitution of the Republic of Türkiye, which guarantees that "everyone is equal before the law without distinction as to language, race, colour, sex, political opinion, philosophical belief, religion and sect, or any such grounds"; and the Law to Protect the Family and Prevent Violence Against Women numbered 6284. The Amasya Municipality can sign the European Charter for Equality of Women and Men in

Local Life, which was adopted in 2006 by the Council of European Municipalities and Regions (CEMR) as an initiative of the Council of Europe, through a decision to be made by the municipal council, and take the necessary steps in this regard. By becoming a party to this charter, it is expected to take responsibility for promoting gender equality and undertake the following steps: (1) committing to taking the necessary actions to achieve gender equality; (2) preparing an action plan to address gender equality; (3) regularly monitoring the implementation process of the plan and sharing the results with the public. The commitment to achieving gender equality can only be realized through the establishment of administrative bodies specifically created for this purpose. The Women-Friendly Cities United Nations Joint Programme, which was initiated in Türkiye in 2006, would be an appropriate framework for Amasya to follow in preparing its Local Equality Action Plan. It is mentioned in the project that the establishment of "Local Equality Mechanisms" is crucial for the preparation of the Local Equality Action Plan. To ensure the permanent achievement of gender equality at the local level, local equality mechanisms are comprised of the Provincial Women's Rights Coordination Committee, Gender Equality Commissions in municipal councils, and governorship/municipality Equality Units. Firstly, a Provincial Women's Rights Coordination Committee as one of the local equality mechanisms can be established in Amasya. The Provincial Women's Rights Coordination Committee coordinates the identification of women's needs related to local services and the development, implementation, and monitoring of policies at the provincial level. Secondly, a Gender Equality Commission can be established under the Amasya Municipal Council. The Gender Equality Commission can be responsible for ensuring the integration of the gender equality strategy into the decision-making processes of the Amasya Municipal Council, facilitating the presentation of issues and solutions to the council in order to address women's needs related to local services, and collaborating with women's NGOs to conduct assessments and research. Thirdly, Equality Units, which are to be established within the Amasya Governorship, provincial directorates, and Amasya Municipality, can be responsible for preparing institutional action plans within the framework of the Local Equality Action Plan, identifying issues and developing appropriate strategies, as well as detecting and

reporting challenges encountered during the implementation phase. Improving women's urban quality of life in Amasya is possible through effective administrative structure. The establishment of these local equality mechanisms within the administrative structure is crucial, but equally important is increasing women's representation in these mechanisms and ensuring their active participation in decision-making processes. Developing and implementing strategies to address the social and environmental factors that restrict women's capabilities and functionings in urban spaces can be achieved through the collaboration of various stakeholders.

In this way, increasing awareness of gender equality, improving gender-sensitive local service delivery, spreading a human rights-based approach to the neighborhood level, developing participatory mechanisms by institutions to enhance women's quality of life, and fostering a gender-sensitive urban planning approach may transform the central district of Amasya into a women-friendly city.

### **8.3. Limitations of the Study**

This section focuses on the limitations of the study. The first important limitation is the contradiction between the philosophical foundations upon which this study is based and the concept it seeks to construct. To elaborate further, by revealing Aristotle's views of women, some may criticize how this thesis establishes the quality of women's urban life on an Aristotelian 'eudaimonic' foundation. Aristotelian understanding of ethics and happiness (eudaimonia), as presented in *Nicomachean Ethics* and other works, includes certain gendered limitations. For Aristotle, due to deficiencies in deliberation and practical reason, women and slaves can never reach eudaimonia under any circumstances (Nussbaum, 1987). Aristotle advocated the ancient Greek belief that men are more apt to govern, while women are more suited to be governed (Yalom, 2002).

Aristotle's views on women are inconsistent with contemporary understandings of equality and human rights. Nevertheless, although Aristotle's perspectives contain certain gendered limitations, they should be considered within the socio-cultural context and the patriarchal structures of his era. Aristotle's ethical philosophy can provide an important foundation and framework for modern understandings of

women's happiness and potential. As seen in Nussbaum's (1987, 2011) works, Aristotle's philosophy can be reinterpreted through contemporary frameworks to extend his principles to incorporate gender equality, and to support a more inclusive understanding of eudaimonia.

The Capabilities-Based Quality of Urban Life of Women concept that is being in this thesis can be viewed as a modern application of Aristotle's principles, reinterpreted through contemporary frameworks, such as Amartya Sen's (1999) and Martha Nussbaum's (2011) capabilities approach, in the spatial context. This perspective aligns well with the idea of expanding opportunities and enabling women to achieve their full potential, reflecting the essence of eudaimonia in a more equitable context in urban space.

The second significant limitation is that this study synthesizes ambiguous concepts namely, the quality of urban life in the context of women and urban space relations, and the capabilities and functionings approach, which lack an agreed-upon theoretical and methodological framework. This leads to the determination of quality of life indicators being highly dependent on the researchers' subjective preferences. In determining the indicators of this study, the literature review was conducted on urban quality of life and the issues women face in urban living. Accordingly, the dimensions, sub-dimensions, and indicators derived from the literature were selected and grounded within the framework of the capabilities and functionings approach. The reliance on the researcher's selection of dimensions, sub-dimensions, and indicators constitutes a limitation of this study.

The third limitation is about the cross-sectional nature of this study. As cities are dynamic and ever-changing, cross-sectional QoUL measurements reflect the conditions at the time of assessment, requiring periodic updates to remain relevant. This study is based on cross-sectional analysis and relies on subjective primary data collected via a questionnaire between September 2023 and February 2024 from women residing in urban center neighborhoods of the central district of Amasya.

The fourth limitation is the lack of secondary data at the neighborhood scale. In the empirical research part of the thesis, the objective secondary data are needed for site

selection and for clustering urban neighborhoods based on women's Human Development Index levels. The Human Development Index (HDI) at national scale in order to compare countries globally is measured by using four indicators: life expectancy at birth (a long and healthy life), mean and expected years of schooling (knowledge), and gross national income (GNI) per capita (a decent standard of living). The data of these four indicators are not kept for the neighborhood scale in the Turkish context. At the neighborhood scale, data on population size, age groups, educational attainment, and marital status can be obtained from TurkStat, disaggregated by gender. No data is kept on the income status of individuals at the neighborhood scale by TurkStat and there is no reliable income data available from any source at the neighborhood scale. Therefore, as explained in Chapter 5, the surrogate indicators were used to measure Women's HDI level at neighborhood scale in the central district of Amasya, which constitutes a limitation of this study.

Despite all these limitations, this study offers a new framework, a different perspective and methodology, which focus on people -without gendered limitations- and their capabilities and functionings in urban public spaces, to the urban studies and the quality of life literature.

#### **8.4. Recommendations for Further Research**

Focusing on the quality of urban life studies through the lens of capabilities and functionings is highly important, as this approach emphasizes not only the physical spaces but also the abilities of individuals to use these spaces to lead a meaningful and fulfilling life. It allows us to examine urban spaces in terms of the opportunities/threats they offer for/constrain people to realize their full potential, going beyond the mere existence of resources to how these resources can be accessed and used effectively.

In this thesis, the quality of urban life of women living in urban neighborhoods is compared within the framework of capabilities and functionings approach, across two urban clusters differentiated by their Women's Human Development Index levels. Apart from this topic, addressing the capabilities and functionings approach in the spatial context opens the door to a wide range of important topics for researchers

by addressing social inequalities and contributing to the creation of a more just and inclusive society.

The capabilities approach can easily be incorporated into spatial justice studies, which contributes to building more inclusive, just, and empowering environments. Adopting the capabilities approach in spatial justice research can provide urban planners and policymakers with tools to design environments that expand freedoms and opportunities for all individuals. This perspective encourages not only just distribution of resources but also the creation of spaces that foster individuals' quality of life, social inclusion, and sustainable development.

Future research can focus on analyzing the internal and external conversion factors that hinder the capabilities of disadvantaged groups related to the spatial dimension of issues concerning social justice, such as poverty, housing, gender equality, urban inequalities and segregation, right to the city. The disadvantaged groups can be children, the elderly, poor people, immigrants, marginal groups and people with disabilities. The intersection of being in a disadvantaged group with descriptive characteristics of these groups such as gender, age, education level, geographic location, income level, disability, and race may contribute depth and new dimensions to the research.

The spatial differentiation of studies based on the capabilities and functionings approach will be important for research. Comparing rural and urban areas, two different cities, different neighborhoods, or areas determined due to the topic of the study may enrich the research to be conducted. Aside from making comparisons, a study focusing solely on the target population in a single settlement can also be conducted. In this way, the results obtained will be important for both the critical evaluation of problems encountered in the urban space and the development of future urban policies to expand target population's agency freedom in cities.

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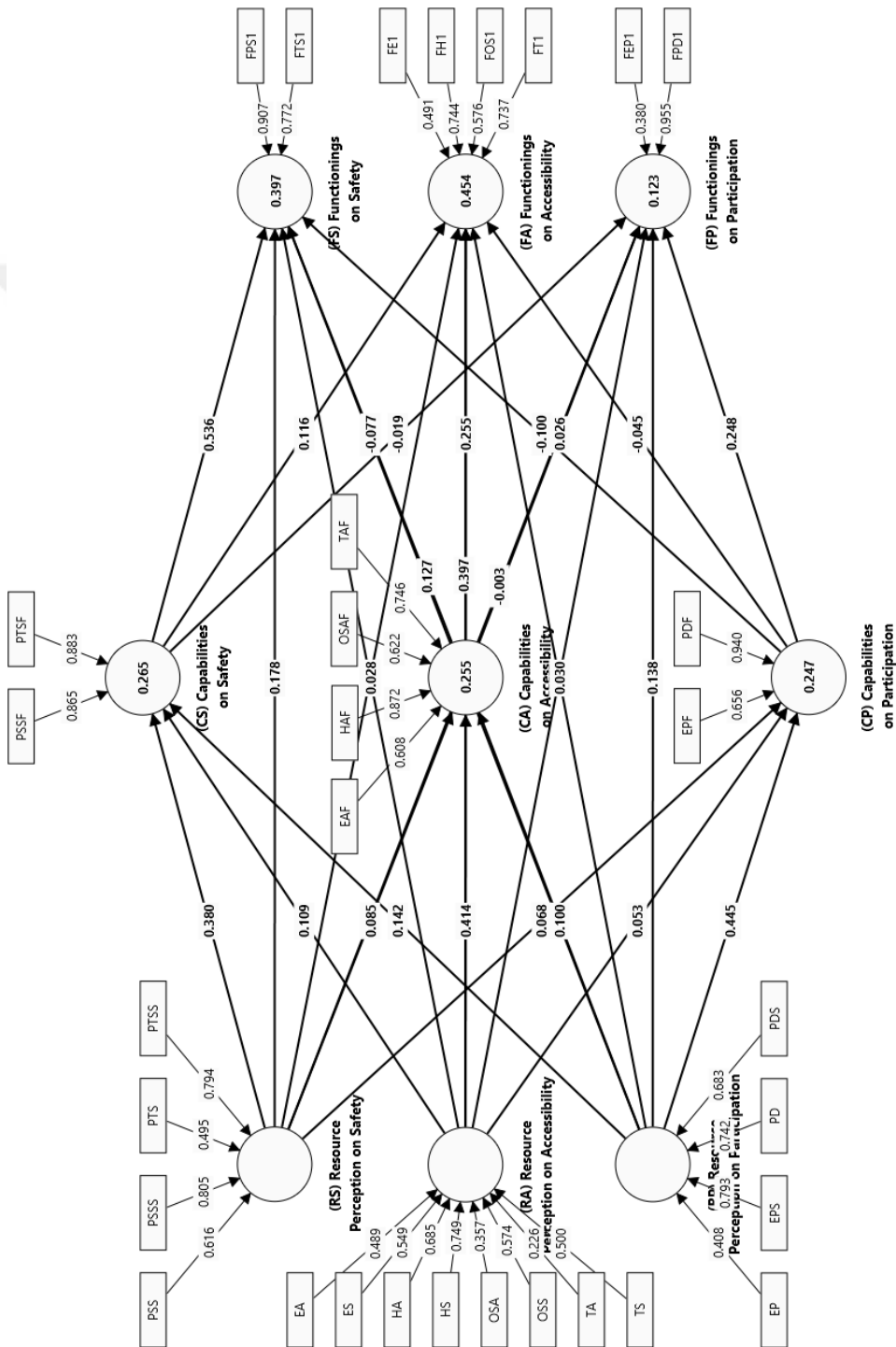
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## APPENDICES

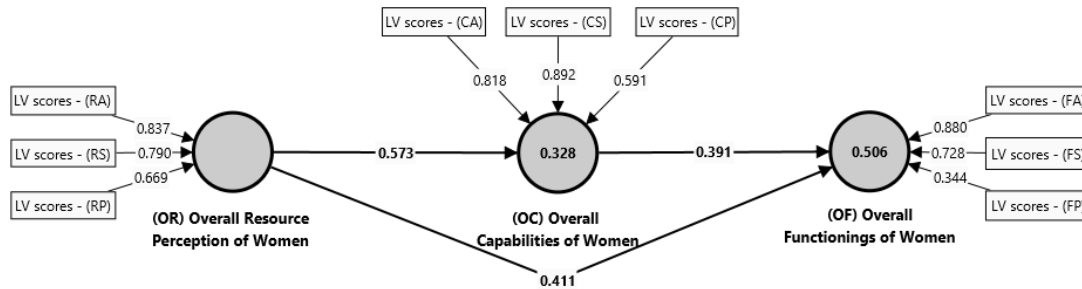
### A. Graphical Outputs of the Main Path Model for the High WHDI Cluster

A1. The graphical output of the Measurement Model-PLS results of the Stage 1 of the main path model of the cluster with high WHDI (Disjoint Two-Stage Approach)



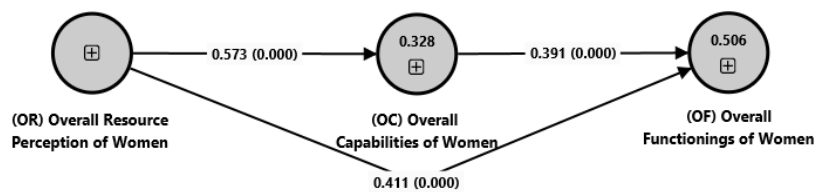
\* The constructs show the R-squared values of the lower-order constructs. The structural model shows path coefficient results. The measurement model shows outer loadings which should be > 0.5. OSA, EA, EP, FEPI are retained even if the indicator loadings are < 0.5 but significant.

A2. The graphical output of the Measurement Model-PLS results of the Stage 2 of the main path model of the cluster with high WHDI (Disjoint Two-Stage Approach)



\* The constructs show the R-squared values of the HOCs (higher-order constructs). The structural model shows path coefficient results. The measurement model shows outer loadings of the latent variable scores of LOCs which are obtained from the Stage 1.

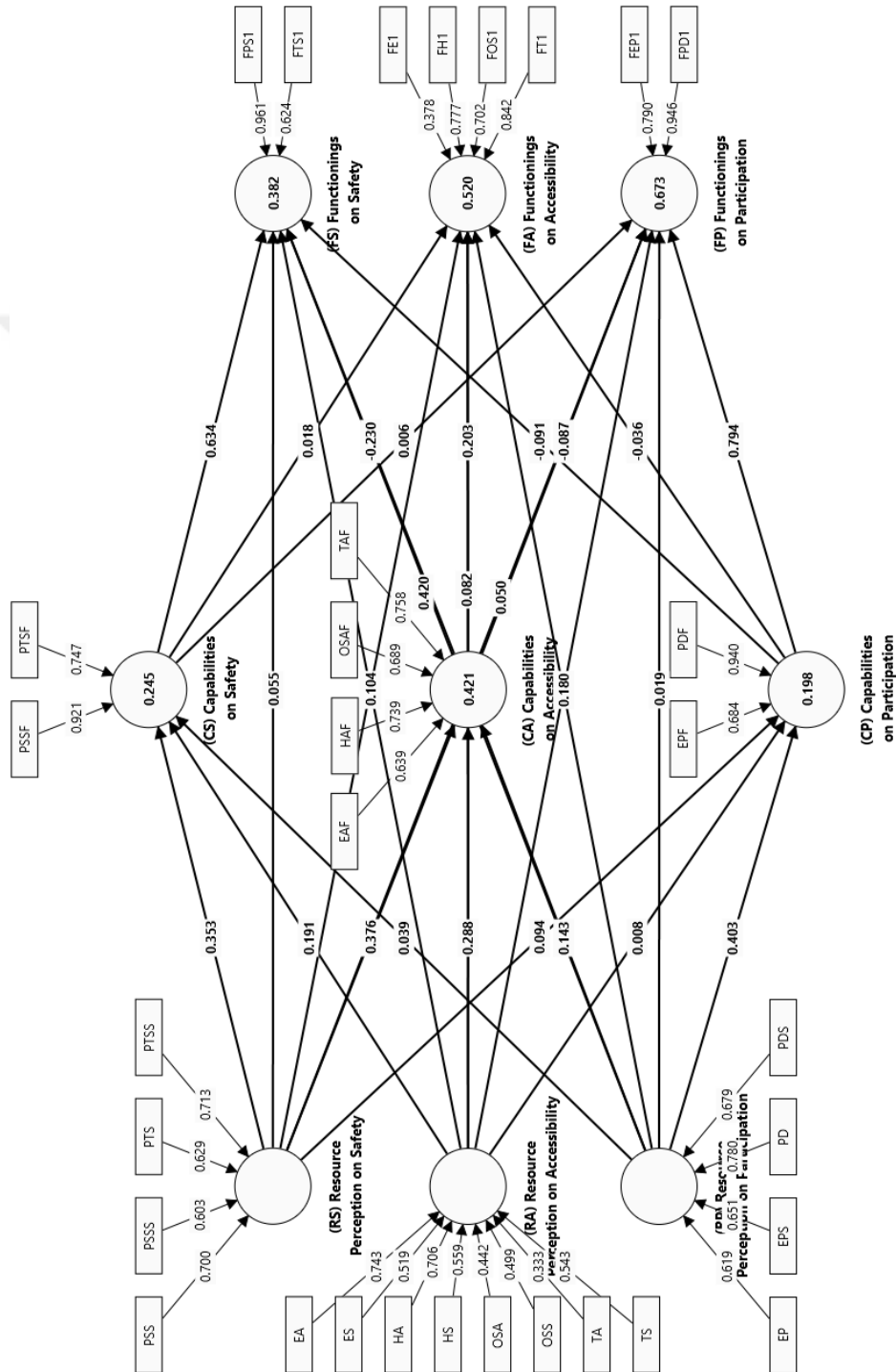
A3. The graphical output of the Path Model-Bootstrapping results of the Stage 2 of the main path model of the cluster with high WHDI (Disjoint Two-Stage Approach)



\* The constructs show the R-squared values of the HOCs (higher-order constructs). The structural model shows path coefficient results and p-values.

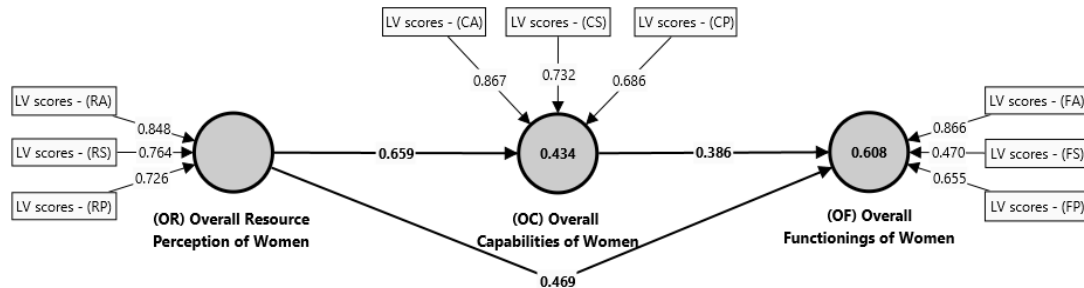
## B. Graphical Outputs of the Main Path Model for the Low WHDI Cluster

B1. The graphical output of the Measurement Model-PLS results of the Stage 1 of the main path model of the cluster with low WHDI (Disjoint Two-Stage Approach)



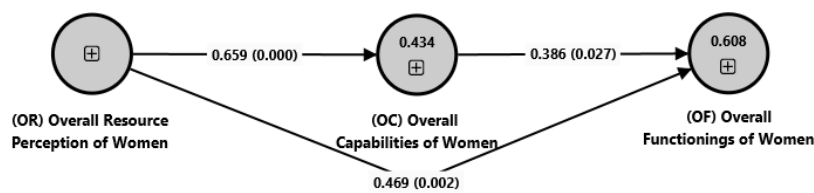
\* The constructs show the R-squared values of the lower-order constructs. The structural model shows path coefficient results. The measurement model shows outer loadings which should be  $> 0.5$ . OSA, TA, FE1 are retained even if the indicator loadings are  $< 0.5$  but significant.

B2. The graphical output of the Measurement Model-PLS results of the Stage 2 of the main path model of the cluster with low WHDI (Disjoint Two-Stage Approach)



\* The constructs show the R-squared values of the HOCs (higher-order constructs). The structural model shows path coefficient results. The measurement model shows outer loadings of the latent variable scores of LOCs which are obtained from the Stage 1.

B3. The graphical output of the Path Model-Bootstrapping results of the Stage 2 of the main path model of the cluster with low WHDI (Disjoint Two-Stage Approach)

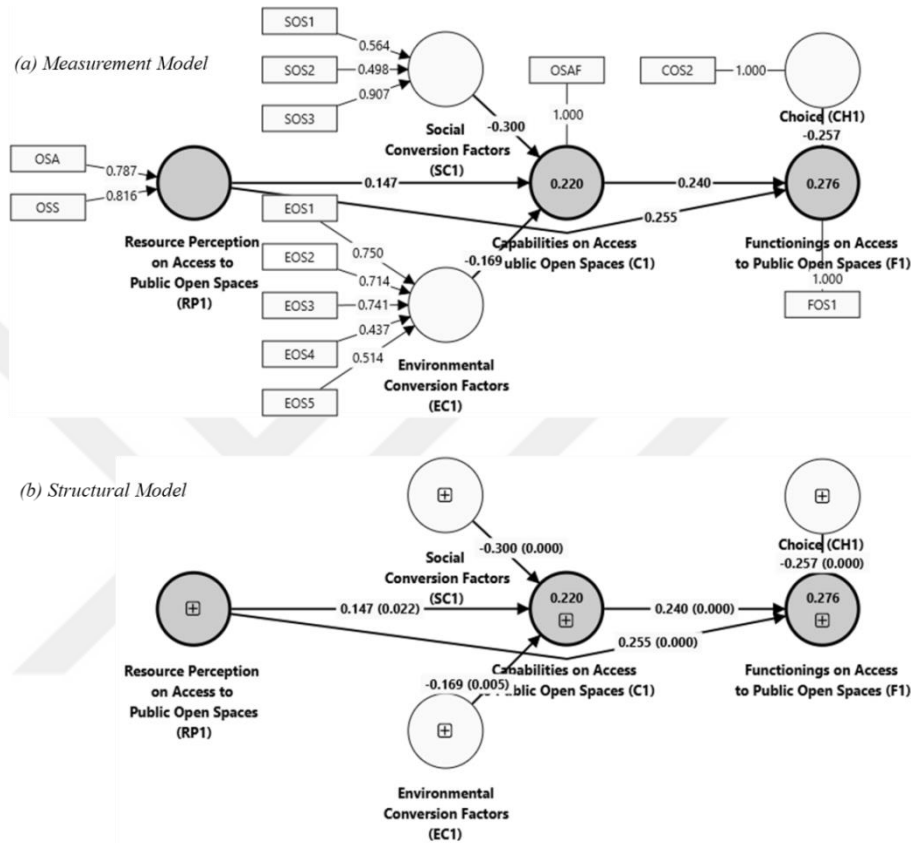


\* The constructs show the R-squared values of the HOCs (higher-order constructs). The structural model shows path coefficient results and p-values.

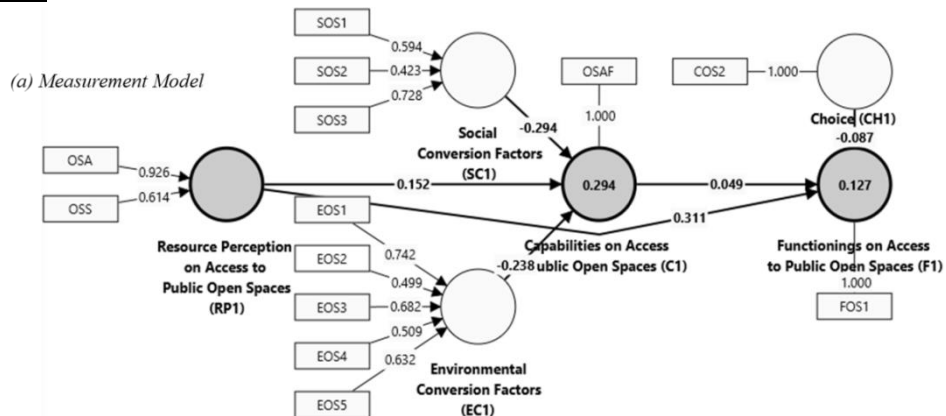


## C. Graphical Outputs of the Second-Stage Path Models

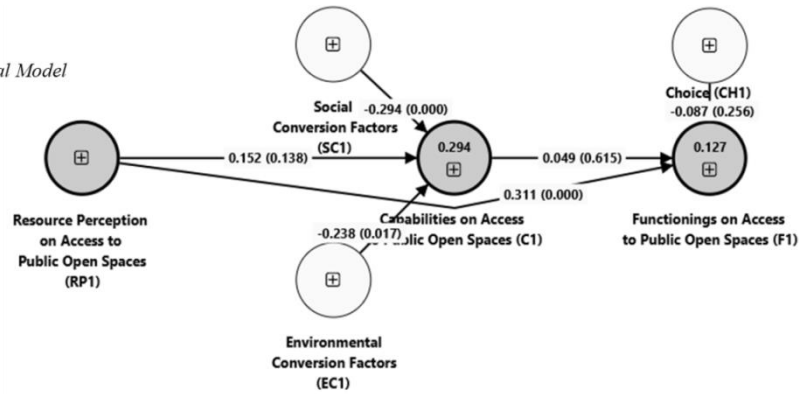
C1. The graphical output of the second-stage model of access to public open space sub-dimension showing (a) measurement and (b) structural models of the cluster with high WHDI



C2. The graphical output of the second-stage model of access to public open space sub-dimension showing (a) measurement and (b) structural models of the cluster with low WHDI

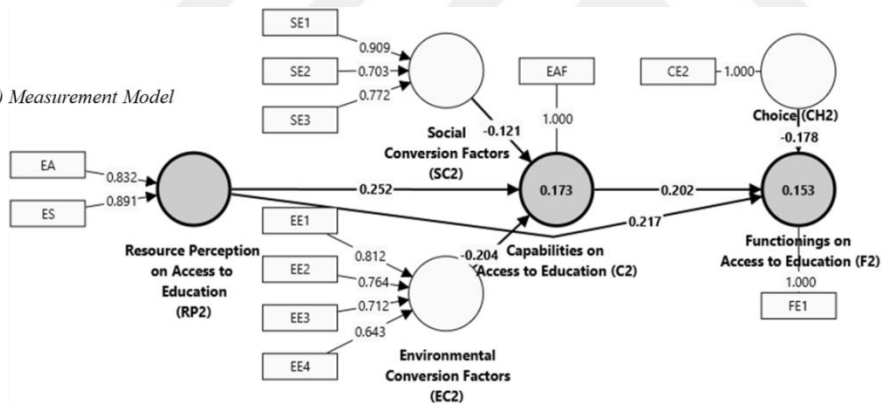


(b) Structural Model

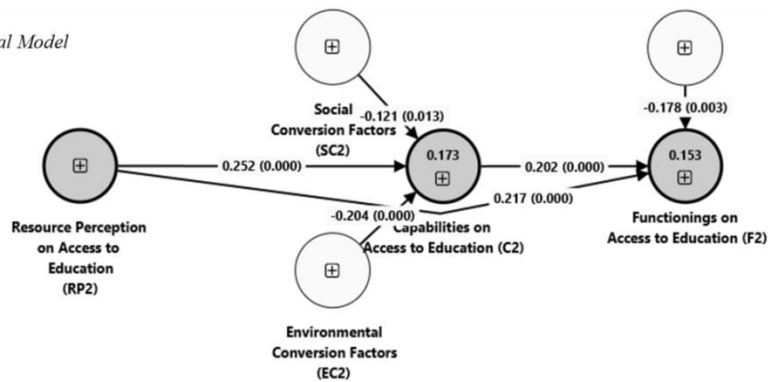


C3. The graphical output of the second-stage model of access to education sub-dimension showing (a) measurement and (b) structural models of the cluster with high WHDI

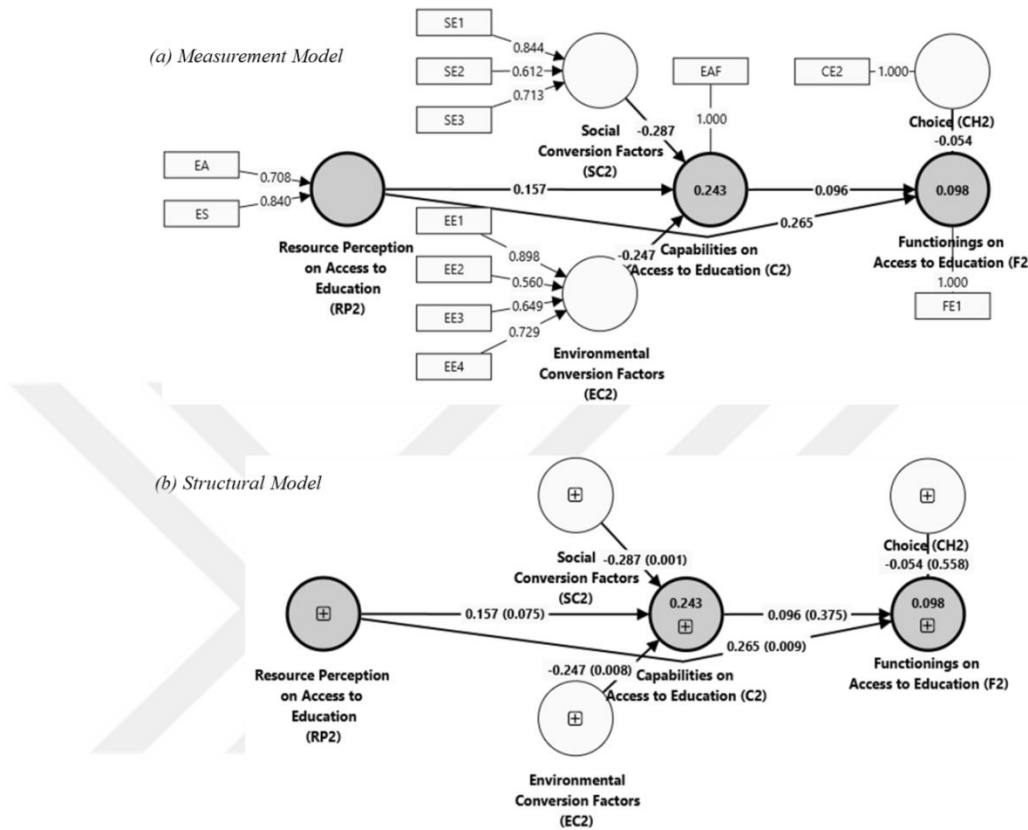
(a) Measurement Model



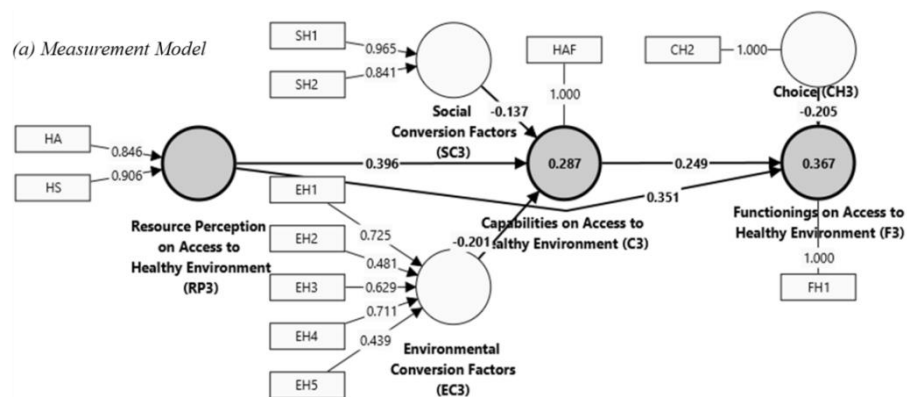
(b) Structural Model



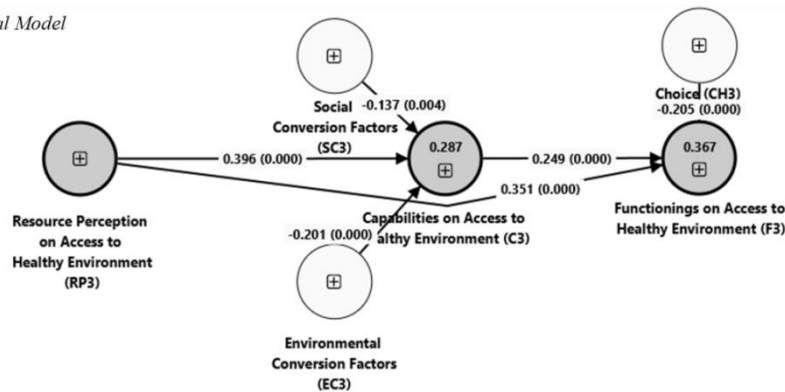
C4. The graphical output of the second-stage model of access to education sub-dimension showing (a) measurement and (b) structural models of the cluster with low WHDI



C5. The graphical output of the second-stage model of access to healthy environment sub-dimension showing (a) measurement and (b) structural models of the cluster with high WHDI

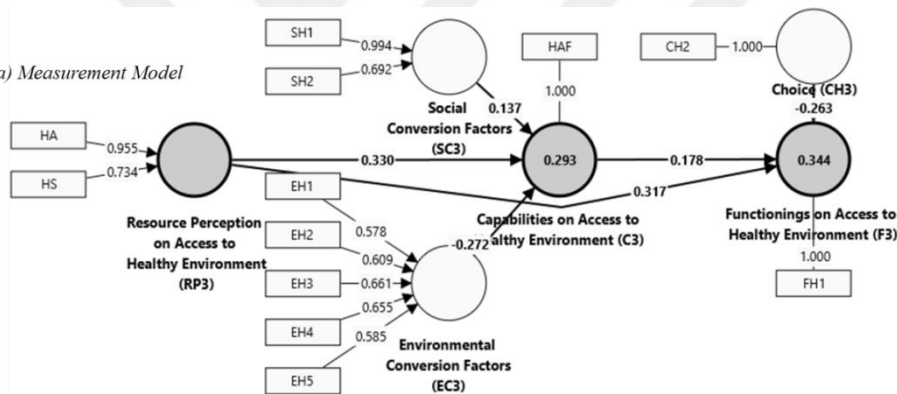


(b) Structural Model

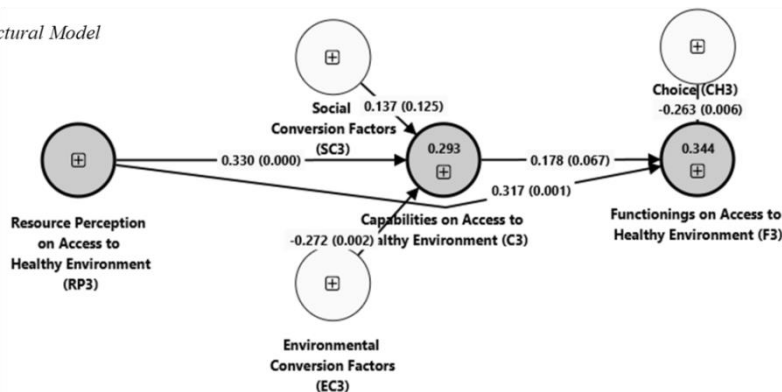


C6. The graphical output of the second-stage model of access to healthy environment sub-dimension showing (a) measurement and (b) structural models of the cluster with low WHDI

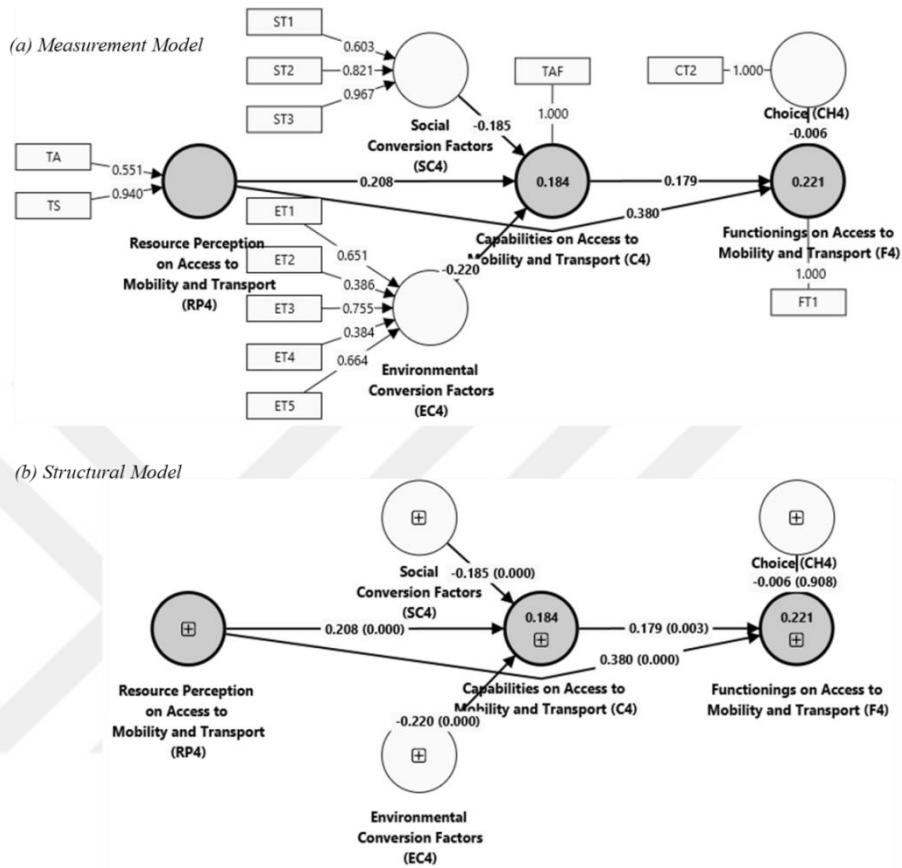
(a) Measurement Model



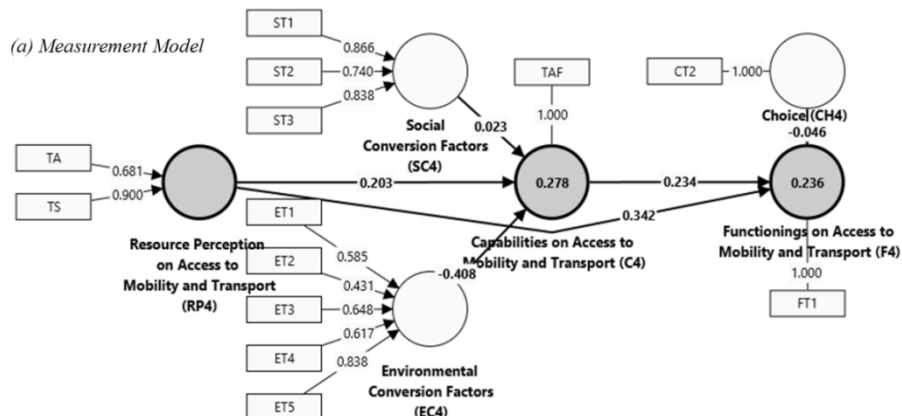
(b) Structural Model



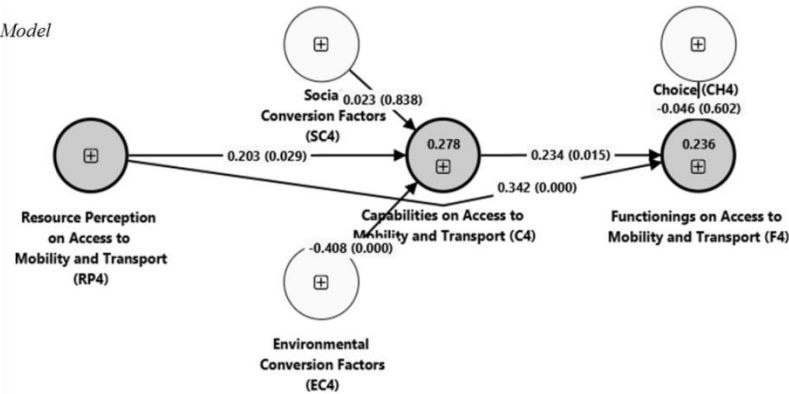
C7. The graphical output of the second-stage model of access to mobility and transport sub-dimension showing (a) measurement and (b) structural models of the cluster with high WHDI



C8. The graphical output of the second-stage model of access to mobility and transport sub-dimension showing (a) measurement and (b) structural models of the cluster with low WHDI

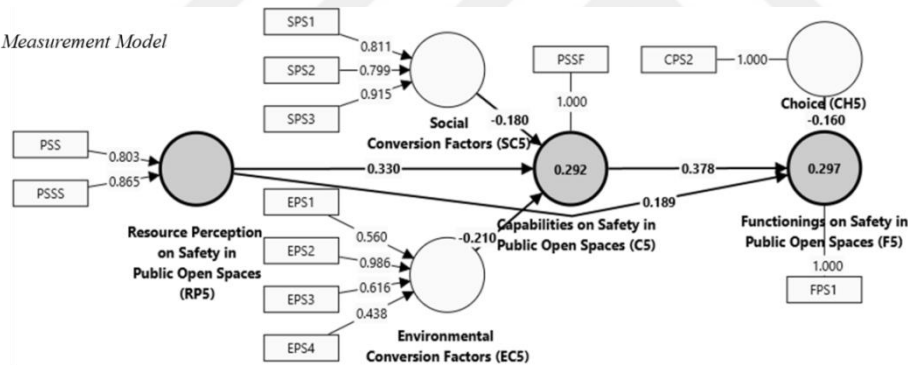


(b) Structural Model

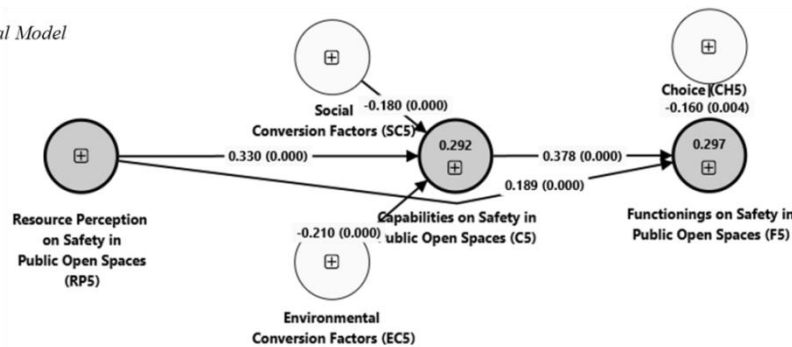


C9. The graphical output of the second-stage model of safety in public open spaces sub-dimension showing (a) measurement and (b) structural models of the cluster with high WHDI

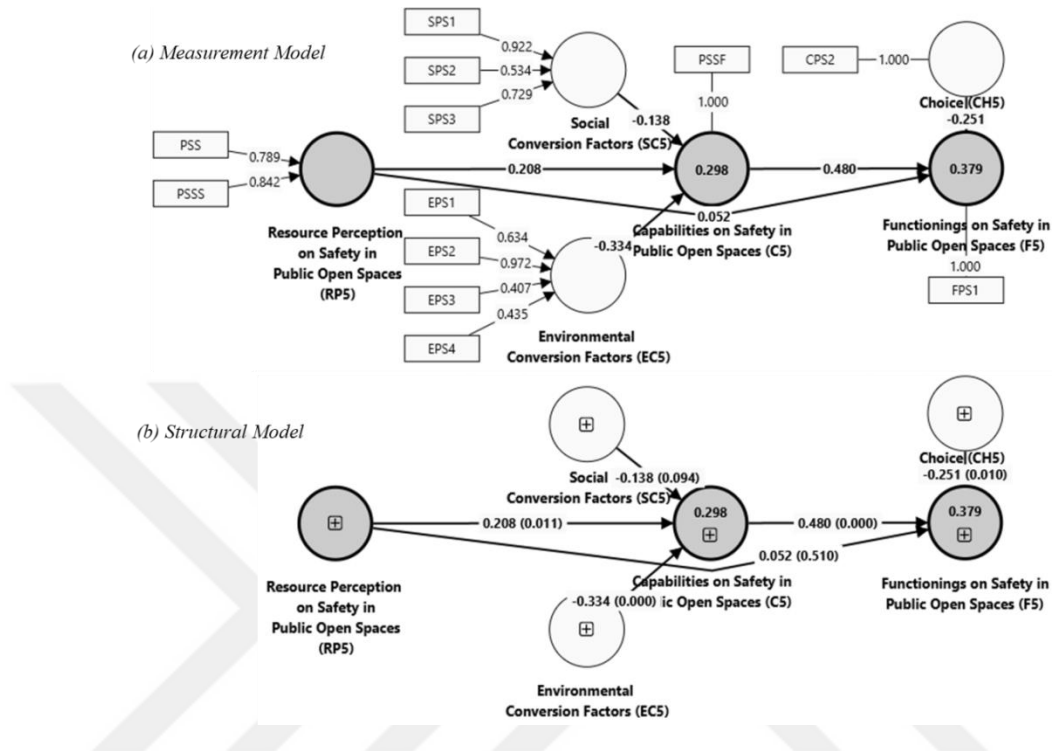
(a) Measurement Model



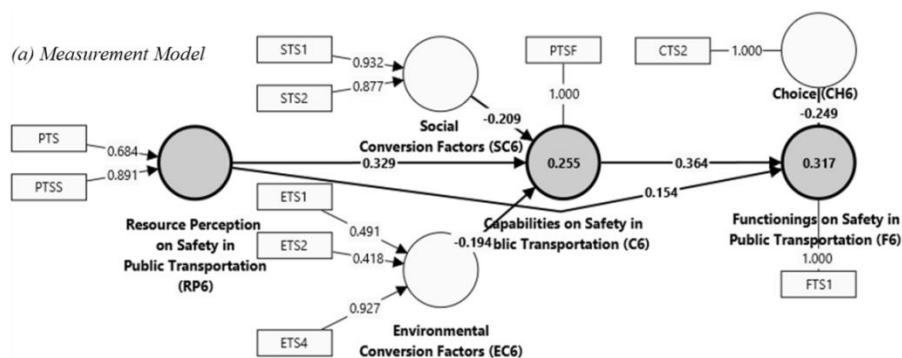
(b) Structural Model



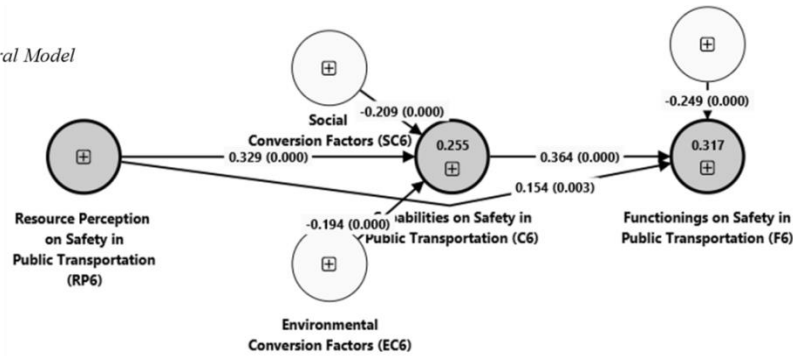
C10. The graphical output of the second-stage model of safety in public open spaces sub-dimension showing (a) measurement and (b) structural models of the cluster with low WHDI



C11. The graphical output of the second-stage model of safety in public transportation sub-dimension showing (a) measurement and (b) structural models of the cluster with high WHDI

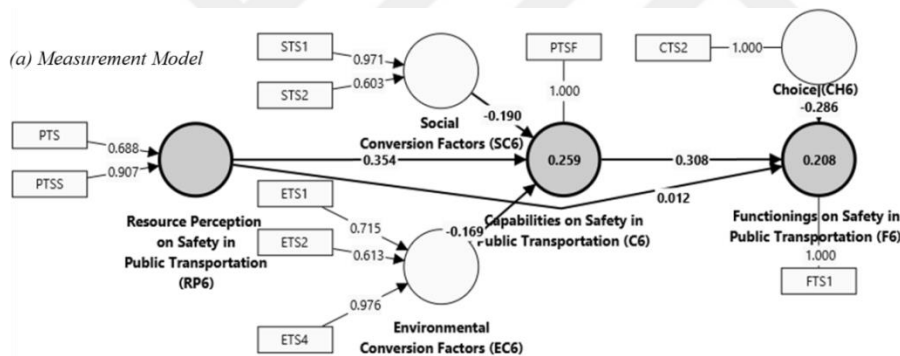


(b) Structural Model

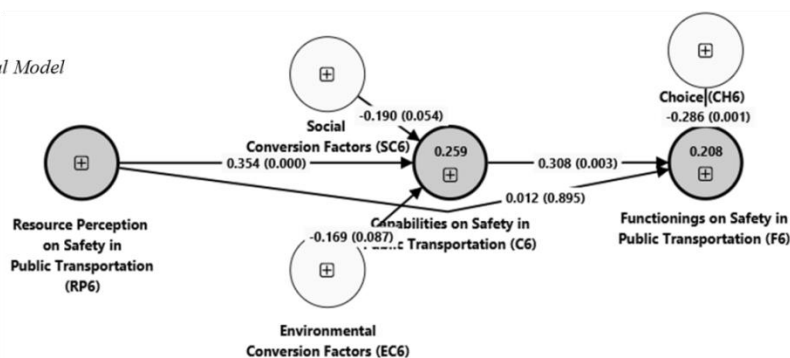


C12. The graphical output of the second-stage model of safety in public transportation sub-dimension showing (a) measurement and (b) structural models of the cluster with low WHDI

(a) Measurement Model

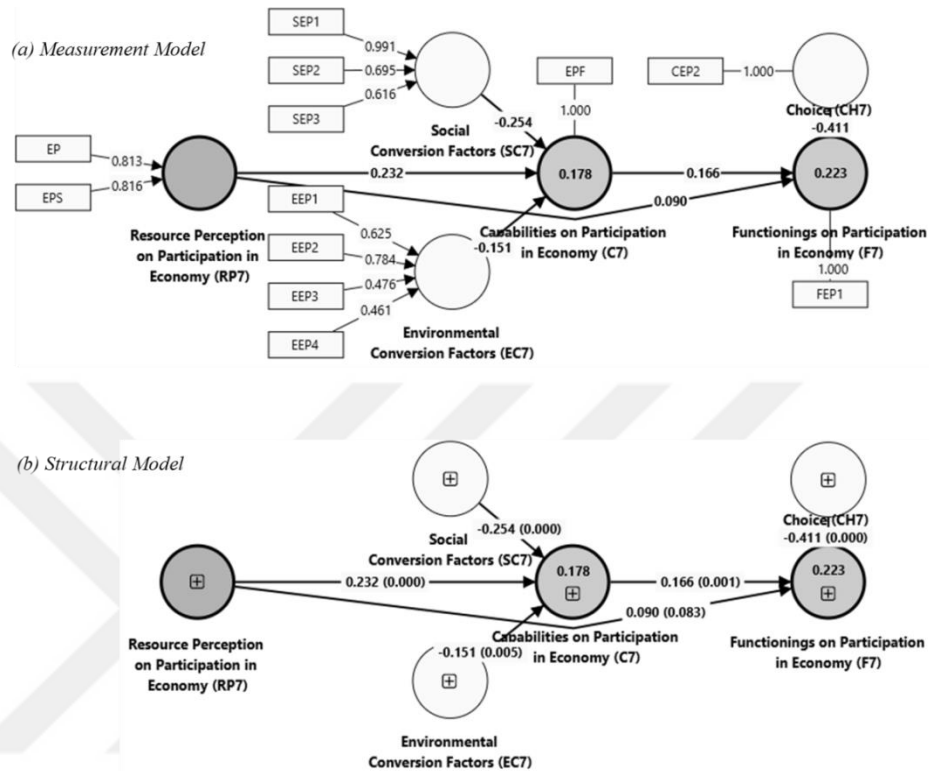


(b) Structural Model

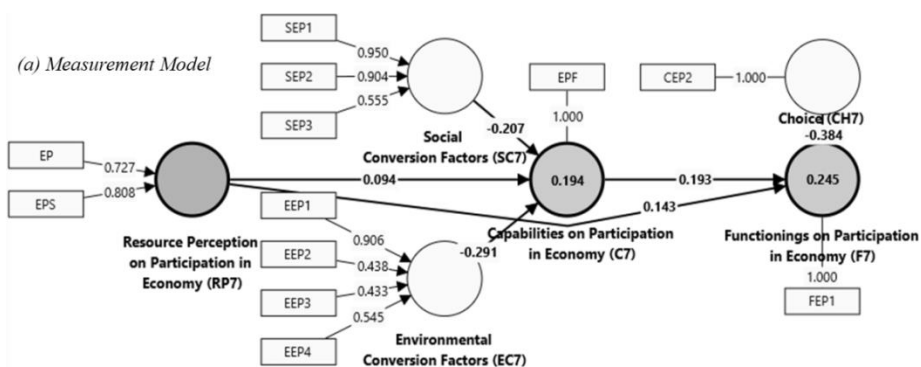


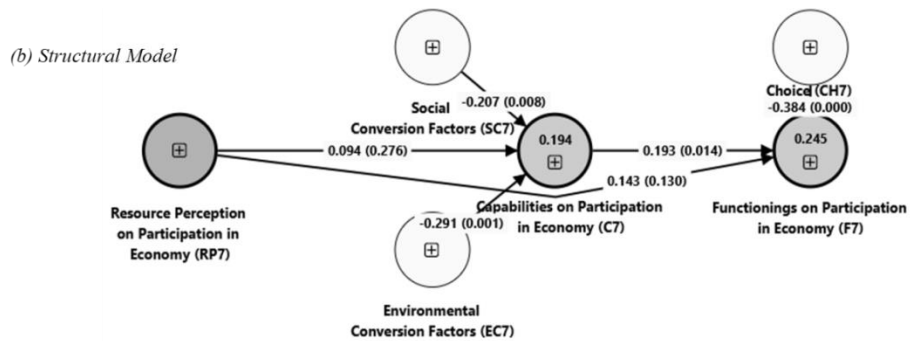


C13. The graphical output of the second-stage model of participation in economic activities sub-dimension showing (a) measurement and (b) structural models of the cluster with high WHDI

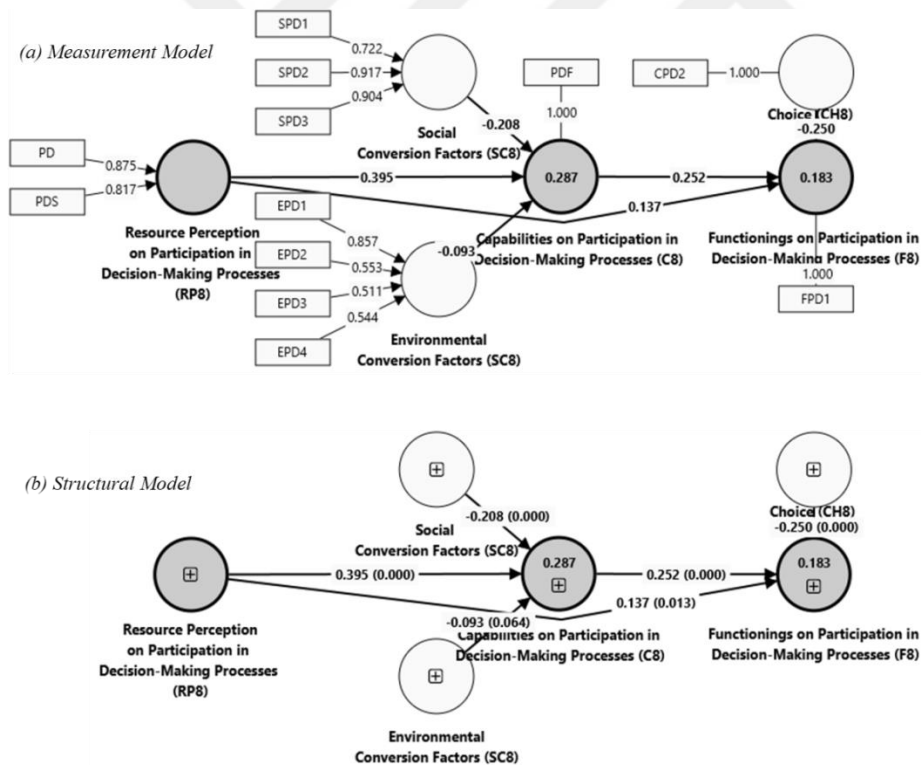


C14. The graphical output of the second-stage model of participation in economic activities sub-dimension showing (a) measurement and (b) structural models of the cluster with low WHDI

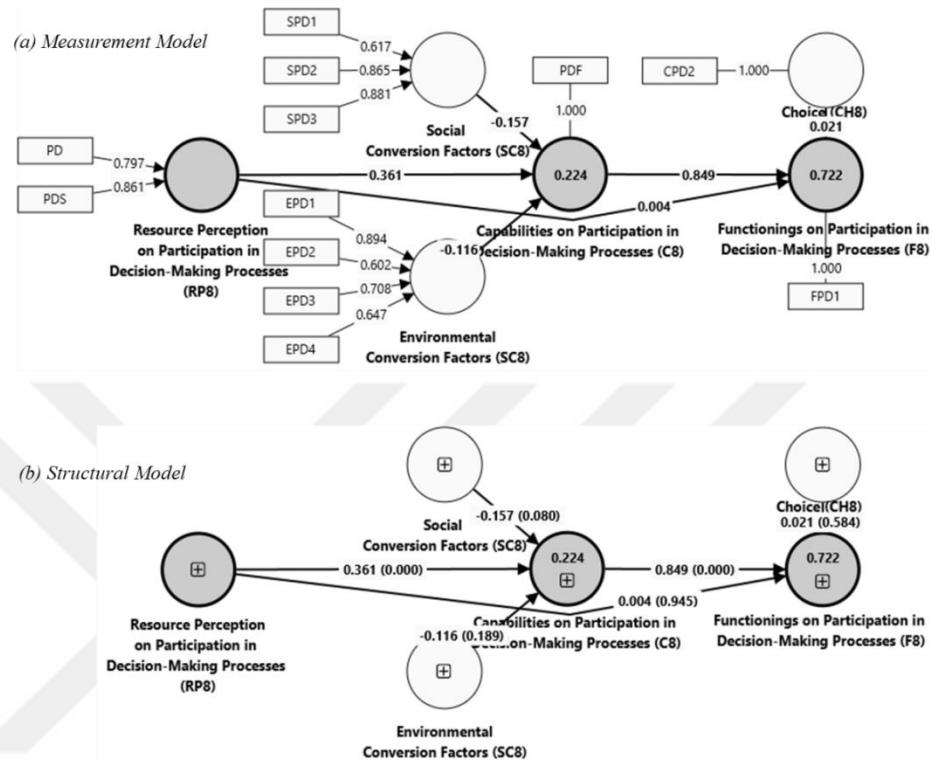




C15. The graphical output of the second-stage model of participation in decision-making processes sub-dimension showing (a) measurement and (b) structural models of the cluster with high WHDI



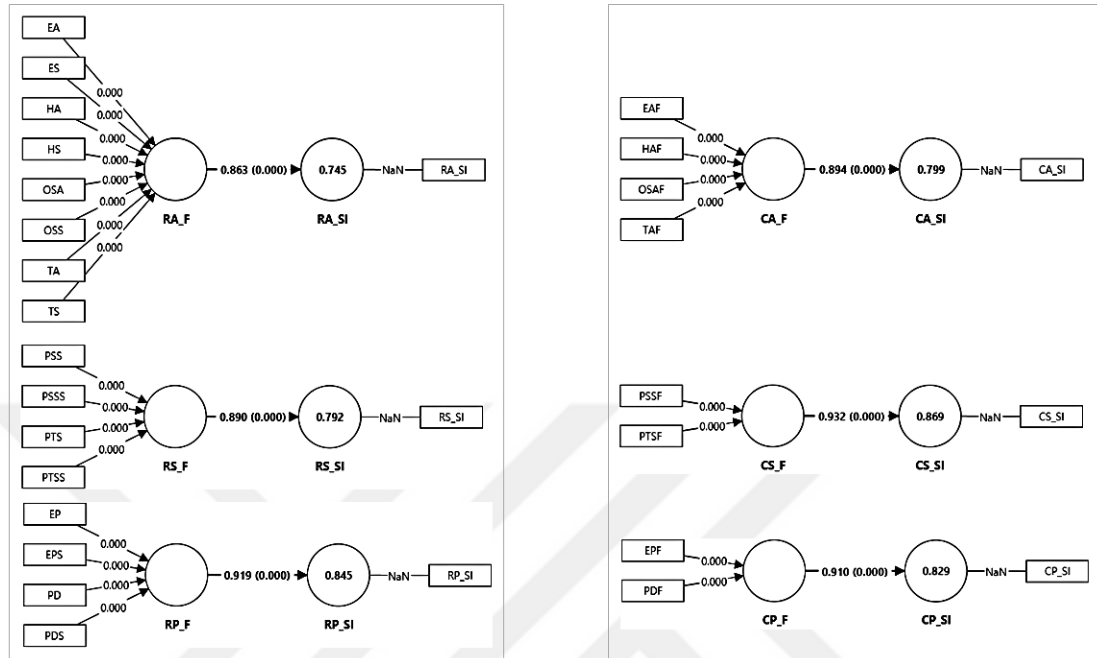
C16. The graphical output of the second-stage model of participation in decision-making processes sub-dimension showing (a) measurement and (b) structural models of the cluster with low WHDI





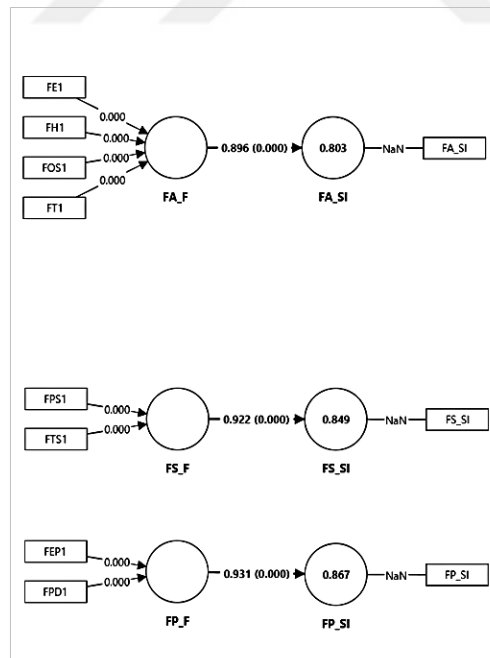
## D. Redundancy Analysis of Formative Constructs in Main Path Models

### D1. Redundancy analysis of main path model of high WHDI cluster



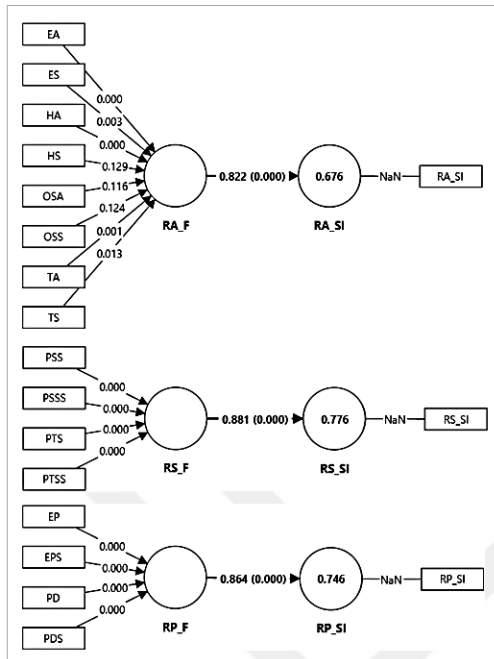
a) Redundancy analysis results for formative measured constructs under Resource Perception Dimension (resource perception on accessibility (RA\_F), on safety (RS\_F), and on participation (RP\_F))

b) Redundancy analysis results for formative measured constructs under Capabilities Dimension (capabilities on accessibility (CA\_F), on safety (CS\_F), and on participation (CP\_F))

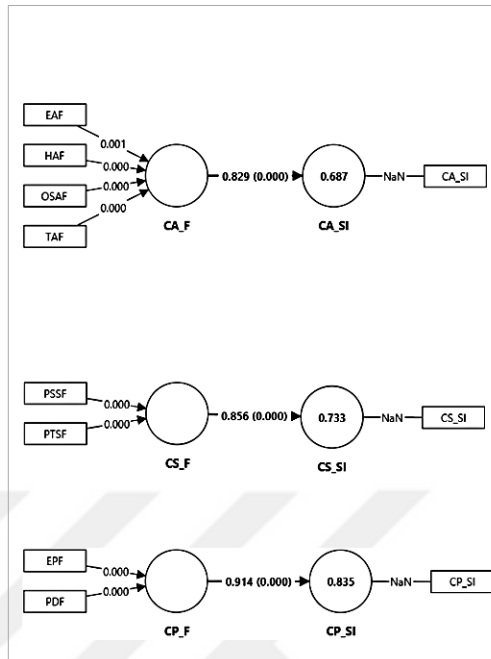


c) Redundancy analysis results for formative measured constructs under Functionings Dimension (functionings on accessibility (FA\_F), on safety (FS\_F), and on participation (FP\_F))

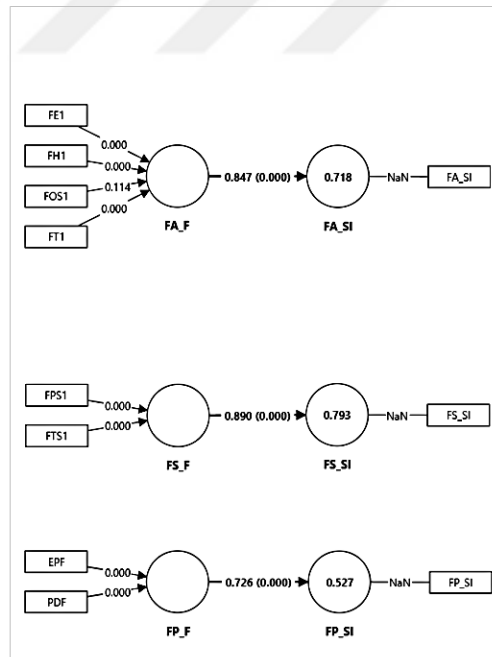
## D2. Redundancy analysis of main path model of low WHDI cluster



a) Redundancy analysis results for formatively measured constructs under Resource Perception Dimension (resource perception on accessibility (RA\_F), on safety (RS\_F), and on participation (RP\_F))



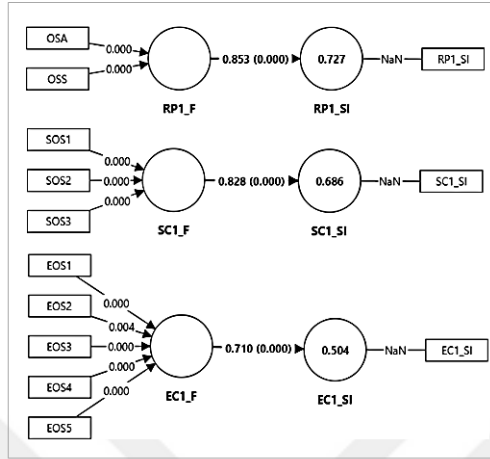
b) Redundancy analysis results for formatively measured constructs under Capabilities Dimension (capabilities on accessibility (CA\_F), on safety (CS\_F), and on participation (CP\_F))



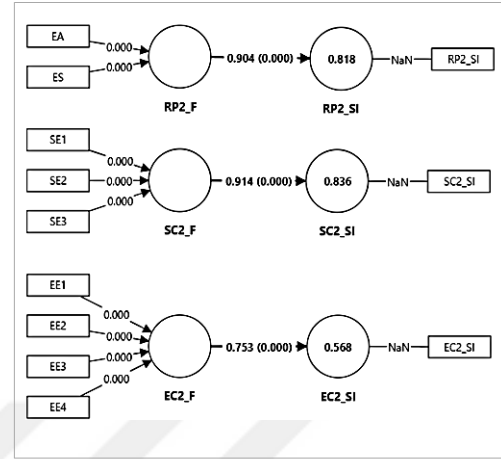
c) Redundancy analysis results for formatively measured constructs under Functionings Dimension (functionings on accessibility (FA\_F), on safety (FS\_F), and on participation (FP\_F))

## E. Redundancy Analysis of Formative Constructs in Second-Stage Path Models

### E1. Redundancy analysis of second-stage path model of high WHDI cluster

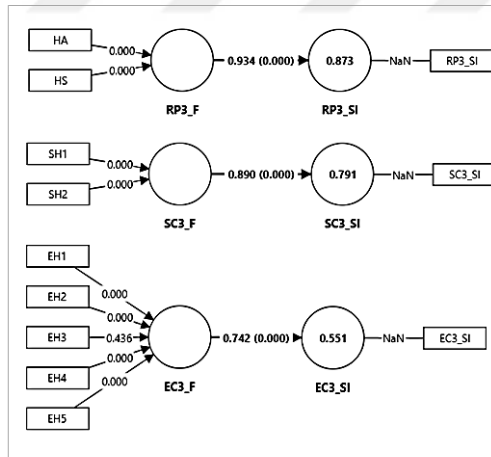


a) Redundancy analysis results for formatively measured constructs under access to public open spaces in high WHDI cluster (resource perception (RP1\_F), social conversion factors (SC1\_F), and environmental conversion factors (EC1\_F))

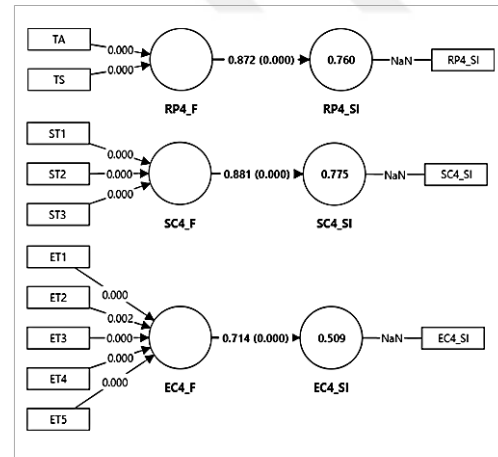


b) Redundancy analysis results for formatively measured constructs under access to education in high WHDI cluster (resource perception (RP2\_F), social conversion factors (SC2\_F), and environmental conversion factors (EC2\_F))

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
RP1_F → RP1_SI	0.853	0.853	0.016	54.232	0.000
SC1_F → SC1_SI	0.828	0.830	0.017	47.931	0.000
EC1_F → EC1_SI	0.710	0.714	0.026	26.841	0.000
RP2_F → RP2_SI	0.904	0.905	0.011	85.595	0.000
SC2_F → SC2_SI	0.914	0.916	0.012	78.087	0.000
EC2_F → EC2_SI	0.753	0.756	0.023	32.467	0.000

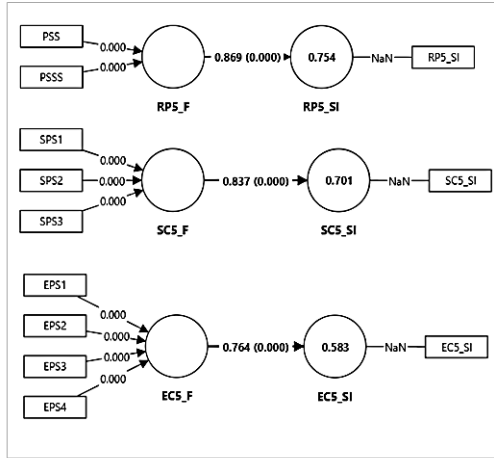


c) Redundancy analysis results for formatively measured constructs under access to healthy environment in high WHDI cluster (resource perception (RP3\_F), social conversion factors (SC3\_F), and environmental conversion factors (EC3\_F))

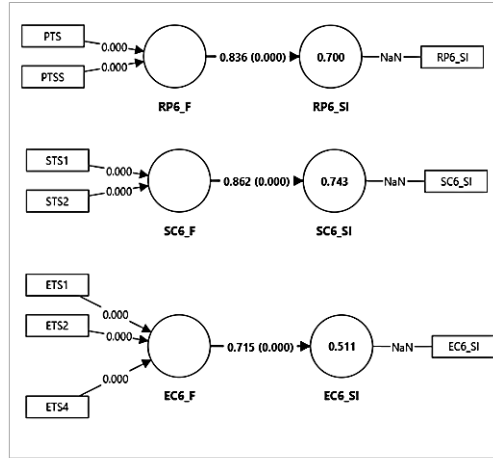


d) Redundancy analysis results for formatively measured constructs under access to mobility and transport in high WHDI cluster (resource perception (RP4\_F), social conversion factors (SC4\_F), and environmental conversion factors (EC4\_F))

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
RP3_F → RP3_SI	0.934	0.935	0.008	123.046	0.000
SC3_F → SC3_SI	0.890	0.890	0.013	69.563	0.000
EC3_F → EC3_SI	0.742	0.746	0.024	31.356	0.000
RP4_F → RP4_SI	0.872	0.872	0.014	64.332	0.000
SC4_F → SC4_SI	0.881	0.882	0.014	63.481	0.000
EC4_F → EC4_SI	0.714	0.716	0.030	23.960	0.000

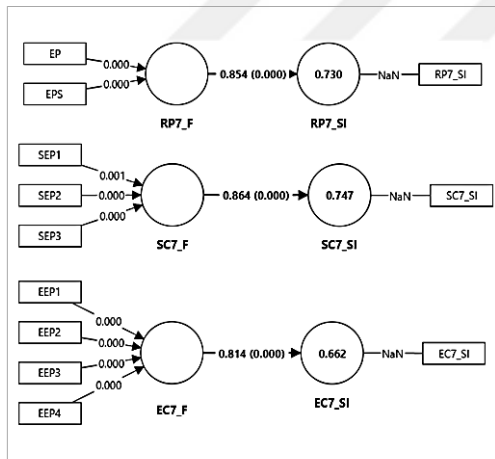


e) Redundancy analysis results for formatively measured constructs under safety in public open spaces in high WHDI cluster (resource perception (RP5\_F), social conversion factors (SC5\_F), and environmental conversion factors (EC5\_F))

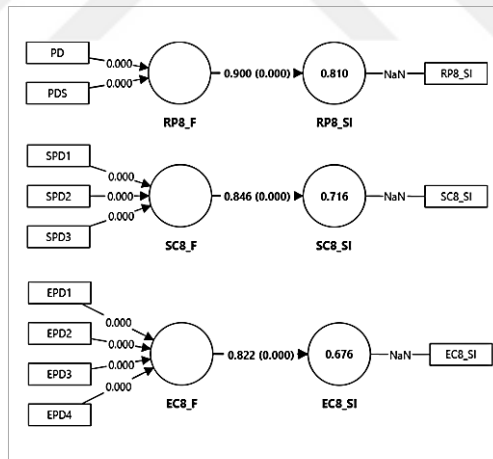


f) Redundancy analysis results for formatively measured constructs under access safety in public transportation in high WHDI cluster (resource perception (RP6\_F), social conversion factors (SC6\_F), and environmental conversion factors (EC6\_F))

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
RP5_F → RP5_SI	0.869	0.869	0.013	65.949	0.000
SC5_F → SC5_SI	0.837	0.839	0.017	49.737	0.000
EC5_F → EC5_SI	0.764	0.765	0.025	30.806	0.000
RP6_F → RP6_SI	0.836	0.837	0.016	53.291	0.000
SC6_F → SC6_SI	0.862	0.863	0.014	59.601	0.000
EC6_F → EC6_SI	0.760	0.762	0.021	36.176	0.000



g) Redundancy analysis results for formatively measured constructs under participation in economy in high WHDI cluster (resource perception (RP7\_F), social conversion factors (SC7\_F), and environmental conversion factors (EC7\_F))

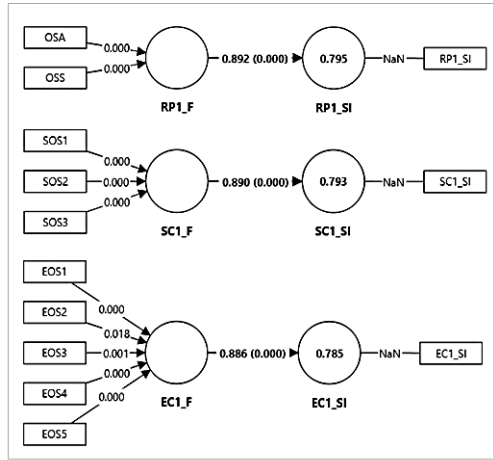


h) Redundancy analysis results for formatively measured constructs under participation in decision-making processes in high WHDI cluster (resource perception (RP8\_F), social conversion factors (SC8\_F), and environmental conversion factors (EC8\_F))

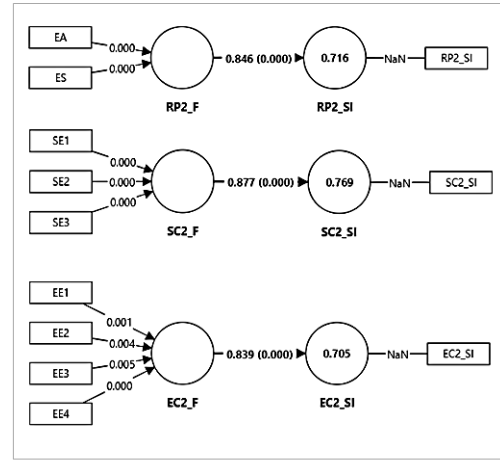
	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
RP7_F → RP7_SI	0.854	0.855	0.014	61.751	0.000
SC7_F → SC7_SI	0.864	0.864	0.017	50.582	0.000
EC7_F → EC7_SI	0.814	0.815	0.017	49.309	0.000
RP8_F → RP8_SI	0.900	0.901	0.011	85.036	0.000
SC8_F → SC8_SI	0.846	0.847	0.017	48.763	0.000
EC8_F → EC8_SI	0.822	0.824	0.016	52.836	0.000



## E2. Redundancy analysis of second-stage path model of low WHDI cluster

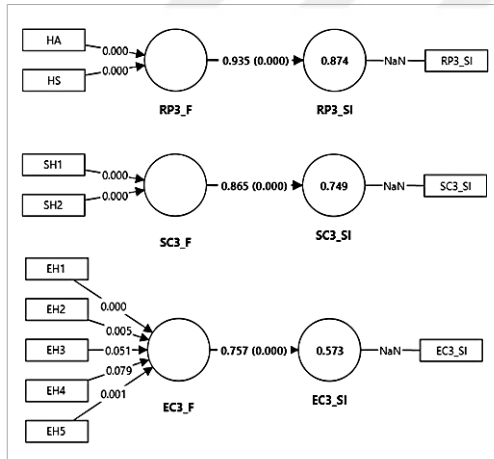


a) Redundancy analysis results for formatively measured constructs under access to public open spaces in low WHDI cluster (resource perception (RP1\_F), social conversion factors (SC1\_F), and environmental conversion factors (EC1\_F))

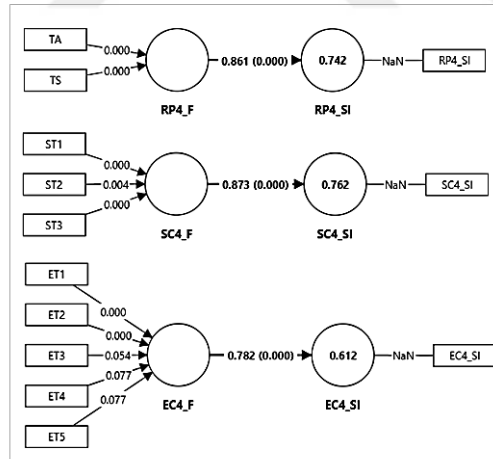


b) Redundancy analysis results for formatively measured constructs under access to education in low WHDI cluster (resource perception (RP2\_F), social conversion factors (SC2\_F), and environmental conversion factors (EC2\_F))

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
RP1_F → RP1_SI	0.892	0.891	0.024	36.673	0.000
SC1_F → SC1_SI	0.890	0.892	0.019	46.347	0.000
EC1_F → EC1_SI	0.886	0.890	0.017	52.621	0.000
RP2_F → RP2_SI	0.846	0.844	0.036	23.533	0.000
SC2_F → SC2_SI	0.877	0.879	0.026	33.907	0.000
EC2_F → EC2_SI	0.839	0.844	0.035	23.814	0.000

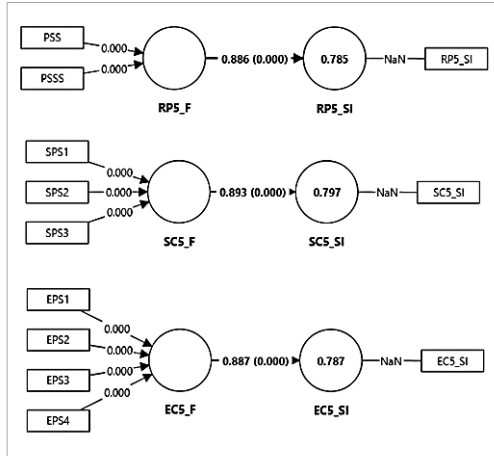


c) Redundancy analysis results for formatively measured constructs under access to healthy environment in low WHDI cluster (resource perception (RP3\_F), social conversion factors (SC3\_F), and environmental conversion factors (EC3\_F))

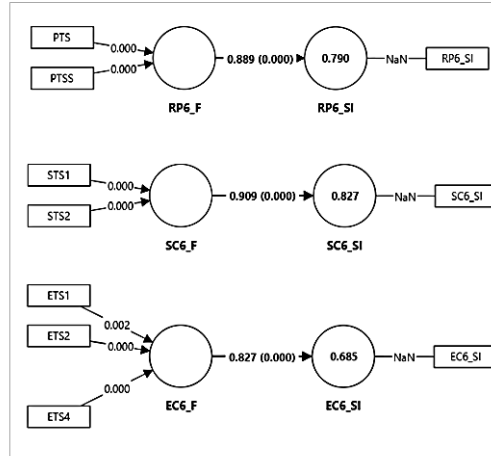


d) Redundancy analysis results for formatively measured constructs under access to mobility and transport in low WHDI cluster (resource perception (RP4\_F), social conversion factors (SC4\_F), and environmental conversion factors (EC4\_F))

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
RP3_F → RP3_SI	0.935	0.936	0.015	62.708	0.000
SC3_F → SC3_SI	0.865	0.865	0.025	34.143	0.000
EC3_F → EC3_SI	0.757	0.768	0.040	18.865	0.000
RP4_F → RP4_SI	0.861	0.862	0.025	34.535	0.000
SC4_F → SC4_SI	0.873	0.876	0.023	37.427	0.000
EC4_F → EC4_SI	0.782	0.791	0.035	22.669	0.000

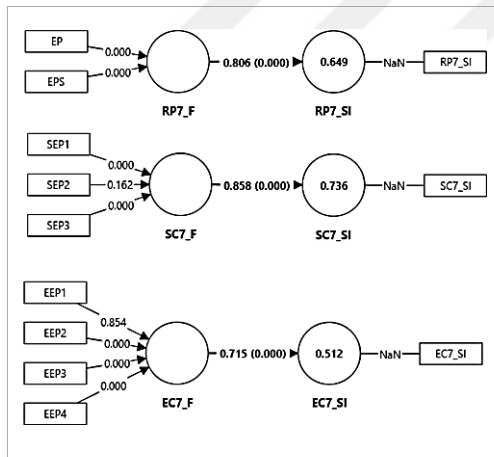


e) Redundancy analysis results for formatively measured constructs under *safety in public open spaces in low WHDI cluster* (resource perception (RP5\_F), social conversion factors (SC5\_F), and environmental conversion factors (EC5\_F))

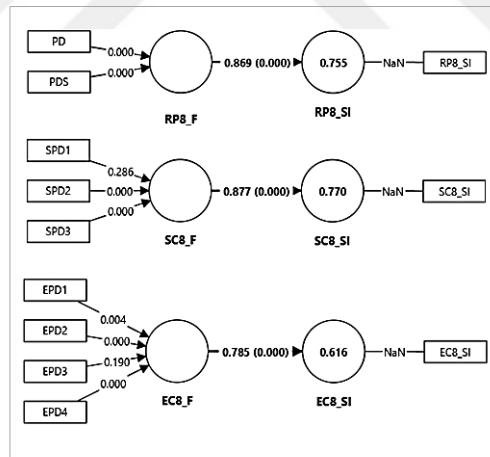


f) Redundancy analysis results for formatively measured constructs under *access safety in public transportation in low WHDI cluster* (resource perception (RP6\_F), social conversion factors (SC6\_F), and environmental conversion factors (EC6\_F))

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
RP5_F → RP5_SI	0.886	0.887	0.022	40.591	0.000
SC5_F → SC5_SI	0.893	0.894	0.023	38.409	0.000
EC5_F → EC5_SI	0.887	0.891	0.017	53.743	0.000
RP6_F → RP6_SI	0.889	0.889	0.021	42.243	0.000
SC6_F → SC6_SI	0.909	0.910	0.018	51.089	0.000
EC6_F → EC6_SI	0.827	0.830	0.033	24.764	0.000



g) Redundancy analysis results for formatively measured constructs under *participation in economy in low WHDI cluster* (resource perception (RP7\_F), social conversion factors (SC7\_F), and environmental conversion factors (EC7\_F))



h) Redundancy analysis results for formatively measured constructs under *participation in decision-making processes in low WHDI cluster* (resource perception (RP8\_F), social conversion factors (SC8\_F), and environmental conversion factors (EC8\_F))

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
RP7_F → RP7_SI	0.806	0.807	0.034	23.415	0.000
SC7_F → SC7_SI	0.858	0.859	0.025	34.232	0.000
EC7_F → EC7_SI	0.715	0.724	0.040	17.962	0.000
RP8_F → RP8_SI	0.869	0.869	0.026	33.190	0.000
SC8_F → SC8_SI	0.877	0.879	0.023	37.969	0.000
EC8_F → EC8_SI	0.785	0.791	0.039	20.284	0.000

## F. The Revised Formulas for the Indicators Used in the WHDI Calculation

$$(1') \dots (\%) = \frac{\text{The total number of single, divorced and widowed women in the neighborhood}}{\text{The total number of women in the neighborhood over the age of 15}} \times 100$$

$$(2') \dots (\%) = \frac{\text{The total number of illiterate women in the neighborhood}}{\text{The total number of women in the neighborhood over the age of 6}} \times 100$$

$$(3') \dots (\text{years}) = YS_{max} - \sum_l HS_l \times YS_l$$

where

$HS_l$  Proportion of the women population for which the level of education  $l$  is the highest level attained

$YS_l$  Official duration of the level of education  $l$

$YS_{max}$  Official duration of the maximum level of education

$$(4') \dots (\text{€}/\text{m}^2) = AP_{max} - AP_n$$

where

$AP_{max}$  The neighborhood with the highest average price per square meter in housing

$AP_n$  The average price per square meter in housing for neighborhoods  $n$

$$(5) \dots (\%) = \frac{\text{The sum of 0 – 14 and + 65 years old female population}}{\text{The number of female and male population 15 – 64 years old}} \times 100$$



G. Informed Consent Form of the Study

INFORMED CONSENT FORM

**Researcher:** Res. Assist. Müzeyyen Sağiroğlu  
(Supervisor: Assoc. Prof. Dr. Yücel Can Severcan)

**Research Title:** The Capabilities Approach to the Quality of Urban Life of Women:  
Measuring the Intra-Urban Disparities in the City of Amasya

**Researcher's Institution:** Middle East Technical University | Faculty of Architecture |  
Department of City and Regional Planning

Dear Women,

We invite you to participate in the research conducted by Res. Assist. Müzeyyen Sağiroğlu, who is currently pursuing her doctoral studies at the Middle East Technical University, Department of City and Regional Planning, within the scope of her PhD dissertation.

This Informed Consent Form aims to inform participants about the research. Please read the text carefully. If you would like to obtain further information about the study before providing your consent, you may contact the researcher, Müzeyyen Sağiroğlu, via telephone at +90 (ext: ) or by email at and communicate any questions you may have.

**What is the purpose of this study?**

Women living in cities may face numerous challenges, particularly regarding accessibility, safety, and participation, from the moment they step outside their homes. The field of City and Regional Planning aims to create more livable and healthier urban environments by investigating the causes of problems experienced by individuals in public spaces and developing solutions to address these issues.

This research, to which we invite you to participate, aims to identify the factors that restrict women's freedom to:

- Access to urban public open spaces,
- Access to education,
- Access to a healthy environment,
- Access to mobility and transport,
- Safety in public open spaces,
- Safety in public transport,
- Participation in the economy,
- Participation in decision-making processes

By Participating in this study, you can contribute to the planning of more livable urban environments and healthier, women-friendly cities.

How do we expect you to help us?

Participation in this study is voluntary. Women who wish to answer the survey questions must be residents of a neighborhood in the city center of Amasya and aged between 18 and 65 years. If there is no woman in your household who meets these criteria, please refrain from answering the survey and return it to the researcher in the form you received.

By signing this form, female participants aged 18-65 are expected to answer the questions in the survey accurately and completely. The estimated time for completing the survey is approximately 20-25 minutes. The study generally does not include questions that are of a personal or distressing nature. However, participants have the freedom to withdraw from the study at any time if they wish.

How will the collected data be used?

The data for this study will be collected through a survey method from approximately 470 women aged 18-65, residing in neighborhoods in the city center of Amasya. The obtained information will only be used for academic purposes.

The results of the study will be accessible in 2025 through the YÖK National Thesis Center (<https://tez.yok.gov.tr/UlusalTezMerkezi/>) under the author name Müzeyyen Sağiroğlu.

How will the security of the data you provide be ensured?

The survey does not request any personally identifying information or institutional identifiers. Your responses to the survey will be kept completely confidential and will be evaluated collectively with the responses of other participants by the researcher. Any information you provide within the scope of the study will remain confidential with the researcher.

How will you participate in the study?

If you wish to participate in the study, you may proceed to answer the survey questions after signing the form. We would like to thank all women who contribute to the production of scientific knowledge by participating in this study.

If you do not wish to participate in the study or if there is no woman aged 18-65 in your household to answer the survey, please do not mark anything on the documents. One day after the documents are delivered to you, they will be collected from you by the researcher. We kindly ask you to place all documents into the sealed envelope provided and return it to the researcher.

**I have read the above information and I voluntarily agree to participate in this study.**  
(Please return the completed and signed form to the researcher.)

Name Date: ... / ... / 20... Signature



## H. Questionnaire Form of the Study

1.6. What type of work schedule do you follow?

☐ I am not working in any job  
☐ Full-time  
☐ Part-time  
☐ Flexible schedule  
☐ Seasonal

1.7. What type of payment do you receive?

☐ I do not receive any payment  
☐ I am paid based on the hours I work  
☐ I receive daily wages  
☐ I receive weekly wages  
☐ I receive monthly wages

1.8. Based on your household's monthly total income, which income group do you consider your family belongs to? (These categories are based on the Turkish Confederation of Trade Unions' poverty threshold data for June 2023)

☐ Low-income family (0 – 35,000 TL)  
☐ Middle-income family (35,000 – 80,000 TL)  
☐ High-income family (+80,000 TL)

1.9. How many people live in your household (including yourself)? \_\_\_\_\_

1.10. What is your housing situation?

☐ Own house  
☐ Paying rent, living in someone else's house  
☐ Paying rent, living in a guesthouse or dormitory  
☐ Not paying rent, living in a relative's house  
☐ Not paying rent, living in a relative's house  
☐ Not paying rent, living in a guesthouse or dormitory

1.11. Please indicate the number of vehicles in your household (car, motorcycle, bicycle):  
\_\_\_\_\_ car(s), \_\_\_\_\_ motorcycle(s), \_\_\_\_\_ bicycle(s)

1.12. What is your marital status? ☐ Never married ☐ Married ☐ Widowed ☐ Divorced

1.13. Do you have any children? If yes, how many children do you have? \_\_\_\_\_

If you do not have children, please leave the following question blank.

1.13.1. Please indicate the ages of your children: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

1.14. Is there an elderly or ill person in your household in need of care? Yes / No

1.15. Please indicate the amount of time you spend on household chores during weekdays and weekends (including childcare, elderly/ill care, house cleaning, meal preparation, and all other household tasks).

Weekdays (average):	Weekends (average):
<input type="checkbox"/> I do not spend any time <input type="checkbox"/> 0-2 hours <input type="checkbox"/> 2-4 hours <input type="checkbox"/> 4-6 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> I do not spend any time <input type="checkbox"/> 0-2 hours <input type="checkbox"/> 2-4 hours <input type="checkbox"/> 4-6 hours <input type="checkbox"/> More than 12 hours

1.16. How often do you receive assistance with household chores from others (such as acquaintances or paid cleaners)?

☐ Never  
☐ Daily  
☐ Once a week  
☐ Once a month  
☐ Once a year  
☐ Other (please specify) \_\_\_\_\_

Page 2  
Please turn the page for the next section. →

### The Capabilities Approach to the Quality of Urban Life of Women: Measuring the Intra-Urban Disparities in the City of Anasya

#### Questionnaire Form

Thank you for participating in the survey. This survey is designed to be completed by women aged between 18 and 65. The primary aim of this survey is to measure the quality of urban life of women living in urban neighborhoods in Anasya city center. The study seeks to identify the problems women encounter in urban life regarding accessibility, safety, and participation, as well as the factors that have relationships to their quality of urban life. Therefore, your complete and honest responses will play a crucial role in planning and designing urban environments with higher quality of life for women.

Completing the survey will take approximately 20-25 minutes. Please answer the questions by considering your own circumstances along with the conditions of the society and environment you live in. All your responses will be treated with strict confidentiality.

Thank you very much for your valuable participation.

**Müzeyyen Sağdıroğlu**  
Research Assistant

#### 1st PART: General Information

This section aims to understand the demographic and socio-economic conditions of the participants, as well as their household responsibilities.

- 1.1. Which neighborhood do you currently live in? \_\_\_\_\_
- 1.2. How many years have you lived in this neighborhood? \_\_\_\_\_
- 1.3. How old are you? \_\_\_\_\_
- 1.4. What is your educational background? (Please indicate the highest level of education you have completed.)

- ☐ Illiterate  
☐ Literate, but not completed any formal education  
☐ Primary school graduate  
☐ Middle school graduate  
☐ High school graduate  
☐ Bachelor's degree graduate  
☐ Master's degree graduate  
☐ Doctoral degree graduate

#### 1.5. What is your employment status?

- ☐ I am not working in any job  
☐ Civil servant  
☐ Worker  
☐ Self-employed  
☐ Paid employee  
☐ Student – not working  
☐ Student – working  
☐ Retired – not working  
☐ Retired – working  
☐ Other (please specify) \_\_\_\_\_

Page 1  
Please turn the page for the next section. →

### 2nd PART: Women's Access to Public Open Spaces

The questions in this section are intended to gather information about your **freedom of access to urban public open spaces**. Urban public open spaces should be understood as areas that are publicly owned and freely accessible to everyone, such as parks, gardens, playgrounds, and riverbanks.

- 2.1. In my neighborhood, there are urban open spaces available for people to use.  
☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree
- 2.2. I find the urban open spaces in my neighborhood to be sufficient.  
☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree
- 2.3. As a woman, to what extent do you feel you have the freedom to access the urban open spaces in your neighborhood?  
☐ Strongly free ☐ Free ☐ Neither free nor not free ☐ Not free ☐ Strongly not free
- 2.4. Please indicate the **personal factors** that you believe restrict your access to urban open spaces in your neighborhood. (You may select multiple options.)
- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Presence of health issues     | <input type="checkbox"/> Childcare responsibilities         | <input type="checkbox"/> Safety concerns         |
| <input type="checkbox"/> Participation in working life | <input type="checkbox"/> Elderly/sick care responsibilities | <input type="checkbox"/> Personal unwillingness  |
| <input type="checkbox"/> Presence of education life    | <input type="checkbox"/> Intensity of housework             | <input type="checkbox"/> Other (please specify): |
| <input type="checkbox"/> Family prevention             | <input type="checkbox"/> Limited social environment         |  |

Please read the statements below carefully. Indicate the extent to which you agree with each statement.

- Please answer the following three questions by considering the **general mindset of the people** in your neighborhood.
- |  | Strongly Agree           | Agree                    | Neither Agree<br>Nor Disagree | Disagree                 | Strongly Disagree        |
|--|--------------------------|--------------------------|-------------------------------|--------------------------|--------------------------|
| 2.5. It is not well-regarded for women to be alone in urban public open spaces.    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.6. It is expected that women spend their free time at home rather than outdoors. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.7. The urban public open spaces in my neighborhood are safe.                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> | <input type="checkbox"/> |

• When considering the **environmental factors** that restrict women's access to urban open spaces:

- |   |                          |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 2.8. The urban public open spaces in my neighborhood are close to my home, and it is easy to access them.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.9. The urban public open spaces in my neighborhood are small in size.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.10. The infrastructure of the urban public open spaces in my neighborhood is adequate. (e.g., lighting, playgrounds, walking paths, seating areas, fountains, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.11. There is waste, noise, or air pollution in the urban green spaces in my neighborhood.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.12. The urban open spaces in my neighborhood are designed with mothers and children in mind.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

• Please indicate the extent to which you agree with the following statements, considering your preferences.

- |   |                          |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 2.13. I make use of the urban public open spaces in my neighborhood | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.14. I prefer not to use the urban open spaces in my neighborhood. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Page 3  
Please turn the page for the next section. →

### 3rd PART: Women's Access to Education

The questions in this section are intended to gather information about your **freedom to access education**. Please answer considering the educational opportunities available in your city, such as public education centers, evening art schools, or courses, as well as your opportunity to continue to the next level of education (e.g., if you have completed high school, the possibility of continuing to higher education).

- 3.1. There are educational services available for women to benefit from in the place where I live.  
☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree
- 3.2. The educational services available for women are sufficient in the place where I live.  
☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree
- 3.3. As a woman, to what extent do you feel you have the freedom to benefit from the educational services available in your area?  
☐ Strongly free ☐ Free ☐ Neither free nor not free ☐ Not free ☐ Strongly not free
- 3.4. Please indicate the **personal factors** that you believe restrict your participation in the educational services available in your area. (You may select multiple options.)
- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Presence of health issues     | <input type="checkbox"/> Childcare responsibilities         | <input type="checkbox"/> Family prevention       |
| <input type="checkbox"/> Participation in working life | <input type="checkbox"/> Elderly/sick care responsibilities | <input type="checkbox"/> Personal unwillingness  |
| <input type="checkbox"/> Poor economic conditions      | <input type="checkbox"/> Intensity of housework             | <input type="checkbox"/> Other (please specify): |

Please read the statements below carefully. Indicate the extent to which you agree with each statement.

- Please answer the following three questions by considering the **general mindset of the people** in your neighborhood.
- |  | Strongly Agree           | Agree                    | Neither Agree<br>Nor Disagree | Disagree                 | Strongly Disagree        |
|--|--------------------------|--------------------------|-------------------------------|--------------------------|--------------------------|
| 3.5. It is not well-regarded for girls to receive an education/go to school.                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.6. It is believed that women should not continue their education after marriage.                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.7. It is expected that girls contribute to the family budget rather than continue their education. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> | <input type="checkbox"/> |

• When considering the **environmental factors** that restrict women's access to education services:

- |   |                          |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 3.8. There are insufficient educational centers available for me to benefit from in the surrounding area.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.9. The educational centers in the surrounding area are close to my home / easily accessible.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.10. The services such as daycare, daytime care centers, and kindergartens for women with children in my neighborhood are insufficient.                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.11. The institutions providing nursing homes and elderly/sick care services for women who are living with a disability/illness in my area are sufficient. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

• Please indicate the extent to which you agree with the following statements, considering your preferences.

- |  |                          |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 3.12. I have access to the educational services and benefit from them. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.13. I prefer not to benefit from the educational services.           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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Please turn the page for the next section. →



#### 4<sup>th</sup> PART: Women's Access to a Healthy Environment

The questions in this section aim to gather information about your **freedom to access a healthy environment**. Access to a clean and healthy environment is a fundamental human right. A healthy environment refers to one where human health is not negatively impacted, with no air, water, soil, waste, or noise pollution, and where adequate housing that is suitable for human life is provided.

4.1. The neighborhood where I live is clean and a place in which environmental health is protected.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

4.2. I find the neighborhood I live in to be sufficient in terms of being a clean and healthy place where environmental health is protected.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

4.3. To what extent do you believe you have the freedom to live in a clean, healthy, and sustainable place where environmental health is protected?

☐ Strongly free ☐ Free ☐ Neither free nor not free ☐ Not free ☐ Strongly not free

4.4. Please indicate the **personal factors** that you believe restrict your ability to live in a clean and healthy environment. (You may select multiple reasons).

- ☐ Poor economic conditions ☐ close proximity of current home to work/school  
☐ Sense of belonging to relatives / acquaintances ☐ Reluctance of family  
☐ Sense of belonging to current neighborhood ☐ Personal unwillingness  
☐ Other (please specify): \_\_\_\_\_

Please read the statements below carefully. Indicate the extent to which you agree with each statement.

• Please answer the following two questions by considering the **general mindset of the people** in your neighborhood.

	Strongly Agree	Agree	Not Disagree	Disagree	Strongly Disagree
4.5. It is expected to live in nearby houses due to family and kinship ties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.6. Newly married couples are told that they should settle in a nearby house in the same neighborhood as their families.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

• When considering the **environmental factors** that restrict women's access to a healthy environment:

4.7. There is intense air pollution in the place where I live.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.8. There is continuous access to clean drinking water and sewerage services in the place where I live.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.9. It is very difficult to purchase houses in neighborhoods with a healthy environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.10. The green spaces in the place where I live are adequate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.11. In the place where I live, the population density is high, the streets are narrow, and the buildings are without gardens and very close to each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

• Please indicate the extent to which you agree with the following statements, considering your preferences.

4.12. I live in a clean and healthy environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.13. As a personal preference, I would not want to leave my current environment for a cleaner and healthier one.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Please turn the page for the next section. →

#### 5<sup>th</sup> PART: Women's Access to Mobility and Transport

The questions in this section are intended to gather information about your **freedom of access to mobility and transport**. It should be considered in terms of public transport, cycling, and walking.

5.1. In the place where I live, the means of transportation are available.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

5.2. In the place where I live, I find the means of transportation sufficient.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

5.3. As a woman, to what extent do you believe you have the freedom to benefit from the available transportation options in your area?

☐ Strongly free ☐ Free ☐ Neither free nor not free ☐ Not free ☐ Strongly not free

5.4. Please indicate the **personal factors** that you think limit your access to mobility and transport (e.g., the use of public transport, biking, and walking) in the place where you live. (You may check multiple options.)

- ☐ Presence of health issues ☐ Having little child ☐ Personal unwillingness  
☐ Safety concerns ☐ Carrying heavy loads ☐ Long distance to the destination  
☐ Visiting multiple places ☐ Lack of time ☐ Other (please specify): \_\_\_\_\_

Please read the statements below carefully. Indicate the extent to which you agree with each statement.

• Please answer the following three questions by considering the **general mindset of the people** in your neighborhood.

	Strongly Agree	Agree	Not Disagree	Disagree	Strongly Disagree
5.5. If there is a car at home, it is generally used by men / It is considered that men should use it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.6. Women are expected to explain in detail who they are with and where they are during the day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.7. It is expected that women go out not alone, but usually with someone or with their family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

• When considering the **environmental factors** that restrict women's access to mobility and transport:

5.8. Public transportation services in the place where I live are safe for women in the evening hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.9. In the place where I live, the frequency of public transportation services decreases in the evening hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.10. In the place where I live, it is easy to access any desired location in the city using public transportation services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.11. Streets and green spaces in the place where I live are not safe for women.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.12. In the place where I live, it is safe for women to access places on foot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

• Please indicate the extent to which you agree with the following statements, considering your preferences.

5.13. I have access to mobility and transport and can reach my desired destinations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.14. I do not prefer to access to means of transportation in the place where I live.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Please turn the page for the next section. →

## 6<sup>th</sup> PART: Women's Safety in Public Open Spaces

*This section of the questions is designed to gather information about your freedom to be safe in public open spaces such as streets, green areas, and squares.*

1. The streets, green spaces, and squares in my neighborhood are safe for women.
- ☐ Strongly agree    ☐ Agree    ☐ Neither agree nor disagree    ☐ Disagree    ☐ Strongly disagree
2. I find the level of safety in the streets, green spaces, and squares in my neighborhood to be sufficient.
- ☐ Strongly agree    ☐ Agree    ☐ Neither agree nor disagree    ☐ Disagree    ☐ Strongly disagree
3. As a woman, how free do you feel to be in the streets, open and green spaces, and squares in your neighborhood at any time of the day while feeling safe?
- ☐ Strongly free    ☐ Free    ☐ Neither free nor not free    ☐ Not free    ☐ Strongly not free
4. Please check **the personal factors** you think contribute to feeling unsafe in streets, green spaces, and squares in your area. (You can check *multiple items*.)
- ☐ Unconventional clothing choice    ☐ Being single    ☐ Not feeling sense of belonging to place
- ☐ Being outside during the evening hours    ☐ Fear of harassment    ☐ Having few acquaintances in the area
- ☐ Not walking for a long period    ☐ Walking alone    ☐ Other (please specify): \_\_\_\_\_

Please read the statements below carefully. Indicate the extent to which you agree with each statement.

- Please answer the following three questions by considering the general mindset of the people in your neighborhood.

**the general mindset of the people in your neighborhood.**

6.5. It is frowned upon for women to be outside after a certain hour / Those who are outside are viewed negatively.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.6. It is expected that the clothes women choose to wear outside are modest.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.7. It is considered safer for women to be at home rather than on the street.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- When considering the environmental factors that prevent women from feeling safe in public open spaces:

<b>6.8.</b>	The lighting in the streets, open spaces, and green areas in my neighborhood is adequate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>6.9.</b>	The streets, green areas, and squares in my neighborhood are safe for women.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>6.10.</b>	The streets, green areas, and squares in my neighborhood become very deserted at certain times.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>6.11.</b>	The streets in my neighborhood are narrow, dark, and intimidating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Please indicate the extent to which you agree with the following statements, considering your preferences.

[illegible]

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Please turn the page for the next section. →

## 7<sup>th</sup> PART: Women's Safety in Public Transport

The questions in this section are intended to gather information about your **freedom to be safe in public transportation**.

1. In the place where I live, using public transportation is safe for women.  
☐ Strongly agree    ☐ Agree    ☐ Neither agree nor disagree    ☐ Disagree    ☐ Strongly disagree
2. In the place where I live, I find the level of safety on public transportation to be sufficient.  
☐ Strongly agree    ☐ Agree    ☐ Neither agree nor disagree    ☐ Disagree    ☐ Strongly disagree
3. As a woman, to what extent do you feel you have the freedom to use public transportation at any time without concerns about safety or fear of harassment?  
☐ Strongly agree    ☐ Agree    ☐ Neither agree nor disagree    ☐ Disagree    ☐ Strongly disagree
4. Please indicate the **personal factors** you believe contribute to feeling unsafe on public transportation in the place where you live. (You may select multiple items.)
  - ☐ Fear of harassment
  - ☐ Unconventional clothing choice
  - ☐ Concern about using public transport in the evening
  - ☐ Concern about being the only female passenger
  - ☐ Concern about traveling alone
  - ☐ Other (please specify):

Please read the statements below carefully. Indicate the extent to which you agree with each statement.

- Please answer the following two questions by considering the general mindset of the people in your neighborhood.

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<b>7.5.</b> It is considered asking for trouble for women to walk on the street or use public transportation late at night.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>7.6.</b> Women who board public transportation with immodest clothing are subject to negative comments, and it is believed that they deserve whatever	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- When considering the environmental factors that restrict women's safety on public transportation:

[illegible]

- Please indicate the extent to which you agree with the following statements, considering your preferences.

[illegible]

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Please turn the page for the next section. →

### 8th PART: Women's Participation in Economic Activities

The questions in this section are intended to gather information about your **freedom to participate in the economic activities**.

8.1. In the place where I live, opportunities are provided for women to participate in the economic activities.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

8.2. I find the opportunities provided for women to participate in the economic activities in the place where I live to be sufficient.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

8.3. As a woman, to what extent do you feel you have the freedom to participate in the economic activities without any restrictions?

☐ Strongly free ☐ Free ☐ Neither free nor not free ☐ Not free ☐ Strongly not free

8.4. Please indicate the **personal factors** you believe limit your active participation in the economic activities (Even if you are employed, consider the reasons that prevent you from working under better conditions when answering this question.) (You may select multiple items.)

- ☐ Presence of health issues ☐ Having little child ☐ Family prevention  
☐ Insufficient education ☐ Elderly/sick care responsibilities ☐ Personal unwillingness  
☐ Insufficient wages not compensating ☐ Intensity of housework ☐ Religious constraints  
☐ the labor and money spent ☐ Fear of harassment at work ☐ Other (please specify):  
☐ Limited social environment

Please read the statements below carefully. Indicate the extent to which you agree with each statement.

• Please answer the following three questions by considering the **general mindset of the people** in your neighborhood.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
8.5. It is accepted that men should work and women should stay at home.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.6. It is considered appropriate for women to stay at home and take care of their children after getting married or having a child, rather than working.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.7. It is accepted that even if women work, household responsibilities and child care are considered to be their responsibility.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

• When considering the **environmental factors** that restrict women's participation in the economy in your city:

8.8. In the place where I live, job opportunities are adequate, and women can easily find employment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.9. In the place where I live, services such as daycare centers and nurseries that would support women's active participation in the workforce are adequate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.10. In the place where I live, concerns about harassment while commuting or at work prevent women from participating in the paid labor force.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.11. The distance between my place of residence and the workplace is far.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

• Please indicate the extent to which you agree with the following statements, considering your preferences.

8.12. I am currently part of the workforce.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.13. As a personal choice, I prefer not to participate in the workforce.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 9th PART: Women's Participation in Decision-Making Processes

The questions in this section are intended to gather information about your **freedom to participate in decision-making processes**. Providing opportunities for democratic participation at the local level is crucial. Citizens' participation in civil society organizations, municipal council meetings, specialized committee meetings, and other decision-making processes, as well as their right to make complaints and have their voices heard in decisions regarding urban life, should be considered as an essential part of this process.

9.1. In the city where I live, opportunities are provided for women to participate in decision-making processes.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

9.2. I find the opportunities provided for women to participate in decision-making processes in the city where I live to be sufficient.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

9.3. As a woman, to what extent do you feel you have the freedom to participate in decision-making processes in your city without any restrictions?

☐ Strongly free ☐ Free ☐ Neither free nor not free ☐ Not free ☐ Strongly not free

9.4. Please indicate the **personal factors** you believe limit your participation in decision-making processes in the city. (You may select multiple items.)

- ☐ Insufficient education ☐ Having little child ☐ Family prevention  
☐ Insufficient knowledge ☐ Intensity of housework ☐ Personal unwillingness  
☐ Intensity of working life ☐ Religious constraints ☐ Other (please specify):  
☐ Limited social environment

Please read the statements below carefully. Indicate the extent to which you agree with each statement.

• Please answer the following three questions by considering the **general mindset of the people** in your neighborhood.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
9.5. In the place where I live, women's opinions are not considered as valuable as men's.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.6. In the place where I live, men are considered the main decision-makers, and their opinions are implemented.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.7. In the place where I live, women's participation in civil society organizations and political activities is not well received.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

• When considering the **environmental factors** that restrict women's participation in decision-making processes:

9.8. In the place where I live, efforts to involve women in participation processes are adequate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.9. In the place where I live, there are no women's organizations (associations, foundations, unions, chambers, professional organizations, and associations).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.10. In the place where I live, the municipality does not develop urban amenities and services for women (such as safe transportation, child and elderly/sick care centers, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.11. In the place where I live, the municipality considers women's opinions before making decisions in urban planning and design.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

• Please indicate the extent to which you agree with the following statements, considering your preferences.

9.12. I participate in decision-making processes in the city.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.13. As a personal choice, I prefer not to participate in decision-making processes in the city.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 10<sup>th</sup> PART: General Evaluation

Please read the statements below carefully. Indicate the extent to which you agree with each statement.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
10.1. I believe that the availability and sufficiency of urban resources affect women's freedom of access in the place where I live.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.2. I believe that social norms affect women's freedom of access in the place where I live.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.3. I believe that environmental factors affect women's freedom of access in the place where I live.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.4. I believe that public open spaces and public transport are safe for women in my living environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.5. I believe that social norms affect women's freedom to be safe in my neighborhood.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.6. I believe that environmental factors affect women's freedom to be safe in my neighborhood.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.7. I believe that the opportunities provided for women to participate in economic activities and decision-making processes are sufficient in the city.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.8. I believe that social norms affect women's freedom to participate in economic activities and decision-making processes in the place where I live.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.9. I believe that environmental factors affect women's freedom to participate in economic activities and decision-making processes in the place where I live.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please submit the survey after ensuring that all questions have been answered.  
Thank you very much for your valuable help!

## I. METU Human Subjects Ethics Committee Approval Form

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ  
APPLIED ETHICS RESEARCH CENTER



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16 AGUSTOS 2023

Konu: Değerlendirme Sonucu

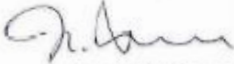
Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (IAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

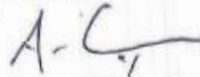
Sayın Yücel Can Severcan

Danışmanlığımı yürüttüğünüz Arş. Gör. Müzeyyen Sağıroğlu'nun "**Kentsel Mahallelerde Yaşayan Kadınların Yapabilirlikler Yaklaşımı Temelli Kentsel Yaşam Kalitesi: Amasya Kentinde Kent İçi Farklılıkların**" başlıklı araştırmanız İnsan Araştırmaları Etik Kurulu tarafından uygun görülerek **0386-ODTÜİAEK-2023** protokol numarası ile onaylanmıştır.

Bilgilerinize saygılarımla sunarım.

  
Prof. Dr. Ş. Halil TURAN  
Başkan

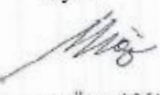
  
Prof. Dr. İ. Semih AKÇOMAK  
Üye

  
Doç. Dr. Ali Emre Turgut  
Üye

Doç. Dr. Şerife SEVİNÇ  
Üye

Doç. Dr. Murat Perit ÇAKIR  
Üye

  
Dr. Öğretim Üyesi Süreyya ÖZCAN KABASAKAL  
Üye

  
Dr. Öğretim Üyesi Müge GÜNDÜZ  
Üye





## J. Visual Representations of Neighborhoods in the High WHDI Cluster

Hızırpaşa Neighborhood



Hacı İlyas Neighborhood





Şeyhcui Neighborhood

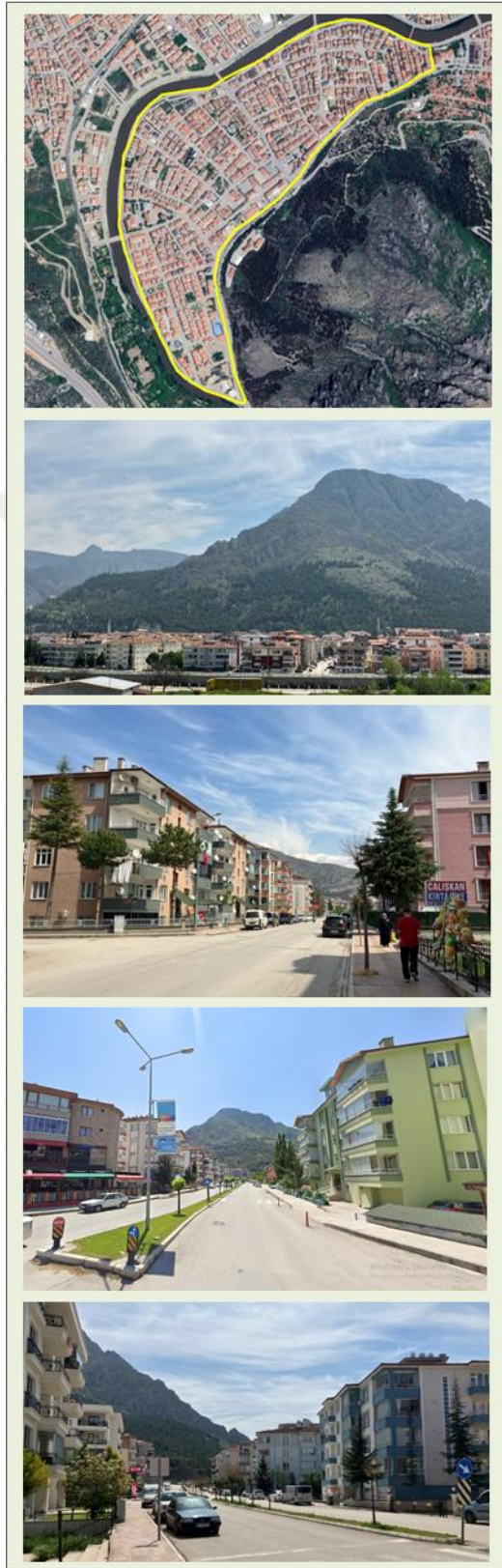


Akbilek Neighborhood





Hacılar Meydanı Neighborhood



Kirazlıdere Neighborhood





Ellibeşevler Neighborhood



Bahçeleriçi Neighborhood



## Pirinççi Neighborhood





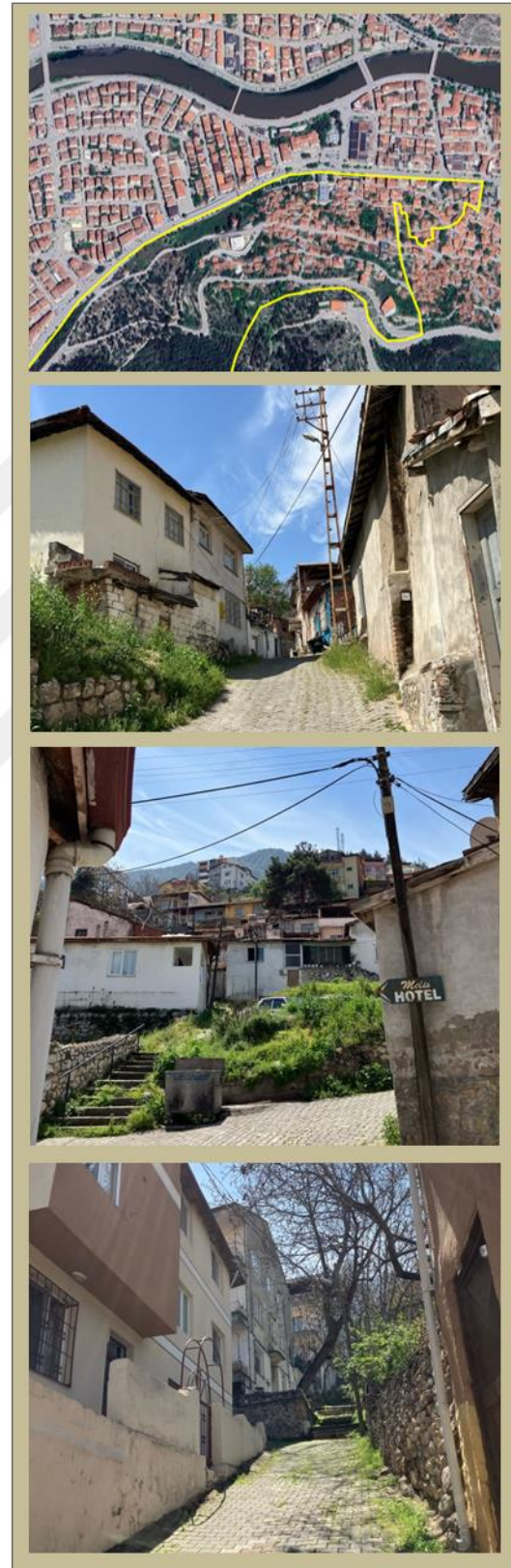


## K. Visual Representations of Neighborhoods in the Low WHDI Cluster

Kurşunlu Neighborhood



Gökmedrese Neighborhood





Üçler Neighborhood



Şehirtüstü Neighborhood





Yüzevler Neighborhood

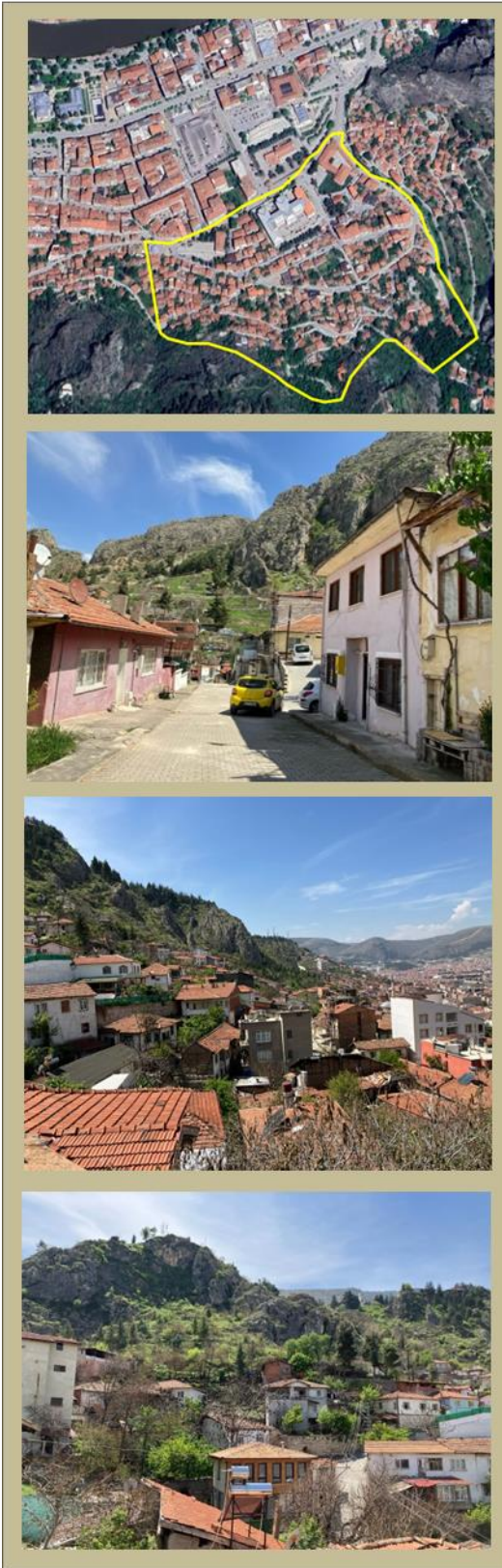


Dere Neighborhood





Fethiye Neighborhood



Mehmet Paşa Neighborhood





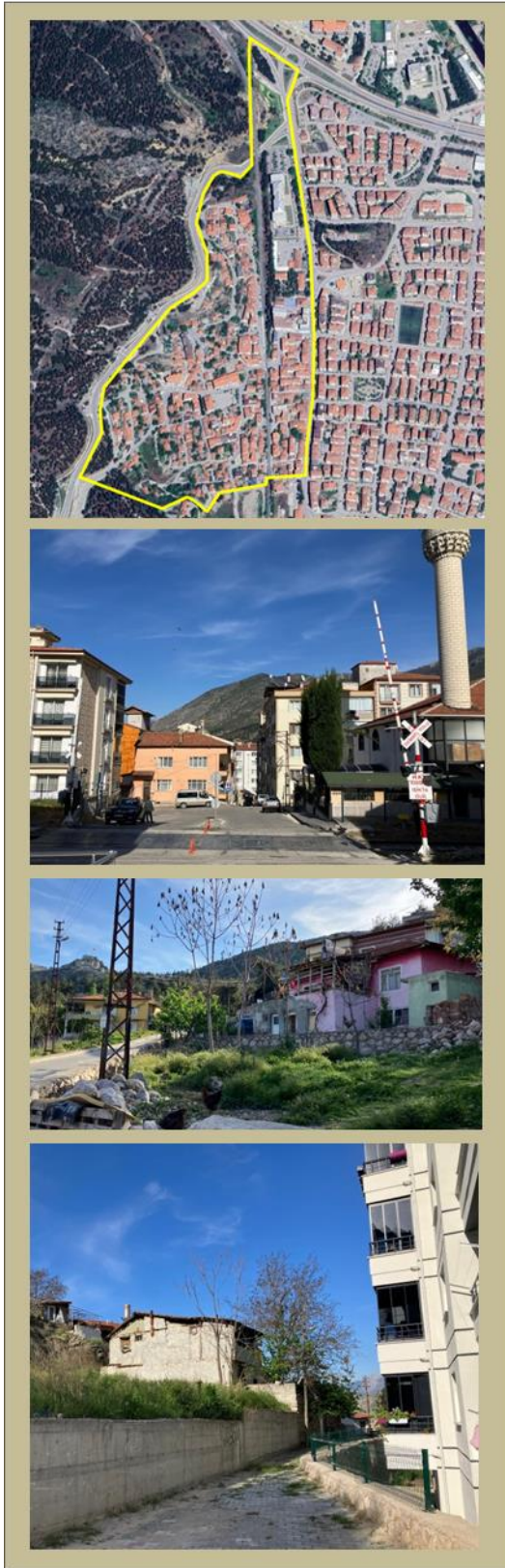
Beyazıtpaşa Neighborhood



Savadiye Neighborhood



## İhsaniye Neighborhood





## CURRICULUM VITAE

### PERSONAL INFORMATION

Surname, Name: Sağıroğlu, Müzeyyen

### EDUCATION

Degree	Institution	Year of Graduation
M.Sc.	METU City Planning	2016
B.Sc.	METU City and Regional Planning	2014
High School	Derici Mustafa Gürbüz High School Kuşadası, Aydın	2009

### WORK EXPERIENCE

Year	Place	Enrollment
2017-Present	Amasya University Department of City and Regional Planning	Research Assistant

### FOREIGN LANGUAGES

Advanced English

### PUBLICATIONS

1. Sağıroğlu, M. (2019). Turistik mekânda gerçekliğin algısal değişimi: Modern ve post-modern turizm deneyimlerinde özgünlük. *Planlama*, 29(2), 90-101. <https://doi.org/10.14744/planlama.2019.42204>
2. Sağıroğlu, M. (2016). *A policy framework for sustainable tourism management in historic cities: The case of Amasya* (Unpublished master's thesis). Middle East Technical University, Ankara, Türkiye.

### AWARDS

1. Marmara Urban Forum 2023 – PhD Showcase – *Honorable Mention Award*