

T.C

**ISTANBUL OKAN UNIVERSITY
INSTITUTE OF GRADUATE SCIENCES**

**THESIS FOR THE DEGREE OF PhD IN
ARCHITECTURE PROGRAM**

Huda Mohamed Lathram

**PHYSICAL AND SOCIAL ASPECTS INTERACTION IN
DEVELOPMENT FOR SELECTED NEIGHBOURHOOD OF
BENGHAZI CITY- LIBYA**

ADVISOR

Prof. Dr. Behiye Işık Aksulu / Okan University

CO ADVISOR

Prof. Dr. Mehmet Emre Aysu/ Okan University

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APPROVAL OF THE THESIS:
PHYSICAL AND SOCIAL ASPECTS INTERACTION IN
DEVELOPMENT FOR SELECTED NEIGHBOURHOOD OF
BENGAZİ CITY- LİBYA

Submitted by **Huda Mohamed Lathram** in partial fulfillment of the
requirements for the degree of **Doctor in Architecture**

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DEDICATION

I pray in the name of God, the Most Gracious, and the Most Merciful. First and foremost, thank God Almighty, without whom this thesis would not have been possible.

I dedicate this to my beloved father's soul. May God have mercy on him? I dedicate this to the memory of my cherished mother. May God have mercy on her? They were the first and best-ever school from which I learned the alphabet of life.

To those who taught me that knowledge and work are the foundations of life:

My husband is Prof. Dr. Youssif Alshakmak.

To those who wiped away tears in times of hardship and drew laughter in times of distress whose prayer was the secret to my success, and whose tenderness was a surgical balm.

To all my children.

To those who loved me and were pleased with what I had accomplished.

I dedicate this work

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ÖZET

LİBYA BİNGAZİ ŞEHRİNDE SEÇİLEN MAHALLELERİN GELİŞİM SÜRECİNİN FİZİKSEL VE SOSYAL ETKİLEŞİMİ

Bu çalışma, Libya Bingazi'deki şehir büyümesinin çeşitli karmaşık faktörlerini kapsamlı bir şekilde incelemekte olup, özellikle sosyo ve çevresel faktörlerin etkileşimine vurgu yapmaktadır. Mahalleler, insanlar arasında sosyal uyumu teşvik edebilecek, etkili iletişimi ve toplum içindeki genel memnuniyeti sağlayabilecek yerler olarak değerlendirilmektedir. Bu durum, fiziksel çevre ve onun sosyal yapısı üzerindeki etkisiyle yakından ilişkilidir. Mahalledeki sosyal özellikler, yaşam kalitesini artırmada önemli bir rol oynamaktadır. Bu unsurlar, yapı çevre gibi fiziksel yapının yanı sıra, yapı çevrenin toplumda uyandırdığı duygular ve algılar gibi fiziksel olmayan unsurları da kapsamaktadır. Üretken ve uyumlu bir sosyal yaşam için yararlı bir ortam oluşturmak amacıyla grup tasarımının olumlu sosyal yönlerini kabul etmek çok önemlidir. Bu, küçük bir konut birimi (mahalle) içinde uygun etkileşim ve homojenliğin sağlanmasına vurgu yaparak başarılabilir. Çalışma, fiziksel çevrenin sosyal faktörler üzerindeki etkisini vurgulamakta ve kültürel ve ekonomik bileşenlere duyarlı gelişim stratejilerini savunmaktadır. Çalışma, fiziksel altyapı ile sosyal yapı arasındaki kayda değer ilişkiyi ve sosyal etkileşimi teşvik etmek, güvenlik ve korunmayı sağlamak, aidiyet duygusunu pekiştirmek, mahalle memnuniyeti ve topluluk birliğini teşvik etmek için karma kullanıma, tesislerin mevcudiyetine ve erişim kolaylığına sahip olmanın önemini ve topluluğun planlama sürecine dahil edilmesinin önemini, kentsel gelişimin, sakinlerin özel ihtiyaç ve arzularıyla eşleştirilmesi gerekliliğini vurgulamaktadır. Tez kentsel planlamanın kalıcı etkileri üzerine gelecekteki araştırmalar için bir çerçeve oluşturmakta ve farklı Arap şehirlerinin karşılaştırmalı bir incelemesini sunmaktadır. Bu yöntem, sadece fiziksel durumu artırmakla kalmayıp aynı zamanda sosyal yapıyı da teşvik eden, topluluk refahını artıran ve canlı, varlığını sürdürebilen kentsel alanların yaratılmasına katkıda bulunan kentsel ortamların inşa edilmesinin kritik önemini vurgulamaktadır.

Anahtar Kelimeler: Gelişim, Kentleşme, Sosyal Değişim, Mahalle, Yapılı Çevre, Yapılı Çevre Göstergeleri, Sosyal Yönler, Sosyal Yönlerin Göstergeleri



ABSTRAT

PHYSICAL AND SOCIAL ASPECTS INTERACTION IN THE DEVELOPMENT FOR SELECTED NEIGHBOURHOOD OF BENGAZI CITY- LIBYA

This extensive analysis of urban planning in Benghazi thoroughly examines the various complex elements of city growth, with a specific emphasis on the interplay between socio and environmental factors. Neighbourhoods are regarded as locations that can foster social cohesion among people, enabling effective communication and overall satisfaction within the community. This is closely tied to the built environment and its impact on social aspects. The social features in the neighbourhood play a crucial role in improving the overall quality of life. These aspects encompass both the physical elements, such as the built environment, as well as the non-physical elements, which include the emotions and perceptions that the built environment evokes in society. It is crucial to acknowledge the positive social aspects of group design in order to establish a beneficial environment for a productive and harmonious social life. This can be achieved by emphasizing the provision of suitable interaction and homogeneity within a small residential unit (neighbourhood). The study highlights the impact of the physical surroundings on social factors, advocating for development strategies that are considerate of both cultural and economic components. The study emphasizes the notable correlation between the physical infrastructure and social elements, as well as the significance of having a mixed-use, the availability of facilities, and ease of access for fostering social interaction, ensuring safety and protection, fostering a sense of belonging, satisfaction with neighbourhood and promoting community unity. The study emphasizes the importance of involving the community in the planning process and highlights the need to match urban development with the specific needs and desires of inhabitants. The paper establishes a framework for future research on the enduring effects of urban planning and provides a comparative examination of different Arab towns. This method emphasizes the crucial significance of constructing urban environments that not only increase

physical elements but also foster the social element, boost community welfare, and contribute to the creation of lively, resilient urban spaces.

Keywords: Development, Urbanization, Social Change, Neighborhood, Built Environment, Built Environmental Indicators, Social Aspects, And Social Aspects Indicators.



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CHAPTER 1 INTRODUCTION AND PURPOSES OF THE STUDY

1.1 INTRODUCTION

This study examines the intricate characteristics of urban development in Libya, with a specific focus on the sociocultural and economic factors that are driving developments in its cities. Starting from the 1970s, Libya has actively pursued an ambitious urbanization strategy to address a range of socioeconomic difficulties. The nation aimed to build modern urban centers using current planning ideas. This initiative aimed to rejuvenate urban areas and enhance the quality of life. Nevertheless, the disparity between contemporary urban designs and customary Libyan ways of living has given rise to challenges and conflicts in achieving sustainable urban growth (Fitzgerald, 2008; Mohamed, 2013).

The urban transformation in Libya faces obstacles including population growth, environmental deterioration, and socio-cultural shifts. These projects exemplify broader worldwide trends in urban development. Urban infrastructure in emerging nations has been greatly burdened by them, as stated by Orewere et al. (2020). The rapid growth of cities has brought forth various obstacles such as issues related to privacy, community interaction, and the appropriateness of current neighborhood designs (Omeir, 2013).

Urban design in Libya frequently neglects the customs and safety requirements of people due to sociological, political, and budgetary limitations. It is crucial to carefully incorporate these factors to ensure the stability of the community (Irham et al., 2023). Analyzing the correlation between human behavior and the built environment is crucial in tackling these difficulties. When technological advancements lead to changes in community areas, it is essential to consider the interconnection between these concepts and the existing environment and social connections (Kalantar et al., 2019).

1.2 PROBLEM STATEMENT

The process of urban community development and design is closely connected to human needs, as it can shape the habits, customs, and behaviors of residents or users. Therefore,

it is crucial to promote a significant degree of engagement within communities. Effective communication has a fundamental role in promoting social interaction and strengthening community cohesiveness. The variations and changes in population preferences and desires for housing type and density in residential neighborhoods are not only influenced by economic and executive factors. Instead, they primarily stem from the lack of social interaction, cohesion, and residential satisfaction as a crucial element in achieving a high quality of life.

Desires and attractions vary across different residential and societal locations, including different societies, rural and urban settings, and developing and non-developing societies. The divergence mentioned is a result of different social and cultural components, religious influences, and existing customs and traditions. These factors have a considerable impact on the built environment and surroundings inside residential areas.

Considering that the creation and layout of a residential neighborhood are crucial in determining the overall quality of life, especially in terms of social aspects, it is essential to shape these environments in a way that attracts residents, achieves desired development goals, and brings about significant changes in the customs, traditions, and behavior of the neighborhood's residents. This requires meticulous design to guarantee an ideal level of contact, therefore promoting stability among inhabitants and assuring the long-term existence of these neighborhoods.

The examination of interconnected social factors as a central focus for the advancement of residential neighborhoods and the achievement of a satisfactory standard of living in Libya, a developing nation experiencing significant urban growth and socio-economic transformations, is a formidable challenge. The goal is to determine if the satisfaction of social needs differs in different residential settings. Consequently, the lack of study becomes evident because Libya is a growing nation undergoing fast urbanization, socio-economic changes, and diverse types of neighborhoods.

Therefore, there is a strong requirement for a study that enhances residential areas by incorporating social elements. This study seeks to strengthen and verify the magnitude of variations and inequalities among societies. The chosen neighborhoods for examination include the historic city neighborhood and three modern neighborhoods, each displaying unique patterns of growth influenced by varying generational planning, housing styles,

and population densities. Therefore, the primary study inquiry arises: What is the correlation between the built environment and social factors that actively contribute to the development of established residential neighborhoods?

1.3 RESEARCH HYPOTHESES

We have developed hypotheses to examine the connections between different social factors at the neighbourhood level and physical factors, specifically the built environment.

H1. There is a relationship between physical aspects (the built environment) and social aspects at the neighborhood level.

H1.1 There is a relationship between the mixed-use and social aspects.

H1.2 There is a relationship between the availability of facilities and social aspects.

H1.3 There is a relationship between accessibility and social Aspects.

H1.4 There is a relationship between open space, gardens, and social aspects.

1.4 GOALS AND OBJECTIVES

The holistic goal of this research is to define the relationship between the built environment and social aspects in Libyan neighborhoods. The study seeks to achieve this.

1. The aim of the study is to identify the socio-economic and demographic backgrounds of the respondents.
2. Examine the residential neighborhood concept from a theoretical perspective and in accordance with contemporary planning guidelines. Examine the neighborhood's overall factors that contribute to a better living environment and a better quality of life, and contrast these factors with those implemented in Libyan neighborhoods.

3. To identify the demographic-socioeconomic impact on social aspects (social interaction, sense of belonging, safety and security, human needs, housing satisfaction, and neighborhood satisfaction in the neighborhood).
4. We aim to investigate the interplay between the physical (built environment) and nonphysical (social) elements in the chosen neighborhood. Also, which factors in the built environment contributed to enhancing the social aspect of the neighborhood?
5. Provide an appropriate urban environment for future development.
6. Analyze the social indicators in a four-case study neighborhood in Benghazi city to test a developed guiding framework.

1.5 RESEARCH QUESTION

The study of residential communities aims to provide a thorough understanding of the complex interactions between the built environment and social factors, which is a key area of concentration. As cities continue to change and develop, it is becoming more and more important to understand and express the complex connection between the physical buildings and the social aspects of residential communities. The complex interplay of social interactions, cultural dynamics, and community well-being is closely connected to the built environment, which includes architectural design, infrastructure, and spatial organization. This study aims to investigate the complex relationships between the built environment and social factors, focusing on how they contribute to the development of established residential areas. The central focus of this exploration is the fundamental research question.

Is there a relationship between the built environment and social aspects that actively contribute to the development of existing residential neighborhoods?

Through an in-depth investigation of this research issue, our objective is to uncover valuable knowledge that may guide urban planning initiatives, promote equal opportunities within communities, and ultimately help to the development of fulfilling and lively living environments that respond to the varied requirements of their residents.

1.6 IMPORTANCE OF THE SUBJECT /ORIGINALITY

The current body of literature places significant importance on the need to achieve social features within neighborhoods and comprehend the complex interplay between physical and social dimensions in order to improve residential areas. The contemporary scholarly debate predominantly relies on Western academia, which has exhaustively examined and advanced countries' implementation of diverse principles in their localities. Nevertheless, the lack of comparable research conducted in the Libyan setting highlights a substantial deficiency in understanding. This study seeks to fill this void by examining the interaction between tangible and intangible elements in Libyan communities, providing a distinct viewpoint in the current body of research.

This research is crucial due to the rapid urbanization rates and socio-cultural shifts occurring in Libyan society. The government's collaboration with foreign planning and architecture firms for the development of Benghazi, resulting in the creation of new residential neighborhood designs, highlights the importance of investigating the connection between physical and non-physical elements in these developing urban environments. Additionally, the unique cultural and political circumstances of Libyan society need a thorough analysis of factors in the physical surroundings that greatly influence sentiments of belonging, social interaction, satisfaction and social engagement at the local community level. The research aims to offer significant insights for urbanists and policymakers by assessing these factors, so promoting a comprehensive comprehension of social structures and difficulties in Libya's emerging cities. Understanding this, in return, can provide valuable insights for future strategic endeavors, enhance the well-being of individuals, and contribute to the holistic advancement of the nation's sustainability.

1.7 SCOPE AND LIMITATIONS

This study analyzes particular areas in Benghazi City. Four neighborhoods have been chosen for examination, focusing on both the physical and non-physical development occurring inside these communities. It offers a comprehensive examination of these communities, employing quantitative data and firsthand accounts. Although the study is thorough, it does have certain constraints. It does not uniformly include all

neighborhoods. Specific details are given more emphasis. Furthermore, the methodologies used have limitations.

Ultimately, this study offers a profound understanding of the impact that buildings and their surroundings have on social life throughout the various neighborhoods of Benghazi. This comprehension is highly valuable as it guides urban development, community planning, and policymaking in comparable city contexts.

1.8. METHODOLOGY

The research aims to examine the correlation between the physical and social aspects of development. Neighborhood research investigates the evolving physical characteristics of the neighborhood's architecture and urban structures with the built environment, housing, facilities, public spaces, mixed use and accessibility.

Researchers achieve this by employing methods such as direct observation, expert interviews, document collection, and photographic surveys. The main objective of this analysis is to establish an impartial understanding of the principles that dictate the processes of development and change. The social analysis evaluates multiple social dimensions, such as social interaction, safety, satisfaction, sense of belonging, social engagement, and human needs.

We selected Benghazi city as a research site due to a multitude of factors. Benghazi is the second most populous city in Libya and an important seaport on the Mediterranean Sea. The city exemplifies a common Libyan urban area experiencing swift socio-economic changes, an increase in population, and the construction of residential areas. The four chosen case studies were organized based on the type of houses, the city's development process, and the level of density. The researcher chose specific case study areas, including traditional and three different types of modern areas, to accurately depict the various stages of the city's transformation. The objective of this empirical analysis is to establish the correlation between social and physical processes by assessing the constructed surroundings and social factors of 351 residents in Benghazi City.

The research study's goals and objectives were categorized.

1. Theoretical and Analytical Approach to Studying the Physical and Social Aspects in the Neighborhoods.
2. Descriptive and exploratory to determine the measurement of aspects or indicators of the built environment and indicators of social indicators.
3. Choosing case studies with diverse typologies and patterns in housing projects.
4. I administered questionnaires for data collection through interviews.
5. Data analysis with SPSS (Statistical Package for Social Science).
6. The date in Benghazi City, Libya, is summer 2022.

The study combined quantitative and qualitative research approaches to answer research questions. Research methodologies included the investigation of historical records related to observation as well as surveys.

The research design is given in Figure 1.1.

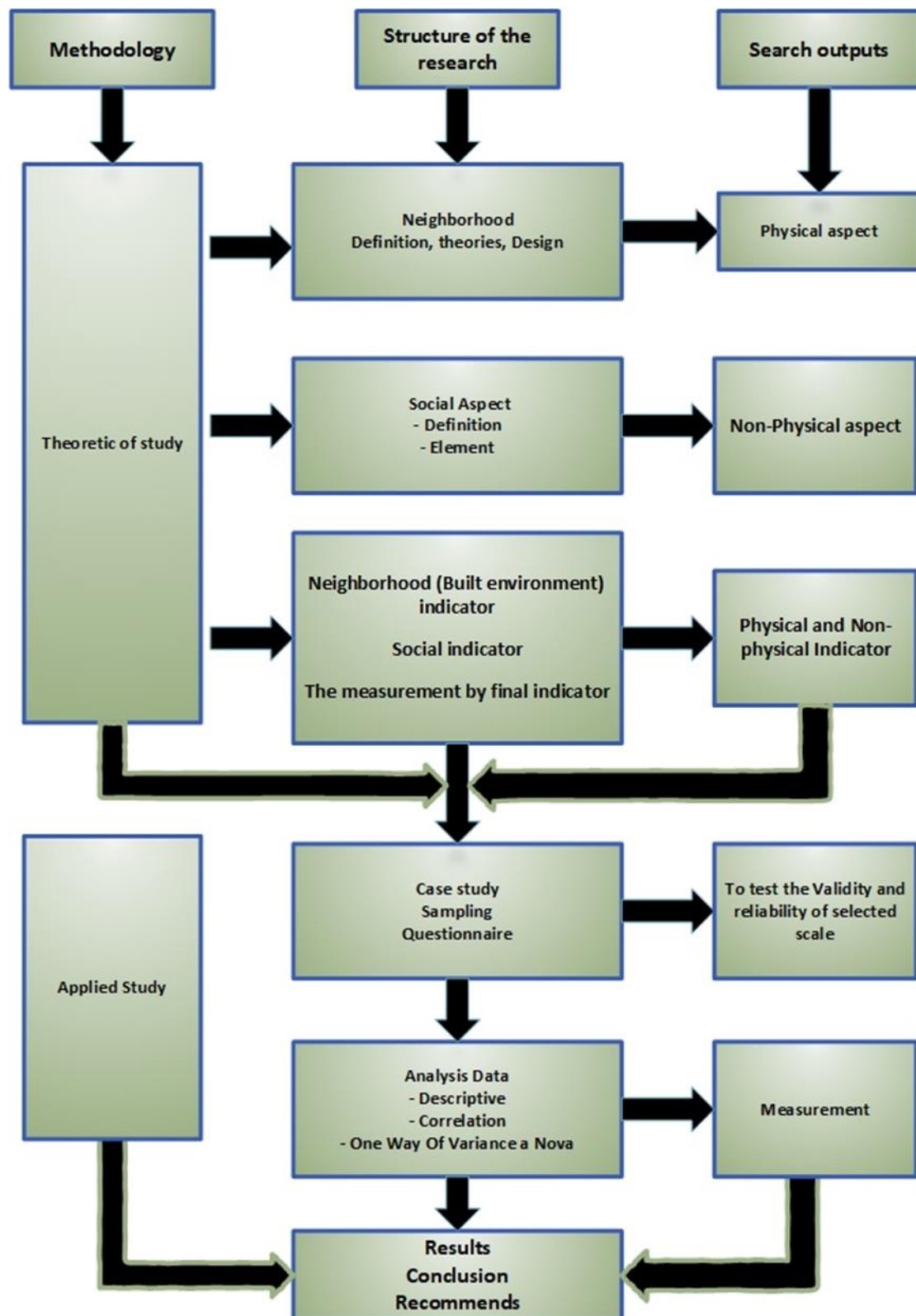


Figure 1.1 Research Design.

1.9 THE STRUCTURE FRAME WORK OF THE STUDY

This research aims to define the relationship between the built environment and social aspects in Libyan neighborhoods. This is studied in four traditional and three contemporary neighborhoods in Libya (Benghazi case study).

Six chapters organize this work. The aspects covered by each chapter have been presented in Figure 1 and as presented below:

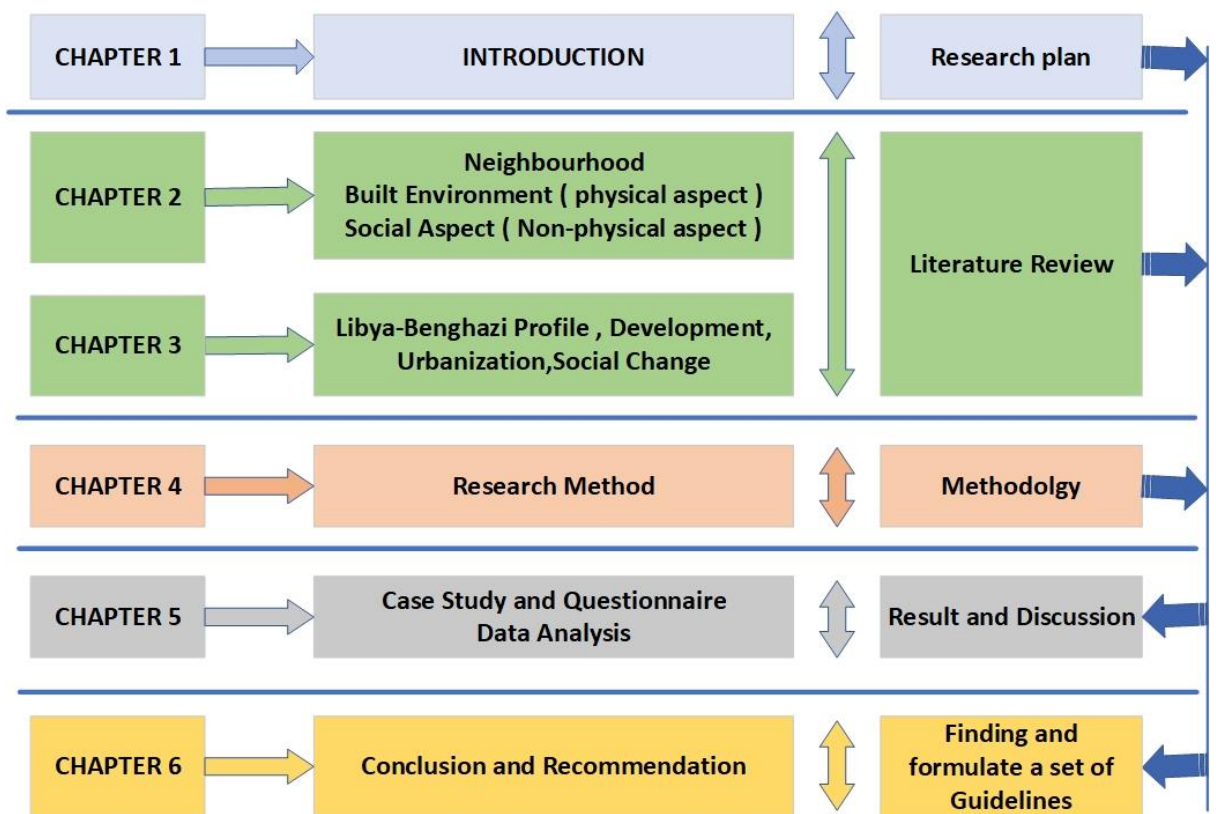


Figure 1.2 Overall structure of the thesis

CHAPTER 2 LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides context for the study. It situates the study within the context of previous relevant research and explores the theoretical framework used. In other words, it shows a thorough review of previous research on neighborhood definitions and concepts, transformation, physical and social change, neighborhood theories, and elements of a built environment. The definition of the social aspect, indicators of social aspects, and the relation between the built environment and the social aspect at the neighborhood level are explored.

2.2 NEIGHBORHOOD; CONCEPT, TYPES AND INDICATORS

The next section explores the concept of a neighborhood, the various types that can exist, and the essential indicators used to evaluate the traits and attributes of each. This section offers invaluable insights into the fundamental building blocks of city groups, enhancing our comprehension of Libyan urban planning.

2.2.1. Neighborhood Definition

Communities are essential planning tools that support healthy residential settings with easily accessible public amenities. They combine physical attributes, interpersonal harmony, and a vital role in urban growth. According to Silver (1985), neighborhoods—which range in size from tiny groupings of houses to larger areas with equivalent housing types—represent both physical locations and the people who live there. He continues by emphasizing the critical importance of social fraternity and communal cohesion (Silver, 1985).

2.2.2 Neighborhood Theories

Neighborhood theories, which influenced modern urban planning, saw a substantial change in the 20th century. A particular proposal, which is commonly known as "garden towns," suggested the establishment of separate villages encircled by green spaces. Another seminal concept from 1929 focused on residential assembly around basic amenities and was dubbed the neighborhood unit. Modern neighborhood planning, which integrates community and urban design ideas, is based on these beliefs (Perry, 2015).

2.2.3 Social Dynamics and Neighborhood Change: A Historical Perspective

Unfortunately, the fabric of family and neighborly bonds—which are based on the common experiences of generations living under a common folk tradition—is prone to disappearing or, at most, weakening with time. The Chicago School of research conducted groundbreaking work in the 1920s that gave rise to the first ideas and models designed to explain neighborhood transformation. Research on neighborhood change has since been conducted by a variety of academic fields.

Neighborhood transformation was long thought to be an almost unavoidable result of a filtering process that operated in places with an older housing supply. Through this lens, neighborhoods are seen as dynamic entities that are prone to change throughout time due to modifications in the structural and demographic makeup of the housing stock. The aging of a home is a driving force behind change, since new inhabitants frequently bring new dynamics that reflect changing society demands and preferences (Hallowell & Baran, 2021; Terlemez, 2022).

Furthermore, scholastic consciousness has highlighted the significance of developing a solid neighborly bond. Scholars have directed their attention towards the social and psychological dimensions of residents' relationships with their local communities, acknowledging the critical role that these sentiments recognize the important role played by feelings of belonging and connectedness in influencing environmental change. In the face of outside forces, the resilience and adaptability of a society are shaped in large part by the strength of these social bonds. Studies have evaluated the broader impacts of significant social and economic changes on the environment at the same time. The impact of major powers on social and economic situations has been extensively studied in relation to how it shapes the destiny of regional communities. Established as miniature versions of the larger urban setting, neighborhoods serve as sites for significant transformations at the local level, resulting in distinct evolutionary pathways (Theron & Liebenberg, 2015).

To be more precise, there are several sociological, urbanism, and economic perspectives that are used to comprehend neighborhood transformation in addition to a single explanatory framework. The multifaceted phenomena of community development are better understood thanks to this nuanced perspective, which acknowledges the intricate

interactions between neighborhood dynamics and social dynamics at large (Temkin & Rohe, 1996).

2.3 TRANSFORMATION

The Arab world's cities and countries have surely seen economic, political, social, and technological changes that have an impact on the built environment. The city's transformation was directly and compellingly impacted by the execution of its master plans. According to Amer (2007), Libyan Arab residential architecture had three distinct socio-stylistic periods after the oil boom. The first step toward modernization was the conscious rejection of the past and the disengagement from the traditional framework. The next phase involved consciously choosing not to fit in in order to achieve uniqueness, distinction, standing, and prestige. Finally, the goal of a post-oil future came into view. Restoring historic values and ideas related to Arab identity is the goal.

In the last few decades, the Middle East has witnessed tremendous political, economic, and social changes. These changes have included a major overhaul of the urban landscape in all major cities, along with significant levels of urbanization. The population has grown quickly as a result of higher natural birth rates, large migrant populations, changes in the legal designation of urban areas, and improvements in public amenities and essential services (Malkawi, 2011; Kafkoulas, 2009; UN Habitat, 2008). The rapid process of urbanization has led to gradual modifications in the physical, economic, and socio-cultural environments, which have an impact on people's behavioral patterns, aspirations, and strategies for meeting their housing needs (Knox and McCarthy, 2005; Yuan, 20). In addition to alterations to residential circumstances, site allocations, and housing density, there have been notable changes in the methods and resources utilized for housing provision as a result of the population's exponential growth and the need to meet the expanding demand for housing.

According to Giddens (1986), a society's transition from an agrarian to a mechanical one occurs during the process of moving from a traditional civilization to a modern one. These changes are an indication of the passing of time. Rapidity and unfettered production of physical things are hallmarks of the industrial society. The domination of power and the rise of capitalism are the hallmarks of the industrial civilization. After that, the basic foundation of daily life in the family, the community, and the city has crumbled.

Relationship coherence, value systems, and control over the built environment have all declined in the contemporary era. Changes in the social interaction structure are associated with Libya's economic success. It has been incredibly noticeable to move from a tribal to an urban environment. This has led to many unanticipated problems, which have forced the government to plan ahead and quickly construct a large number of buildings. The physical surroundings and urban organization of the city were subsequently transformed as a result. The way that the social and physical aspects of metropolitan places are related has been greatly impacted by Western modernism (Daza, 1982).

The oil discovery led to substantial economic and social growth in Libya, earning the nation recognition on a global scale. This sudden transformation caused changes in a number of social and physical contexts. The main objective was building new infrastructure, which required the development of multiple projects in a range of industries, including contemporary electricity, transportation, housing, healthcare, and education.

Significant growth occurred in the 1970s and 1980s, including urban development initiatives aimed at meeting the spatial needs resulting from novel social, economic, and administrative contexts. The commercial sector and the government worked together to carry out the development. In addition to building marketplaces, healthcare facilities, educational institutions, and transportation infrastructure, the government carried out massive public housing programs, the majority of which were marked by high-rise buildings. Furthermore, Libya created industrial zones near several of its cities. The construction of different kinds of housing units, such as villas, duplexes, and homes, in a variety of neighborhoods, served as an example of the private sector's development advancement.

These developments caused the city to expand in all directions and underwent a dramatic change in its environment. There was a notable shift in the number of people moving from rural to urban areas in pursuit of work opportunities due to major gains made by the government and private sector in a number of industries. Due to the increase in the urban population brought about by the immigration wave, local administrations have been under increasing pressure to provide more housing.

Every ethnic and national group has its own unique qualities that have evolved over time. According to Abel (1986), modernity's prevalence has swiftly increased. Rapid advancement undermines the continuity of traditional beliefs and characteristics. The introduction of modernism in the twentieth century, which included colonialism, tended to encourage uniformity among different tribes. However, the way in which groups differentiate themselves from others has a significant impact on their overall sense of contentment.

2.3.1 Transformation and the Influence of Western Building Regulations, Codes, and Models

The alteration of courtyard housing in Arab cities came as a result of fast expansion, which included economic prosperity, changes in the planning system, and the introduction of numerous modes of mobility. The modern housing allows for alterations to the original plans to fit the tenants' needs (Almasri & Abuhijleh, 2012).

Contemporary dwellings have departed from the long-standing standards that have historically governed house organization. This is particularly clear in the disappearance of the courtyard, which has a considerable influence on women as a result of these changes. As a result, the courtyard was replaced with a covered central area.

Undoubtedly, the prevalent trend in the tradition's physical surroundings and lifestyles changed dramatically, yet a sense of continuity persisted. However, the custom was called into question when modernized and Westernized variants appeared. According to Al-Hathloul (1998), traditional urban patterns in Muslim cities were rapidly being replaced by street grids, detached residences (villas), and apartment buildings.

According to Mitchell (2010), in Arab Gulf cities over the twentieth century, two significant developments occurred in the utilization of courtyards. The first wind-tower houses with courtyards appeared in the 1920s. Second, with the discovery of oil, planning efforts were made that ended the usage of courtyards in residential buildings. Implementing master plans and regulations entailed creating street subdivisions and plot grid layouts, as well as establishing minimum setback limits. This resulted in the formation of independent villas, as illustrated in Figure 2.1.

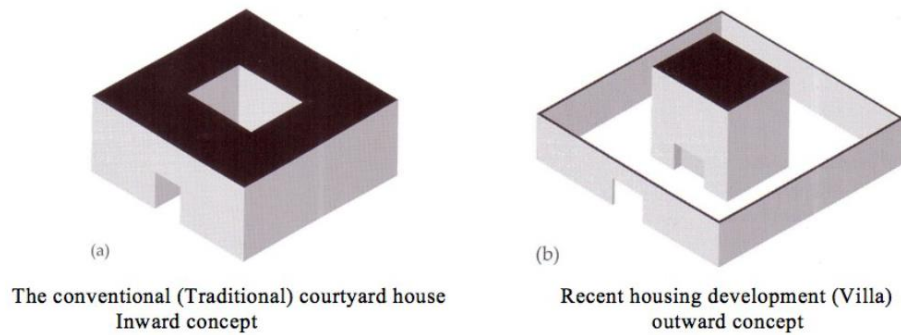


Figure 2.1 The transformation in the concept of courtyard house

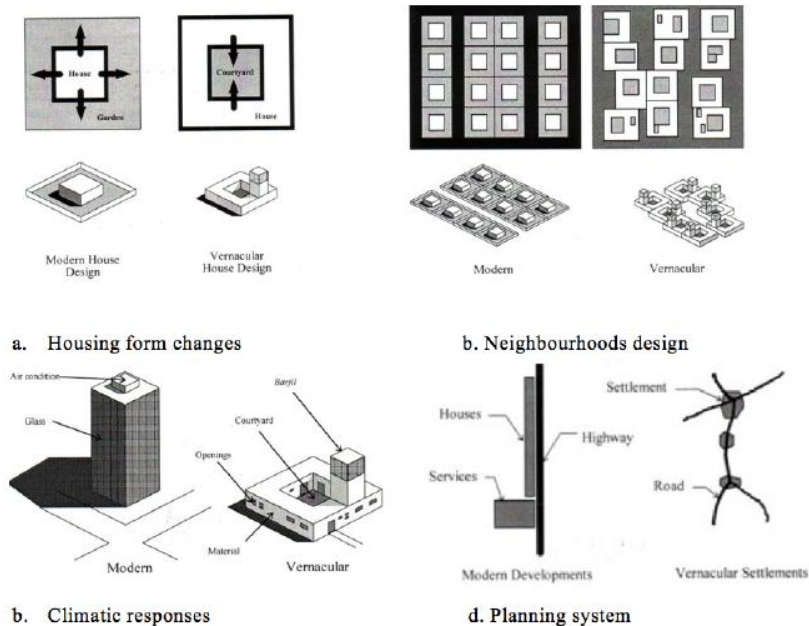
Source: Mitchell (2010).

The fundamental effect of these issues in Libya is the availability and concentration of road infrastructure. The practicality of courtyard housing was reduced when each unit required direct car access. The loss of courtyard living can be related to an increase in car ownership and lifestyle changes.

As a result, the modern home fails to meet the needs of its residents and makes achieving sufficient solitude impossible, regardless of the number of extensions built into the surrounding walls. The rapid adoption of digital technology, combined with the incorporation of hybrid development models, has resulted in ambiguous representations of society's sociocultural and physical frameworks. Instead of promoting the neighborhood's traditional ambiance, the decision-making authority showed disrespect for the traditional architectural context (Ishteeaque and Alsaid 2003).

Figure 2.2.: Transformation of the planning system and house design in Arab cities

Source: Mahgoub (1997).

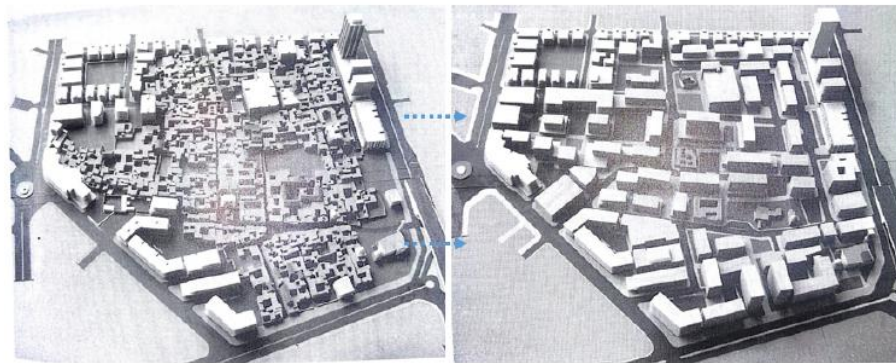


- The concept of courtyard housing changed from inward-looking to outwards the streets.
- Neighbourhoods design moved from the traditional residential clusters to the new settlements grown on a regular grid pattern, with individual housing units separated with wide straight streets.
- Courtyard, slim openings, wind-catcher as temperature regulator components, replaced with air-conditioning and covered glazed curtain walls.
- The planning system transformed from organic neighbourhoods' growth into automobile dependant planning.

Figure 2.2 Transformation of the planning system and house design in Arab cities

Source: Mahgoub (1997).

By the end of the nineteenth century, European cultural ideals and beliefs had a significant impact on the design and construction of cities and buildings in many Islamic countries (Fig.2.3). The changes made to the house's design were congruent with current trends. The birth of the villa house type was motivated by a need for a new and distinct form of individual expression. The rooms' function also reflects the growing recognition of the family's distinctiveness. As a result, there was an increased demand for furniture, with each room fulfilling a specific role. Compared to typical dwelling, this representation of individualism offers a different sense of being an outsider (Azzam, 1987).



a) Traditional urban-fabric

b) Modern development

a) Traffic planning into isolated fragments surrounded by vehicular roads then the massive blocks are constructed along the easily accessible and commercially valuable street edges.

b) The block structure spreads out, to substitute the asphyxiated and no longer viable residues of the historic fabric.

Figure 2.3 Typical modern transposition in an urban Arab city

Source: Bianca (2000).

2.3.2 Physical Change and Social Change

Changes in architectural forms and spatial arrangement mirrored changes in socioeconomic structure. These alterations either partially preserved or fully altered the usual architectural process. Furthermore, the architectural implications of society's structure, as well as other variables such as Muslim households, have been discovered (Al-Hathloul, 1998).

The influence of these changes is shown by the transformation and modification of house designs. People's tendency to move their dwellings has increased as the influence of Western and modernization grows. The execution of urban master plans has effectively imposed a new type of housing architecture on Arab cities and their population. A contemporary home with a historical feel. Zaini (1976) attributes this phenomenon to people's desire to break free from traditional lifestyles and their attraction to Western clichés. According to Al-Haroun (2015), there was a kind that demonstrated extroverted traits and influenced people's lifestyles.

Following the oil boom, Kuwait City's home architecture evolved through three socio-stylistic periods. The first phase entailed rejecting the past and distancing from traditional contexts in order to pursue modernization. The second phase entailed rejecting uniformity

in favor of individualism, distinctiveness, status, and prestige. The third phase entailed a search for a post-oil Kuwaiti identity, with the goal of restoring traditional values and conceptions (Al Bahar, 1990; Islam et al., 2006). The dynamic movement between traditional and modern surroundings has caused major disruption in both physical and socio-cultural dimensions.

The new houses were marked by the absence of a courtyard, which was replaced by gardens surrounded by tall walls. As a result, activities that used to take place in the courtyard, particularly those undertaken by female household members, are now carried out in more open spaces. Despite the disadvantages that resulted from the employment of unique design elements, it appears that this layout has emerged as the dominant one. Unlike the traditional courtyard-house, modern houses have evolved to fulfill a wide range of user-defined wants and demands. These aspects include the appearance of balconies and boundary walls, which create semi-private open spaces. As a result, Libya's modern architectural landscape is defined by a mix of styles, resulting in significant changes in people's lifestyles (Amer, 2007; Belgasem, 2005).

The diversity of housing patterns is the outcome of socio-cultural factors and individual preferences for where to reside, which eventually determine the physical environment (Madanipour, 2003; Goodchild, 2008). This stresses the differences and conflicts between the processes of assimilating Western culture and becoming more modern. The cultural distinction is most evident in the separation of private and public places inside the household, which is dictated by gender expression. The Arab house takes a unique approach to separating indoor and exterior spaces, as well as public and private rooms, and spaces designated for males and females (Mazumdar et al., 2001).

2.3.3 Influences of Socio-Cultural Factors on the Built Environment

Every community's culture is an essential component. No matter how simplistic a culture may be, people have a strong conviction that the traits that define their own culture are the right ones. Each person is born into a complex cultural background that has a lasting influence on their way of life and behaviour (Ember, 1981). People who don't follow these patterns are more likely to be viewed as morally reprehensible or inferior. Similar occurrences can be found in Muslim societies like Libya.

According to Rapoport (1977), a person's values, upbringing, attitudes, and preferences all emerge in their cultural surroundings. He asserts that human behaviour directly results in the physical composition of the built environment. This viewpoint implies that a traditional way of life can have an impact on the layout of spaces, building orientation, and building shape. As a result, the physical structures may represent societal norms, values, beliefs, and standards. Socio-cultural values like religion and privacy have a big impact and cause people to build their homes in a way that reflects these beliefs.

Rapoport (1977) asserts that the way in which physical space is organized, how time is interpreted, how information is exchanged, and the cultural background are all strongly correlated. In addition, it is feasible for a group of people to have a set of beliefs and values that are learned and transmitted; they lead to the creation of a system of laws and traditions that represent values and define a way of life. Through socialization, cultural norms are transmitted from one generation to the next. People frequently bring a great deal of their own cultural history with them when they migrate from one place to another (Lang, 1987).

2.3.4 Changes in Housing and Neighborhoods in Libya

The shift in the architectural and planning principles of the neighborhood unit, from a traditional to a geometric pattern, and from a pedestrian-oriented to a vehicle-oriented style, has an impact on the concept of private and public spaces, as well as the significant influence of transitional social areas. The concept of personalizing space refers to the distinction between private and public regions within a home (Lawrence, 1987; Al-Thahab et al, 2016). The social and economic developments in Libya, as well as the effect of modernity and Western patterns, have a considerable impact on the general construction of Libyan towns, particularly in terms of residential architecture.

Housing initiatives in Libya were established at various points in response to economic concerns. Several Libyan housing experts, including Awotona (1990), Hudana (1995), Omar and Ruddock (2001), and Sheibani and Havard (2005), have discussed these housing initiatives.

The housing development can be divided into three distinct stages based on the extent of government involvement: the initial period, which lasted from 1970 to 1978, saw the

government construct and allocate housing while also allowing the private sector to invest in housing through sales or leases. During that time, a number of building codes were implemented. These mostly hampered housing design and segregation of houses by implementing grid patterns for land subdivision. The government launched a private housing subsidy program by establishing a real estate fund to provide loans to individuals for the construction of new homes. As a result, the traditional regions were abandoned, resulting in deterioration (Awotona, 1990).

The second period, which lasted from 1979 to 1988, was defined by an unstable public housing policy and a decline in the number of buildings. The policies failed to accomplish their intended goals. The goal for this time period was to generate 7500 units, however they only managed to make 5943. The final era extends from 1989 until 2000. During this time, the government's general role in housing policy decreased, particularly in the housing sector. This phase was marked by changes in government policy tendencies, with the government shifting from a guarantor to a supportive attitude. Following a long absence, both public and commercial groups attempted to make real estate investments. Furthermore, housing restrictions were vague and unclear between 1996 and 2000 (Sheibani & Harvard, 2005).

From 1950 to 1980, the housing sector witnessed the development of government initiatives, particularly within the framework of the Six-Year National Development Plans. Notably, Doxiadis Associates, a well-known firm, played an important part in this transformation. They were actively involved in a variety of initiatives in Libya, and they were explicitly invited to help construct city plans, housing schemes, and housing programs in the 1960s. Apartment complexes, single-family homes, and traditional Arab-style buildings were among the residential constructions built during this time period. In the 1980s, the housing sector stagnated, with less government engagement and the private sector completely withdrawing.

Housing shortages have increased as a result of slow progress. Libyan government responded by establishing limitations and encouraging private sector involvement to avoid the housing problem from deepening (Hudana, 1995). Throughout the 1980s and 1990s, Libya faced a series of economic and political sanctions. The withdrawal of these firms led in the termination of numerous of their projects, affecting the overall housing

sector (Amer, 2007). As a result, the number of newly built dwellings decreased, and the overall quality of building declined. After 1990, the government switched its approach from actively intervening in housing to encouraging private sector participation and attracting foreign investors for housing investment (Omar & Ruddock, 2001).

A wide range of social, cultural, economic, physical, and technological variables contribute to architectural form variation. In Libya, housing patterns changed in terms of socio-spatial, cultural, and planning components. The urban expansion and residential typologies can be divided into four distinct structures that represent the key stages of city development, as shown. The architectural growth of Libyan houses can be divided into three major stages of advancement: Traditional courtyard houses as well as modern dwellings such as housh, villa, and apartment are offered (Almansory, 2018).

The courtyard dwelling concept in North African towns has been affected by a variety of sociocultural and urban planning elements. These include shifts in family structure, such as the transition from extended families to single-family households. Furthermore, housing rules require tiny plots of land, making it difficult to accommodate courtyard spaces. Urban planning restrictions have also promoted dwellings to face the street, which has impacted the courtyard housing concept. Furthermore, room individualization has affected family life as a whole. (Bada, 2006).

Furthermore, it has been emphasized that European colonialism from the nineteenth to twentieth centuries had a considerable impact on the architecture of courtyard dwellings. During this time, Western architectural styles were gradually adopted, with little emphasis placed on local invention (Bianca, 2000). The houses and streets are structured using Western architectural ideas, and many new housing projects mirror modernist ideals (Emhemed, 2005).

The disturbance in the courtyard house's architectural design can be attributed to the volatility of housing policy and economics, as well as the adoption of Western models and construction regulations. As a result of increased connection with the Western world, Arab-Libyan society has gained access to new technologies and exposure to a new system of modernization.

2.4 NEIGHBORHOOD EVOLUTION: THE TRANSITION FROM TRADITIONAL TO CONTEMPORARY

The transition of communities from traditional to modern settings is a complicated system spurred by a variety of factors, including fast demographic growth, urbanization, and changes in lifestyle and technology.

2.4.1 Traditional Arab Neighborhood

The typical Arab neighborhood, marked by its emphasis on comfort, privacy, and security, has a particular architectural structure. This structure is organized hierarchically and spatially separated, with distinct public, semi-private, and private spaces with unique purposes and objectives (Eben Saleh, M, 2002).

The availability of private space in traditional Arab neighborhoods encouraged introversion because it provided a sense of solitude while maintaining an open-door policy that facilitated prayer and business connections. According to Dabbous (2021), the planned location of public institutions such as mosques and markets in close proximity enabled convenient communal interactions while adhering to Islamic teachings and social norms.

Traditional Arab urban planning began with the establishment of key axes and public buildings, which enabled the construction of local communities through collaborative decision-making among all parties concerned. Irregular yet polished urban layouts fit a variety of socioeconomic and cultural needs, providing both visual privacy and semi-public places.

Arabic Islamic communities had urban architecture that featured low-rise buildings, intricate structures, and complicated shapes. The towns featured a "multi-focal" cellular architecture. This architectural design included a variety of functions and building typologies, used indigenous materials and technology, and followed a forward-thinking development strategy that was critical for creating economic prosperity (Bianca 2000).

The Islamic city was divided into three neighborhoods: professional, commercial, and artisan. The governor's palace and mosque were located in the central zone. The Islamic city's spontaneous growth and homogeneity were indicated by the arrangement of streets

and lanes cantered around a kasbah that held shops, workshops, and families (Ibrahim, 1993).

Ancient Arabic urban design included narrow lanes that provided shade and sun protection. The city's general design was defined by a blend of simplicity, classic organic fabric, and continuity, which was achieved through the use of inner courtyards, a hierarchical street layout, and a human scale. (Al Sayyad, 1987) The historic Arab metropolis exemplifies the application of sustainability concepts by managing climate challenges while maintaining a comprehensive physical layout. The neighborhood unit, which is significantly inspired by Islamic teachings and suited to the local environment, played an important role in the construction of these cities (Z. Ali et al., 2014).

2.4.2 Contemporary Neighborhood

The modern neighborhood, influenced by rapid economic, social, and technological transformations, differs from its traditional counterparts. Housing closeness to workplaces, service supply, and walking distances are important aspects in current residential planning that diverge from the original concept of community units.

Following World War II, the urbanization process and the need to rehabilitate declining metropolitan centers drove the adoption of a modernist strategy, which resulted in the spread of urban sprawl. The emphasis shifted from community hubs to larger commercial service centers, and the emergence of automobiles changed the time and space variables in choosing service sites (Bosselmann, 2012).

Urban development in underdeveloped countries is distinguished by planned expansions as well as uncontrolled low-density urbanization. This pattern is also seen in modern Libyan cities. The impact of technological improvements, growing automobile usage, and changing lifestyles has resulted in the change of traditional fabrics, frequently resulting to the formation of scattered, spontaneously produced communities without a distinct identity (El-Allous, 2016).

Finally, the transition from traditional to contemporary communities demonstrates the dynamic interplay of cultural, technological, and societal developments. Understanding these shifts is critical for good urban planning that is responsive to today's needs and difficulties.

2.4.3 Neighborhood Development

This section explores and divides neighborhood development into two categories. Traditional neighborhoods value social cohesion and communal ideals, as seen by their unique social and physical structures formed by history and culture. Contemporary neighborhoods, on the other hand, reflect the impact of technological advancements and changing lifestyles, resulting in dispersed and informal urban areas, as seen in modern Libyan cities like Benghazi (Mohamed,2013). This section includes crucial information about the growth and diversity of neighborhood designs across time.

2.4.3.1 Traditional Neighborhood

Traditional neighborhoods, marked by amazing social and physiological systems, are the result of ancient and cultural influences. Their design addresses specific resident demands while promoting social cohesion and community values.

2.4.3.2 Contemporary Neighborhood

Traditional neighborhoods, defined through wonderful social and bodily systems, are formed through ancient and cultural factors. Their design reflects precise resident needs, emphasizing social cohesion and community values.

2.5 NEIGHBORHOOD AND BUILT ENVIRONMENT

The Section explores the complex relationship among neighborhoods and their physical surroundings. It delves into how the constructed environment plays an essential role in shaping neighborhoods, influencing their functionality, aesthetics, and universal nice of lifestyles. This phase gives valuable insights into the dynamic interplay between urban planning, structure, and the development of cohesive neighborhoods.

2.5.1 Elements of the Built Environment

The term "built environment" or "built world" refers to the man-made environment that humans create through urban planning, architecture, and civil engineering in order to assist human activities. It is primarily a built environment in which people live, work, and engage in daily leisure activities (Daza, 1982).

The built environment refers to man-made environments that are specifically designed and used for human activities. It encompasses a wide range of structures, including residential, industrial, commercial, hospitals, schools, and others. It also takes into account both above-ground and underground infrastructure, such as roadways, transportation networks, and airports. According to Norberg-Schulz. (1971) there is a strong connection between humans and the built environment, which is divided into four categories: village, urban space, institution, and housing. These four categories collectively encompass the physical location where various types of houses, such as natural, complex, public, and private forms, are found.

2.5.1.1 Density

Dempsey et al. (2012) found that density had a multifaceted impact on social interaction and cohesion. The relationship between social contact and density is complex, as medium-density neighborhoods have more social connections than those with higher or lower densities. The frequency of social encounters is impacted by both the social and physical factors of a given region (Dempsey et al., 2012).

Alipour and Galal Ahmed (2021) conducted research to determine the impact of urban form on social outcomes. The study considers density, land use distribution, building heights, housing kinds, and accessibility to be critical factors of urban planning that influence social fairness and community sustainability. The findings underline the importance of urban structure, such as population density, land use, and accessibility, in shaping people's lives, social ties, emotions, sense of belonging, and stability. Increased population densities and accessibility correlate positively with increased social contact, making it easier for people to meet, converse, and form connections (Alipour & Galal Ahmed, 2021; Alia et al. (2019) discovered a favorable link between higher densities, accessibility levels, and increased interaction. This shows that increasing densities and accessibility make it easier for people to connect, converse, get to know each other, and interact.

2.5.1.2 Mixed Use

The notion of mixed land use, which describes the many roles of the urban environment, acknowledges the changing nature of land use patterns. The main force behind land usage

is the local population's demand for services. Mixed residential communities differ from one another based on their urban surroundings and demographic needs.

It is widely held that having a diversified range of land uses helps promote social attributes such as social contact, resulting in an increase in social capital. Shorter distances to the city center, higher population densities, and diverse land uses have been shown to improve overall social well-being. According to studies, people are more likely to engage in pedestrian activities in areas with diverse land use, which promotes social contact and improves community bonds. Furthermore, mixing diverse types of land use has been associated to increased safety, reducing people's concerns about safety issues and criminal conduct (Nabil & Abd Eldayem, 2015).

According to research, the existence of compact, mixed-use zones near one's home improves the likelihood of people walking more frequently. Walking increases the likelihood that people may encounter, observe, and interact with others. Furthermore, it has the ability to encourage community members to work together to solve an issue. Mazumdar et al. (2018) and Yoo & Lee (2016) found that social capital is associated with multiple levels of the built environment.

Hajipoura and others (2020) found that diverse land use in neighborhoods improves safety. Neighborhoods having a wide range of non-residential land uses are frequently connected with lower levels of safety and a higher incidence of criminal activity.

2.5.1.3 Access to Facilities

Access to neighborhood centers is dependent on numerous critical factors, including the availability and quality of these amenities. The suitable geographic location and remarkable urban design have a considerable impact on people's willingness to use facilities and modes of transportation. Urban form characteristics such as the combination of different types of land use and population density influence the accessibility and usage patterns of specific local services and amenities (Mouratidis, 2018).

However, access to local facilities is dependent on a number of other factors, in addition to their presence. It is critical to provide local amenities in a handy and well-designed area, as these factors have a direct impact on people's propensity to utilize the facilities and go to them by walking, cycling, or taking public transportation (Hajjar, 2015; Ali, H.,

et al. (2019) discovered that new city centers provide more access to services than ancient cities.

Ensuring the availability and convenience of vital services and local facilities is critical for ensuring social sustainability. Accessibility is defined by more than just distance; it also encompasses transit systems, service features, and usage patterns. Recreational centers, health facilities, educational centers, and other communal services make a substantial contribution to society's living conditions, quality of life, and general well-being (Bramley & Power, 2009; Hajjar, 2015).

According to a study conducted by Akcali and Ispalar Cahantimur (2022), modern city centers provide better access to services than old city centers. The study emphasizes the importance of urban design in promoting social sustainability, identifying density, land use, and accessibility as significant elements influencing people's lives, social ties, emotions, sense of belonging, and overall stability. greater population density and ease of access are closely related to greater levels of social contact, allowing more people to meet, converse, and connect (Akcali & Ispalar Cahantimur, 2022).

These studies emphasize the importance of accessible and well-designed local facilities in improving quality of life and developing social aspects such as social contact, a sense of belonging, safety, and neighborhood satisfaction in urban environments. They argue that inclusive and smart urban planning is critical for guaranteeing fair access to local facilities and improving overall community well-being.

2.5.1.4 The Availability of Facilities

Ensuring the availability of local amenities inside neighborhoods is an important aspect of community planning and design. This prioritization is founded on the concept of accessibility, which is an important component of social fairness. Local amenities have an impact on health, well-being, and community happiness because they make it easier to go shopping, exercise, get medical checkups, and participate in the community. Engelberg et al. (2016) investigated the relationship between physical characteristics and facility availability.

In 2022, Fahim and his colleagues conducted a study to investigate the correlation between three primary factors: (1) physical factors associated with the presence of parks

and community facilities, (2) social factors associated with a sense of belonging to the community, and (3) personal factors associated with the length of time people have lived in a place and their status as homeowners. The study's findings revealed a strong relationship between physical infrastructure and human behavior. Alternatively, the availability of services and amenities in the neighborhood can encourage people to walk or cycle, resulting in better physical health (Barton 2003).

According to the findings of the study by Yuliette, N, Sukmawati.A, Purwoningsih. P (2018) accessibility is the most significant determinant of social facility utilization. Furthermore, in comparison to public housing developments, social facilities at private housing developments are more effective at facilitating social interaction. Social facilities play a crucial role in private housing developments by serving as venues for residents to congregate and cultivate social connections.

It was demonstrated that the built environment has a considerable, albeit limited, impact on social capital and emotions of safety. According to Wood and colleagues (2008), the availability of proper facilities and a sense of safety are inextricably linked. This shows that providing facilities that fulfill specific standards and are of high quality can improve people's sense of safety. Hassan et al. (2017) discovered that higher levels of neighborhood satisfaction correlate with increased availability of public services.

2.5.1.5 Types of Buildings and Housing

Housing, as one of the most basic human needs, today not only provides shelter but also contributes to a sense of security and community harmony (Tupenaite et al., 2017). Considerations such as a building's orientation, exposure to daylight, and reconstruction capacity all play essential roles in meeting tenants' changing needs (Nguyen, 2005; Holmes, 2007). Elements such as living space, room arrangements, and the lowest level of living space all have a significant impact on building efficiency and overall individuality (Nguyen 2005).

Housing is a vital signal in neighborhood planning, ensuring privacy and protection for all family members. The type of housing chosen is also important for social sustainability, as individuals' satisfaction with their home directly influences their satisfaction with the area (Uzzell et al., 2002). Cultural and familial factors frequently impact preferences for specific housing forms, such as detached homes (villas). For example, Libyan families

cherish villas because they may be expanded to accommodate extended family members, maintaining cultural traditions (Chen et al., 2022).

2.5.1.6 Gardens and Open Spaces

Parks and sports facilities have a significant impact on residents' satisfaction with their living conditions. The perceived availability of these amenities has a bigger impact on satisfaction than the facilities' real, quantitative characteristics (Wu et al., 2020). Urban green spaces provide strong social relationships, harmony, and overall health and well-being. According to research, the presence of shrubs, grass, and perceived greenery influences social interactions amongst acquaintances (Oh, 2003).

Abdullah et al. (2021) similarly found that the perceived availability of parks and sports facilities had a greater impact on residential happiness than objective, measured factors. Urban green spaces have the ability to promote pleasant social connections and increase communal cohesiveness, resulting in improved physical and mental health. Urban green spaces have been linked to improved health habits and outcomes, such as increased physical activity and social contact. Viniece, Omoshalewa (2019).

Kemperman and Timmermans (2014) found that trees, grass, and the perceived level of greenery influence neighbors' social interactions. Green spaces encourage communal engagement in neighborhoods. Superior green spaces encourage social interaction among neighbors and develop communities for the elderly, while also playing an important role in guaranteeing safety and maintenance.

Ghassan et al. (2014) found that the availability of green spaces in small communities improves social cohesion and encourages increased social contact.

High-quality green spaces encourage social contact while also strengthening communities, particularly among the elderly. Sampson (1991) found a link between the presence of green spaces in small towns and improved social ties and increased levels of social interaction.

2.6 SOCIAL ASPECT INDICATOES

This section of the study digs into the analysis of key metrics and measurements that analyze social dynamics within communities. This section provides a complete overview

of how various indicators are used to assess characteristics such as network participation, social inclusion, and overall well-being, shedding insight on the diverse structure of urban communities. Understanding and assessing the built environment requires determining how people interact with their surroundings. According to Shahesh (2010), certain aspects of this relationship are critical to how people perceive their surroundings.

2.6.1 Definition of the Social Aspect.

Represent feelings, impact, and interaction as they arise from the built environment and the inhabitants. Neighborhoods are additionally established by citizens' social interactions and relationships, with the sense of belonging and attachment influencing community evolution (Park & Rogers, 2015).

2.6.2 Social Interaction

Urban and architectural design have a significant impact on social interaction, which is a basic human demand. Urban environments are purposefully built to encourage both individual and collective contact by providing particular communal places, appropriate lighting, and optimal acoustic circumstances. These features, together with the dynamic interaction between buildings and users, increase social participation and strengthen community solidarity. According to studies, the physical design of neighborhoods, which includes the layout of buildings, open spaces, and overall design, has a substantial impact on social relationships and a sense of belonging within a community. For example, the layout of public places and residential areas can either facilitate or obstruct social contacts and community participation, hence altering neighborhood social dynamics (Laureyssens et al., 2014).

Architects work to meet the inherent human demand for interaction by designing urban and architectural environments that encourage social ties between people and groups. This is accomplished through many types of urbanization. The environment includes specific locations for physical activity. Creating specified places with distinct characteristics, such as a focused mood, suitable and targeted lighting, and sound processors to improve audio quality and reduce noise. Furthermore, consider the concept of suggestive expressive interaction between the structure and its occupants, which improves communication and connection between them (Kattan and Khalifa 2003).

The design of urban and architectural surroundings is critical to meeting people's demand for interaction. Providing appropriate meeting locations for individuals or groups, while taking into account lighting, sound processing, and expressive exchanges, improves social bonds (Azeri et al., 2018).

Social interaction occurs in a variety of circumstances and contributes to local social relationships, hence strengthening communal cohesiveness. According to studies, urban planners have a substantial impact on community dynamics since they manage land use, planning density, open space availability, and other design elements. Research conducted in numerous communities has revealed a link between design, layout, and social interactions. Physical layouts with interconnected common areas encourage social interactions and relationships (Ghafoor et al., 2019).

Green spaces and their design are essential for fostering social cohesion. Urban parks and green spaces can serve as hubs for community participation, strengthening social relationships and promoting physical and mental health (Jennings & Bamkole, 2019). Furthermore, the design of urban areas, particularly the ease of access and path layout, can have a significant impact on the scope and quality of social interactions within communities (Mohammadi Tahroodi and Ujang, 2022).

As a result, urban planners and architects play an important role in shaping social interactions and encouraging community cohesiveness through the careful design and organization of urban surroundings. The goal is to create environments that not only meet the residents' physical needs, but also improve their social interactions and strengthen communal bonds.

2.6.3 Safety and Security

Shannon, W. et al. (2008) discovered that there was an increase in perceived facility sufficiency and safety feeling. This shows that providing appropriate and high-quality facilities improves perceptions of safety.

Creating a sense of safety is critical for fostering trust, mutual interchange, and a strong sense of community and belonging among inhabitants. The quality of the surroundings, which includes factors such as effective lighting fixtures, unimpeded sightlines, and the availability of outdoor seating, is critical in widening opportunities for informal

observation, so improving security and encouraging social interactions. Furthermore, the presence of a diverse range of activities within a community can help to reduce crime and improve overall security. Environmental influences and network engagements are important in determining individuals' attitudes on safety and community wellbeing, according to research (Allik & Kearns, 2017; Adedibu, 2013).

Safety is a critical problem that directly affects people's lives and identities. Numerous academics have claimed that safety is an important component of social identity. When people feel safe, they can form strong attachments and loyalty to their constructed environment. Individual and family safety promotes personality development (Shawash, 2000).

The study found that the built environment has a significant but limited impact on social capital and safety perceptions. The perceived sufficiency of facilities and the sense of security both improved, demonstrating that providing sufficient and high-quality facilities had a beneficial impact on safety perceptions (Wood.L & others, 2008).

In terms of land use and security, she explained that "Jacobs, 1961" proposed a strong link between the nature of urban activities and the rate of criminal activity. Compared to specialized neighborhoods, the neighborhoods, which includes business and residential zones, institutions, and recreational and leisure places, achieves more than continuous security. Because of the ongoing stream of people into these communities, informal surveillance of activities and behavioral patterns will be feasible. Feelings of security are said to boost inhabitants' confidence and mutual collaboration, as well as build a sense of community and belonging in the place. Dempsey, in 2009.

Perkins observed that environmental factors such as illumination, sight lines, and outside seats increase the probability of accidental observation. Obtaining security in an area requires not only training, but also promotes social interaction. Residents' relationships inspire them to make full use of the accessible venues and spaces. Their involvement and conversation with neighbors, as well as the formation of collaborative ties, are more noticeable. Overall, the presence of a specified number and type of overlapping activities in the context of land use and security helps to protect the neighborhood from criminal activity and ensures its safety.

According to Shawash (2000) study, the availability of facilities and mixed usage in the area stimulates and increases the neighborhood's safety and security.

2.6.4 Human Needs

Understanding human desires, as defined by Maslow's hierarchy, is critical for achieving social peace in residential communities. Fulfilling physiological, security, social, self-esteem, and self-consciousness needs is critical to fostering individual and societal well-being (Mehan & Soflaei, 2017).

Amershedy et al. (2015). The goal of the urban designer is to assure successful and human-centered design by meeting persons' physical, emotional, and spiritual demands through an analysis of various societal wants and needs.

Maslow's hierarchy of human needs is commonly used in urban design to achieve social sustainability in residential neighborhoods. The theory divides human wants into five categories: physiological, security, social, self-actualization, and self-esteem. Each of these demands has a significant impact on human behavior and overall welfare in urban areas.

Many scholars believe that privacy is an important factor in the formation of both the family and society. The value of privacy must be emphasized in both the outward and internal aspects of one's built environment, whether at home or elsewhere (Shawash, 2010).

To ensure that their designs are functional and appropriate for human behavior, urban designers emphasize meeting these various needs. An in-depth analysis of the application of Maslow's theory in urbanism has been done, emphasizing the importance of designing environments that incorporate key human needs such as comfort, privacy, diversity, and a strong sense of place and identity. Research emphasizes the need of addressing these demands at various levels within urban environments, from small neighborhoods to entire cities. This is especially important in terms of urban rehabilitation and regeneration projects (Mehan & Soflaei, 2017).

Furthermore, it has been proposed to combine Maslow's hierarchy of needs with other theories, such as Porter's value chain theory, in order to prioritize policies that promote sustainable development while striking a balance between social, economic, and

environmental sustainability. The aforementioned integration is especially significant for developing countries because it acts as a powerful motivator for addressing fundamental physiological needs while also ensuring environmental sustainability. This integration is an important aspect in achieving higher-level goals and supporting sustainable development (Walsh, 2011).

In summary, the study of human needs and the application of Maslow's hierarchy to urban planning are key elements in the aim of improving social aspects and promoting equality in residential areas. This is accomplished by meeting the physical, emotional, and spiritual needs of those who live in these communities.

2.6.5 Sense of Community

The concept of a 'sense of community' is inextricably tied to urban planning and physical characteristics of areas. Our emotional attachment to specific places is determined by personal interactions, the location's historical and architectural value, and the activities associated with it. The concept of location is critical in shaping our sense of community, as it encompasses both the physical surroundings and our subjective interpretations of it. The arrangement of the urban fabric and the types of housing have a significant impact on human behavior, shaping sentiments of community, belonging, and connection to a specific region. The relationship between urban space syntax and building quality has a direct impact on residential happiness and community belonging (Fahim et al., 2022). Place attachment in public settings has a considerable impact on the quality of life in urban communities. It contributes to a city's identity and fosters a strong sense of belonging and community (Novianti et al., 2018).

Martin, M. (2021) confirms in his study that individuals' sense of belonging differs based on their geographical location and the specific qualities of their communities. These elements have a big impact on how people see a specific region.

Farahani, L& Lozanovska, M. (2014) conducted that the Neighbourhood residential environments may foster a sense of community among their inhabitants. By increasing the number of interactions and creating pedestrian-friendly environments, the built environment can positively or negatively impact the intensity of this sensation. In Bangalore, India, community-led place-making activities in urban lakes show how a

sense of place promotes stewardship and advocacy for a more socially fair and nature-oriented approach to urban ecology management (Murphy et al. 2019).

Furthermore, research on human requirements in urban settings emphasizes the significance of contact with nature, aesthetic preferences, social interaction, and community identity in urban planning (Matsuoka & Kaplan, 2008). Physical places, the acts that accompany them and a person's sense of self are all part of a feeling of place and community. Such as a sense of belonging and a connection to a specific location. Creating a sense of place is central to urban place making, which promotes interconnected practices and brings people together (Alyani & Herlily, 2019; Sepe & Pitt, 2014).

Living in communities that encourage leisurely walking improves an individual's sense of place, hence it is connected with neighborhoods having a smaller range of land uses but a higher concentration of commercial activity. The findings show that commercial areas can limit social interaction among local residents unless urban design is used to create vibrant pedestrian-friendly business districts, such as offering street-facing stores rather than huge parking lots. Wood and colleagues (2010).

Physical design should stress establishing a sense of place, as well as usefulness and efficiency. Community centers and neighborhood-friendly designs can increase social behavior, encourage involvement in everyday and social activities, and strengthen the feeling of place (Dannenberg et al., 2003; Wood et al., 2010).

These studies emphasize the complex interplay between urban architecture, feeling of place, and community dynamics. They emphasize the necessity of intelligent urban planning that prioritizes human needs while also encouraging a sense of belonging and community cohesion.

2.6.6 Satisfaction with the Neighborhood

Morris and Winter (1978), Peck and Stewart (1985), and other studies believe that the dwelling unit and neighborhood have a substantial impact on persons' physical and mental health, as well as their social and economic well-being. Densely populated neighborhoods, poor living conditions, restricted social places, and compulsory housing or relocation can all contribute to inhabitants' social and physical diseases.

Ciorici and Dantzler (2019) used subjective assessments of neighborhood-level qualities to identify the components that contribute to community satisfaction. A binary logistic regression analysis found that the quality of social networks, neighborhood physical conditions, neighborhood safety, and the quality of public services all have a positive correlation with neighborhood satisfaction. The dwelling unit and neighborhood have a significant impact on physical and intellectual fitness, social well-being, and financial stability. Factors such as high-density areas, inadequate living arrangements, a lack of play space, and forced relocation can all contribute to social and physical difficulties among inhabitants. Studies on neighborhood pride focus on subjective assessments of features such as social networks, physical conditions, safety, and public services. Positive relationships exist between those characteristics and neighborhood delight, indicating the importance of commonplace places and public geographical regions in improving network contact (Kahana et al., 2003; Sulaiman and Yahaya, 1987).

A range of factors influence an individual's neighborhood satisfaction, including physical surroundings, social relationships, sense of security, and public facilities. Hur and Morrow-Jones (2008) conducted a study that found that homeowners' degree of satisfaction with their residential locations is significantly connected with a variety of characteristics, including physical conditions, social issues, and safety. A distinction was made between excellent and undesirable neighborhoods. Eluwa and Siong (2015) conducted a study in Lagos, Nigeria, using structural equation modeling and multiple linear regression to assess resident satisfaction. Eluwa and Siong (2015) discovered that the social environment, transportation, environmental quality, and facility availability all had a substantial impact on neighborhood satisfaction.

Hwang, Choi, and Park (2014) conducted a comparative study of the factors that influence housing satisfaction in rural and urban areas. Their findings showed that housing satisfaction is highly influenced by house characteristics, communities, and individuals, with notable differences between rural and urban models (Hwang et al., 2014).

Savasdisara (1988) discovered that environmental factors such as noise, ground vibration, sunlight in dwellings, and road conditions were important predictors of resident satisfaction.

These studies emphasize the intricate interplay of numerous elements that influence neighborhood satisfaction, highlighting the importance of both physical and social settings in molding inhabitants' views and well-being. The findings suggest that commercial locations may limit social interaction unless urban design strategies are used to establish pedestrian-friendly commercial enterprise areas. Additionally, municipal facilities and spaces that encourage leisurely walking contribute to individuals' sense of place. Finally, examining social factors within the built environment is critical for building network well-being, brotherhood, and sustainability. Urban planners and architects play an important role in constructing surroundings that no longer only support inhabitants' physical needs, but also contribute to the experience of region, network, and typical satisfaction. The complex relationships between various indicators highlight the importance of holistic and human-centered procedures in urban planning and design.

2.6.7 Satisfaction with Housing

Dwelling satisfaction is a multifaceted notion influenced by elements such as dwelling quality, neighborhood safety, and personal preferences. Statistical analysis, descriptive evaluation, correlation testing, visualizations, and summarizing findings are all used to improve policy and community well-being. (Lu, 1999; Saleh ,2008).

Morris and Winter (1978) defined housing satisfaction as being content with one's current living arrangement. Housing satisfaction is defined as an individual or family's level of contentment with their current living situation. The feeling of happiness or dissatisfaction with broad areas of life reflects a person's appraisal of his or her well-being. Satisfaction is attained when a need is met, but dissatisfaction occurs when a need is not supplied (Husna and Nurizan,1987).

Scholars that specialize in neighborhood and housing satisfaction emphasize the need of assessing the gap between one's current condition and future ambitions. Housing satisfaction has been found to be associated with variables such as adequate living space, as evidenced by the number of bedrooms, which influences family members' ability to participate in everyday activities. Room kinds, poorly designed floor designs, and insufficient space are listed as factors contributing to dissatisfaction. The length and design of a home are commonly accepted to have a substantial impact on housing pride (Altaş and Ozsoy, 1998; Yi, 1985).

Housing satisfaction relates to one's level of contentment with their current living arrangement. It is influenced by a variety of factors, including housing's physical characteristics, human aims and ambitions, and the suitability of the living environment. According to research, the mismatch between a person's current circumstances and their desires has a significant impact on their degree of satisfaction with their living environment. Physical features such as floor plans, space, and room kinds are important considerations. Hwang, Choi, and Park (2014) discovered that human characteristics, home circumstances, and neighborhood attributes all influence housing satisfaction in both rural and urban settings. Notably, the form of dwelling and the quality of connections with neighbors were recognized as critical determinants in determining levels of pleasure (Hwang et al., 2014).

Lee's (2012) research shows that the kind of housing tenure and housing affects residential satisfaction, with homeowners being more content than renters on average. Residential area, household income, and size were among factors that influenced satisfaction levels (C. Lee, 2012).

Cho and Kwon (2023) explored the numerous factors that influence housing satisfaction. Their studies demonstrated that housing happiness is significantly influenced by monthly rent, built-in appliances, transit conditions, medical and convenience services, and housing quality. The research listed above demonstrate the complex and different elements of home satisfaction. They emphasize the importance of considering a wide range of components, from personal preferences to broader environmental and socioeconomic concerns, in order to understand and increase housing satisfaction.

2.6.8 Participation in Communities

Community participation is a key indication of social sustainability. Understanding of community groups, experience with government assistance, engagement in religious activities, active participation in network firms, and attentiveness to community news and difficult situations are all quantifiable metrics of participation. Participation has been identified as an effective strategy to build local groups and contribute to small-scale projects that beautify specific places, according to research. The experience of civic obligation, inspired by public involvement, emerges as a valuable ultimate effect of citizen participation (Sawicki, 2002; Obar et al., 2017).

Teernstra, A & Pinkster,F., (2015) conducted a study and discovered that involvement can be useful in boosting the local community and supporting small-scale projects that improve specific parts of the neighborhood. One of the benefits of citizen participation is that it promotes public engagement by developing individuals' feeling of public duty (Michels and De Graaf, 2010).

The findings of Kadomy's (2008) study show that residents are willing and eager to participate in neighborhood activities and appreciate the importance of their contribution to community development. Furthermore, they recognize the importance of neighborhood commissioners in facilitating community engagement in the community development process. Oropesa's (1992) study found positive views and desires for community participation. Residents are aware of the importance of neighborhood committees in community development and comprehend the nature of their work. Joining neighborhood committees is motivated by a desire to improve one's life experience, create belonging and teamwork, boost one's self-esteem, and strengthen public relations (Swaroop & Morenoff, 2006; Oropesa, 1992).

2.7 THE RELATIONSHIP BETWEEN THE BUILT ENVIRONMENT AND SOCIAL ASPECT

The built environment and social features have a reciprocal relationship, with one impacting the other. Residents benefit from a variety of social activities and experiences provided by unique urban forms with distinct physical and spatial qualities. Considerations of community interests and needs in urban neighborhood design play a critical part in residents relying on the area to meet their requirements, hence increasing liveliness and encouraging social interactions.

Turgut's (2010) research shows the role of physical and social surroundings on increased place attachment. Perceived living conditions, social links, a sense of security, and a reduced floor area ratio (FAR) are all positively related to place identification. Similarly, perceived housing conditions, perceived neighborhood environment, social links, lower FARs, and built environment quality all have a favorable relationship with location reliance.

Turgut (2010) investigates the impact of neighborhood design and layout on social interaction and networks. Variations in socializing patterns and network structures between high- and low-density regions highlight the impact of neighborhood planning on social dynamics (Ülken & Edgü, 2005; Turgut 2010).

Many studies have found that a neighborhood's physical association has a significant impact on social contact among its people. Analyzing physical-social relationships, the study offers a continuum, emphasizing the need for residential design to focus on users at the micro-neighborhood level. Lauwers et al. (2021) investigate the relationship between physical surrounds and residents' behavior in typical cities. The study emphasizes the impact of the physical environment on many aspects of people's life, as well as the interactive effect that alters the environment to accommodate varied desires. More research is needed to investigate the potential benefits and risks to intellectual fitness linked with specific neighborhood environments and the development decisions that define them. Smart Growth and New Urbanism, which focus on traditional roles, seek to build more sustainable and livable cities. Physical layout, as promoted by these moves, is critical in encouraging walking, social connections, and minimizing car dependence, which is likely to lead to cognitive health benefits (Anderson et al., 2017; Lauwers et al., 2021).

Gadanfer, S. (2014) explored the relationship between changes in the social environment and their implications for the built environment of a city. It also discussed the key drivers of social and functional transformation that influence the built environment, including an examination of social transformations, current lifestyle demands, and their effects on the built environment. Based on the consensus, it is necessary to reconsider future approaches to urban development in order to foster an environment that promotes the growth and reinforcement of social interaction, the enhancement of a sense of belonging, the reinforcement of security measures, and the encouragement of civic engagement by understanding the demands of existence and the emerging lifestyles of all societies.

A study by Abuthiaf, F. (2004). conducted in Algiers found that neighborhoods services such as service supply, open spaces, and accessibility greatly contribute to the improvement of social interaction. Inequities in service accessibility harm interpersonal relationships and may even lead to breakdown.

Shawash (2000) investigates three Tripoli neighborhoods, one colonial and one postcolonial, located in different historical regions. The results showed that the extent to which the built environment is integrated with local physical and social variables is critical to its effectiveness. Sociocultural, economic, and political upheavals have transformed the built environment. However, the younger respondents, who represent the city's future, do not agree about traditional social life, and modern neighborhoods are not satisfying the older people.

Abedhalim, L.'s study (2022) examines the relationship between the physical environment and the behavior of its citizens in traditional cities, as well as the effects of that specific physical environment on many elements of people's lives. Furthermore, it has an interactive impact and changes the nature of the environment in which they dwell. Residents must adjust to their changing requirements in order to comprehend how the historical urban fabric originally formed. As a reflection, the translation of a prior culture highlights the use of knowledge of human behavior when building constructed environments, as well as the responsibility of architects in designing psychological spaces and influencing appropriate and improper behavioral patterns.

Rand et al. (2002) examine the relationship between metropolitan sprawl and neighborhood social interactions. The findings highlight the statistically significant link between the use of public areas and the type and frequency of neighbor interaction, stressing the importance of public spaces in molding residents' behavior. Finally, the complex interplay between the built environment and social elements emphasizes the importance of holistic and user-centered urban design strategies. Understanding how bodily design effects social dynamics is essential for forming long-lasting, colorful, and socially connected communities. The research cited provide valuable insights into the complex interaction between the built environment and social aspects, opening the path for educated urban planning decisions that emphasize community well-being and satisfaction (Rand et al., 2002; Azhdari et al., 2018).

2.8 CONCLUSION

This chapter delves at both traditional and modern neighborhoods, as well as neighborhoods theories developed in Western countries and used in developing countries. Residential communities have changed, with improvements to housing standards,

roadways, public spaces, and facilities. Changes in the physical environment are accompanied by changes in the societal dimension, which come from the introduction of new dwelling structures, a new lifestyle, and new employment opportunities. Although the built environment has seen enormous changes, the social side has been less significant. Clearly, societal transformation did not match the extent to which the built environment was modified. Furthermore, the chapter covered a wide range of issues concerning the built environment, including development trends, population density, mixed use, accessibility, and service availability. The conversation also covered social aspects such as a sense of belonging, social engagement, safety and security, housing satisfaction, neighborhood contentment, and societal participation, as well as how these affected the physical environment. Several studies have been conducted on the link between the built and inbuilt environments (social elements) and the impact of one on the other. The following chapter will look at the modifications of the built environment in Benghazi as a result of urbanization, migration, and social change.

CHAPTER 3 GENERAL CHARACTERISTIC OF BENGHAZI CITY

3.1 INTRODUCTION

This chapter provides the groundwork for understanding the urban development that the study is situated in by offering a thorough overview of the theoretical perspectives, historical perspectives, policy developments, challenges, and limitations of urban development, with a special focus on Benghazi, Libya which the study is located.

3.1.1. Historical Perspective

This phase, the historical component of Benghazi's urban development is examined, with particular attention paid to the city's transformation from the mid-1970s. The twin objectives of improving infrastructure and raising the standard of living for its citizens drove this era's tremendous growth. During this time, the city's development was greatly influenced by the integration of modern urban architectural concepts with traditional Libyan community values, underscoring the significance of maintaining cultural and historical identity in addition to, advancement (Fox, 2012; Eltrapolsi 2022).

3.1.1.1. Historical Perspective of Urban Development in Benghazi

Since the middle of the 1970s, Benghazi has experienced significant urban growth, characterized by a concerted attempt to modernize while maintaining the essential elements of traditional Libyan life. Two goals propelled this period of urban development: improving infrastructure and people's quality of life (Awotona, 1990a).

3.1.1. Evolution of Urbanization Policies since the 1970s

Since the 1970s, there has been a substantial change in the urbanization regulations, which has affected how urban growth is approached both globally and in Benghazi in particular. Over this time, there has been an increase in awareness of the intricate problems that urbanization has brought about and the ensuing need for more sustainable and equitable urban development plans (Pugh, 1995).

Local city planning techniques started to be impacted by worldwide shifts in urbanization policy in Libya, especially in Benghazi. The creation of more sustainable and inclusive urban landscapes, embracing the ideas and suggestions covered in those international conferences, started to gain attention. To strike a balance between growth, environmental preservation, and social justice, legislators and urban planners have begun

implementing concepts into the planning and development of new metropolitan areas (Awotona, 1990a).

3.1.3. Growth and Infrastructure Renewal

The need for better living conditions and increased social interaction spurred Benghazi's growth, necessitating the renovation of the city's infrastructure to meet these devolving needs. According to Barani (2019), the expansion improved the city's livability and functionality in addition to causing it to physically increase. According to Barani and Kahraman (2019), Benghazi's urban environment has significantly improved in the modern era. They stress the close relationship that exists between improving living circumstances and infrastructural development.

3.1.4. Designing for Social Dynamics

This urban development was motivated by the idea that physical locations significantly influenced social connections and the general well-being of the community. As a result, the planning of Benghazi's urban areas placed a high priority on encouraging community involvement and the formation of solid social ties. In response to the evolving urban environment and societal expectations, this involved creating community spaces that promoted social contact and improved interpersonal (Omeir, 2017).

3.2 CHALLENGES TO URBAN DEVELOPMENT

During this fast-paced period of urbanization, Benghazi encountered many challenges, especially when it came to incorporating new construction into the preexisting urban framework. To guarantee the equitable expansion of the city, issues including a stressed infrastructure, rising service demand, and the need for efficient municipal government must be addressed.

This thorough analysis looks at Benghazi's urban growth from a historical perspective since the mid-1970s. It uses particular materials to give a thorough and well-referenced account of the city's growth, challenges, and solutions used to deal with them. Since the mid-1970s, Benghazi has undergone tremendous urbanization and expansion. Urban infrastructure needs to be revitalized and living standards improvement in response to this surge, which is driven by changes in social aspects and the need for better living conditions.

Benghazi's city development showed a dedication to raising living standards and bolstering infrastructure in an ever-changing urban setting (Barani & Kahraman, 2019:

Safour, 2021). Benghazi's declining urban layout was addressed by developers through the creation of new urban districts that blend aesthetically pleasing social and spatial features with contemporary living requirements. Urban development initiatives hinge on striking a careful balance between modern urban upgrading and the preservation of traditional Libyan towns (Omeir, 2017; Elgadi et al., 2021; Remali & Abudib, 2022).

3.2.1 Contradictions in Urban Development

A major paradox characterizes the neoliberal approach to urban improvement: the social dimensions of city design often clash with the economic imperatives. This paradox poses a difficult conundrum for politicians and urban planners. Prioritizing social equality and environmental sustainability is just as essential as advancing economic growth and advancement. One of the biggest problems in modern urban development is still finding a way to reconcile those frequently conflicting goals. These difficult urban growth conditions highlight the complex interactions between social, economic, and environmental elements that shape metropolitan environments.

Sophisticated and comprehensive urban policies that can successfully balance the various and sometimes competing needs are essential as urban areas continue to develop. Urban development faces several challenges, one of which is striking a delicate balance between environmental protection and economic expansion. Comprehensive municipal regulations that address these intricate issues are necessary, as the neoliberal approach to urban management often leads to social inequality and gentrification (Newman & Kenworthy, 1999; Kelly, 2014).

3.3. THEORETICAL APPROACHES

Benghazi's urbanization process requires a thorough analysis that takes into account a variety of theoretical perspectives in order to fully understand the complex interplay between the city's social and physical components. It is crucial to comprehend how urban planning affects the social climate of the city.

3.3.1. Social-Cultural Theories

The social and political aspects of urban planning must be taken into account when analyzing how city design affects network alliances, cultural identities, and social bonds. This is made clear by looking at the example of Benghazi, which has moved from following customs to representing modern values. Analyzing the historical impacts of colonialism and post-colonialism on Benghazi's development reveals that urban planning

initiatives have either considered or ignored the unique needs and cultural customs of the community (Watson, 2009; Schmitt & Hartmann, 2016).

3.3.2. Environmental Psychology

The study of environmental psychology looks into how human behavior, emotions, and social interactions are affected by urban planning. This line of work in observation makes it easier to comprehend how urban environments affect people psychologically. This study investigates how urban people's social behavior and mental health are impacted by physical elements such as public spaces, open areas, amenities, mixed-use development, and accessibility, (Durante, 2017; Park, G., & Evans, G, 2016; Jackson, L. 2003).

3.4 THEORETIC APPROACHES IN URBAN PLANNING IN LIBYA

Urban design in Libya is changing dramatically right now, with new concepts being incorporated while maintaining the country's rich cultural heritage. This change represents a more thorough shift toward an all-encompassing approach to urban development that embraces modern planning principles while valuing and attempting to maintain Libyan cities' unique legacy.

3.4.1. Integration of Modern and Traditional Planning

Throughout this time, Benghazi's urban development carefully integrated contemporary urban planning concepts while maintaining a seamless fusion of Libyan traditional characteristics. Ali, Taki, and Painter's (2020) studied compares modern architectural styles with traditional Islamic homes to look at how Benghazi's housing design has changed over time. According to the study, modern Benghazi homes put an emphasis on meeting modern needs while usually ignoring ancient homes' sustainable features, like interior open areas and well-planned architectural layouts.

These features, which are frequently seen in classic designs, significantly improve energy efficiency and environmental comfort. Research suggests that combining these traditional elements with modern architecture can produce a more ecologically sustainable living space, maintaining a balanced relationship between technology development and the conservation of Benghazi's historical and cultural legacy. This plan ensures that the expansion of cities positively affects society's socio-cultural framework. (Ali *et al.*, 2020).

Libya's contemporary urban planning movement seeks to strike a careful balance between technology and maintaining the country's traditional way of life. For towns like Benghazi, where maintaining cultural identity is a top priority while pursuing sustainable growth, this approach is crucial. The strategy includes not only the creation of plans and the integration of new technologies, but also the maintenance of traditional urban layouts and social norms (Elgadi et al., 2021).

3.4.2. Contemporary Planning Principles

An examination of Libya's existing building regulations reveals a concerted effort to combine contemporary development strategies with the country's traditional way of life. This tactic shows a thorough comprehension of the unique sociocultural setting of Libyan cities. By fusing cutting edge urban planning techniques with the customary spatial and social components of Libyan communities, urban planners hope to create neighborhoods that are meaningful, sustainable, and culturally relevant. The increased discussion in Libya about theoretical strategies for urban planning provides important context for understanding the methods and practices that are now in use.

The recognition of the need to combine traditional and modern components with a strong emphasis on sustainability and cultural preservation shows how urban planning is evolving in Libya, especially in cities like Benghazi. Urban planning in Libya is currently undergoing a major transition as it blends modern concepts with the country's traditional way of life. The goal of contemporary urban planning is to create resilient and sustainable communities. It places a special emphasis on growing mixed-use neighborhoods, encouraging environmental preservation, and constructing sustainable transportation infrastructure (Shahran et al., 2017; Elbasha& Aysu, 2019).

3.5 SOCIETAL GOVERNMENTAL AND FINANCIAL CONSTRAINTS IN URBAN DEVELOPMENT

Libyan urban development, especially in areas like Benghazi, necessitates deftly navigating a complex web of political, administrative, and financial constraints. These elements have a critical role in shaping the urban environment and influencing how urban development projects turn out.

3.5.1. Societal Constraints

Libya's urban planning laws are heavily impacted by socioeconomic variables, such as the country's demographic composition and cultural inclinations. According to

Elmansouri et al. (2020), it is critical to balance urban growth with residents' values and feeling of community. Libya's heterogeneous population, distinguished by its unique blend of cultures, necessitates a particular strategy for urban growth. This strategy should be considerate of the various desires and inclinations of various groups, guaranteeing that urban growth is both practical and consistent with societal cultural norms (Elmansouri et al., 2020).

3.5.2. Governmental Constraints

Sometimes governmental limitations on city development take the form of policy directives, administrative processes, and regulatory frameworks. Effectively overcoming these challenges is necessary for Libyan city development to be effective. It takes knowledge, working within the law, ensuring compliance with the law and standards, and interacting with the government to get permission and support. To expedite decision-making and the implementation of environmentally friendly projects, a clear and effective regulatory framework is essential (Azlitni, 2005).

3.6. LIBYA\BENGHAZI CITY PROFILE

In neighborhood planning, the complex interplay between the built environment and social factors is essential. Social dynamics are greatly influenced by the physical layout and design, which emphasizes the necessity of integrated urban planning that takes these factors into account.

3.6.1. Geographical Features of the City

Libya is a country in North Africa that is roughly 1.775 million km² in size. Its borders go from latitude 20° to 33° North and from longitude 10° to 25° East. The region has 1820 km² of immaculate Mediterranean coastline. The country's advantageous location, it borders the Mediterranean Sea, Egypt, Sudan, Chad, Niger, Algeria, and Tunisia underlines its significance as a geopolitical player in the region. Situated along the Mediterranean coastline in northeastern Libya, Benghazi is a strategically significant city spanning 4 kilometers with coordinates of 32 degrees North and 20 degrees East. The administrative hub of the Benghazi Region is Benghazi, the second-largest city in the region. Benghazi Baladiyat and Benghazi Shabiyat also have their capitals there. Situated in the Sidra Gulf, the Benghazi region has long been a center of alternative culture. Its diverse urban fabric, which includes striking structures, thoughtfully planned streets, effective transit systems, and green areas, define it. These factors have had a significant

impact on the urban layout and construction of the city (Majeed, 1952; Ahmouda & Hochmair, 2018).

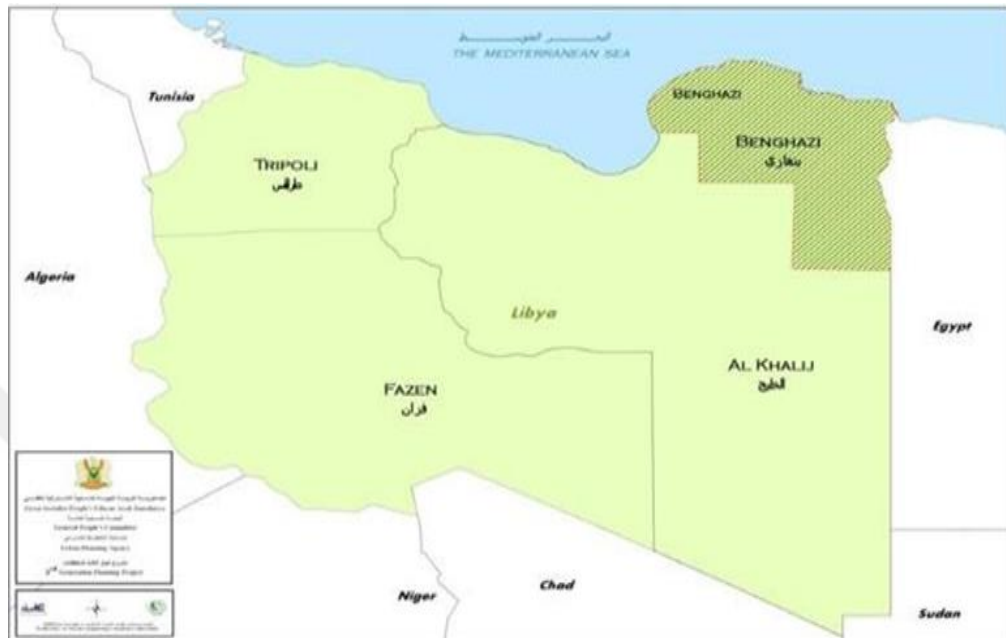


Figure 3.1 illustrates the geographical position of Benghazi in the country. Source: Elemara (2009).

3.6.2. Urbanization

While Libya's urbanization process is similar to that of other North African nations, it also demonstrates unique features. Furthermore, there is variety in North Africa's urbanization tendencies; Libya is a prime example. Libya exhibits a higher rate of urbanization even though its population is smaller than that of its neighbors. Nearly two thirds of the populations live in metropolitan regions, where the bulk of people reside.

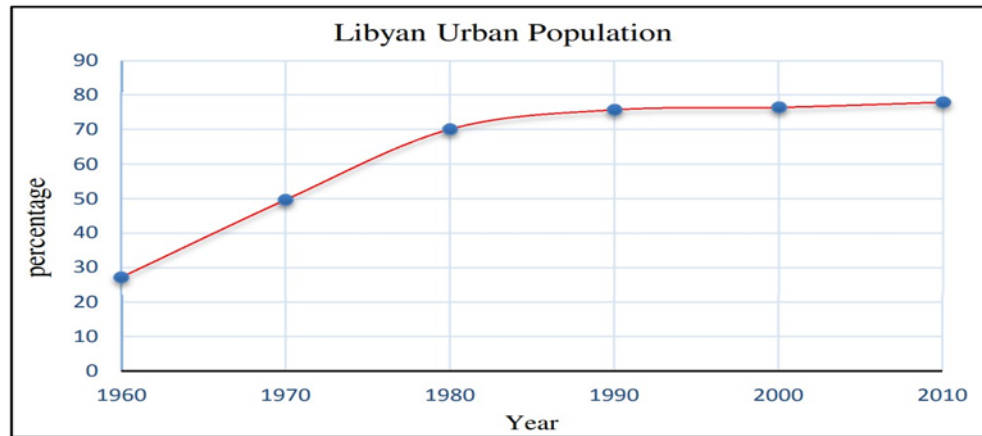


Figure 3.2 which shows the urban environment of Libya's cities, demonstrates this pattern.

According to 2010 UN-Habitat research, 77.89% of Libyans lived in urban areas in 2010, and by 2020, this number is predicted to rise to 80.29%. Regarding Benghazi, urban development has entailed striking a careful balance between meeting the needs of modern infrastructure and preserving the city's distinctive past. This balance demonstrates the city's resilience and adaptability as it continuously tries to strike a balance between preservation and development. Benghazi's urbanization strategy incorporates both the incorporation of modern urban life's important elements and the preservation of its historical identity (Omeir, 2013; Salhin, 2010).

3.6.3. Migration Dynamics and Their Impact on Benghazi

Migration is defined as the movement of people for a variety of causes and can be classified as forced, voluntary, temporary, or permanent. It may have international or domestic origins and cross-national boundaries. Push and pull forces are the two most prominent categories for migration motivations. People are forced to leave their home countries due to a variety of circumstances, including hunger, overcrowding, civil unrest, climatic shifts, and limited job opportunities. Conversely, pull forces entice individuals to relocate to other areas in search of better employment opportunities, educational opportunities, and living conditions. As Lee (1966) showed, economic factors are a major force behind migration. The main causes of this are typically the disparities in financial prospects between small and large towns, as well as between rural and urban communities (Lee, 1966).

The demographic and cultural composition of Benghazi has been greatly influenced by the city's migration patterns. The city features a blend of traditional

neighborhoods that support strong ties to the community and cultural heritage with more modern areas that promote individualistic and self-serving lifestyles. The city embraces modern urban development while simultaneously attempting to preserve cultural preservation, which characterizes its response to migration trends (Mengiste, 2019).

3.7 SOCIAL CHANGES AND CULTURAL DEVELOPMENT

Foreign rulers have progressively absorbed elements of foreign civilizations into native cultures throughout history (Morgan et al., 2012). Libya has been a center for ancient civilizations, cultures, and beliefs due to its physical location. This is demonstrated by the wide range of social and architectural influences present throughout the nation. Prior to the advent of Islam, the local populace practiced a number of native religious traditions, and there were Jewish communities in Cyrenaica. Furthermore, the city of Cyrene had Christian communities. Islam gained popularity swiftly and had a big impact, changing laws, customs, rituals, and society in interesting ways (Morgan et al., 2012).

Libya's notable socio-cultural developments have been significantly shaped by the shared religion of Islam. Muslims base their religious, moral, and social behavior on the teachings of the Qur'an, Hadith, and Sunna, which are the main sources of guidance. Islam has the beneficial attribute of flexibility, which allows it to easily blend into the political, social, economic, and cultural facets of other communities. Cultural shifts happened slowly during the long period of interaction between Libya and the Ottoman Empire. During this time, the religious convictions of both the populace and the monarchs remained unwavering. One notable exception, though, happened from 1911 to 1943 when Italy annexed Libya. The Italian government founded universities all around the nation at this time in an effort to market and advance the Italian language and subculture (Ahmida, 2011).

The majority of Libyans were against the concept of sending their kids to these schools because they were worried about how their cultural identity and religious convictions might be compromised. Conversely, those who collaborated with the invaders and adopted European traditions were disparagingly called "modernized" or "Italianized." Furthermore, this minority was isolated from the rest of society because the process of "Europeanization" exclusively affected the upper classes of society, affecting their lifestyle, morals, and educational attainment. The goal of the Italian reformers was to

reduce Libyan resistance to colonial behavior and ideas by undermining Libyan solidarity and familial. Despite strong opposition, there have been some changes to the population's socioeconomic makeup. The Italians' hold on the nation's resources of wealth, power, and prestige accounts for the domination of a certain type of the Italian social class structure (Madi, 2018).

Libya has seen significant increases in living standards and urbanization as a result of the country's explosive economic expansion once oil was discovered, which has significantly altered peoples' livelihoods. The influence of the West on Libyan culture goes beyond heightened contact and exposure to foreign ideologies and ways of life. The marketing and media industries have grown in importance as well. By attacking Libyan education, morals, and way of life, the Italian reformers sought to sabotage the country's unity and ties. By isolating the majority from the larger population, this strategy aimed to combat colonial ideas and actions. The people's social order experienced a slight change in spite of strong opposition. The widespread presence of Italians in positions of authority, money, and influence across the nation was a defining feature of the Italian social class system. After oil was discovered, Libya had tremendous economic expansion that raised living standards and stimulated urbanization, which drastically altered peoples' lifestyles (Allan, 2022).

The increasing engagement with overseas people and their cultural norms Libya, a nation undergoing change, has managed to preserve a number of aspects of its culture, including ethnicity, language, rituals, and religious practices and beliefs, despite the strains and influences of colonization and post-colonial Westernization. The Libyan society still revolves around the extended family, despite an increasing trend toward nuclear households. Western homes have evolved over the past 50 years due to improvements in economic wealth and education, but family members' responsibilities have not changed. The segregation of genders, privacy, social security, and relationships are the most crucial elements of Libyan housing architecture. It is important to remember that women's traditional housewife roles are still in place. A person's degree of motivation and role integration among economically active people is impacted by a number of factors, including family values, employment happiness, and education (Elbendak, 2008). In conclusion, the rate of lasting changes in the physical environment exceeds that of changes in the social aspect.

3.7.1. Socioeconomic Conditions

The discovery of oil in the late 1950s and the revolution in Libya in 1969 significantly altered the country's socioeconomic situation. Thus, the development of Libya before and after these periods is examined in this section.

3.7.1.1. Before the Discovery of Oil

On December 24, 1951, Libya became neutral with the support of the UN. With a \$35 wage, it was categorized as a low-income earner by the Central Bank of Libya in 1978. With 70% of jobs generated by the sector, agriculture emerged as the main source of income. However, the absence of cutting-edge equipment, water supplies, and rich land meant that agricultural productivity remained remarkably low. Libya had little economic influence throughout the colonial era. In Libya, the proportion of workers employed by state-owned enterprises in the construction and agriculture sectors was estimated to be lower per capita annually than in other countries across the world. After gaining their independence, humans were still at a disadvantage since they could only make meager profits from the land they farmed. In addition, resources like water and minerals had not yet been used. As a result, the sector became small-scale and primitive, devoid of capital and trained workers. There has been little to no impact on the domestic market as a result of the government's insufficient investment in numerous areas. In addition, there is a lack of skilled personnel and ineffective resource control and management (Alferjani et al., 2018).

There was an acute shortage of housing, healthcare, and educational resources. Ninety percent of people in Libya were illiterate, and most families lived in shanties or other rudimentary steel or wood constructions (Stoller, 1962). With the exception of a few small hospitals in the major cities, the health services lacked basic comforts (UNESCO, 1952).

3.7.1.2. The 1960s

Many multinational companies conducting drilling operations in Libya in the late 1950s found extraordinarily high-quality oil that was inexpensive. Europe thus saw a substantial market for this oil (Younger, 1980). A wealthy new economic structure emerged, one that was centered on oil domination rather than agriculture as its primary source of income. Day (1992) stated that in the 1960s, petroleum accounted for 99 percent of Libya's exports. From 1960 to 1968, the national profits increased significantly, from 131 million Libyan dinars (LD) to LD798 million. More food and other goods were

needed by a city's expanding urban population than could be supplied by its industrial and agricultural sectors. Because of this, the government had to rely on oil revenue to import commodities to meet the increased demand. A notable shift towards urban areas was caused by the socioeconomic conditions of 1952–1969, which were characterized by an imbalance between rural and urban areas and a lack of necessary services. Even when oil was discovered and the economy expanded quickly, the nation remained undeveloped. The dearth of housing turned into a significant problem, and poverty and a lack of basic amenities continued (Elfarnouk, 2015; Gray, 2013).

3.7.1.3. Post-Revolutionary Conditions

The National Revolution, which occurred on September 1, 1969, is the most important event in Libyan history. The remaining Italian citizens were forced to flee the country in 1970 by the newly installed government, which also made plans to give confiscated land to Libyan farmers. This choice significantly increased the number of workers in the agriculture sector. In order to attain more equal economic growth and reduce dependence on oil sales, the government nationalized numerous businesses and supported alternative industries. As a result, national income rose to LD8,900 million in 1975 and LD8,050 million. In addition to building new roads, housing, schools, and healthcare facilities, the government ran a number of commercial and agricultural initiatives in the 1970s and 1980s. As a result, there was a reduction in dependency on erratic foreign markets and an effective use of home resources (Tripoli Planning Department, 1998). Numerous farming initiatives made sure that farms had better housing and cutting-edge machinery. In addition, the government set up specialized educational programs for Libyan nationals and funded a broad spectrum of light and heavy industrial firms. Libyans have ardently aspired to experience the modern conveniences of life after years of destitution, made possible by aid from other countries over the previous 50 years. Rapid social, cultural, and financial changes occurred soon after, leading to predictable impacts on architecture (Muktad, 2023).

The construction sector was greatly impacted by the economic upturn, which led to the creation of creative home designs that made use of imported building and finishing materials.

3.8 SOCIO-ECONOMIC CHANGES IN LIBYA

Libya was one of the world's poorest countries in terms of economic development in the early 1900s due to its tremendous poverty. The start of oil exports in the early 1960s caused a transformation in the Libyan economy (Ghanem, 1981). The main changes in social, economic, and political contexts that the use of "a" has experienced throughout the 20th century, particularly in the years after oil discovery, The substantial expenses linked to population increase and urbanization have also been studied, as has the effect of oil discovery on city growth and public service delivery since the late 1950s.

The exploitation of oil has contributed greatly to the country's wealth increase since the early 1960s. As a result of this change, the nation has gone from being among the world's poorest in the first half of the 20th century to among the richest in the second. Nevertheless, the volatility in the composition and authority of the legislative and executive branches, as well as the administrative divisions of the US government, was a major factor in the creation and implementation of many public policies in the late 1970s and early 2000s. Towns in Libya have seen notable increases in urbanization and population expansion since the discovery of oil. The primary reason for this is that foreign consultants and agencies that have been in charge of developing and carrying out development projects have introduced new urban settings. Consequently, many communities have experienced significant changes in their morphology and demographic makeup. Due to the realization of better living circumstances and economic opportunities in large towns, the population of cities has grown significantly during the post-revolutionary period (Cole & McQuinn, 2015; Francesca, 2013).

3.9 POLICIES, RULES AND REGULATION

Libya's housing rules are designed to guarantee that every family has a place to live. Furthermore, officials do not acknowledge or support the traditional architectural traditions of Libya. On the other hand, the Libyan housing policy places more of a priority on building new homes than it does on improving the standard of living, tenant satisfaction, or environmental impact. Furthermore, in order to execute Western housing rules and designs, Libyan officials rely on imported resources, a huge workforce, and international knowledge. Conversely, Western house typologies reflect progress, modern

aspirations, and lifestyles, while vernacular building typologies are occasionally interpreted as a sign of poverty and backward civilization (Elwerfalli, 2017).

3.10 GROWTH OF BENGHAZI

Benghazi's development has been marked by a historical narrative that includes the people, culture, and society that inhabit its urban environment in addition to the city's physical infrastructure, such as its buildings and roads.

3.10.1. Spatial Development of Benghazi

Benghazi's strategic location on the Mediterranean Sea and historical context has greatly influenced the city's spatial evolution. The city's planning experience, which falls into three separate periods, provides a means of measuring this dynamic.

1. **Early development plans (before 1967):** Benghazi underwent its first phase of urban planning at this period, as the city began to establish itself as a major hub for trade in the Mediterranean.
2. **Second Generation Planning (1967–1988):** During this time, Benghazi saw an exceptionally well-organized urban planning and development process that reflected the needs of the city and its ongoing expansion.
3. **Third Generation Planning (1989–2006 and beyond):** In this last stage, the city's spatial growth experienced further adjustments and developments in response to new opportunities and constraints. Benghazi's geographical development during this period was shaped not only by historical events and the natural environment, but also by significant changes, most notably those brought about by Italian colonial control. As a result, significant changes were made to the urban fabric and the city's development trajectory (Kezeiri & Lawless, 2023; Omeir, 2013).

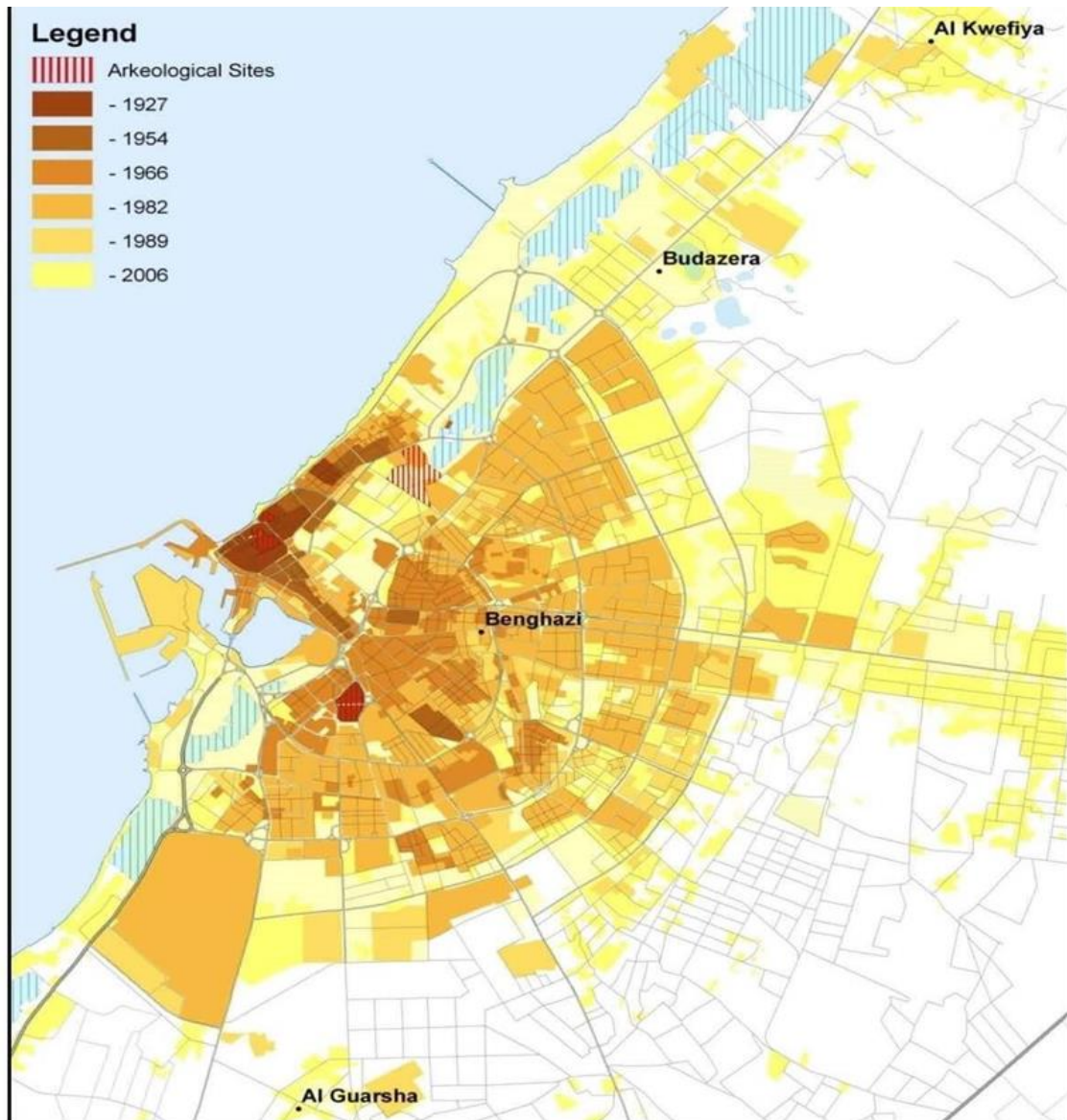


Figure 3.3 The development of Benghazi city. Source: Emera 2009.

3.10.2 Physical Growth of Benghazi

The city's urban expansion has been characterized by a combination of ancient urban plans including narrow, curved streets in traditional neighborhoods, and wider roads thoroughfares with higher buildings in contemporary districts. The characteristics of public places differ greatly between traditional and modern areas (Azlitni, B,2009).

3.10.2.1 Urban Planning in Benghazi City Before 1967

Benghazi's early development was impeded by multiple colonial occupations and difficult economic circumstances. During the period of Ottoman administration, the city had

limited growth and changes, which included the establishment of its initial suburb, Elbirka, representing a significant advancement in its urban layout. The Italian occupation resulted in notable alterations, particularly in the architectural style and planning characteristics. The majority of recent urban developments, which mainly targeted Italian settlers, were heavily influenced by Italian architectural forms, setting them apart from the older Arab sections of the city (Bulugma, 1964; Goodchild, 1962; Kezeiri, 1984).

Subsequently, there was a period of significant development, which was particularly evident in the substantial enlargement of Benghazi's urbanized region. By 1980, the city had experienced a fourfold increase in size compared to its dimensions in 1966. The built area of the city expanded from 1092.70 hectares in 1966 to roughly 3745.4 hectares in 1982. The increase in land utilization and urban growth is elaborated upon in

Table 3.1 Land use Distribution in Benghazi according to 1966 master plan

Land use	Area (hectares)	% of total
Residential Areas	569.70	52.1
Commercial Areas	5.50	0.5
Public Buildings	50.50	4.6
Transport & Communication	94.60	8.7
Industrial Areas	74.70	6.9
Social Services	223.70	20.4
Green areas & Cemeteries	53.60	4.9
Recreational Areas	20.90	1.9
Total developed land	1092.70	100

Source: Whiting Associates International, Benghazi master plan, 1966, p. 6.

3.10.2.2 The first-Generation Plan (1967-1988)

The primary objective of the first-generation plan was to facilitate sustainable development while accommodating population growth, achieving a harmonious equilibrium among a multitude of interconnected factors (Doxidas, 2000).

Table 3.2 Land Use Distribution in Benghazi in 1978

Land use	Area (hectares)	% of total land
Residential areas	2298.5	62.0
Commerce & Business	35.6	1.0
Social services	562.2	14.2
Public Buildings	16.4	0.4
Green & Recreation areas	115.1	3.1
Public Utilities	29.4	0.8
Transport & Communication	41.6	1.1
Road network	277.9	7.5
Industry	368.7	9.9
Total developed land	3745.4	100
Total undeveloped land	378.7	
Grand total	4124.1	

Source: Doxiadis Associates, Benghazi master plan of 1989.

3.10.2.3 The Second-Generation Plan

The first -generation prioritized addressing population growth and promoting sustainable development, while effectively managing interconnected issues to achieve balanced progress. The 1989 Benghazi master plan was designed to cater to the anticipated population of around 750,000 by the year 2000, ensuring an adequate supply of developed land, particularly for residential use. Nevertheless, the execution of the plan encountered substantial obstacles:

- The absence of comprehensive district plans resulted in a scarcity of land, specifically for residential purposes, which in turn led to the emergence of unlawful developments on the outskirts of the city.
- Illegal land use and higher-than-planned residential density have put extra strain on public services and utilities (Salhin, 2010; Urban Planning Authority, 2003a).

شكل (7.13.2): مخطط تفصيلي لمدينة بنغازي (مشروع الجيل الثاني للمخططات)

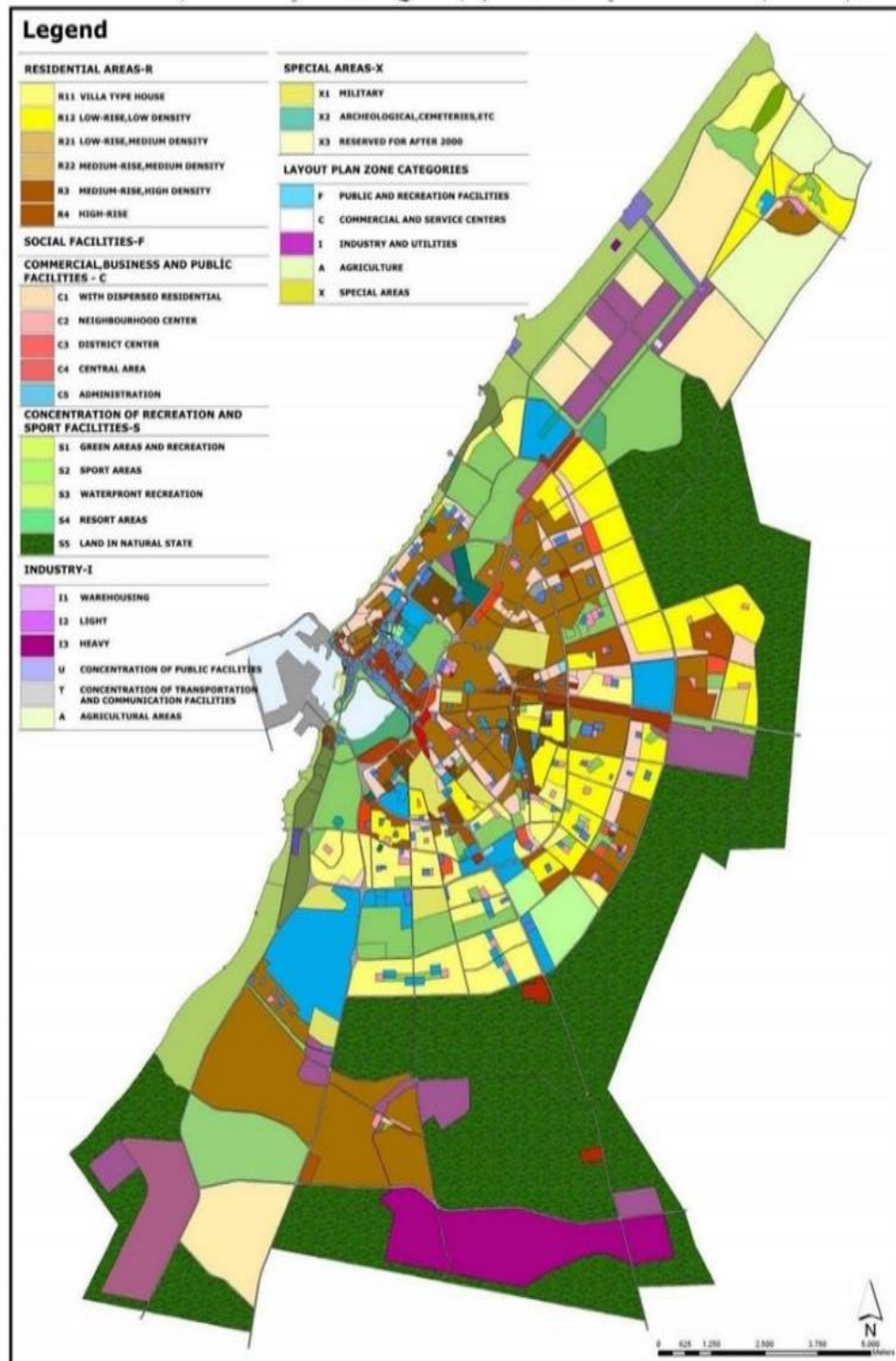


Figure 3.4 Master plan of Benghazi city in second generation plan. Urban planning department 2009.

Post-oil development in Benghazi became more organized and regulated, notwithstanding the difficulties that had previously been encountered. The city expected a surge in

available land, particularly for residential purposes, with the implementation of the Third Generation of Physical Plans (2000-2025).

3.10.2.4 The Third-Generation Plan

Table 2.1 presents a thorough examination of the distribution of land use in Benghazi during the Third Generation Plan (2000-2025). This plan, which is crucial in determining the future growth of the city, outlines several land uses and their corresponding areas in hectares, as well as their percentage of the total land area. The desk classifies land use into discrete categories, encompassing residential zones, commercial enterprises and trade, neighbourhood centres, services, institutional and administrative areas, industry, tourist and recreation, and transportation. It offers a comprehensive analysis of both developed and undeveloped areas, offering valuable information on the spatial planning and urban strategy anticipated for Benghazi from 2000 to 2025. This defined allotment showcases the city's priorities and projected growth, representing a significant milestone in its urban development journey.

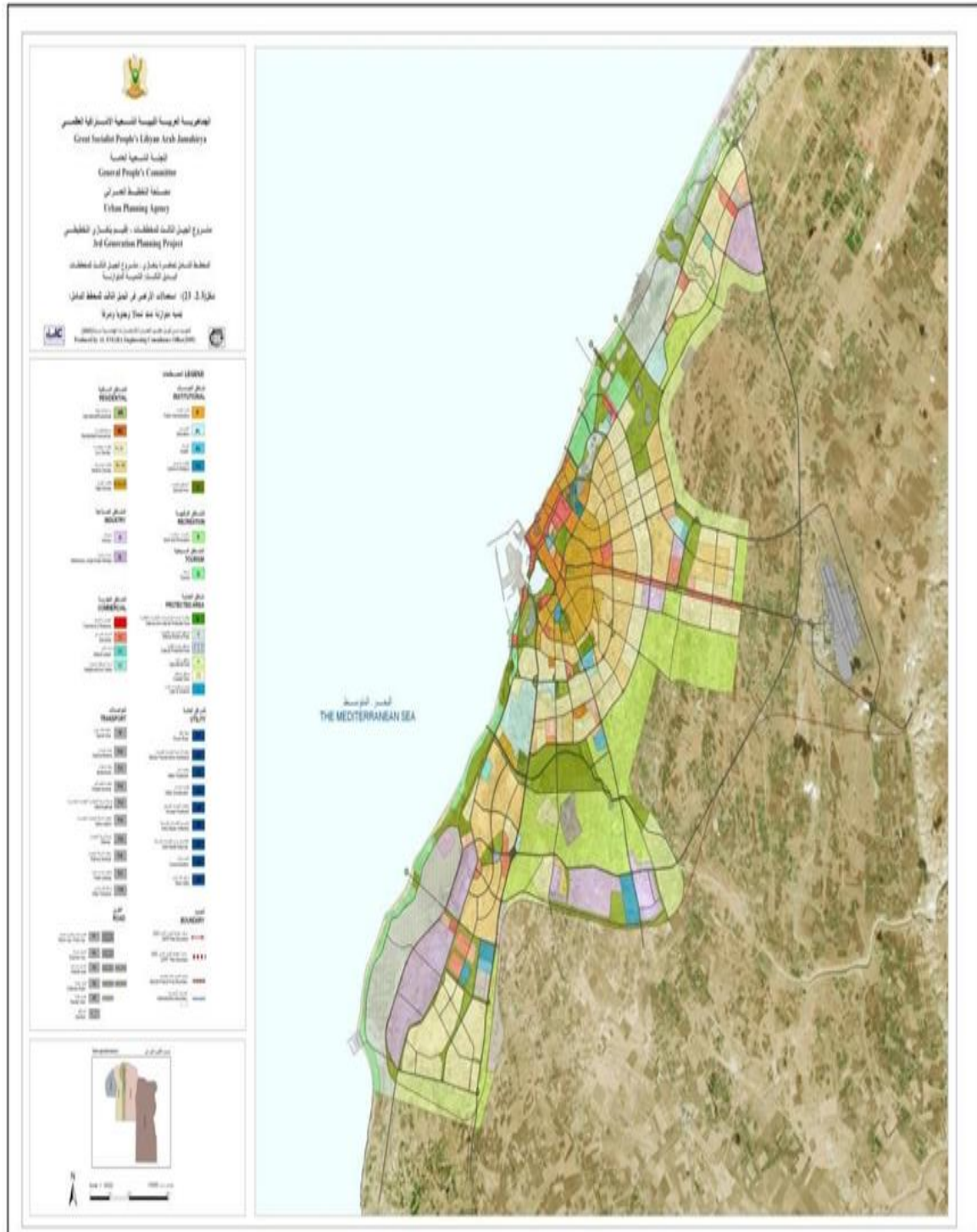


Figure 3.5 Land use of Benghazi, (2000-2025). Emera 2009.

3.10.2.5 The Existing Master Plans in (2008)

Benghazi, the capital city, has experienced sectoral expansion towards the east, including Bouatni and neighborhoods along the airport route. The city extends in a semi-circular

shape from Sidi Khalifa in the northeast to Kanfouda in the southwest. The overall form of Benghazi has been heavily impacted by natural features like as the Mediterranean Sea, coastline, and sbach. The city's growth, originating from the Old City and extending towards the east, south, and north, is in accordance with these geographical requirements. Figure 3.6. The urban growth of the city is characterized by the convergence of radial routes at the central intersection, which then connect to the business center. This growth pattern combines both circular and linear expansions, and serves as the basis for a comprehensive urban development.



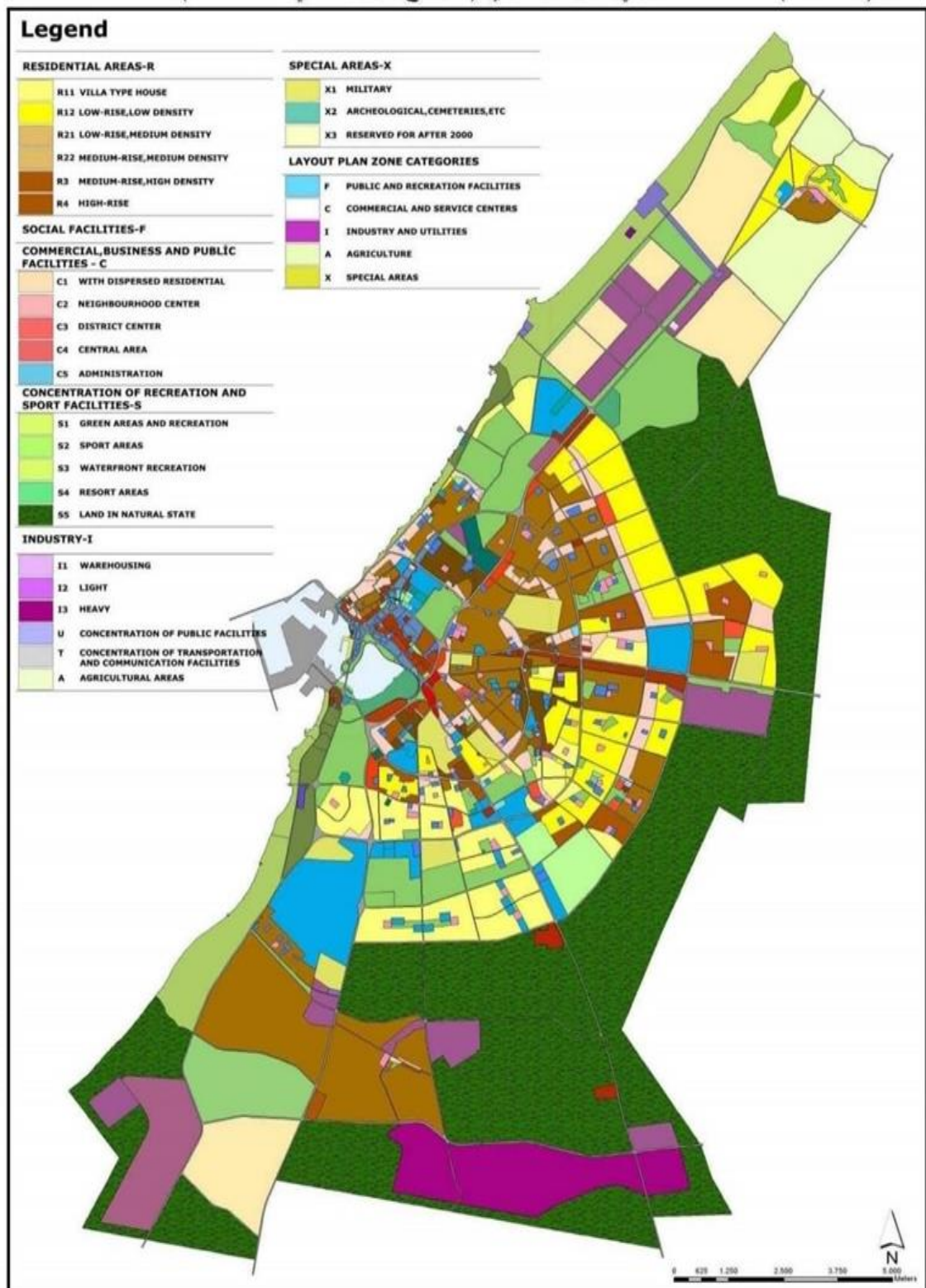


Figure 3.6 Land use of Benghazi city. Source Elamera,2009.

3.11 HOUSING

The Second-Generation Plans Project in Benghazi estimated the housing requirements by primarily considering factors such as population assessment, historical needs, building consumption over time, and the need for additional housing units to accommodate the projected population. The current spectrum of housing devices fell below the projected estimates. Doxiadis accurately forecasted a demand for 148,953 housing units to be met by the year 2000. However, housing statistics indicate that only 111,444 housing units were actually available, as per the 2006 housing data (Doxiadis).

Table 3.3 Comparison between housing projections in the second generation plans project and the current population census (population census: 2006) in the Benghazi sub-region

Projects	Total housing
Forecasting Doxiadis (2000)	148,953
Existing housing (2006)	111,444
Differences from the expectations of the second-generation schemes	-37,509

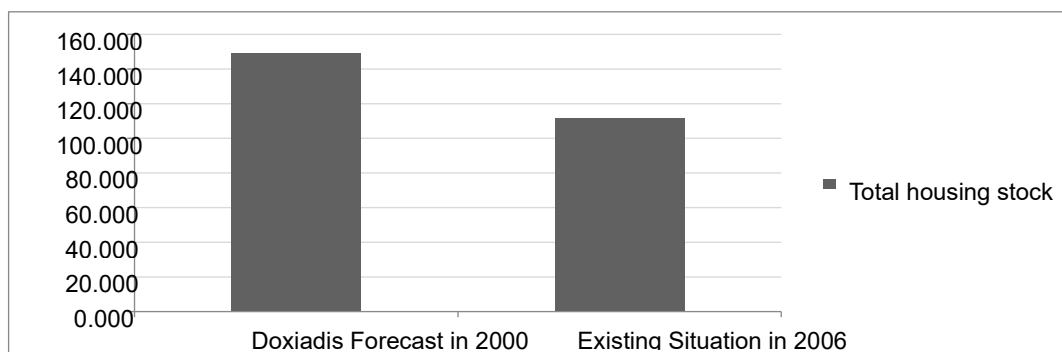


Figure 3.7 A comparison between housing projections in the Second-Generation Plans Project and the current population census (population census: 2006) in the Benghazi sub-region, Source: Sector Study (Architecture Office: 2008) , "Dioxidis" plan for the Benghazi sub-region (1993).

In the Benghazi sub-region, the rate of housing occupancy has varied over time. In 1995, there were 99.5 housing units for every 100 people, but by 2006, this number had decreased to 87.5 housing units per 100 families, showing a growing housing shortfall.

In 2006, the Benghazi sub-region, which mainly consists of urban regions, had a housing unit to household ratio of 85 units per 100 residents. The Benghazi sub-region has a total of 111,444 dwelling units, with an average family size of 5.7 individuals and an occupancy rate of 6.7. Around 70% of the housing shortage was concentrated in this area, falling short of the projected 148,953 dwelling units expected by the year 2000. Approximately 78% of housing units were located in the city of Benghazi, with varying proportions of Housh, Dara, and residential apartments, showcasing the diversified housing environment within the urban area.

Table 3.4 The available housing in the city of Benghazi, the Benghazi metropolitan area, and the Benghazi sub-region, Building statistics (2006)

	Courtyard and housh	%		Villa	%	Flat	%	Total	%
Benghazi City	41,700	48.01		10,815	12.45	34,344	39.54	86,859	100.00
Benghazi metropolitan area	45,377	48.90		12,118	13.10	35,250	38.00	92,845	100.00
Benghazi sub-region	59,027	52.97		16,453	14.76	35,964	32.27	111,444	100.00

Analysis of housing availability in the metropolitan area reveals that 77% of all buildings in the sub-districts are classified as "Housh", 73.7% are classified as "Dara", and 98% are "Apartments" specifically located in the Benghazi sub-region inside the metropolitan area of Benghazi.

Table3.5 The Available housing in the Benghazi metropolitan area, and other population center in sub-region , Sector Study (Architecture Office: 2008)

		Housh%		Dara %		Apartment%	
Benghazi metropolitan area	45,377	77.00	12,118	73.70	35,250	98.00	92.994
Other population center	13,650	23.00	4,335	26.30	714	2.00	18,450
Benghazi sub-region	59,027	100.00	16,453	100.00	35,964	100.00	111.444

In the early Nineteen Seventies, extensive clearance operations in Benghazi's shanty towns ushered in a extremely good modernization of the metropolis's housing stock. By 1978, the 63,400 housing units were classified into four number one kinds: Villas, predominantly privately built, characterized by way of one or tales, spacious setbacks, and often such as non-residential makes use of; Terraced Houses (Housh), mainly privately constructed in medium-density areas with two to five tales; Apartments in Multi-Story Buildings, along with both privately built to 4-tale systems and publicly constructed four to 12 story building housing projects; and Courtyard Houses (Bait-arabi), often unmarried-circle of relatives dwellings with one floor and private courtyards, becoming increasingly rare due to city renewal efforts in the submit-revolution generation, normally determined inside the metropolis's older center and particular regions like El-Sabri and ElBirka (Awotona, 1990b,UPA,2006).

Table 3.6 Buildings by Type and Occupancy, Benghazi, 2006, Adapted from the National Census 2006 (NSA, 2007) and The Benghazi, Planning Study, Elemara Engineering Consultants, 2009

Buildings by type	
Type	Per-cent
Flats	39.5%
Courtyard & Terraced Houses	48.0% 6
Villas	12.5%
Total number	100%
Families per household 1	1.18

According to the National Physical Plan (UPA, 2006), the demand for housing will gradually rise from 24,000 units per year in 2000 to 38,000 units per year in 2025. From 1996 to 2010, this plan says that about 4,950,00 new homes will be needed, which will require around 18,464 hectares of land. From 2010 to 2025, it says that another 543,900 homes will be needed, which will require around 20,257 hectares of land, or an average of 27 homes per hectare. It is estimated that about 200,000 hectares of urban area will be needed to build new homes with all the necessary services and facilities over the course of the whole planning process (UPA, 2006).

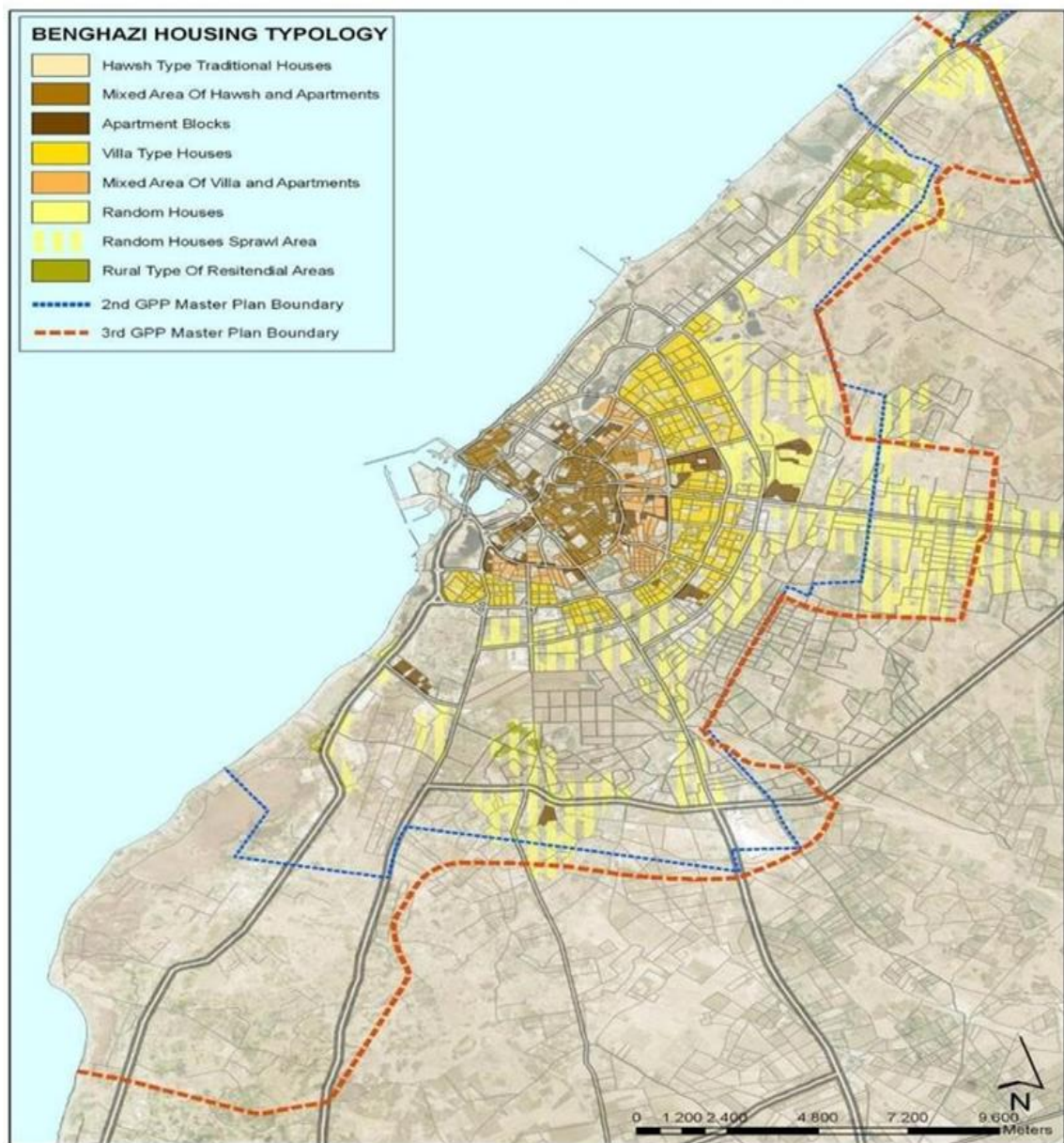


Figure 3.7 housing typology in Benghazi city. Elemera 2008.

During the revolution, many planned large-scale housing projects were left unfinished. These projects, mostly condo buildings meant to meet the needs of people who needed social housing, went beyond the limits of the second-generation master plan. Construction mostly continued until 2014, but it has since stopped, leaving these features' closing parts mostly unfinished. They were supposed to build 57,035 apartments, but only 16,686 were built before work stopped. The average level of completion is about 70%, and Ganfuda has by far the most units. Only about 42% of people finish. Getting these housing units back into production is important to meet the urgent need for sheltering families who have been forced to leave highly damaged buildings. Also, some of the areas that were supposed to be used for these projects have been taken over by "illegal" villages, so new land had to be set aside for housing projects to make up for the lost areas. This problem needs to be looked at as part of updating and widening the 3rd generation master plan (see figures 3.7 and 3.8), (Elemara Engineering Consultant (2009)).

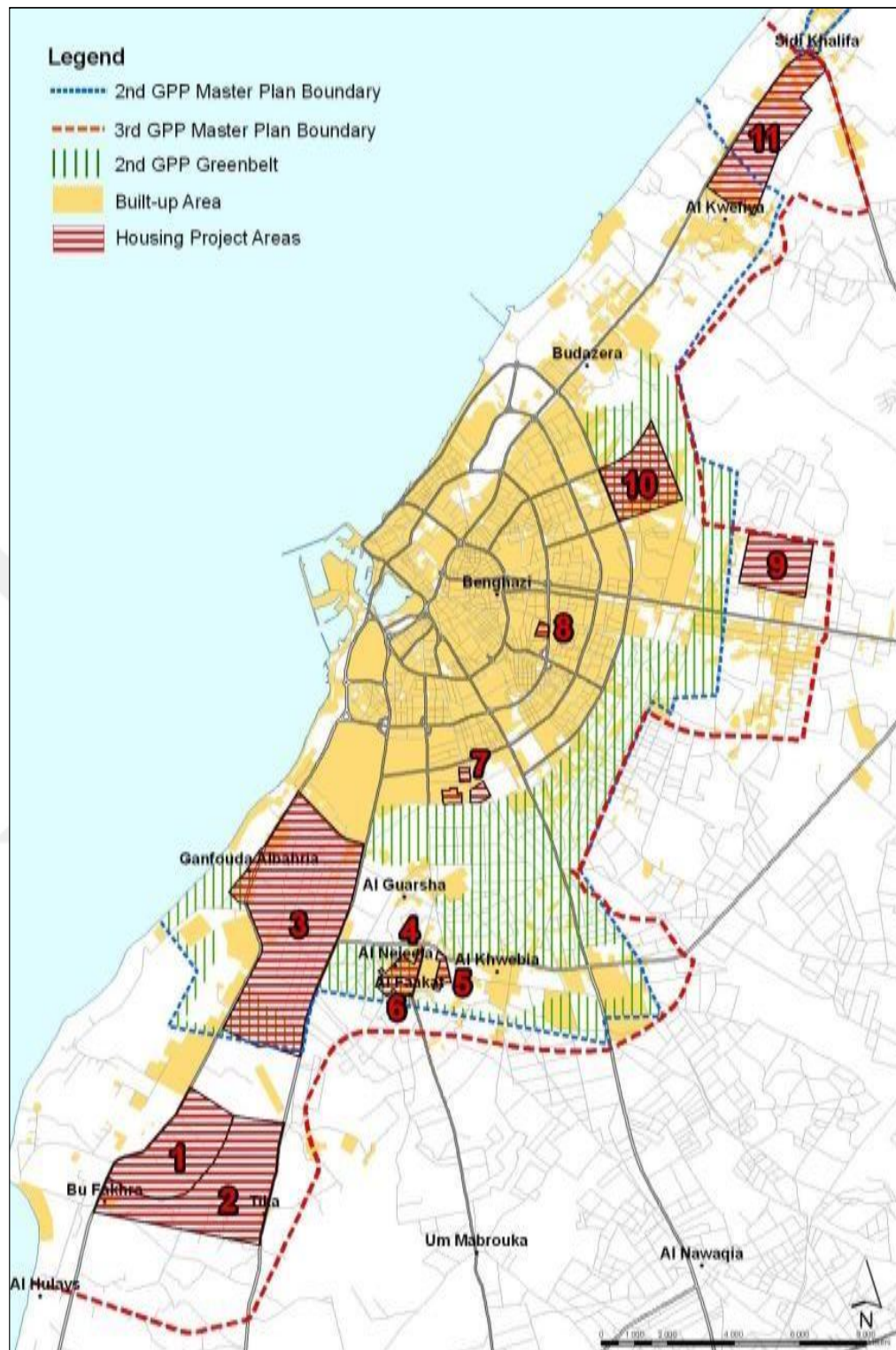


Figure 3.8 Housing project. Elemara (2008)

Table 3.7 The location of housing project and number of units, Elemara (2009)

Approved and under implementation housing projects: Housing & Utilities Authority - Administrative Centers Development Authority - Urban Development Co. - Real Estate Bank				
	Site	Areas (Hectare)	Units Number	Population
1	Bofakra	576	5000	25000
2	Urban Development- Teka	992	12000	60000
3	Qanfoda (A,B,C)	1600	20000	100000
4	Quarshah	276	5000	25000
5	Industrial Housing- Quarshah	32	800	4000
6	Elnegila	105	595	2975
7	ElKish	61	720	3600
8	El Hada-ek	9	320	1600
9	Urban Development-Bo- atni	308	3600	18000
10	Hi-Elanhar	386	6000	30000
11	El-kuwifiah	623	3000	15000
	Total	4968	57035	285175

Table 3.8 The number of housing units needed, Elemara (2009)

Period	Population expectations	Population increase	Housing need
2006-2010	685205	83918	16784
2011-2015	813267	128062	25612
2015-2020	933269	120002	24000
2020-2025	1055561	122292	24459
Total	-	454274	90855

Random housing has grown clustered in specific regions, specifically between the Fourth and Fifth Circular Roads in the Buatni region and along the Green Belt, particularly in the eastern and northeastern parts of the city. This phenomenon can be ascribed to various variables, one of which is the postponement of elaborated development plans. The high cost of land in urban areas has led people to seek more cheap land, while the desire for detached dwellings (villas) has fueled this need. As a result, the development of housing units in specific places has been postponed. The failure to execute Doxiadis' plans has not only worsened the issue of informal housing but has also caused delays in the implementation of the 3rd generation schemes, resulting in a complicated urban housing problem.

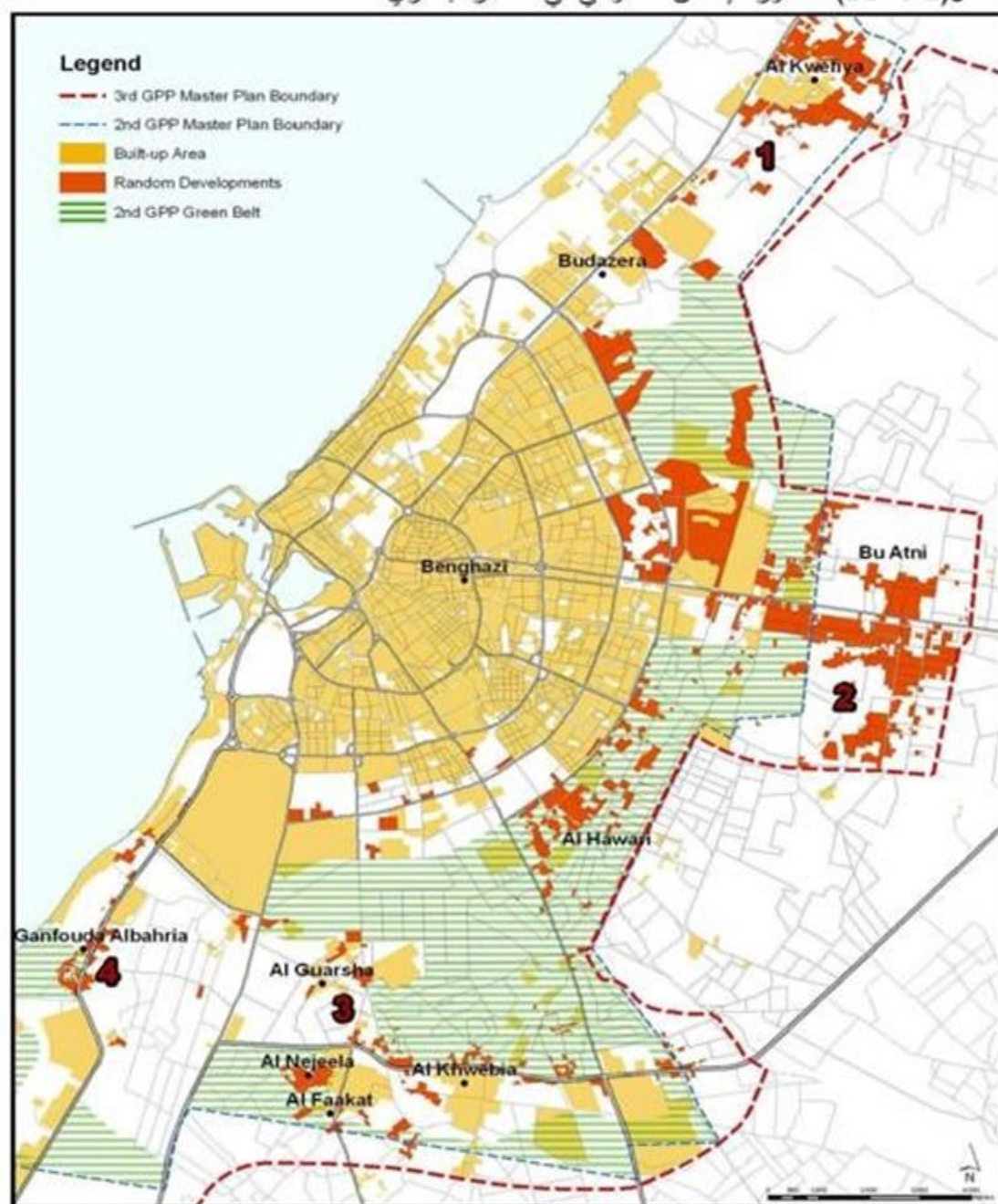


Figure 3.9 The illegal housing unit, Elemara (2008)

3.12 CHARACTERISTICS OF URBAN FORM IN BENGHAZI CITY

Benghazi exhibits four main typologies of urban form. The inner zones bounded by the 3rd ring road in the city consist of two dense types of buildings: courtyards and terraced buildings. These buildings are concentrated in this area, depending on the type of building, urban patterns, and population density. Between the 3rd and 5th ring roads, there is a third

group of lower density developments dominating the area. Additionally, scattered throughout the city are super-blocks of apartment buildings .The first category includes compact grid layouts and courtyard buildings. The concentration of development is primarily located in the vicinity of the second ring road. This area showcases several stages of growth, including historical districts that are well integrated, with strong structures prevailing over open spaces. The fundamental characteristics of these urban forms include back-to-back constructions, compact and rectangular urban blocks, relatively narrow roadways, and limited public open spaces (Figures 3.10 and a couple of. Eleven(Mohamed, A,(2013).



Figure 3.10 (right): Courtyard Buildings - Distorted Grid, Burniq area **Figure 3.11**, (left): Courtyard Buildings - Commercial Subdivisions; Dawod area, Mohamed, A (2013)

The second category comprises of less dense urban configurations for medium-density row houses, which are most common in the recently developed areas located between the second and third ring roads. This typology is characterized by regular blocks, somewhat big land parcels, and more expansive public places, setting it apart from the previous one. It is important to mention that, in certain situations, due to the arrangement of the layout designs, private front and back gardens have been organized in uninterrupted strips of green spaces, which can be valued for their contribution to improving the environmental quality (Figures 3.10 and 3.11).



Figure 3.12 (Right): Terraced Buildings – Front & Back Side-distances, New-Benghazi,

Figure 3.13 (left): Terraced Buildings - Front & Lateral Side-distances; El-Salmani, Source, Mohamed, A (2013).

Between the 3rd and 5th ring roads, the prevalence of the third form of low-density urban areas with detached buildings increases. These structures are less noticeable in earlier zones. In contrast to detached buildings, all other varieties of single-family structures have a reduced number of open areas. In contrast, the contemporary sites situated in the northern region feature more expansive public open areas and more irregular historic villa sections in the southern and eastern zones of the city. The majority of the new site features wider thoroughfares and more expansive public open areas due to the implementation of backstreets and common gardens (Figures 3.14 and 3.15).



Figure 3.14 (right): Detached Buildings - Economic Subdivisions; El-Ansar area,

Figure 3.15 (left): Detached Buildings - Superblocks; El-Mukhtar area, Mohamed, A (2013).

The final category consists of project regions consisting of superblocks and residential structures distributed around the city. Their design incorporated parking facilities and

areas of green space. Although these zones typically have less land area than individual housing areas, certain sites within this category have net densities that are comparable to row single-family buildings.



Figure 3.16(right): Low-rise Apartment Buildings – Super-blocks, Ali Ben-Talb area

Figure 3.17(left): Medium-rise Apartment buildings – Sparse-blocks, El-Salmani area, Mohamed, A (2013).

3.13 EVOLUTION THE DEVELOPMENT AND GROWTH OF BENGHAZI CITY

The key factors shaping Benghazi's growth and development are clear. First, population growth and large families are increasing the demand for housing. Secondly, migration from rural to urban areas occurs as people seek better job opportunities, education, healthcare facilities and improved quality of life in the city center. Compared to other areas, affordable rent in the Old City plays a role in the selection of buildings. As living standards improve, families expand and the construction industry booms, there is a shift to better housing options. These variables are closely related to the socioeconomic status of the family.

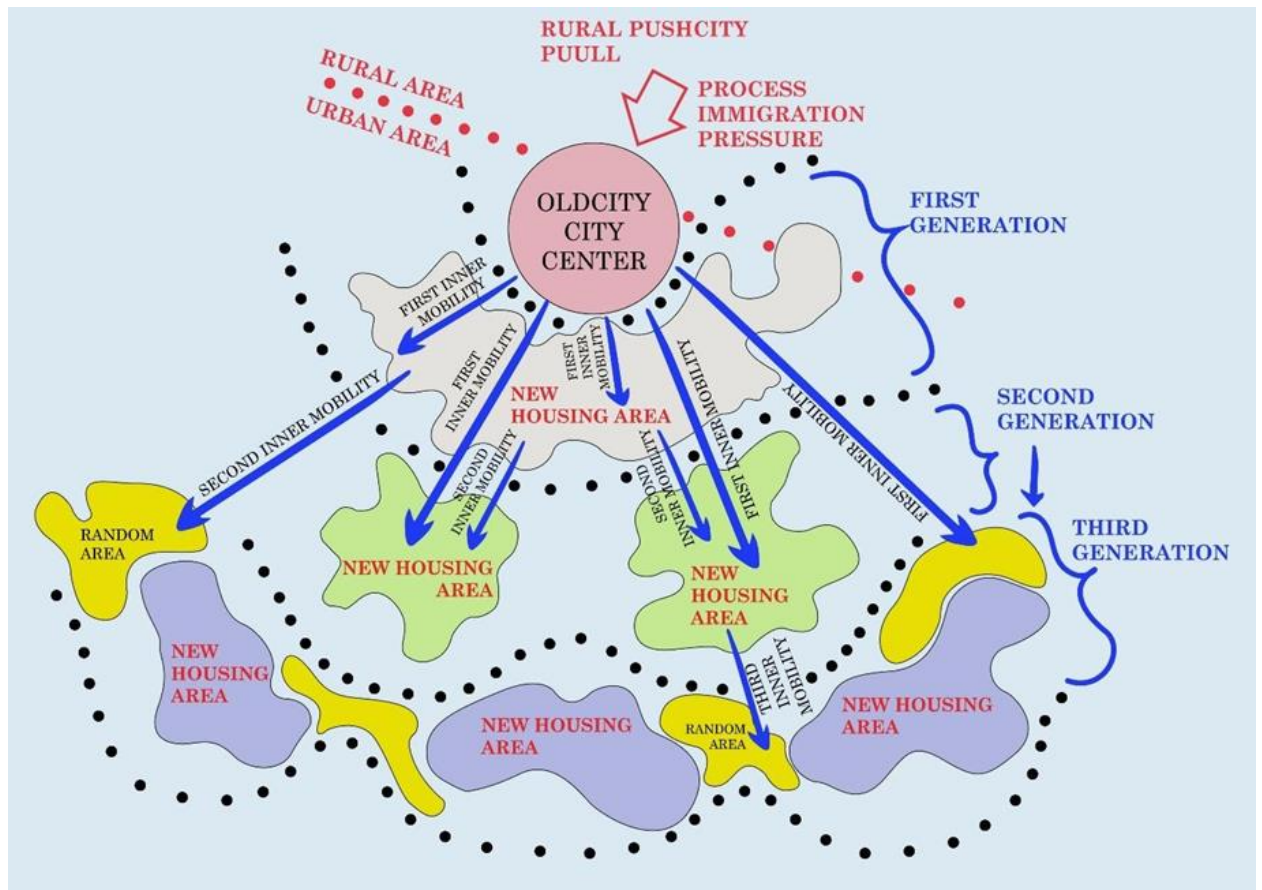


Figure 3.18 shows the Factors and process of growth and development in the city plan, Idea prof. Aysu (2022)

Transportation and the development of a paved road network have also played pivotal roles in Benghazi's growth process. The implementation of circular and radial road networks in the city has encouraged population migration toward these roads due to improved access to services and simplified relocation, promoting housing development in their vicinity. Benghazi's city plan aligns with these factors, where growth primarily centers on the old city due to both internal and external migration, rapid population expansion, and shifts in social structures. This growth is closely tied to the availability of housing projects and the economic progression of families, enabling them to move to more developed areas in the city.

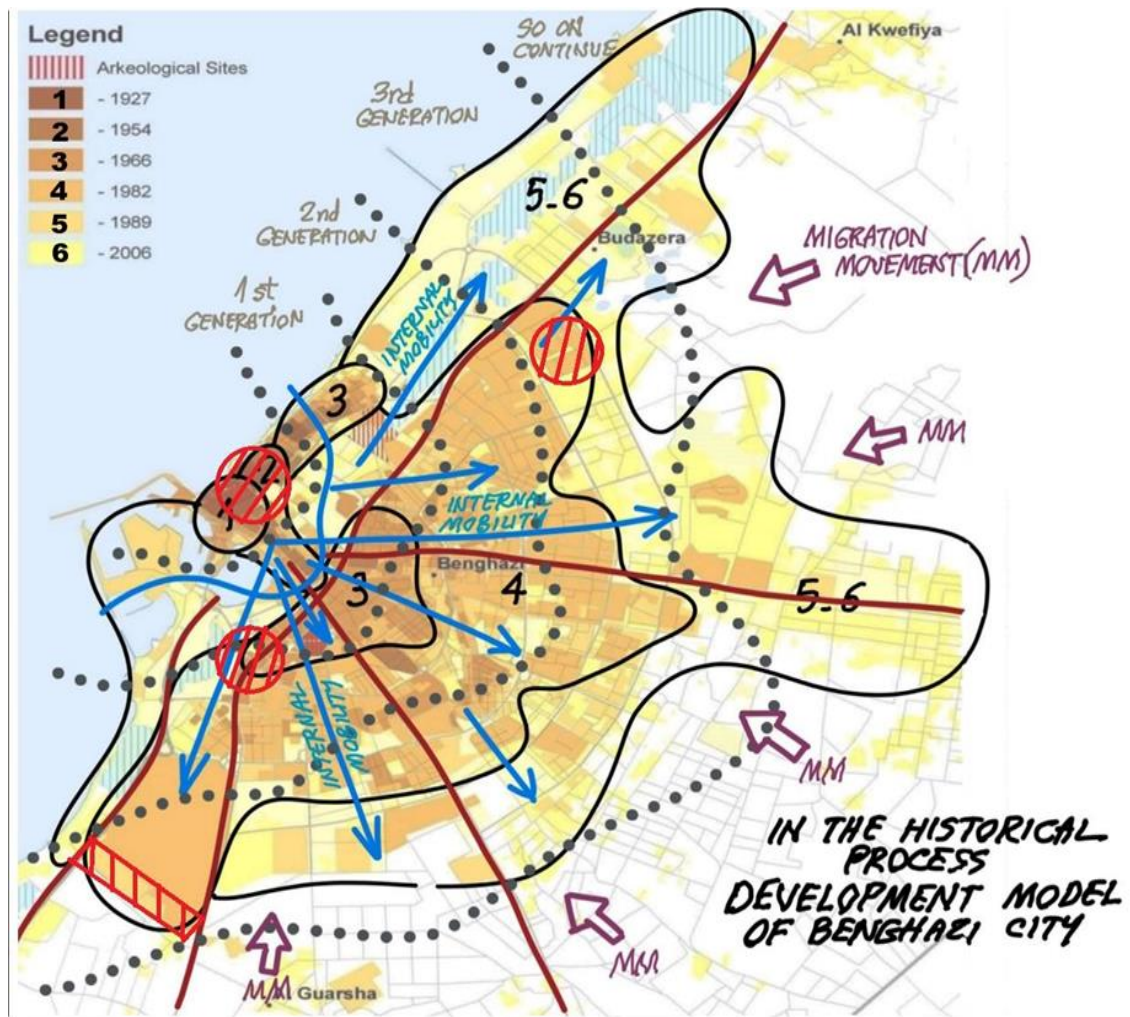


Figure 3.19 explain the historical development of Benghazi city, Idea prof. Aysu, (2022).

Benghazi's expansion in the first and second generations adhered to a constant methodology. However, in the third generation, the emergence of random housing zones was caused by delays in plan development and subsequent housing project implementation. This was a consequence of rising housing demand and population growth, which in turn led to the emergence of new constructions that were not well planned. Figure 3.20 depicts the chronological evolution of Benghazi city.

This table provides a structured overview of socio-economic changes in Libya over different periods and their impact on urban development and housing.

Table3.9 socio-economic change in Libya over different period

period	Key Aspects
Pre-Revolution Era (Up to 1969)	- Urban development aimed to blend modern urban plans with traditional Libyan lifestyles. - The monarchy regime introduced plans that remained unimplemented due to the September 1st Revolution. - Progressive social policies, including free healthcare, education, and subsidized food and housing, improved living standards in the early 1970s.
Post-Revolution Era (From 1969)	- Shifted focus from complete oil dependency to balanced growth across sectors. - Establishment of institutions related to the housing sector. - Dominance of the public sector in various areas of economic growth. - Substantial budget allocation for housing projects in the 1970s.
Economic Blockade (1996-2005)	- Widening housing gap and growing number of self-financed housing units. - Increasing cost of land and the rise of land divisions outside city plans. - Population density increased in some neighborhoods, leading to strains on public services and utilities.
Development Plan (2005-2011)	- Decreased housing sector spending despite increased oil income. - Introduction of housing programs and loans to address the housing crisis. - Project delays, corruption, and nepotism due to planning and implementation issues.
Post-2011 Political Instability	- Period of political instability leading to haphazard construction abuses. - Inadequate implementation tools and oversight mechanisms. - Cumulative housing deficit and budgetary challenges. - Need for comprehensive data-driven analysis for revitalizing the housing and planning sector.
Physical Expansion of Benghazi City	- Significant urban growth and development from the 1950s onwards. - Expansion driven by economic changes related to oil exploration and export. - Substantial population growth and expansion of the city's territory. - Emphasis on sustainable transportation infrastructure for better traffic management and urban accessibility.

period	Key Aspects
Social change	-As result the urbanization, migration from the other city and rural areas searching for work, education and other facilities. Changed the life style and the transformation from traditional housing to modern housing. Change extended family to nuclear family.

3.14 CONCLUSION

This chapter discusses information about Libya and the city of Benghazi in terms of the city's historical evolution, the effects of urbanization, migration and change in the built environment and its impact on the city. Change in the built environment and its impact on social and cultural change over time and history have affected the city. Political changes have influenced urban planning policy. First generation plans, second and third. The impact of the late implementation of the scheme and its negative impact.

From here we can say that urbanization and migration from rural areas and other cities in search of the wealth of services, better employment opportunities, a comfortable new lifestyle and a better quality of life have encouraged an increasing number of rural and other cities in Benghazi. As a result of the preparation of immigrants for the city, which led to increased demand for housing, and the emergence of oil as a result of economic development, new and modern schemes were prepared to address the acute shortage of housing and hence the beginnings of a shift and change in the building environment.

The migration of the natives from the traditional city to modern neighbourhoods in search of modern dwellings and a higher and better social life. However, customs, traditions and culture are still entrenched and have not changed as much as the built environment has changed. In other words, change in the built environment is faster than change in the unbuilt environment (social change). This can be seen in the high walls in the villa type of housing to create privacy, as well as unused balconies, sometimes a barrier is created out of custom, tradition and privacy. Although living in modern homes, culture and customs have not changed as much as the type of housing. The next chapter will review how the research will be used, how information will be collected, the questionnaire and the methods of analysis in more detail.

CHAPTER 4 METHODOLOGY

4.1 INTRODUCTION

This chapter will provide a comprehensive explanation of the methodological strategy employed in this study to examine the correlation between the physical aspect (built environment) and nonphysical element (social factors). According to Harvey (1990), methodology refers to the systematic use of theoretical concepts, methods, and epistemological principles to analyze particular programs within the framework of society and the built environment. In order to accomplish this, a well devised strategy and framework are needed. To initiate this inquiry, a fundamental theory regarding the built environment of the neighborhoods, as discussed in earlier chapters, was formulated. This chapter will integrate the unique theoretical and methodological frameworks identified in the literature study to establish a research approach.

The research design derived from the literature review is described at the outset of this chapter. The text discusses the research methods and the approach used for field research.

4.2 THE RESEARCH STRATEGY

After examining the existing literature, it became evident that the research technique for investigating the connection between the built environment and social aspects in Benghazi city should adhere to at least two primary principles (as shown in figure 3.1): Firstly, it is crucial to comprehend the historical changes that the city has undergone in order to effectively study its transition (historical analysis). Secondly, the most optimal way to evaluate the changes would be through a social analysis conducted by the city's residents. The study has been guided by these two fundamental concepts, which have resulted in the establishment of methodological foundations.

Chapter three demonstrates that the evolution of Benghazi can be categorized into traditional and modern neighborhoods over different time periods. The research of the transformation of the built environment should be conducted according to the different types of houses and time periods.

Chapter two highlights the importance of thoroughly examining the indicators of the built environment in a neighborhood. It is crucial to systematically identify these

characteristics in order to trace the historical evolution of the built environment. Four components were selected to symbolize the constructed surroundings during these four developmental eras: built environment, mixed use, facility availability, open space, and accessibility through the examination of these components in the formation of four different neighborhoods.

Chapter two demonstrates that the architectural environment of a neighborhood plays a pivotal influence in the social dynamics of a city. Hence, the primary criterion for assessing urban transformation should be the manner in which individuals engage with their constructed surroundings. In Chapter two, the connection between physical and nonphysical aspects will be examined by analyzing various variables. These variables were identified through a literature review and in alignment with the research objectives. They include social interaction, sense of belonging, social participation, safety and security, satisfaction with housing, satisfaction with neighborhood, and human needs. The subsequent phase has involved identifying suitable research methodologies to investigate and assess the correlation between tangible and intangible elements.

The primary methodological inquiries that arose from the study strategy were:

1-What is the best strategy to investigate the relationship between the built environment and social aspects in four neighbourhoods?

2- What is the appropriate analysis for the factors that comprise people's interactions with their built environment?

To answer the first question, it was required to identify places of Benghazi that have been developed at different stages of development. The next stage was to conduct in-depth research in these places, focusing on the previously mentioned elements: the built environment. Interviews with respondents, direct observation, a photographic survey, and document gathering were among the research methodologies used. This resulted in a thorough image of Benghazi's built environment transformation. The case study and findings of this research are presented in Chapter Five.

In order to obtain answers to the objectives, it was imperative to engage with the inhabitants of these areas and inquire about their perceptions and connections to their surroundings. In order to accomplish this, a questionnaire survey was administered and several informal interviews were undertaken. The findings of this inquiry are documented in Chapter five.

4.3 METHODS OF RESEARCH

Yin (1994) and Manning (1987) argue that a literature review is a means to an end, rather than an end in itself. An effective method for doing a literature study entail identifying the current knowledge on a certain issue and developing and refining important questions about a new subject. Field work is a study methodology that entails gathering empirical facts and doing meticulous observations on a certain subject. It also entails engaging with individuals in their normal surroundings to monitor their day-to-day behaviors. A multitude of tools are utilized throughout this procedure.

This part is dedicated to discussing the research methodology used in the empirical study. It includes a summary of how the investigation was conducted, after the formulation of the overarching research strategy.

The psychological characteristics to be identified include social contact, sense of belonging, social interaction, safety and security, satisfaction with housing, satisfaction with neighborhood, and human needs. The physical components of the constructed surroundings (such as mixed-use areas, availability of amenities, open spaces, and accessibility) along with the four categories of traditional and three categories of modern neighborhoods have already laid the groundwork for empirical research.

The empirical investigation utilized a range of research methodologies, including direct observation, analysis of historical sources, photographic survey, and questionnaire. The fieldwork encompassed the designated areas outlined in the four case studies. In order to assure a comparative study, the period of field work was essentially equivalent in each distinct area. Prior to delving into a thorough analysis of the research approach, the justifications for choosing Benghazi as a case study are discussed.

4.3.1 Selection of Case Study

The main aim of the research has been to investigate the relationship between the physical (built environment) and non-physical elements in Libya. To achieve this objective, the study has concentrated solely on the city of Benghazi. **The selection of Benghazi as the city was based on the following criteria:**

The selection criteria for studying Benghazi are based on its status as the second-largest urban settlement in Libya and the lack of research on its social and physical aspects. The selected regions for the study represent the diverse housing structures constructed during successive stages of urban development, reflecting notable shifts in socio-cultural characteristics and residential designs. The decision to choose Benghazi as the research setting was made with the intention of addressing the lack of information on the city's growth, specifically in terms of the interaction between physical and social aspects in the selected neighborhoods of Benghazi City.

4.3.2 Selection of Areas

In accordance with our research methodology, it was imperative for us to investigate the locations that have been built during different phases of urban development in the metropolis. Therefore, our method of choosing the location began by identifying four distinct zones that would represent the several important phases of development and transformation in the built environment. However, given the extensive expanse of these regions, it was imperative to select four exemplary neighborhoods within each area. **The selection of the areas was based on the framework established in Chapters three, and was determined by:**

Key attributes of the chosen neighborhoods: The chosen neighborhoods in Benghazi city were picked based on housing typology and the city's development. The case study encompasses both the historic section of the city, which is distinguished by traditional courtyard houses, and three modern house-type case studies. This provides a comprehensive and representative understanding of the city's urban structure and the interaction between physical and social aspects in the development of selected neighborhoods in Benghazi City.

4.3.3 Document Collection

According to Patton (1987) and Yin (1994), documents and records are considered useful sources of data and information. They provide valuable information about significant investigations and provide essential facts about field operations. In addition, historical papers may contain a significant amount of information on a certain location. The study sought to get materials from sources that provided relevant information on the history and current contexts of the built environment in Benghazi. The focus was directed towards personal life stories, depictions through paintings, official documents, city maps and sketches, and collections of photographs. In addition, the issue was additionally supported by consulting historical books and publications. These sources provided the research with valuable data about the conditions and events surrounding the transformation and progress of the city's social and physical settings, as well as its social structure, culture, and use of space. The primary sources of these materials were the Municipality of Benghazi and the Urban Planning Department.

4.3.4 Observation

According to Manning (1987), by closely studying individuals in their surroundings and analyzing their movements in the created environment, we might gather data that may support, question, or provide an alternative to oral records. This study utilized observational methods to collect data on the physical infrastructure and people's actions inside their environment. Nachmias (1976, p. 74) argues that the primary advantage of observation is its immediacy, allowing for the analysis of behavior as it happens. The researcher can observe individuals' behavior and the actions of others without needing to directly inquire about them; instead, they can simply observe and document their actions and statements. Furthermore, data obtained through observation can accurately depict the observed phenomena in their authentic environment.

Observation methods can be utilized to gather additional data that can help explain or provide context to findings gained through other approaches.

The data was gathered through direct observation using a fieldwork notebook, as well as by recording information on maps and plans. While observing, the phenomenon of 'street life' was accurately documented. The documentation encompassed the arrangement of

streets, the design system, the appearance of buildings, their dimensions, how people perceive them, and their connection with other elements of architecture and urban planning.

Data was collected regarding the properties and surrounding areas. Open spaces were also noted with regards to their design, dimensions, placement, and their connection to the social and physical surroundings. An investigation was conducted on the amenities, such as the school, market, clinic, and mosque, and their relationship to other social and physical qualities. The investigation also examined the accessibility of these facilities in terms of street conditions, pedestrian routes, and public transit. Direct observation was employed to document social qualities that specifically focus on individuals' mobility and interaction in public thoroughfares, marketplaces, and open areas. Residents were informally interviewed during the observation. This entailed surveying individuals regarding the utilization of their streets and engagement in outdoor activities within their local communities. People's activities and interactions were observed. Both official and informal interviews were conducted, and all conversations and comments were recorded.

4.3.5 Photographic Survey

A photographic survey was conducted to record precise aspects of architecture and the built environment. The survey provided valuable insights on the attributes of the physical environment. This technique played a vital role in analyzing the built environments of the four regions. The photographic medium presents various aspects and characteristics of architectural and urban forms from the four selected case studies. Photographs are not a complete representation of reality, but they can serve as a 'witness' that helps us understand a situation. These photographs assisted us in illustrating the evolution and alteration of the built environment in Benghazi.

4.3.6 Questionnaire Design

According to De Vaus (1996) and Yin (1994), a questionnaire is a widely used tool in survey research that is used to collect data and conduct investigations. The questionnaire survey is a fundamental technique employed in social science research. Data from families about various social characteristics was collected using a research questionnaire.

The queries utilizing this methodology mostly relate to the constructed surroundings and sociological examination of Benghazi city. The study employed a face-to-face questionnaire to facilitate conversation and interaction between the interviewer and interviewees. Face-to-face questionnaires or interviews are particularly beneficial in this study as they efficiently save time and reduce the need for further clarification, especially given that some interviewers may have inadequate literacy skills.

The questions were intentionally crafted to be user-friendly and efficient, enabling quick responses and fast coding for the purpose of assessment and analysis. The questionnaire was comprehensive and was written in English before being translated into Arabic (see Appendix). The questions were produced by converting the research objectives into specific inquiries in order to collect relevant data and information .

Several inquiries were formulated for each social factor found in the literature review: social contact, sense of belonging, social involvement, safety and security, housing satisfaction, neighborhood satisfaction, and human needs. The physical factors such as mixed use, availability of facilities, open space and green area and accessibility. The purpose of this questionnaire was twofold: to collect data for studying the development and transformation of Benghazi city, and to gain insight into the residents' thoughts, attitudes, opinions, and emotions regarding their built environment. Additionally, it aimed to understand their goals, requirements, level of contentment, and ability to adjust. Furthermore, the questions were formulated in a manner that might facilitate the identification of suitable proposals for the future development of Benghazi in relation to its physical infrastructure.

The questionnaires were divided into five parts:

- ☐ Part 1: Demographics and socio-economic information.
- ☐ Part 2: Evaluation of the current house and neighborhood.
- ☐ Part 3: Social aspects.
- ☐ Part 4: Physical Aspects.
- ☐ Part 5: Preferences for the future development of the area.

Questionnaire forms can be found in **Appendix A**.

4.3.6 Indicators and Measuring Tools.

The indicators utilized in this study encompassed non-physical indicators (social indicators), physical indicators (built environment indicators), and demographic socio-economic indicators.

Table 4.1 Societal dimensions, metrics, and assessment instruments

Indicators of Social Aspects	Variables	Measuring tools
Social network	Social Interaction	Observation-questionnaire
Sense of belongs	Sense of place	Questionnaire
Safety and Security	Safety in street Safety in neighborhood	Questionnaire Questionnaire
Participation in society and public life	Participation in neighborhood Majles.	Questionnaire
Human needs	Privacy Feel comfortable Affection and Familiarity with places	Questionnaire Questionnaire questionnaire
Quality of Neighborhood	Satisfaction with the neighborhood:	Questionnaire
Quality of homes	Satisfaction with homes	Questionnaire

Table 4.2 Principles, indicators, and techniques for measuring the built environment of a neighborhood

Principles of neighborhood	Indicators\Variables	Measuring tools
Density	Population density - Dwellings per hectare - Person per hectare	Maps-Document Maps- Document Maps-Document
Mixed-use	Neighborhood land use Mixed-use on the ground floor Mixed-use in the building	Questionnaire-field observation
Availability of facilities	Primary school, kindergarten, shops , clinic, garden, mosque, preparatory school	Questionnaire-field observation

Quality of center (Open space and garden)	Open space size. Open space-play ground Open space size	Questionnaire-maps Questionnaire-maps field observation
Accessibility Access to facilities	Catchment distance Walkability to urban facilities. - Perception of residents about walkability and cycling. Street furniture and lighting Quality of pavement	Questionnaire-maps Questionnaire-maps Questionnaire-maps field observation

Table 4.3 Demographic Social-economic principles, indicators and measuring tools

Principles of Neighbor	Indicators\Variables	Measuring tools
Socio-economic	Family size Household ownership Income	Questionnaire Questionnaire Questionnaire
Demography	Age/ Gender Education Employment	Questionnaire

4.3.7 Selection of Samples

The quality and validity of an evaluation are impacted by both the design of the technique and measuring equipment, as well as the sample strategy used. This technique is linked to fundamental elements of sampling, such as the sample size, its representativeness, the sample parameters, and the sample's accessibility. The sample size should be optimal, striking a balance between correctly representing the population and avoiding the challenges of an excessively large and difficult-to-manage sample. The sample must precisely and faithfully represent the broader population under discussion or analysis. According to Morrison (1993), Wright (1979), and Bryman and Canner (1990), it is not necessary for it to try to reflect the total population.

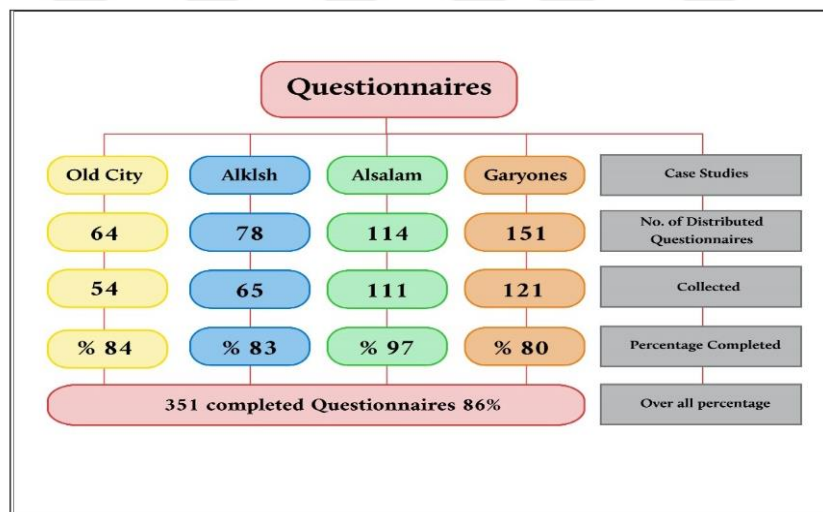
Prior to location selection, it was imperative to ascertain the required quantity of case studies for the research. The selection of this alternative depended on the characteristics and scale of the problem, as well as the goals of the inquiry.

Four districts of Benghazi city were chosen for the field study to reflect different stages of development and transition. The aim was to ascertain, quantify, and depict the

relationship between the physical environment and social factors. A total of four neighborhoods were chosen for the field questionnaire in each site. During the fieldwork, a questionnaire survey was conducted in four visited neighborhoods (Figure 4.2).

Interviews, observation, and photographic survey were carried out in these neighborhoods and the larger areas they covered. The selection of neighborhoods was mostly based on their representativeness in terms of their different geo-social, architectural, and urban planning traits. A total of four neighborhoods were chosen from each time period. The initial district is the traditional one, symbolizing the historic city. The choice of modern neighborhoods was determined by the dwelling category, which had three types: housh, villa, and apartment. The specified neighborhoods are Alkesh, Assalam, and Garyounis.

Table 4.4 presents the distribution of the total number of questionnaires that were distributed, the number of questionnaires that were collected, and the percentage of questionnaires that were completed.



4.3.8 Selection of Households

Households were selected at random from the wider population of the neighborhoods. This sample seeks to be a representative sample of the majority of the population, rendering it valuable for constructing generalizations. Table 4.2 displays the data collected from 351 respondents residing in four distinct neighborhoods.

4.3.9 Pilot Study

Before the primary poll in Benghazi, the research included a pilot study. The initial phase is crucial for refining the research tools and methodologies utilized in the case study. In his book, Moser (1979) highlighted the significance of a pilot study as the primary and most significant tool for surveyors. He stressed the need of asking persons about topics they understand and that are important to the study. At the commencement of the field work in 2022, a preliminary inquiry was carried out utilizing 35 questionnaires. The pilot study included a sample that was the same for both traditional and modern sites in each of the four neighborhoods. Hence, a cohort of 35 unemployed individuals was interviewed for the study, as the primary aim of the pilot was to evaluate the questionnaire's efficacy in addressing the research subjects.

Pilot research was conducted to evaluate the reliability, validity, and relevance of the questions about the physical and non-physical aspects of the built environment in Benghazi. The findings of the pilot study proved to be highly valuable and made a substantial contribution to the overall study. The pilot study yielded the subsequent enhancements to the field study: There was confusion and misunderstanding over the wording of certain questions, hence the number of questions was decreased. The patterns, shapes, and structures of certain questions have also undergone alterations.

Furthermore, the pilot study showcased the practicability of gathering pertinent data within an appropriate time range. Performed experiments on various variables were employed in the survey. Discovered possible shortcomings in the questions; performed a time analysis for each question and interview, which lasted around 45-60 minutes. Verified the reliability of the information's accuracy, particularly in regards to its relevance to the social environment. In summary, the pilot study was a significant tool in this research, offering further insights and suggestions on the time and methods for administering the questionnaire. It enabled the process of reviewing and rearranging the questions in the questionnaire.

4.3.10 Assessment of Validity and Reliability

The study places a high importance on ensuring the accuracy and consistency of its research approach, specifically on the design and execution of the questionnaire. A pilot

study was conducted to assess the efficacy of the questionnaire, guaranteeing its suitability for the target demographic in the selected neighborhoods. This step became crucial in enhancing the data gathering tools and enhancing the methodological rigor of the investigation. The questionnaire underwent thorough testing and validation to guarantee that the collected data accurately reflected the perspectives and opinions of the citizens. This approach also contributed to mitigating biases and errors, hence enhancing the study's findings' credibility. The study's focus on validity and reliability displays its dedication to conducting high-quality and accurate research that can effectively enhance urban improvement guidelines and practices **(Appendix B)**.

4.3.11 Administering the Questionnaire Survey

The questionnaire was given to the families in this study after the local government authorities provided them with information. To familiarize yourself with the designated areas Before administering the questionnaire, the interviewers visited these locations. In addition, all the questions were meticulously scrutinized with the interviewers and clarified on a case-by-case basis. All ambiguous terms were clarified. Furthermore, the assistants were tasked with conducting interviews with their own family members as part of an exercise.

The assistants were instructed to carefully examine the questions. Furthermore, the assistants informed the households that their information would only be used for academic purposes and would be kept confidential. Questionnaires were distributed haphazardly and completed in the vicinity of residential buildings. Interviews were conducted with the patriarchs/matriarchs of the houses, who are often considered to be the most responsible and knowledgeable individuals when it comes to household problems and the state of the neighborhood. Considering that the workday in Libya starts at 8.00 am and ends at 2.30 pm, it can be deduced that most individuals who are in charge of managing households are employed during this time. Therefore, the questionnaire was conducted outside of working hours, precisely from 3:30 am to 7:30 pm.

4.4 METHODS FOR DATA ANALYSIS

4.4.1 A Mixed Data Analysis

The case study included a blend of quantitative and qualitative data. Quantitative results mostly arise from evaluating social elements, with the survey data and observational data on neighborhood social interactions playing a significant role in reflecting social opinions. Both the survey and observation data seek to express the levels and variances of social characteristics in the different configurations of the district. Conversely, a qualitative method is employed to comprehend the planning process. The research of documents and interviews seeks to elucidate the present social component of the work system and address inquiries regarding the reasons behind individuals' preference for one neighborhood over another. However, due to the inability to completely reveal the truths by isolating the interconnected outcomes, both sets of data are ultimately analyzed and combined comprehensively.

4.4.1.1 Quantifying Deviations in Social Features Across Four Cases

Descriptive statistics are initially employed to provide an overview of the demographic and socio-economic attributes in four specific neighborhoods. The tables and figures provide detailed information about the demographic and socio-economic features, social factors, and physical aspects of the four neighborhoods.

Furthermore, the discussion will encompass the examination of differences among various groups. Furthermore, it is necessary to establish their importance in representing data from larger populations. Data analysis is primarily conducted using the SPSS software. Depending on the specific data scenario, several statistical techniques may be employed and analyzed (Punch, 2003).

The purpose of analyzing the questionnaire data is to examine differences in social characteristics among different models of neighborhood shape based on the given indicators. Various statistical methods are employed to analyze variations, and a specific analytical template can be utilized for each indicator.

The data collected from the household survey can be analyzed using specialized statistical software like SPSS. The initial study, which includes descriptive analysis and correlation

analysis, provides us with valuable insights into the situation and significance of both nearby metrics and indicators related to social factors. This enables us to initially ascertain the value of each measurement and subsequently determine the total value of each indicator.

4.4.2 Analyzing the Association: Spearman's rho Correlation

The correlation between the principles of the built environment and social features of a neighborhood is analyzed. The primary approach for investigating the connections between social sustainability and the main factors will be through correlational analysis, a commonly employed way for doing quantitative analysis (Punch, 2003).

In order to scrutinize the research inquiries and hypotheses:

RQ1: Is there a relationship between the physical and social elements within the neighborhood?

The statistical test employed in this analysis is Spearman's Rho correlation.

4.5 SUMMARY AND CONCLUSION

The research methodology was devised by considering two fundamental principles: analyzing the physical infrastructure across four stages of growth and collecting the perspectives and emotions of the population of Benghazi. A questionnaire was administered to 351 persons in four neighborhoods that demonstrate change and development in order to collect data. Before conducting the final survey, the methodologies and processes were tested for reliability and validity through a pilot study and by physically visiting the four sites. After analyzing the results of the pilot study survey, the researcher modified the questions used in the main survey. Additionally, the study employed methods such as observation, photographic survey, and document gathering (table 4.3). Statistical analysis was conducted using the SPSS software program. Chapter 5 contains the findings of the research.

Table 4.5 Summary of research methods

Research methods	subject	Theme
Collection of documents	Social and physical contexts	Social aspect, use of space and change of built environment
Observation	Residential areas, mixed-use accessibility (street, pedestrian, public transportation, open spaces, facilities.	Physical features and characteristics; people interactions, behaviours, movements, activities and use of space, building material and shape.
Photographic survey	Residential area (home), Mixed use, facilities, open space and garden, accessibility (street, pedestrian, public transportation)	Physical features and characteristics.
Questionnaire	Households' views on their built environment.	A number of social dimensions (social interaction, sense of belonging, social participation, safety and security, satisfaction with housing, satisfaction with neighbourhood and human needs).

CHAPTER 5 CASE STUDY -RESULTS AND DISCUSSION

5. CASE STUDY

5.1 An Analysis of the Characteristics of the Built Environment in Selected Case Studies

The four case studies were chosen based on the home type, city development, density, and the period in which the housing was constructed.

5.1.2 City Chosen: Benghazi

Benghazi was chosen as the research site for various reasons, making it a perfect case study for analysing the features of the built environment:

5.1.2.1 Socioeconomic Transition and Urban Growth: Benghazi, being the second-largest city in Libya and an important Mediterranean seaport, exemplifies the common characteristics of a Libyan metropolis experiencing swift socioeconomic transition, population expansion, and residential construction.

5.1.2.2 Research Gap: Benghazi is a significant urban settlement, yet it has received little attention from researchers, especially when it comes to neighbourhood changes. This study gap presented an exceptional chance to investigate and record the city's development.

5.1.2.3 Study of Neighborhood Dynamics: Choosing Benghazi as the subject of study enables a thorough examination of the interplay between physical and non-physical factors at the neighborhood level, so enhancing our comprehension of urban development dynamics.

5.1.2.4 Diversity in Neighbourhoods Housing and Urban Development: The case studies chosen in Benghazi encompass a range of housing styles, distinct stages of urban development, varying population densities, and diverse time periods of home building. This variety provides a wide-ranging viewpoint on the city's development and present urban structure.

The study intends to address a lack of knowledge about Benghazi's growth by focusing

on the city. It seeks to provide a deeper understanding of the various elements that influence the formation of its districts.

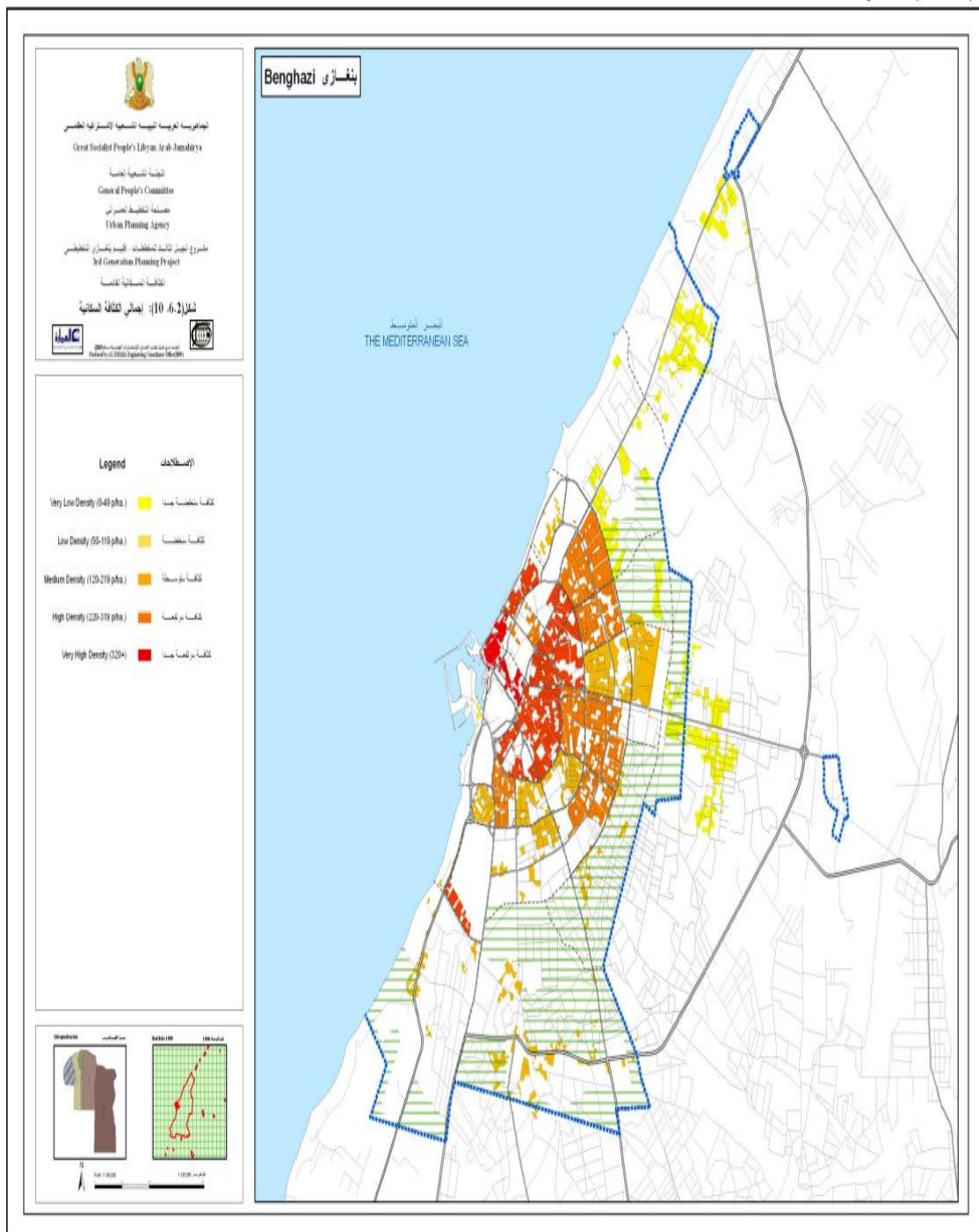


Figure 5.1 The population density of Benghazi city (case study)

Source: Elemera, (2009).

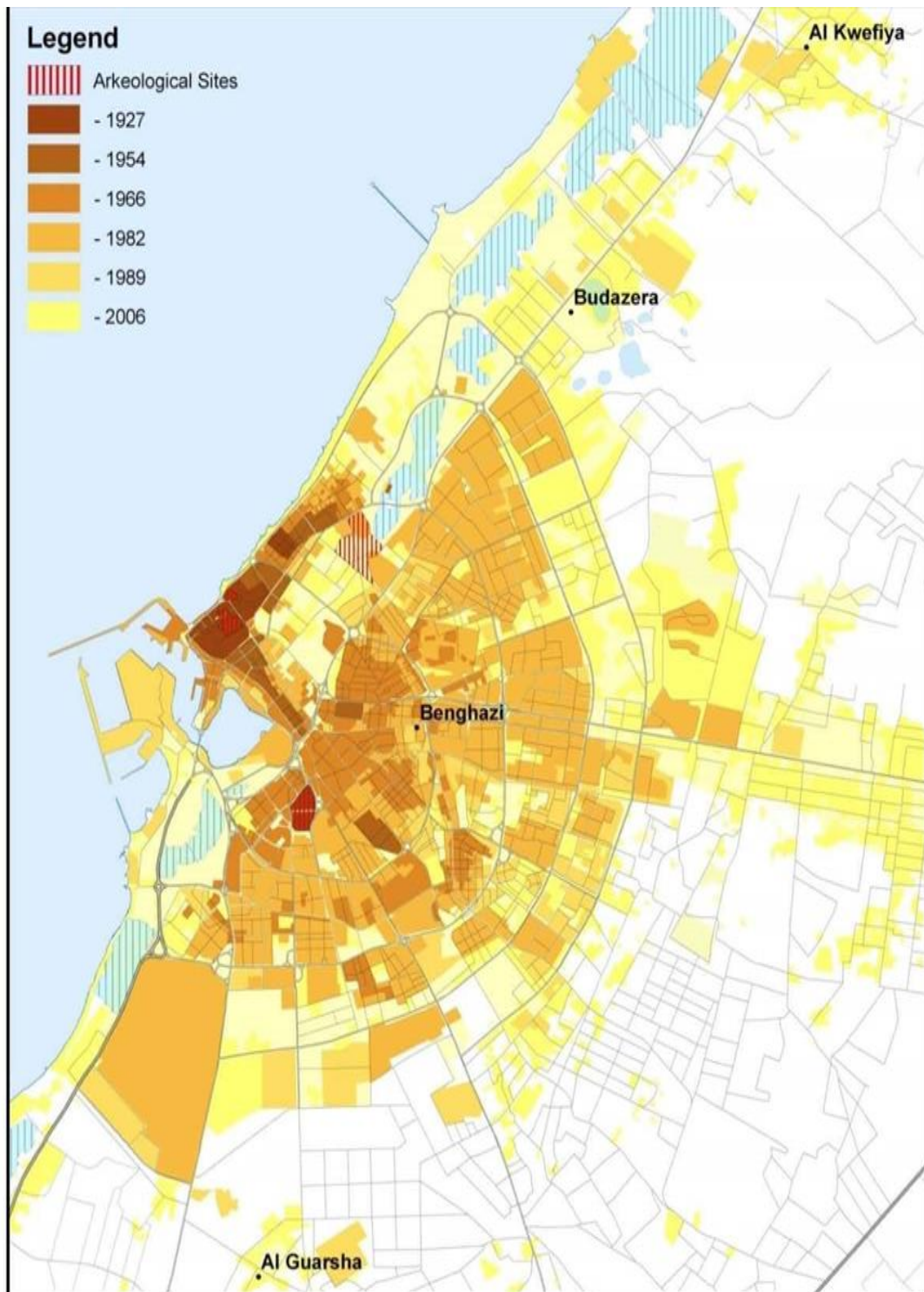


Figure 5.2 The urbanization of Benghazi city. Source: Elemara, (2009)

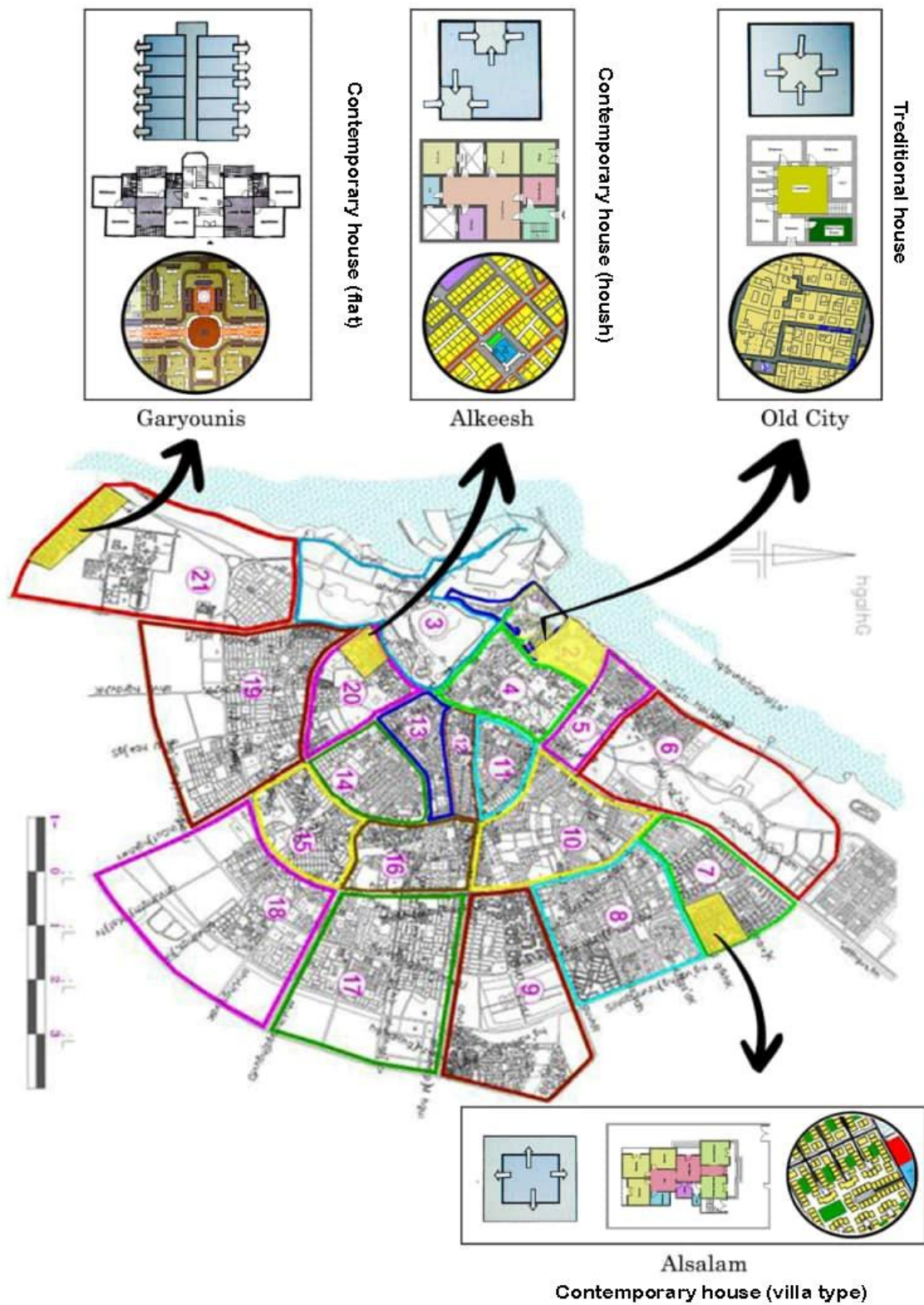


Figure 5.3 The type and pattern of locations for the case studies. Source: by researcher

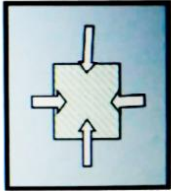
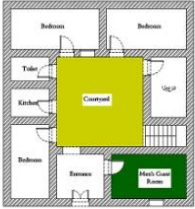
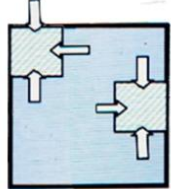
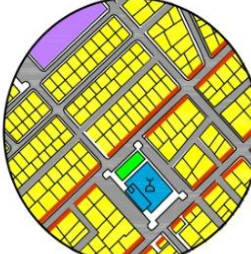
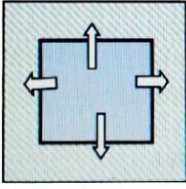
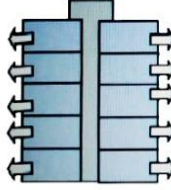
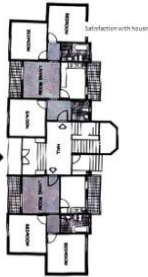
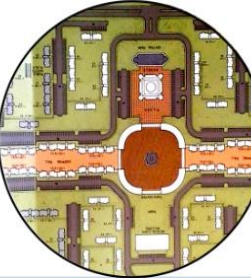
Case study	Development	Housing Typology	Neighborhood pattern
1. Old city Treditional house	 before 1967		
2. Alkeesh Contemporary house-type Househ	 1967_1975		
3. Assalam Contemporary house-Villa house Detached house)	 1970_1984		
4. Garyounis Contemporary house-Apartment	 1984_2000		

Figure 5.4 Analyses and Contrasts Case Studies. Author: Researcher

5.2 CASE STUDY ANALYSIS

5.2.1 Case study (1) old city (Courtyard house)

5.2.1.1 Housing Typology

Courtyard House Concept

In regions such as Libya, traditional dwelling is characterized by courtyard architecture, where an open-air space is encompassed by buildings on all sides. The fundamental principle of layout is that the building materials and the minimum height of the courtyard are the same. Nevertheless, there are nuanced variations in design across different countries. The dwelling in the historic district featured a narrow thoroughfare known as the street. Additional components are affixed to certain dwellings. Their arrangement was casual, and the room designated for male guests held a prominent position in the house, situated near the front entrance and isolated from the rest of the house to ensure the privacy of family members (Figure 3.4). Aseyd (1984) provided a definition of the traditional dwelling type that is based on its manner of occupation and utilization. Libyan families possess a remarkable ability to easily adjust to traditional architectural styles and embellishments. The conventional living space was partitioned into two sections: the domestic area, comprising multiple rooms for various functions, and the hospitality area, consisting of a living room and shelter. The arrangement, dimensions, and furnishings of the rooms offer the resident the flexibility to select, adapt, and allocate them for different purposes. As an illustration, guest furniture may include lengthy velvet sofas accompanied by couches or cushions affixed to the walls of the room for seating. Additionally, there may be little cushions for sitting and small blankets for added comfort. They may have engaged in identical actions to facilitate falling asleep.



Figure 5.5 The typology and arrangement of locations for case studies. Source: by researcher 2022

5.2.1.2 Layout of Housing

Houses were designed to provide mutual protection from the sun's rays, resulting in little solar exposure both outside and inside the walls. Daza (1982) conducted research that illustrated how the house's architecture, featuring a single front facing the twisting streets, minimized direct heat exposure. The construction techniques and materials used in these residences are well-suited for the specific location, including the deep, twisting, small streets and certain sections of the street. The Libyan populace achieved accomplishment in constructing dwellings that are well-suited to the indigenous environment, social framework, and inclement weather conditions. They applied their knowledge of heat retention in their marketplaces, residences, and places of worship. They achieved this by utilizing indigenous construction materials. The indigenous construction materials comprised of marble, sandstone, limestone, clay, brick, and palm tree wood. Mosques and marketplaces were among the several structures that utilized mosaics and glazed tiles. Shawesh, E. (2000).

The dwelling layout in the case study is intentionally intended to accommodate the specific climatic conditions of the area. Key features include:

- **Sun Exposure Management:** The main objective of the dwelling design is to reduce the amount of sunlight that people are exposed to. This is accomplished by implementing architectural design strategies that minimize solar exposure on both the outside and interior surfaces of the walls.
- **House Design and Street Orientation:** The houses are designed with only one side facing the curving streets. The particular alignment and structure of this limit direct exposure to heat. The layout of the building is not only based on architectural preference, but also a practical response to the specific climate conditions in the area.
- **Construction Materials:** The materials utilized in the construction of these houses are chosen to ensure that they are well-suited to the local area and complement the architectural style. These materials are selected based on their qualities that help to keep the inside temperatures cooler and enhance the deep, winding, and narrow street patterns.
- **Environmental Adaptation:** In general, the arrangement of houses exhibits a considerate adjustment to the surrounding circumstances. The design considerations encompass the

local climate, street layouts, and the requirement for suitable living areas, all while upholding historic architectural forms.

This house arrangement method exemplifies a comprehensive comprehension of how architecture may be culturally relevant and environmentally appropriate.



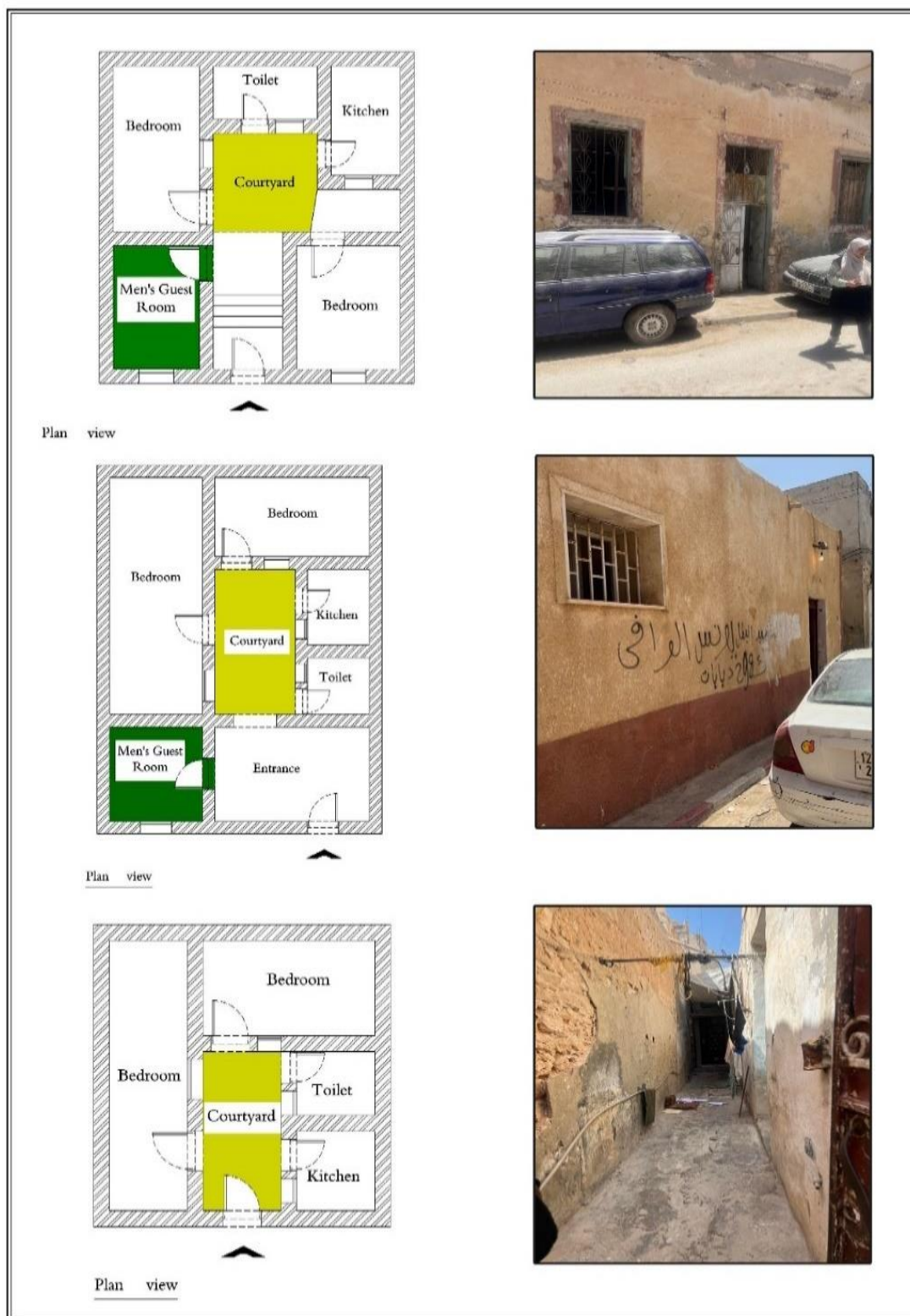


Figure 5.6 Architectural plans and elevations of the old city. Source: by researcher (2022)



Figure 5.7 Architectural plans and elevations of the old city. Source: by researcher (2022)

Traditional housing: Courtyard house

The courtyard serves as the focal point of the home's design. The house's courtyard design offers privacy, supports the sociocultural demands of the family, and gives natural lighting. The men guestroom was in separation part of the house in the left of the entrance house.



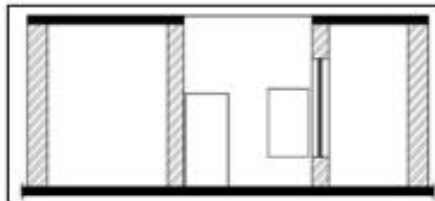
Location



Elevation



Section



Plan

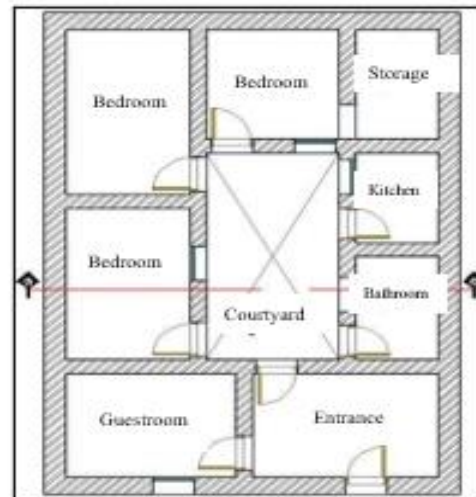


Figure 5.8 Traditional house plan in an old city. Source: by researcher (2022)

5.2.1.3 The Neighbourhood Pattern of the Old City

The ancient city's neighborhood pattern reflects a complex interplay of historical, cultural, and contemporary urban factors. Key elements of this pattern include:

- **Public Open Spaces:** The old city's core parts lack sufficient open spaces. This absence creates obstacles for urban upgrading and redevelopment.
- The old city's redevelopment is motivated by changing human wants, investment opportunities, and breakthroughs in construction technology, such as reinforced concrete. This has resulted in the rearranging of land parcels, with some being subdivided or combined.
- Changes in building types and streets have led to a loss of historic qualities in the core region, including the expansion of narrow streets and the addition of car parks.
- **Urbanization and migration:** Improved economic conditions in the old city have led to a shift in demographics. The original population and traders have relocated to other places in search of better transportation and security, causing the old city to lose much of its unique identity.
- **Demographic shifts:** Lower rent prices bring international inhabitants to the old city. Urban redevelopment and economic causes have led to a significant demographic shift.
- Overall, Benghazi's old city neighborhood structure demonstrates a shift from traditional to modern urban patterns, impacted by economic, social, and technical changes. This development has had an impact on the area's cultural and historical fabric, resulting in the loss of certain inherited characteristics and a shift in the resident population.

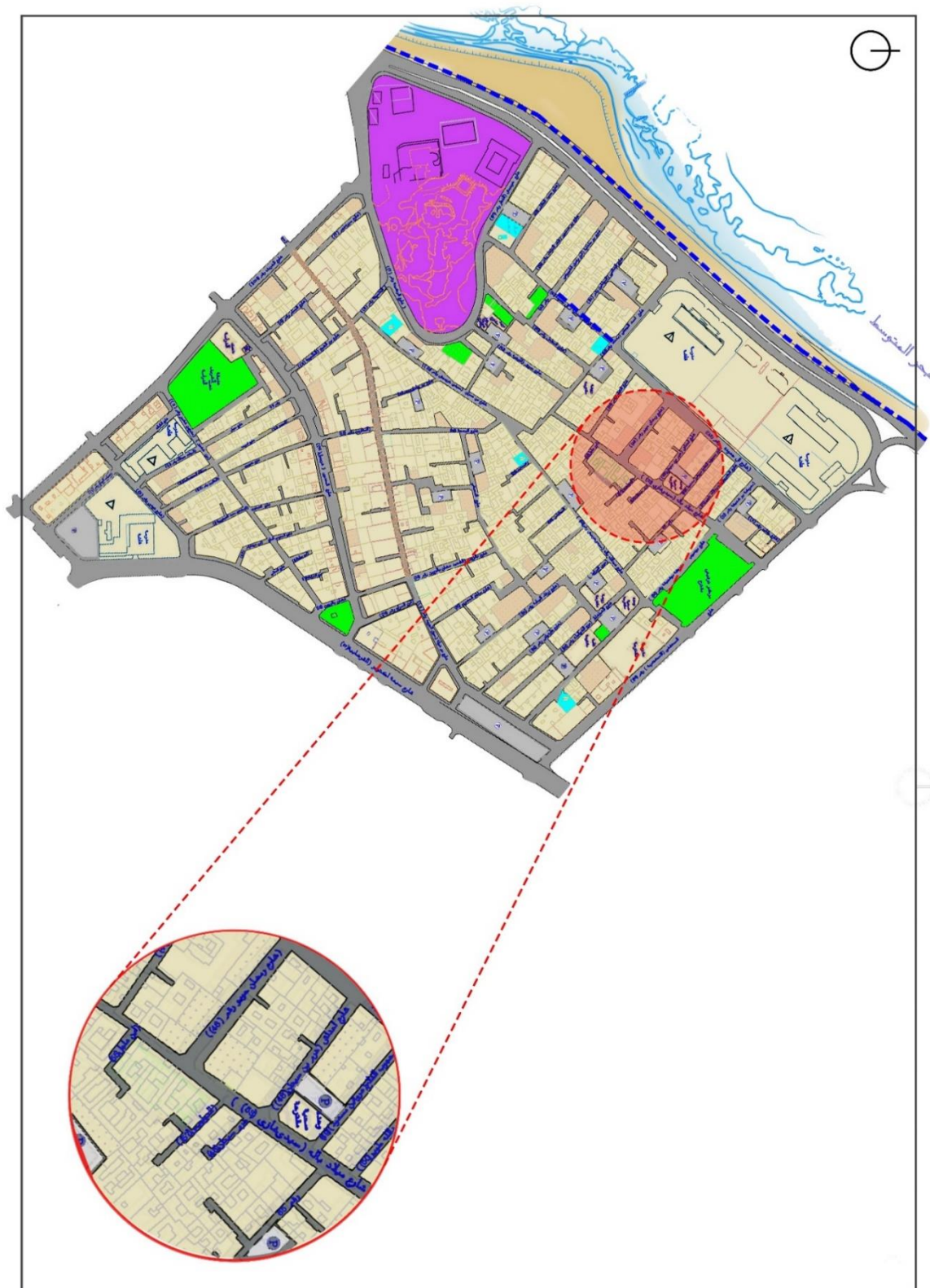


Figure 5.9 Patterns of the old city. Source: by researcher (2022)

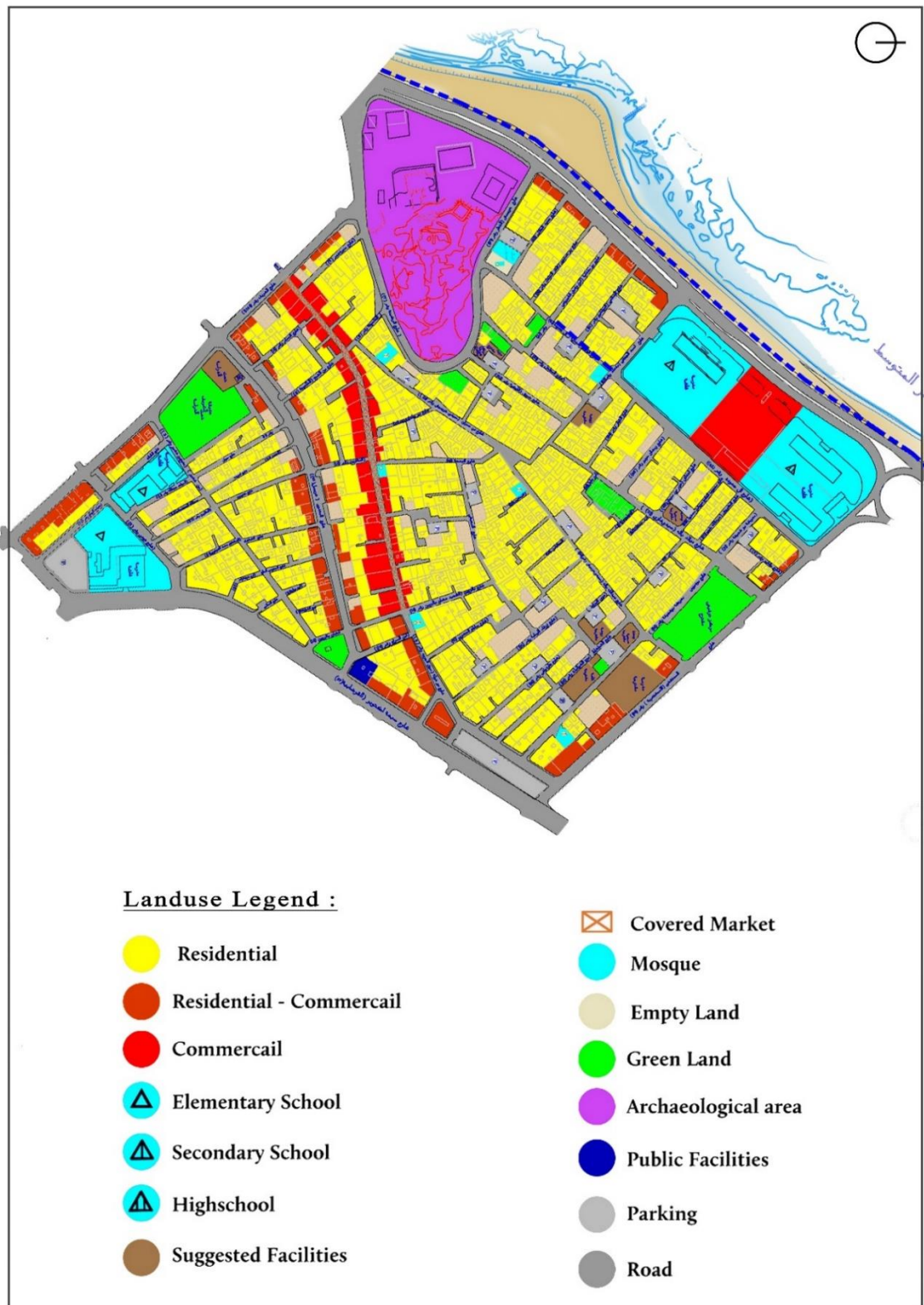


Figure 5.10 Land Use in the Old City. Source: by researcher (2022)



Figure 5.11. Land Use in the Old City. Source: by researcher (2022)

5.2.1.4 Availability of Facilities and Infrastructure

The assessment of facilities and infrastructure in the old city of Benghazi, conducted through a field survey and maps, can be summarized as follows:

1. Educational Facilities: The area is home to multiple educational institutions, such as the First Primary School.

The name of the school is "Second Preparatory Girls School".

The name of the school is "Third Preparatory Boys School".

The name of the school is Fourth Secondary School.

- Nevertheless, these schools are in need of immediate repair, as two of them have already been rehabilitated while the other two remain non-operational due to need repair and not ready.

2. Commercial Facilities: - Several establishments have been established in the vicinity.

- The antiquated enclosed market has been non-operational since 2014 as a result of maintenance work, adversely affecting the commercial operations in the locality.

3. Traders have relocated to regions that provide improved accessibility, parking security, and safety, suggesting a change in the commercial dynamics of the neighbourhood.

4. Requirement for Supplementary Facilities: The area is noticeably deficient in several vital amenities, namely: - A preschool - A medical facility

5.2.1.5 Infrastructure Issues:

- The old city is confronted with issues pertaining to inadequate energy and public drinking water systems.

- The roads necessitate repainting, indicating a requirement for enhanced maintenance of the transportation infrastructure. The green areas are now being neglected and require maintenance and new furnishings. This emphasizes the need for improvement in urban vegetation and public spaces.

In general, the facilities and infrastructure in the old city of Benghazi exhibit a combination of functioning and non-functioning amenities, with notable sections that require upgrading. Although educational facilities exist, they are in need of upkeep. Additionally, the closing of vital markets has had a negative impact on commercial activity. Moreover, there is a significant absence of essential community services such as kindergartens and clinics. The existing infrastructure, especially in terms of utilities and

public areas, is insufficient, highlighting the necessity for rehabilitation and improvement to address the demands of the population and increase their quality of life.

5.2. 1.6 Accessibility of facilities

The availability of amenities in the historic city of Benghazi is marked by a combination of convenience and difficulties, influenced by the consequences of the civil war and the arrangement of the metropolitan area:

Consequences of the Civil War: The Civil War resulted in the devastation of two educational institutions (a secondary school and a primary school) as well as a commercial edifice, so significantly affecting the availability of educational and commercial amenities. Furthermore, the covered stores (covered bazar) are currently undergoing maintenance, which is impacting the availability of commercial spaces.

Proximity to Facilities: Primary and middle schools, shops, and mosques are conveniently located within a 5–15-minute walking radius. This indicates a reasonably level of accessibility for pedestrians living in the area.

Diversity in Accessibility:

- The region benefits from good accessibility to amenities because of its compact block size and short streets. However, the current facilities are inadequate, and it is necessary to seek additional community facilities.
- Nevertheless, certain areas suffer from limited accessibility as a result of the presence of unpaved roads. Both pedestrians and automobiles may find this situation challenging. Driving a car within the old city is impractical due to narrow lanes, limited amenities in the area, and the presence of gravel roads.

Facility Distribution and Location: During the last ten years, the historical city of Benghazi has experienced significant deterioration as a result of out-dated infrastructure and prolonged neglect. Furthermore, the existing facilities require maintenance and repair. Significantly, certain open areas and gardens are in a state of disrepair and do not have sufficient amenities, underscoring the urgent necessity for the upkeep and enhancement of public spaces. To summarize, while several amenities are conveniently reachable on foot, the accessibility of all entry points in Benghazi Old City is hindered by inadequate infrastructure, including unfinished roadways, as a result of the on-going and enduring civil conflict. This emphasizes the pressing necessity for focused urban

restoration initiatives aimed at enhancing accessibility and rejuvenating public spaces for the benefit of inhabitants.

5.2.1.7 Overview of the Analysis of the Old City of Benghazi

The table provides a concise overview of the old city neighbourhood.

Table: 5.1 Summary of the Analysis of the Old City of Benghazi

Aspect	Brief Description
1. Housing Typology	Courtyard houses, characterized by centre open spaces, are built to prioritize solitude and adapt to the local environment.
2. Layout of Housing	Houses oriented to minimize sun exposure, built with local materials.
3. Neighborhood Pattern of the Old City	Organic urban fabric with long streets, influenced by local customs, rich in cultural landmarks.
4. Contemporary state of Benghazi City	Post-World War II modernization, new housing typologies, and contemporary architectural styles.
5. Availability of Facilities and Infrastructure	Essential facilities present, maintenance issues, lack of kindergartens and clinics and schools
6. Accessibility to Facilities	General accessibility is moderate, with challenges due to narrow streets and inadequate infrastructure. But the accessibility is lost by using cars inside the neighborhood
7. Layout of Housing (Environmental Adaptation)	Housing is designed for sun exposure management, cool interiors, and traditional styles.
8. Neighborhood Pattern Changes	Lack of public open spaces, redevelopment, shifts in building styles, urbanization, and demographic changes.
9. Availability of Facilities	Several schools with maintenance issues, and commercial facilities impacted by closures, need additional services. Civil war impact on schools and commercial buildings, walking distance to some facilities, variation in access.

5.2.2 Contemporary state of Benghazi City

Benghazi endured about 1,000 assaults during World War II, resulting in extensive destruction. Additionally, the region was impacted by four military engagements between Axis and Allied forces throughout the war. The British successfully asserted their dominance over the region for the seventh time and maintained their authority until Libya proclaimed its independence in 1951. Subsequently, with the oil discovery in the country,

the city underwent restoration and entered a modern period in Libya's history (Bulgma, 1978). Following the attainment of independence, a fresh era of transformation commenced in the conception and arrangement of families. The rural areas of the early 1950s and 1960s experienced substantial transformations following the conclusion of World War II. Consequently, the demand for housing became one of the most urgent priorities in Libya, leading people of Benghazi to concentrate on finding solutions. Recently, three categories of residential buildings have been introduced (Shavesh, E. (2000)). Following their freedom, the citizens of Benghazi commenced the construction of new edifices. According to Bulgma (1978), the government constructed new pipelines and power plants to facilitate urbanization and stimulate economic growth.

Burniq, the old district of Benghazi, is characterized by its condensed and irregular layout - a twisted network of short streets running from north to south, intentionally planned to capture the coastal winds (refer to Figure). Nevertheless, alterations in lifestyle, coupled with advancements in construction and transportation technologies, have collectively exerted an influence. The need for more living space and interior climate control has significantly influenced the development of building design at the individual building level. Substituting a central courtyard with a lateral courtyard or light well, which permits greater vertical intensification and improved control over indoor air, diminishes its worth as a space for family activities. At the community level, the limited availability of public open spaces in central areas often poses challenges when it comes to improving them. The small parcels of land designated for parking and green areas are insufficient for social activities and fail to meet the planning standards outlined in Libya's residential area planning guidelines (UPA, 1982).

The rehabilitation process has been a direct response to evolving human needs, as well as investment prospects and advantages resulting from advancements in construction technology, such as enhanced utilization of concrete. As a consequence, there has been an increase in the height and density of buildings in the region, leading to modifications in land parcels, including their division or consolidation. However, certain key characteristics of the core zone have been compromised due to actions such as the inclusion of parking lots, small expansions of roadways, and changes in building types (Adel, 2013).

5.2.2.1 The First Type of Contemporary House (Housh Type)

The discovery of oil in 1960, together with rapid economic expansion and social transformation, has resulted in an increasing need for enhanced living standards among the population, including the resolution of housing problems. Increasing migration and urbanization are also occurring. The Alkeesh area was one of the initial developments of Benghazi City.

5.2.2.2. Case Study 2 (Alkeesh Neighbourhood) is discussed in section

The Alkeesh neighbourhood is situated within the Al-Andalus area, which is part of the city of Benghazi. The selected neighbourhood is situated in the heart of Benghazi, positioned between the southern end of Al-Orouba Street and the northern end of the First Alp, the first-round route, towards the west.

As per the officially sanctioned master plan of Benghazi, the neighbourhood is situated in a residential area characterized by a moderate population density. The Alkeesh neighbourhood, spanning a total area of 36.01 hectares, constitutes a substantial portion of urban Benghazi

The housing typology, referred to as the Housh home type, is regarded as an architectural advancement of the conventional courtyard house discovered in the historic city region. This typology represents the shift from conventional to modern house designs, highlighting the neighbourhoods' contribution to the overall urban growth and evolution of housing in the city. This case study offers a comprehensive analysis of the Alkeesh neighbourhood, providing valuable insights into the dynamic changes that have occurred in Benghazi's urban landscape as the city has expanded and developed.

5.2.2.2.1 Housing Typology (Housh House Type)

Housing typology refers to the classification or categorization of different types of houses. In this context, "Housh house type" is a specific example or instance of a housing typology.

The building can be seen as an architectural evolution of the classic courtyard home seen in the old city region. The construction of traditional dwellings has been halted, with the exception of a few residences built by local residents in the outskirts of Benghazi. This particular type of house differed from the traditional style due to its distinct arrangement

of features and spaces, as well as the materials and construction techniques employed. These factors contributed to a more structured and open interior that seamlessly connects with the surrounding environment. These patterns were dominant in Alkeesh, alberka, and other areas of the city (Figure 5.12, 13, 14, 15).

The neighbourhood was initially planned in the late 1960s with the intention of providing affordable land for local workers, particularly those employed by the textile factory situated in the northern part of the region (Figure 5.16). The subdivision comprises elongated rectangular blocks and small land parcels, each measuring approximately 120 m² to 140 m², with some reaching 200 m². The area is connected by streets that vary in width from 6.0 to 10.0 meters. The courtyard buildings on this site were built as either one or two stories high. In some cases. Occasionally, two plots of land were combined.

This housing model has been specifically developed to tackle the issue of housing shortages. Various sections of the city are comprised of residences of this type. This type of dwelling is characterized by either one or two levels. The building has a square architectural design, featuring a courtyard located at one of its corners. The area surrounding Salla's residence, which served as a substitute for a yard in a conventional dwelling. Shawesh, E. (2000).

According to urban planning regulations, the building in the neighbourhood was originally classified as medium density. However, due to the housing shortage in Benghazi city and the high cost of land, the family decided to add another floor to their house in order to accommodate their married sons. As a result, the building now has a total of four floors.

"Nevertheless, building roofs serve as a substitute outdoor area for numerous households." The roof space is often enclosed by walls, covered with tiles, and utilized, particularly during the summer, as a living area, storage space, or laundry room (Adel, 2013).

Figure 5.12, 13 illustrates various architectural designs of different types of houses.

Shawesh (2000) states that this housing type had a profound impact on the built environment's identity in modern history, making it one of the most significant changes in Tripoli and Benghazi at the time. The load-bearing walls composed of stone and brick

were created using contemporary techniques and imported building materials. Cement and lime were used to coat the walls both inside and externally, and they were painted. The roof was created with either clay blocks or reinforced concrete, which was subsequently planted in ordinary concrete. The dwelling typology in the Alkeesh district of Benghazi is particularly noteworthy for its impact on the built environment's character during a significant period in modern history. This typology, as presented by Shawash (2000), contained three major features:

Construction Techniques: The dwellings were built utilizing contemporary techniques, indicating a change from conventional approaches.

Building Materials: The load-bearing walls were built utilizing a combination of native and imported stone and brick materials. This amalgamation of materials showcases a fusion of conventional and contemporary construction methodologies.

The walls were coated with a mixture of cement and lime, both on the inside and outside. This not only conferred durability and robustness, but also facilitated the application of painted finishes, so enhancing the visual aspect of the buildings.

Roofing: Roofs were built using either clay blocks or reinforced concrete. This choice of materials suggests a drive towards more durable and long-lasting construction processes. The dwelling type in the Alkeesh area reflects a significant advance in Benghazi's architectural landscape, integrating traditional components with modern building techniques and materials. These changes not only altered the practical issues of housing but also contributed to the evolving identity of the city's-built environment.



Figure 5.12 Alkeesh's area design schemes of houses, known as Housh. Source: by researcher (2022)



Figure 5.13 Alkeesh's area design schemes of houses, known as Housh. Source: by researcher (2022)

contemporary housing: housh type

The design of the house is ground floor and reach until four floors, the living room is the enteral part of the house. All rooms open on the living room. The guestroom for men in the left of the entrance of the house and guest toilet. The lighting of rooms from windows opens on street. the courtyard was shifted to the rear and side part of house, also used for lighting and ventilation



Front Elevation

Location



Section

Plan

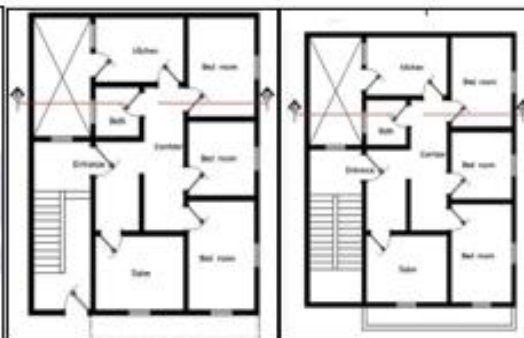
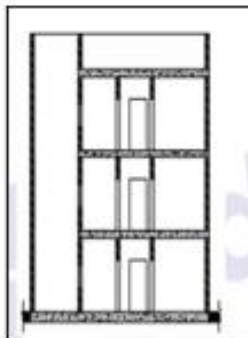


Figure 5.14 Alkeesh area design schemes of houses, known as Housh Source: by researcher (2022)

Contemporary housing: Housh house

The design of the house is ground floor and reach until four floors, the living room is the enteral part of the house. All rooms open on the living room. The guestroom for men in the left of the entrance of the house and guest toilet. The lighting of rooms from windows opens on street. the courtyard was shifted to the rear and side part of house, also used for lighting and ventilation.



Location

Front Elevation



Plan

Section

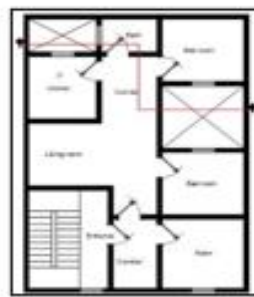
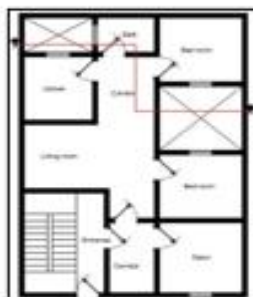


Figure 5.15 Alkeesh's area design schemes of houses, known as Housh Source: by researcher (2022)

5.2.2.2.2 Analysis of Neighbourhood Patterns in the Alkeesh Area

The Alkeesh neighbourhood in Benghazi exhibits a unique urban configuration and social organization:

Gridiron Pattern: The community adheres to a gridiron plan, characterized by regular and uniform plots. The organized arrangement of this pattern demonstrates a deliberate strategy in urban development.

Road Network Hierarchy: The road network has a distinct hierarchy, with local streets being of limited length. This design presumably enables convenient access within the area while effectively managing traffic passing through.

Compact Residential Structures: The compact size of the residential blocks promotes the development of more intimate connections among neighbors. Reducing the size of blocks enhances the feeling of community and facilitates acquaintanceship among inhabitants.

Restricted Vehicular Passage: The design hinders the smooth flow of autos, resulting in the prompt detection of any new vehicle. This function improves the security of the area and minimizes disruptions caused by traffic.

Accessibility and Safety: Alkeesh area is a compact and easily reachable neighbourhood that is conveniently located near important and vital amenities, ensuring accessibility and safety. The region is equipped with two main access points, which not only facilitate entry but also improve safety and security within the neighbourhood.

The design of the neighbourhood exemplifies a harmonious combination of accessibility, community cohesiveness, and security, making it an exceptional and essential component of Benghazi's urban fabric.

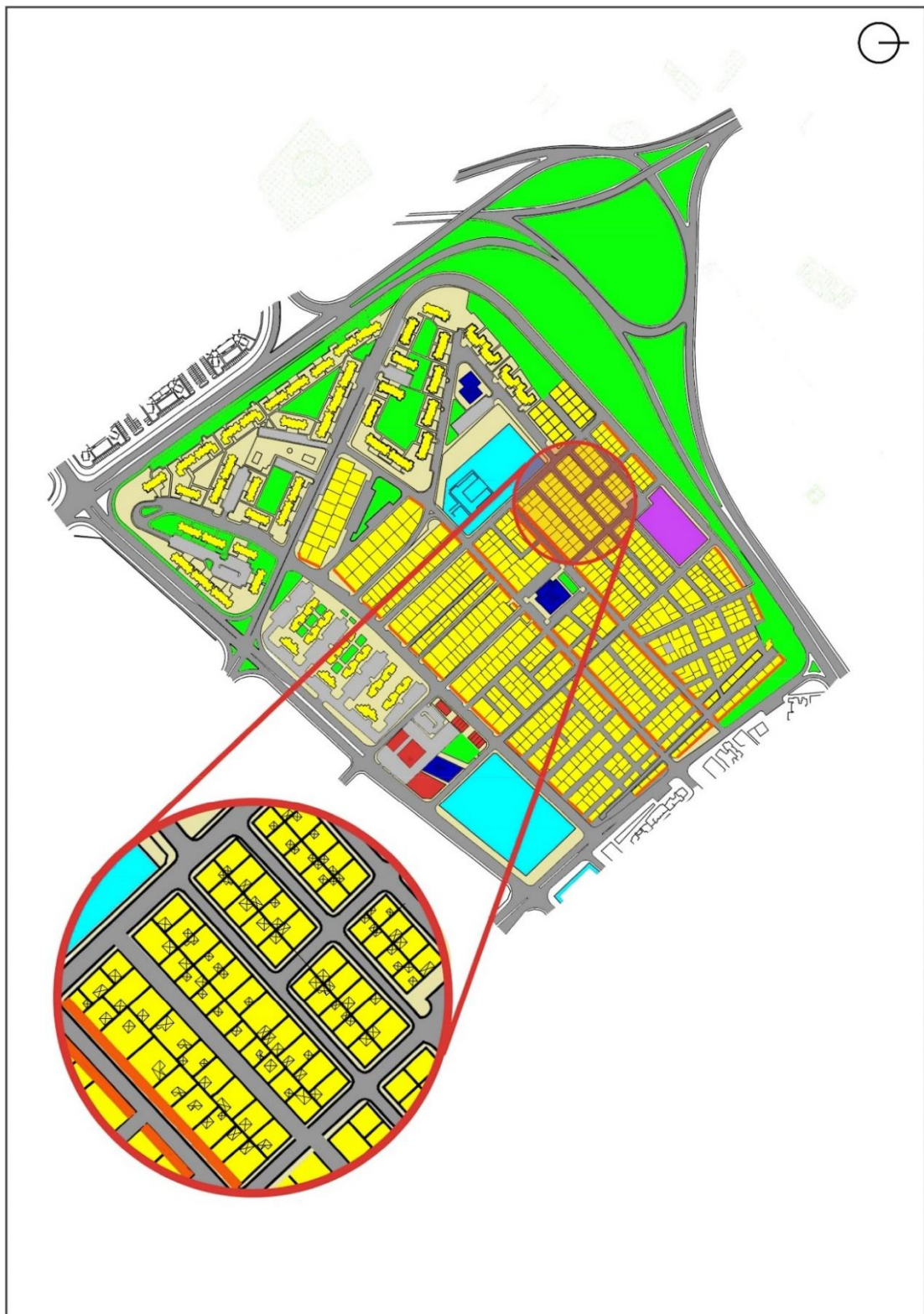


Figure5.16 Neighborhood pattern. Source: by researcher (2022)

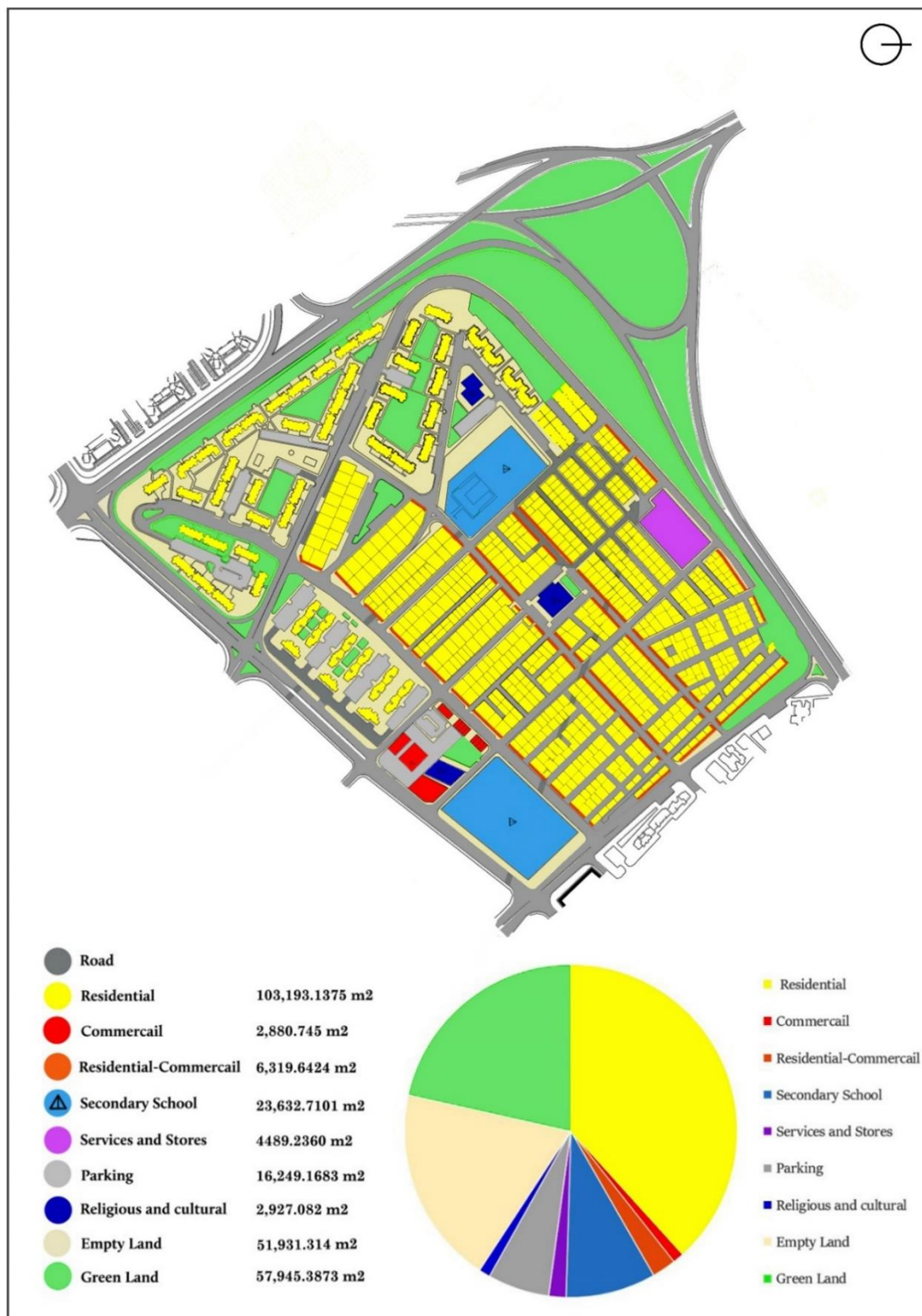


Figure 5.17 Land Utilization in Site Two, Alkeesh Area. Source: by researcher (2022)

5.2.2.3 Social Structural

The social dynamics inside the community rely on robust connections among neighbors, particularly with long-standing inhabitants who own their respective houses. Upon reaching the age suitable for marriage, a dedicated floor is constructed for the child to facilitate the wedding ceremony. Therefore, these families are regarded as extended families residing in distinct residences within the same structure. This fulfils the yearning for a family that is physically separated due to social change, while nevertheless maintaining close proximity to one's parents.

5.2.2.4 The existence and availability of Aamenities and Infrastructure

Based on the field survey and maps, it was determined that there are two mosques, stores located along the main highways, and two schools - one primary school and one secondary school. Furthermore, certain private establishments such as shops, pharmacies, and a limited number of car mechanic workshops were established within residential premises. These establishments were created either by partitioning a room within the house or by opening a separate entrance from the street. The purpose behind these initiatives was to enhance the family's standard of living or to provide employment opportunities for their children.

Additionally, based on the field survey, it was observed that the area does not have its own preparatory school. Instead, they utilize the school that is already there in the adjacent community. The school is within a 10-15-minute walking distance. The entirety of the green space is situated adjacent to the primary thoroughfare inside the local community. Unfortunately, these green areas have been disregarded and lack both vegetation and furnishings.

With regards to infrastructure, it was discovered that the area was completely serviced by the public electricity and drinking water networks. However, every house had immediate access to potable water. Conversely, it was discovered that the area was linked to the municipal sewerage system. Regarding the road network, while the bulk of main roads in the neighbourhood were paved and had adequate street lighting, most of the sub collector and services roads were also paved.

5.2.2.5 Facility Accessibility

The availability of amenities in the Alkeesh locality has been impacted by a range of variables, which have both facilitated and restricted the convenience of access:

The region benefits from enhanced accessibility due to its modest block size and short roadways.

Proximity to Facilities: Essential amenities such as a primary school, middle school, several shops, and mosques are conveniently situated within a 5–15-minute walking radius. This close proximity implies that pedestrians in the neighbourhood have convenient access to essential services.

Geographical Dispersion and Positioning of Establishments:

The overall distribution and location of facilities is satisfactory. However, the absence of furniture in open spaces and gardens suggests a need for improvement in the management of public spaces. Overall, pedestrian access to facilities in Alkeesh area is satisfactory.

5.2.2.6 Summary of Alkeesh Neighbourhood Analysis

Table 5.2 Summary of Alkeesh Neighborhood Analysis

Aspect	Brief Description
1. Housing Typology	- Blend of traditional and contemporary techniques.
	- Load-bearing walls of stone and brick with cement and lime coating.
	- Roofs constructed with clay blocks or reinforced concrete.
2. Neighborhood Patterns	- Gridiron pattern with regular, uniform plots, and the residential blocks were small
	- Clear road network hierarchy with small residential blocks.
	- Limited vehicular access for enhanced security.
	- Proximity to central services with two primary entry points.
3. Availability of Facilities	All facilities are available.
4. Accessibility	- Walking distance to primary and middle schools, shops, and mosques in walking distance 10 min.
	- Well-distributed facilities, but open spaces and gardens require maintenance. Good public transportation



Mosque



Picture of the street



Picture of the street



Elementary School



Highschool



Shops

Figure 5.18 A visual representation illustrates the amenities available in the neighbourhood Source: by researcher (2022)

5.2.3 The second Style of Contemporary Housing is known as a villa House.

Case Study 3 (Assalam Neighborhood)

The Assalam district in Benghazi experienced significant construction during the 1970s to address the housing crisis prevalent in the country at that time. The Al-Salam neighborhood is situated within the city of Benghazi, specifically in the Al-Salam area.

The Assalam neighbourhood is situated positioned between the Fourth Ring Road and Fifth Ring Road in the northeastern part of the city, as depicted in the Figure. As to the officially sanctioned master plan of Benghazi, the area is situated in the low-density residential zone.

The neighborhood has a total size of 75.19 hectares.

Figure:5.3 Location of Selected Neighborhoods within El-Salam Area

5.2.3.1Housing Typology (Villa Type).

The dwellings in this locality are residential villas, typically including one or two stories. The majority of these residences were constructed in the mid-1970s on land that was given as a donation by the city of Benghazi. The size of these buildings varies between 450 and 500 square meters. The majority of the plots have a width ranging from 18 to 20 meters and a depth of 25 meters.

From the illustration, it is evident that the majority of the houses have a design that allows for direct access to the outdoors. These houses are situated in regions with gardens and open spaces, and there are specific regulations in place to limit the number of houses in these places. Additionally, all rooms within the houses have windows that face the outside. The layout of the object could be customized and was organized based on the preferences of the owner and producer, consisting of three basic components.

The initial region is typically located in close proximity to the primary door of the dwelling and is designated exclusively for male visitors. The main welcome space mostly consists of a "saloon" and a separate bathroom designated for guest use. The second section is the family day area, situated in the heart of the house. This space is essentially a spacious living room known as 'Salah', which is connected to the kitchen. If the assigned guest room is not 'Dar Makad', then 'Salah' can serve as an alternative. In order to ensure

privacy, it is preferable for the entrance to be accessible through an alternative pathway located on the side of the home. However, the guidance is often segregated from the extra-terrestrial region using a specific procedure. The third section comprises the family sleeping quarters, consisting of a master bedroom, two or more bedrooms for other family members, and one or more bathrooms to ensure privacy. Typically, a pathway is employed to demarcate this part from the second section.

In the Assalam neighbourhood, the housing typology is defined by detached buildings in the style of villas. This is a distinctive feature of the low-density residential areas in this part of Benghazi.

These villas embody fundamental elements of contemporary home design and urban planning:

Individual and office architect Design and Construction: Each villa is typically individually and Architect designed and constructed, indicating a high level of customization and personalization in housing.

Plot Location: These residences are often situated in the central area of their individual plots, in compliance with planning laws. The strategic positioning of this centre region enables the most efficient utilization of space and frequently leads to the creation of more secluded and private living spaces.

Layout: The layout of the neighborhoods in this area is divided into several residential blocks. This separation promotes the concept of a communal living area while protecting personal privacy.

Residential Clusters: The residential blocks are made up of several residential clusters, indicating a unified yet divided neighborhood layout. This design achieves a harmonious equilibrium between the necessity for communal engagement and the preference for individual living quarters.

The villa house typology in the Assalam area exemplifies a contemporary approach to residential development, with an emphasis on uniqueness, seclusion, and a meticulously planned neighborhood layout.



Figure 5.19 Schemes of house type (Villa). Source: by researcher (2022)



Figure 5.20 Schemes of house type (Villa). Source: by researcher (2022)

Contemporary housing: villa type

Scheme1:

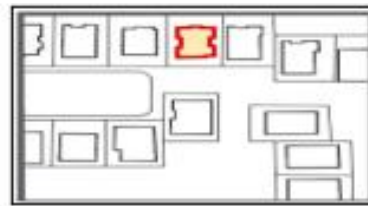
The villa has a ground and one-floor plan and is separated into three areas: the guest area, the living space, and the bedroom area. The house is reached from the distributor space/where stairs are placed to access the top floor, which is similarly built. Every villa has a garden from all or some sides on it which windows, balconies, and terraces open, and the home is enclosed by a concrete fence that circulates it.



Elevation



Location



Plan



Ground floor

First floor

Figure 5.21 Schemes of house type (Villa). Source: by researcher (2022)



Figure 5.22 Neighborhood Patterns in the Assalam Area. Source: by researcher (2022)

5.2.3.2 Neighborhood Patterns in Assalam Neighborhood

The Assalam district of Benghazi exhibits distinct neighborhood patterns that adhere to a certain urban structure, which is a manifestation of the preferences and planning restrictions for low-density residential zones:

Property Classification Single-Family Homes: The prevailing housing style in these communities is characterized by detached houses, commonly known as villas. This type signifies a shift away from densely populated urban areas, providing greater room and seclusion.

Personalized Design and Construction: Every villa is often uniquely designed and built, enabling a significant level of customisation. The diversity in design appeals to different tastes and ways of living, enhancing the distinctiveness of the community.

Central Placement of Dwellings: Following planning regulations, these villas are typically located in the middle of their plots. This central placement optimizes the use of space within each plot and enhances the overall aesthetic of the neighbourhood.

Division into Residential Blocks: The layout of the Assalam neighbourhood is organized around multiple residential blocks. This division facilitates the development of an organized yet adaptable urban structure.

Multiple Residential Clusters: Each residential block comprises several residential clusters. This configuration facilitates the creation of tiny communal entities within the broader vicinity, promoting a feeling of togetherness while preserving personal seclusion. The neighborhood layouts in the Assalam area blend the advantages of personalized, roomy living with the collective benefits of organized residential blocks. This design methodology enhances the development of a unified yet varied urban neighborhood.

5.2.3.3 Assalam Neighbourhood's Facilities and Infrastructure Availability

The Assalam neighbourhood has a well-developed infrastructure and the presence of necessary amenities, as emphasized by the field assessment.

Facility Availability: There are two mosques in the neighborhood. The presence of a mall, two public schools, two private schools, shops, and a clinic greatly improves the accessibility of education and healthcare for the locals. These amenities are easily situated within a 10–15-minute walking radius. But the local road and pedestrian need repair to increased accessibility.

Green Area: Although there are green spaces situated along the major road, these places have been considerably disregarded. The absence of grass and furnishings suggests that these public places require improved upkeep and renovation in order to increase their recreational and aesthetic value.

Road Network: The majority of the primary roads in the area are well-maintained and have adequate street lighting, which makes traveling safe and convenient. Most of the sub-collector and service roads are also unpaved, indicating need a comprehensive and methodical development of the road infrastructure. The presence of facilities and infrastructure in the Assalam neighbourhood indicates a well-designed and well-maintained region, prioritizing the provision of essential amenities for its people. Nevertheless, the need for increased focus on green spaces indicates that there is potential for enhancing the administration of public areas.

Utility Services: The community benefits from comprehensive public electricity and drinking water networks, guaranteeing dependable access to these vital services. Every property is equipped with a direct water supply, which is a crucial component of contemporary living standards.

The region is linked to the city's sewerage network, demonstrating a thorough approach to sanitation and hygiene.

5.2.3.4. Accessibility of Facilities in the Assalam Neighbourhood

The availability of facilities in the Assalam area is governed by a variety of circumstances, which can either improve or hinder ease of access:

Proximity to Facilities: The presence of essential amenities such as a primary school, middle school, various shops, and mosques within a 5–15-minute walking radius demonstrates excellent pedestrian accessibility.

Different levels of accessibility exist within the area. Overall, accessibility is satisfactory, primarily because there are shops nearby that cater to necessary needs. - - Nevertheless, in regions with non-paved roads, the availability of amenities is limited, indicating the influence of road conditions on the ease of access. - the presence of dirt roads in the area makes it less access and convenient for people and to drive automobiles, as it can impede vehicular access.

Distribution and Location of Facilities: - The facilities are evenly dispersed and strategically positioned, indicating a deliberate and well-considered urban planning

strategy.

The user did not provide any text. However, several open spaces and gardens have been disregarded and are devoid of furnishings, highlighting the necessity for better management of these public areas.

In general, the Assalam neighbourhood offers convenient access to important amenities for those on foot. However, there are still difficulties when it comes to accessing the area by foot and vehicle and some public spaces are not in good condition. This emphasizes the significance of on-going infrastructure construction and upkeep in order to improve overall accessibility and the quality of urban living.





Mosque



Highschool



Shops

Market

Figure 5.23 The neighborhood facilities. Source: by researcher (2022)

5.2.3.5 Summary of Assalam Neighbourhood

Table 5.3 Summary of Assalam Neighborhood Analysis

Aspect	Brief Description
1. Housing Typology	- Villa-style detached dwellings with individualized design.
	- Central placement of dwellings within plots for optimal space use.
	- Residential blocks with multiple clusters fostering a sense of community.
2. Neighborhood Patterns	- Dominance of villa-type detached dwellings for low-density living.
	- Individual design and construction, allowing for customization.
	- Structured layout with residential blocks and multiple clusters.
3. Availability of Facilities	- Educational and health facilities, preparatory school, and clinic within a 10-minute walk.
	- Green spaces, though neglected, strategically located along the main road.
	- Well-developed infrastructure with public electricity, drinking water, sewerage network.
4. Accessibility to Facilities	- Good pedestrian accessibility to key facilities within 5-15 minutes in the plan. But the local roads and pedestrian need paved
	- Well-distributed facilities but some neglected public spaces require improvement.

5.2.4 The Third Category of Contemporary Houses. (Apartment)

Case Study (4) Garyounis Neighborhood

This modern apartment building is located in the Garyounis district. Case Study 4 focuses on the Garyounis area in Benghazi and explores a notable change in dwelling architecture that took place during a specific phase of the city's growth:

5.2.4.1 Housing Typology in the Garyounis Neighbourhood

The housing typology in the Garyounis area of Benghazi had a substantial change during a specific period, characterized by the arrival of high-rise buildings.

High-Rise Building Development: The primary kind of housing built during this era was high-rise structures. The transition to vertical residential spaces marked a significant departure from the conventional home designs in the city.

Emphasis on Public Housing: These tall structures were primarily constructed for the purpose of providing public housing, in order to meet the increasing demand for accommodation among the populace. The buildings exhibited a lack of conformity with the local culture and land use conditions, suggesting a deviation from the typical Libyan living spaces.

Government and International Collaboration: The Ministry of Housing signed a deal with the Korean Dow Company in 1987 to address the housing shortage and meet the increasing demand for dwelling units. The objective of this collaboration was to construct 7,000 residential units in Benghazi and Tripoli, with the contribution of Libyan architects and civil engineers. The project aimed to customize the design to meet the specific requirements of the Libyan family.

5.2.4.2. Neighbourhood Patterns in Garyounis Area

The neighbourhood patterns of Garyounis exemplify contemporary urban planning principles, emphasizing the consolidation of infrastructure and services in centralized locations.

The Design Concept: The design of the Garyounis neighbourhood is rooted in a contemporary approach, with a focus on locating vital amenities and services at the heart of the area. The purpose of this centralization is to improve the accessibility and convenience for residents.

Housing Unit Features: - The standard housing unit in this neighborhood comprises of two bedrooms, a guest room, a living room (also known as Salah), a kitchen, a bathroom, a guest restroom, and two balconies. The design of these units prioritizes usefulness and space efficiency.

Communal Facilities: In this type of dwelling, occupants collectively utilize shared amenities such as parking areas, gardens, and staircases. This communal element cultivates a feeling of community and collective accountability among inhabitants.

Consistency and Orientation: The main doors of each unit are carefully positioned directly across from each other, and they all open in the same direction, assuring consistency and a harmonious architectural design.

The neighbourhood patterns in Garyounis exhibit a fusion of contemporary dwelling architecture and planning that prioritizes community engagement. This method addresses the requirements of the Libyan family while fostering a cohesive and well-organized urban setting.

Finalization of the Local Area: The construction of the Garyounis area was finished in 1989, signifying the conclusion of a notable stage in Benghazi's urban growth. This case study examines the Garyounis neighbourhood and sheds light on the difficulties and transformations in urban housing development in Benghazi, specifically in terms of adjusting to novel styles and sizes of dwellings that deviated from the conventional Libyan architectural norms.

contemporary housing: Apartment type

1
The home is a component of a building tower with two apartments on each of its five or seven floors. The entrance to the apartment leads to the guest room, a guest bathroom, and the living room. The living area opens directly to the kitchen and a corridor that leads to the apartment's private spaces. Through the distribution zones such as the corridors provide privacy. There is ventilation offered by the windows.



Location



Plan

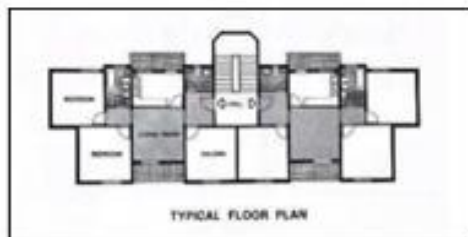
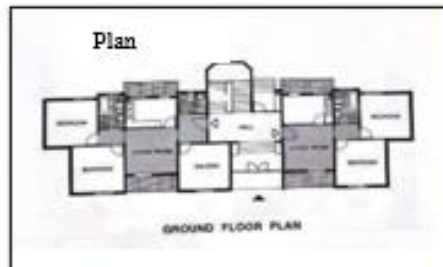


Figure 5.24 The pattern of neighborhood and schemes of flats. Source: by researcher (2022)

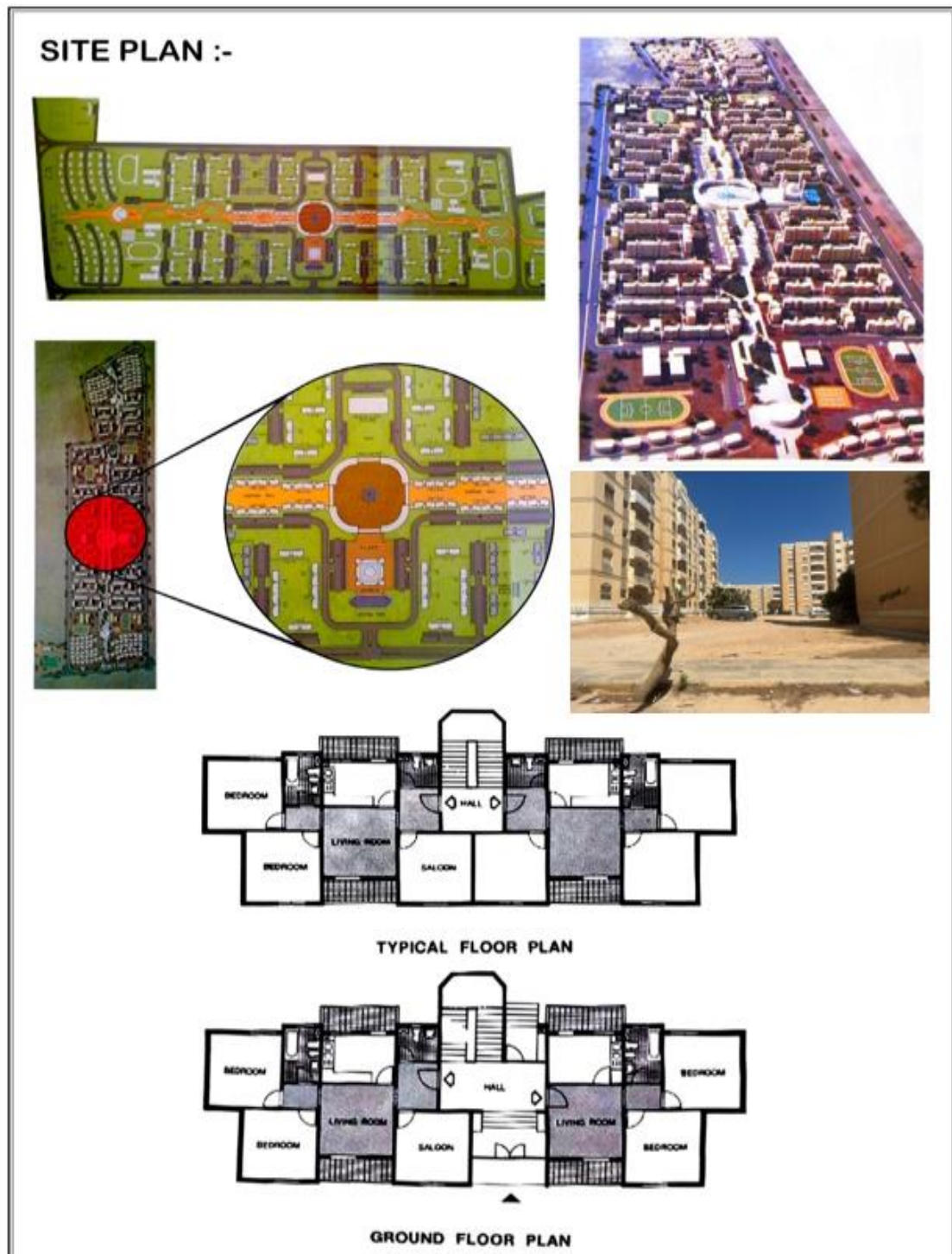


Figure 5.25 The pattern of neighborhood and schemes of flats. Source: 7000 residential projects

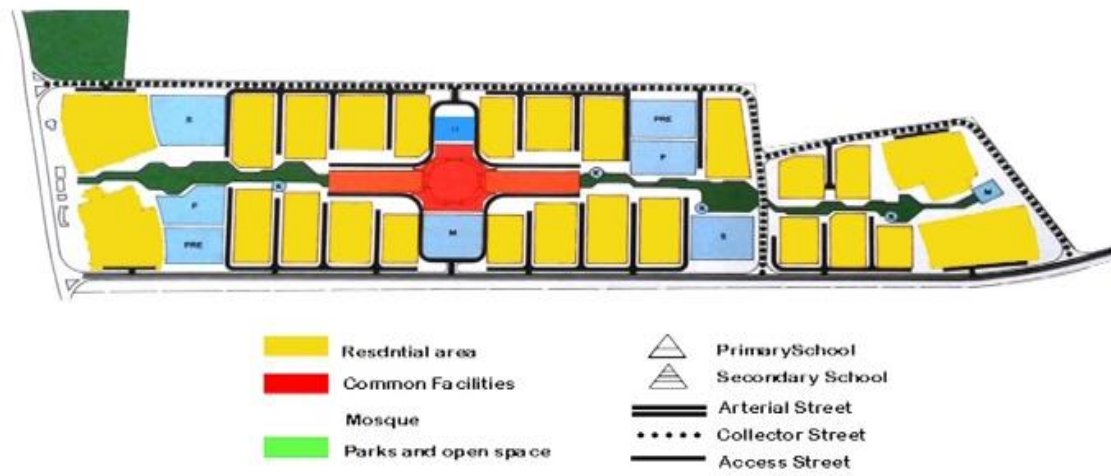


Figure 5.26 Land use of Garyounis neighbourhood. Source: 7000 residential projects

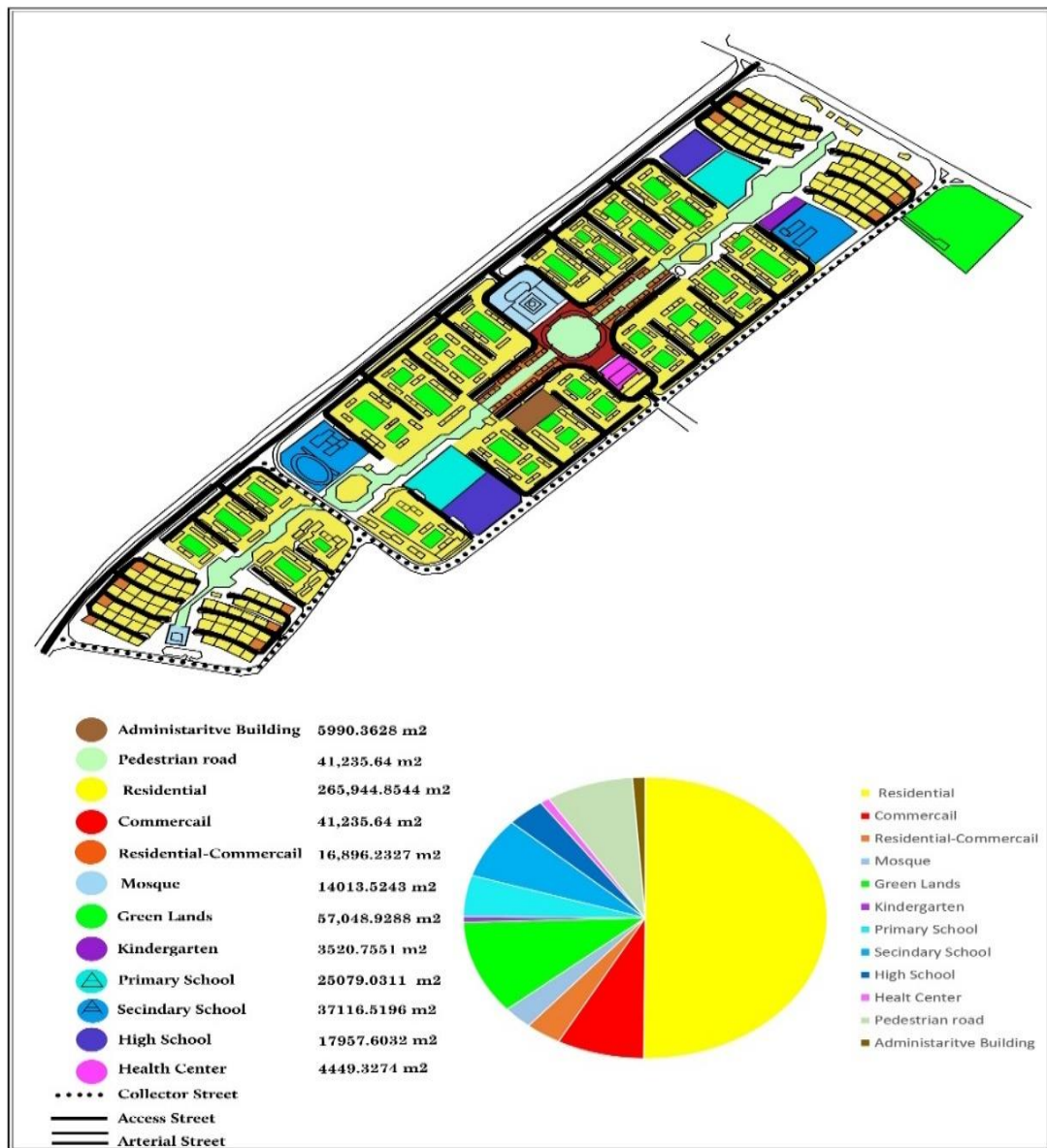


Figure 5.27 Land use of Garyounis neighborhood. Source: by researcher (2022)

5.2.4.3 The Presence and Accessibility of Facilities and Infrastructure in the Garyounis Neighbourhood.

The Garyounis neighbourhood in Benghazi showcases a wide array of amenities and a well-developed infrastructure, as determined through the field survey and land use analysis.

Facilities within the area encompass a range of critical community amenities, including two mosques, a variety of stores, four schools, a clinic, and a kindergarten. These facilities

provide for the fundamental educational, spiritual, health, and commercial requirements of the population.

Utility Services: - The area benefits from comprehensive electricity networks, guaranteeing a dependable power supply. - Adequate public drinking water and sewage systems are available, meeting important sanitary requirements.

Road Infrastructure: - The roads in Garyounis are surfaced with pavement, which improves the convenience and security of transportation. Constructed roadways enhance the general ease of access and interconnection within the local community.

Green Spaces and Playgrounds: Although there are existing green areas, they necessitate more care, such as the cultivation of grass and trees and the placement of garden furniture. The children's playground in the neighborhood requires attention, suggesting the necessity for maintenance and enhancement to ensure the provision of secure and captivating recreational areas for the younger residents.

The presence of amenities and infrastructure in Garyounis demonstrates a meticulously designed urban community that caters to the fundamental requirements of its inhabitants. Nevertheless, the necessity for enhancements in green spaces and recreational locations underscores the continuous demand for upkeep and expansion in urban districts.



Mosque



Primary School



Highschool



Market



Secondary School



Administartive Building

Figure 5.28 explains the facilities (school, mosque, shops). Source: by researcher (2022)

5.2.4.4 Accessibility to Facilities in Garyounis Neighborhood

The availability of amenities in the Garyounis area is impacted by a range of factors, which can either improve or hinder the convenience of access:

1. Proximity to Amenities: Important amenities such as a primary school, middle school, high school, kindergarten, shops, and mosques are conveniently situated within a 5-15 minute walking distance, demonstrating excellent pedestrian accessibility.

2. Varied Levels of Accessibility Exist: primarily attributed to the presence of accessible facilities within the centre.

5.2.5 Analysing the Cases

An initial evaluation is conducted for the four designs, taking into account the social and environmental elements outlined in the table. The purpose of this analysis is to examine and comprehend the distinguishing characteristics of traditional buildings and three distinct categories of modern houses by means of a comparative approach.

Table 5.4 Comparison and analysis of the designs based on social and environmental factors

Criteria	Traditional House with Courtyard (old city)	Contemporary Housh (Alkeesh)	Contemporary Villa (Assalam)	Contemporary Apartment (Garyounis)
Family structure and size	In the past accommodated large families.	It may accommodate large families depending on the size of the house.	It may accommodate large families depending on the size of the house.	The majority of them are for small to medium-sized families, with no space for extended family.
Suitability for a family function	The courtyard can accommodate large family social gatherings.	According to the size of the roof floor, can accommodate a large family social gathering	according to the size of external amenities. Modern villas with small exterior spaces might not provide this choice.	Social functions are severely constrained.
Preservation of national identity	The courtyard aspect, which is common in traditional housing, has a high	Moderate preservation of national identity depends on the design. The first	Moderate national identity preservation, based on the villa's internal,	National identity preservation is limited. Rather than addressing this issue, the

	reflection of national identity.	stage for losing the courtyard	external, and practical design.	apartment's objective is to provide lodging for a single family.
Privacy	High privacy for house residents with private areas. The interior layout of the house was essentially designed to maintain the privacy of the members of the family.	The transition design also separates parts of the guestroom. The interior layout of the house was essentially designed to maintain the privacy of the female members of the family from the view of male visitors.	increasing the privacy Depending on the inside design, with the external guest part.	Rooms have little privacy because they are generally joined by a common corridor. Less privacy by room deficit
Safety and Security	Thick walls provide good security and protection against High level .noise with internal windows.	To improve safety and security, they had already put steel guards on their windows. Additionally, they changed the material of the main entrance to the building from wood to steel.	High wall for privacy and security.	To improve safety and security, they had already put steel guards on their windows. Additionally, they had changed the material of the main entrance to the building from wood to steel.
Social cohesion and sense of community	Houses are often very near to each other, share walls, and are linked by narrow alleys, creating a strong sense of community.	Good sense of community as a result of the houses being very close and sharing walls. also, the roads are not wide	Low-density housing in an area contributes to moderate social cohesion.	High density encourages relationships among inhabitants, although it is dependent on the social context and ties among building residents.
Accommodation for family growth	Can accommodate family growth for a few generations, In the past the	Can accommodate an additional generation of family growth.	Can accommodate an additional generation of family growth.	Opportunities for family expansion are limited. Only Suitable for nuclear family.

	families were extended families.	Suitable for extended families and nuclear families, by adding floor when needed.	Suitable for extended families and nuclear families, by adding floor when needed.	
Appropriate for modern life and new technology	The level will be low with a high number of occupants within a single family if this design is adopted in modern times. However, because of the low female worker ratio and the inclination of a family to work in a single trade, the design met these objectives well during ancient times.	Appropriate for the use of new technology. Suitable for modern Libyan social life. With wide areas, there are several chances to strike a balance between work and family.	Appropriate for the use of new technology. Suitable for modern Libyan social life. With wide areas, there are several chances to strike a balance between work and family.	less suitable for self-employed people. Less appropriate for the use of new technology and depends the size of the flat. Suitable for modern Libyan social life.
Support family relationship	appropriate for one family. in the past can be for 2 families in the same house. Difficult to add floors as a result old buildings need the same materials and grafts built in old buildings	The house encourages the father and his son to reside in the same building by adding a new floor.	The house encourages the father and his son to resident in the same building by adding a new floor	Appropriate for nuclear family.
Green and recreational spaces	low to non-existent. Unless the courtyard featured plants.	Moderate and low, only available on the roof floor.	High availability of external spaces	lacked the apartment from any plants, and depended on the green areas in the neighborhood.
Lighting and ventilation	The courtyard house had good lighting and ventilation	The house type also for lighting and ventilation was good. As a result of external windows. Depending on the size of the side courtyard	The villa type had good lighting and ventilation.	The flat type had good lighting and ventilation because the distance between the block and the other block was quite enough.

Suitable for a summer climate	the advantages of the courtyard are temperature decreased inside the house	depend on the air conditioning.	depend on the air conditioning.	depend on the air conditioning.
suitable for a winter climate	The courtyard and thick walls allow the preservation of heat.	Depending on a heating system	Depending on the heating system	Depending on the heating system

5.2.6 The Analysis of Four Cases (Comparison Between Four Cases)

An initial evaluation is conducted for the four designs, focusing on the physical characteristics of the neighborhood, as indicated in the table. The purpose of this analysis is to compare different types of neighbourhoods in order to get insight into the characteristics of historic cities and three distinct types of modern neighbourhoods.

Table 5.5 Compares between four case studies.

Criteria	Traditional House with Courtyard (old city)	Contemporary Housh (Alkeesh)	Contemporary Villa (Assalam)	Contemporary Apartment (Garyounis)
Planning (Density)	According to the regulation the neighborhood was classified as high density.	According to the regulation the neighborhood was classified as medium density.	. According to the regulation the neighborhood was classified as low density.	According to the regulation the neighborhood was classified as high density. .
Planning (Size, location)	The old city is located north the Sea Street, east of Alexandria Street, west is Al-Sharif Street, and south of 7 October Street. It has an important location and it's near to the enteral business of Benghazi city. The old city has several issues, such as its original inhabitants leaving, traders moving to other	Alkeesh neighborhood was located on the first ring road from north, and south Alorouba Street, east Agoneytera Street. Alkeesh neighborhood is located in the center of Benghazi near Benghazi CBD and near from national park and many public gardens and facilities. The total neighborhood area is 36ha.	Assalam neighborhood is located between the fourth-ring road and fifth-ring roads. it was located far from the CBD of Benghazi, Benghazi University and other facilities on the city level. Located on crowded roads as a result the flow of traffic came from random areas and suburbs of Benghazi city.	The location of the neighborhood is bordered on the north by Al-Jazaer Street, on the east by Garyounis University, and the west by Wadi Al-Qattara. It contains its essential services to the neighborhood, away from the Central Business District. Most of the neighboring services are under pressure as a result of their

	commercial areas, state neglect, exposure to civil wars that destroyed parts of it, and the fact that most of its inhabitants are not Libyans. It also doesn't fit in with the modern .way of living total areas was42.9ha.		The total area is 75.19 ha	location close to slums, which are without services. This affects the efficiency of services. Including the random growth of residential and other areas. The total area of the neighborhood is 79.54 ha.
Mixed-use	There is little mixed use between residential and commercial. As a result, migrant original residents to modern neighborhoods. Also, migrants trade to the main commercial. the mixed-use in covered shops (covered pasar) not open from 2014 under repair and restoration	The mixed-use is distributed in residential in the main roads and local road	The mixed-use in the main roads surrounding the neighborhood is also found as little in some local roads.	The mixed-use in the center also some apartment uses another use mixed with residential
Provision and location of facilities	The old city needs services, including state neglect due to a lack of regular upkeep and the effects of the civil war. As a result, residents need to walk greater distances to receive services. As a result of the civil war, two secondary and primary schools and a commercial building were	The main facilities are available within a 5 –15 min walking distance. also, as a result, the central location of the neighborhood their services were near can be obtained from another neighborhood.	The main facilities are available within 5 –15 min walking distance and some facilities are more than 15 min. The main facilities were in the center, and the service and facilities served the neighborhood and the other neighborhoods near because some housing projects near	The main facilities are available within a 5 –15 min walking distance. The facilities in the center of neighborhood, the facilities not serve the neighborhood population but serve the random neighborhoods nearby without any facilities

	destroyed. And the covered shops (covered pazar). As for the covered shops, they are under maintenance. the existing facilities such as primary school, middle school, some shops, and mosques within a walking distance of 5-15 minutes on foot.		Assalam without any services and facilities	
Accessibility of facilities	The accessibility to facilities was moderate, but using the car inside the old city instead, of the foot made the accessibility was less as a result of small lanes and also as a result of some facilities not available in the neighborhood and the roads .unpaved	the accessibility to facilities was good as a result the Block size is small and their short streets.	The access to facilities was moderate as a result the street was unpaved.	The accessibility to facilities was good.
Open space and garden	The existing open space was not sufficient. the public open spaces in the neighborhoods frequently make it difficult to improve them since the scattered plots of land acquired for parking and green spaces fall short of the standards.	the green areas were neglected without any furniture did not encourage children to use it. For many homes, the building roofs serve as an alternative outdoor space. The roof space is frequently enclosed by walls, tiled	Even though a large portion of the open space appears to be green on the plan, many of the spaces are neglected.	Well distributed and well located, but some open spaces and gardens were neglected without any furniture.

	The garden was neglected			
Street Hierarchy	Well, hierarchy movement for pedestrians in the past but using a car made it the accessibility was weak. but the roads need to be paved., the hierarchy needs to improve as a result of using cars inside the old .city	There is a hierarchy in road movement.	There is a hierarchy in road movement, but the local roads unpaved encourage car movement.	There is a hierarchy in road movement.
Public transport.	Low public transport.	good public transport.	Low public transport.	moderate public transport.
Encourage pedestrian movement:	Narrow streets and rectangular-irregular urban blocks encourage pedestrian movement. Using the car (Municipality development) inside the old city had a negative effect and the lanes needed.	Moderate streets and the small Blocks with rectangular shapes Walking, playing, sitting down, and other outdoor activities were among the human activities that were seen on the street.	The pedestrian lanes are only on the main roads but the local roads are unpaved and pedestrian lanes do not exist as a result of local streets being unpaved.	The layout plan encourages pedestrian movement. As a result of the availability of the pedestrian network. But as a result of most shops in the center, they use cars instead of walking on foot. Also, as a result no pedestrian furniture to encourage people to walk.

Source: by researcher (2022).

When comparing the four case studies in Benghazi - the Old City (Courtyard House), Alkeesh Neighbourhood, Assalam Neighbourhood, and Garyounis Neighbourhood - several important aspects become apparent: the types of housing, the patterns of the neighborhoods, the availability and accessibility of facilities and infrastructure, and how well they have adapted to modern urban needs.

5.2.6.1 Housing Typology

Housing Typology refers to the classification or categorization of different types of housing.

The Old City features traditional courtyard buildings that prioritize family seclusion and are designed to adapt to the local climate.

- Alkeesh: Modernizing the traditional courtyard dwelling to meet contemporary requirements.
- Assalam: Villa-type detached residences that embody current housing preferences.
- Garyounis is a type of high-rise public housing that represents a transition towards vertical living environments.

5.2.6.2 Neighborhood Patterns

The Old City features an organic layout characterized by lengthy parallel streets and is abundant in cultural landmarks.

The gridiron pattern promotes robust community bonds.

- Assalam: A well-designed arrangement featuring residential blocks and clusters, encouraging individualism while fostering a sense of community.
- Garyounis: Incorporating contemporary design and centralized amenities that exemplify the progression of urban planning.

5.2.6.3 Availability of Facilities and Infrastructure

- Old City: The necessary facilities are available but are in need of maintenance; the utility systems are weak.
- Alkeesh offers a range of amenities and efficiently provided services.
- The city of Assalam benefits from efficient utility services and well-maintained main highways. Nevertheless, it is important to acknowledge that numerous local roads still require resurfacing. Furthermore, there is a distinct requirement for the improvement of green areas inside the urban environment. Garyounis offers a wide array of facilities and is efficiently supported by utilities and well-maintained paved roads.

5.2.6.4 Provision of Access to Facilities

- The Old City is characterized by a moderate level of difficulty, primarily due to its tiny streets and infrastructure difficulties.
- Alkeesh: Overall, the location is favourable, as most amenities are conveniently accessible by foot.

- The main roads have good pedestrian accessibility; however, there are issues in smaller roads due to the presence of unpaved streets, which has negatively impacted accessibility.
- Garyounis: Excellent pedestrian accessibility.

5.2.6.5 Modification to Contemporary Requirements

The Old City embodies traditional living but has challenges in meeting the demands of modern urbanization.

- Alkeesh: Harmonizes traditional components with contemporary urban life necessities.
- Assalam showcases a contemporary approach to housing and urban development.
- Garyounis: Demonstrates an urban transition, however may have possible disparities from conventional lifestyle preferences.

5.2.7 Conclusion

Every area in Benghazi offers a distinct and individual reaction to the changing urban environment. The Alkeesh exemplify a shift from conventional to contemporary, preserving cultural aspects while accommodating present-day requirements. Assalam embodies a clear transition towards contemporary lifestyles, defined by uniqueness and well-organized communal areas. Garyounis, with its emphasis on tall public housing buildings, demonstrates a notable urban change while also underscoring the difficulties of harmonizing contemporary constructions with the preferences of the local community. This analysis highlights the varied strategies employed in Benghazi for housing and community design, with each strategy tailored to specific historical, cultural, and socioeconomic circumstances.

Through the survey and observation, it was discovered that there are many types of dwellings and diverse neighborhood patterns. The families modified their residences based on several circumstances. The socioeconomic elements, such as family size, influenced the increase in the number of individuals within a family. However, this is subject to alter based on economic circumstances. As families experience economic improvement, they may choose to upgrade to larger residences that better suit their lifestyle. Additionally, the presence of modern technology and new furniture and equipment is incompatible with the out-dated infrastructure of the old mansion located in the historic city.

The courtyard was relocated from the centre to the corner, and then moved to a position surrounding the house. If the economic situation of the family improves, they will relocate from the ancient city, where their presence is currently regarded temporary. In the local community, the absence of public open spaces in central areas often presents a difficulty in improving them. The process of redevelopment has been a direct result of changing human needs, investment prospects, and the benefits gained from advancements in construction technology, such as the utilization of reinforced concrete. In the old city, land lots have been reorganized, resulting in some being divided or combined. Nevertheless, the implementation of strategies such as alterations in architectural designs, enlargement of certain narrow streets, and the establishment of parking facilities has led to the depletion of the core region's inherent characteristics. Mohamed, A. (2013).

Urbanization has led to economic growth and a desire for a more refined lifestyle. Consequently, there has been a mass departure of inhabitants from the ancient cities, along with entrepreneurs searching for improved transportation and security in other locations. The old town has experienced a decline in its distinctive qualities as a result of affordable rental prices and the influx of individuals from neighboring towns in pursuit of employment opportunities. A multitude of structures were decimated. The contemporary era is characterized by significant transformations in architecture and living conditions. This phenomenon can be attributed to the surge in migration from rural regions to urban areas in pursuit of employment opportunities, education, and an improved quality of life. As a result, there has been a rise in the demand for homes. Following its independence, particularly after 1969, significant transformations have occurred in the field of architecture and urban design, leading to a profound alteration in the city's identity. This shift may be attributed to the adoption of Western architectural and urban design practices, which heavily influenced the construction of houses and communities.

5.3 QUESTIONNAIRE

This section presents the results obtained by analysing the data gathered from a questionnaire administered in person using the study methodology.

The questionnaire's design is intended to gather information that will lead to the logical resolution of the research questions and the achievement of the research objectives.

The research questions serve two distinct purposes:

The subsequent sections will provide a comprehensive analysis of the data obtained from the questionnaire. The questions in the questionnaire can be categorized into five distinct segments:

- Part 1: Demographics and socio-economic.
- Part 2: Assessment of the current residence and surrounding area
- Part 3: Social aspect
- Part 4: Physical Aspect
- Part 5: Shape of future development

5.4 SURVEY RESULT

This section of the research examines the correlation between the physical aspect (built environment) and the nonphysical aspect (social aspect). The analysis is based on data collected through a face-to-face questionnaire conducted with 351 households. Of these households, 54 lived in traditional houses, 65 lived in housh (Libyan house), 111 lived in villas, and 121 lived in apartments. Additional statistical information and tables can be found in the appendices.

5.5 STATISTICAL ANALYSIS OUTCOME

The statistical analysis is segmented into descriptive sections that include demographic, socio-economic, built environment, and social elements. Afterwards, the hypotheses are examined and evaluated.

5.5.1 Descriptive Statistics of Demographic and Socio-Economic Variables.

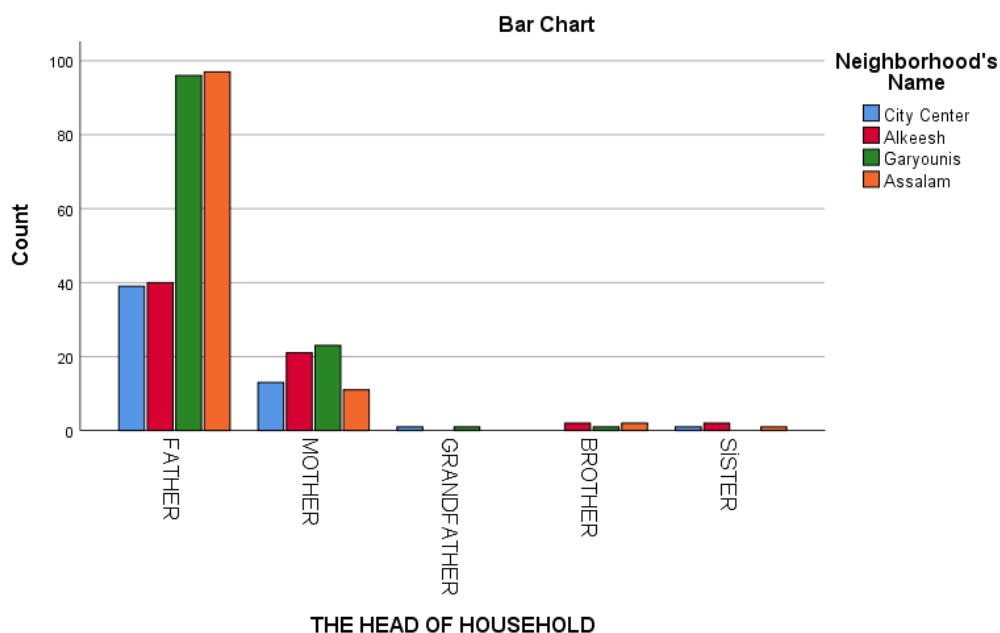


Figure 5.29 The Head of household percentages in four neighborhoods

Regarding heads of household, the results indicate that a substantial majority, specifically 77.5% of the entire sample, comprised of fathers who served as the heads of households. Mothers constituted an additional 19.4% of household heads, whilst grandfathers made up the smallest share, only 0.6% (see Figure 5.29).

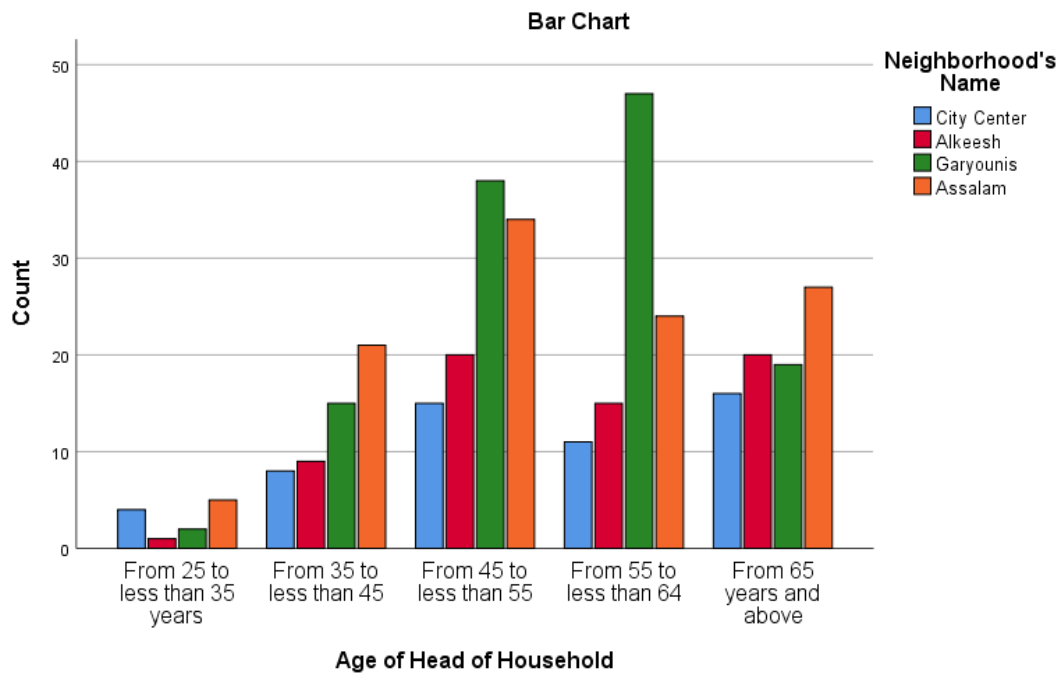


Figure 5.30 Age of head of household percentages in four neighborhoods

In our case study, the head of the family who had the highest percentage was in the age range of 45 to less than 55, with a percentage of 30.5%. On the other hand, the head of the household with the lowest percentage was also in the same age category, with a percentage of 3.4%. Please refer to Figure 5.30 for more details. In the old city neighbourhoods, the age group of 25 to 35 had the largest percentage of head of households, which was 7.4%, compared to other neighbourhoods. Furthermore, the Garyounis neighborhood had the lowest proportion, specifically 15.7%, of individuals aged 65 years and older. On the other hand, the Alkeesh neighborhood had the largest percentage, specifically 30.8%, of individuals in the same age category (refer to figure5.30).

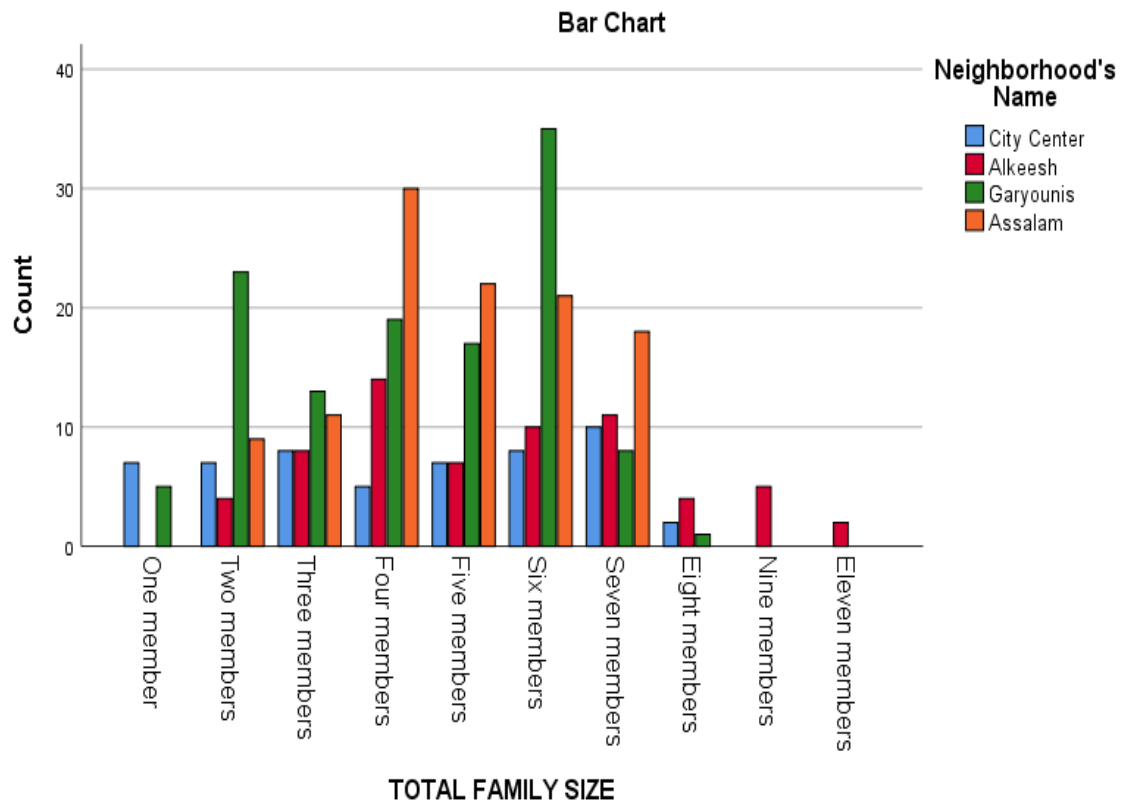


Figure 5.31 Total family size percentages in four neighborhoods

The largest proportion, amounting to 55.6%, was observed in families consisting of 4 to 6 individuals, whereas families with 1 to 3 members accounted for 27.1% (see Figure 5.31). The family size percentage was lowest, specifically ranging from 7 to 11, with a value of 17.4%. Upon comparing the four areas, it was discovered that the Assalam neighborhood had the most percentage (65.7%) of families with a size ranging from 4 to 6 members. Conversely, the Assalam neighborhood also had the lowest percentage (18%) of families with a size ranging from 1 to 3 persons. Based on statistical data, the mean family size in Libya was 5.7 person.

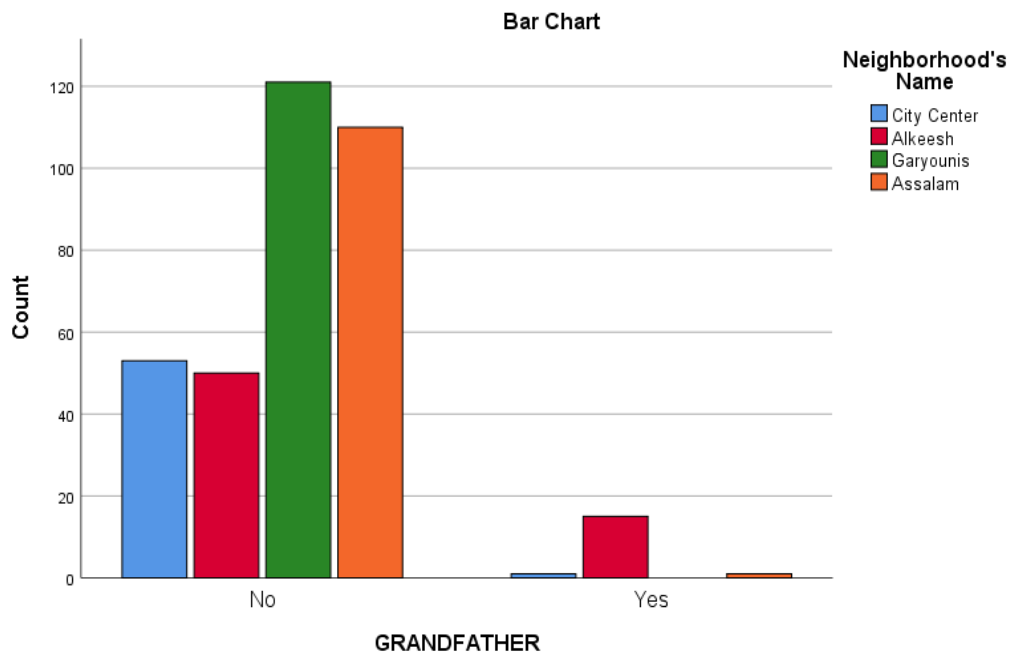


Figure 5.32 Grandfather percentages in four neighborhoods

Regarding the presence of a grandfather in the family, the study found that only 4.8% of the respondents reported having a grandfather. In contrast, 95.2% of the respondents who did not have a grandfather may have passed away or resided elsewhere (see Figure 5.32). Upon analysing the four neighbourhoods, it was determined that Alkeesh had the greatest proportion, with a ratio of 23.1%. The grandfather was a member of the family, and thereafter, the population in the ancient city neighborhood was 1.9%. The Garyounis neighborhood lacked a paternal grandfather as a member of the family .

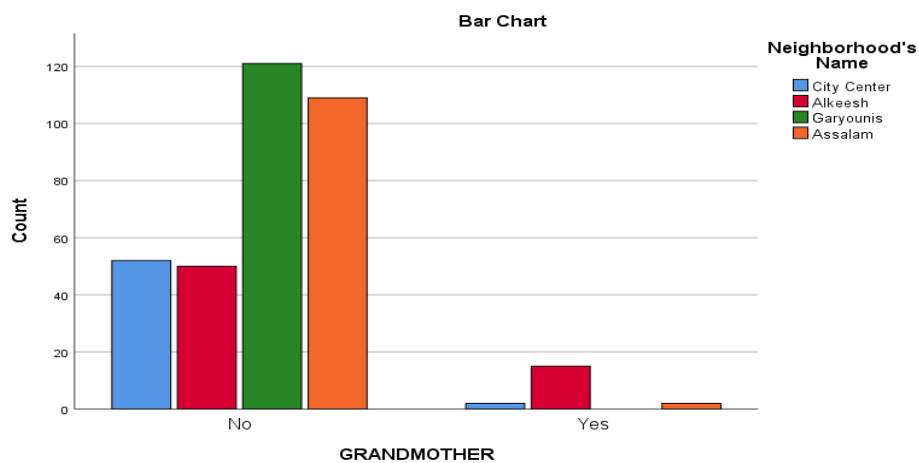


Figure 5.33 Grandmother percentages in four neighborhoods

Regarding the presence of a grandmother in the family, the study found that only 4.8% of the respondents reported having a grandmother. In contrast, 94.6% of the respondents who did not have a grandmother may have passed away or resided elsewhere (see Figure 5.33). Upon comparing the four neighbourhoods, it was determined that Alkeesh had the greatest proportion, amounting to 23.1%. The grandmother was a member of the family, while the remaining percentage of 3.7 was in the old city neighborhood. Although the Garyounis neighborhood lacked a grandmother as a family member.

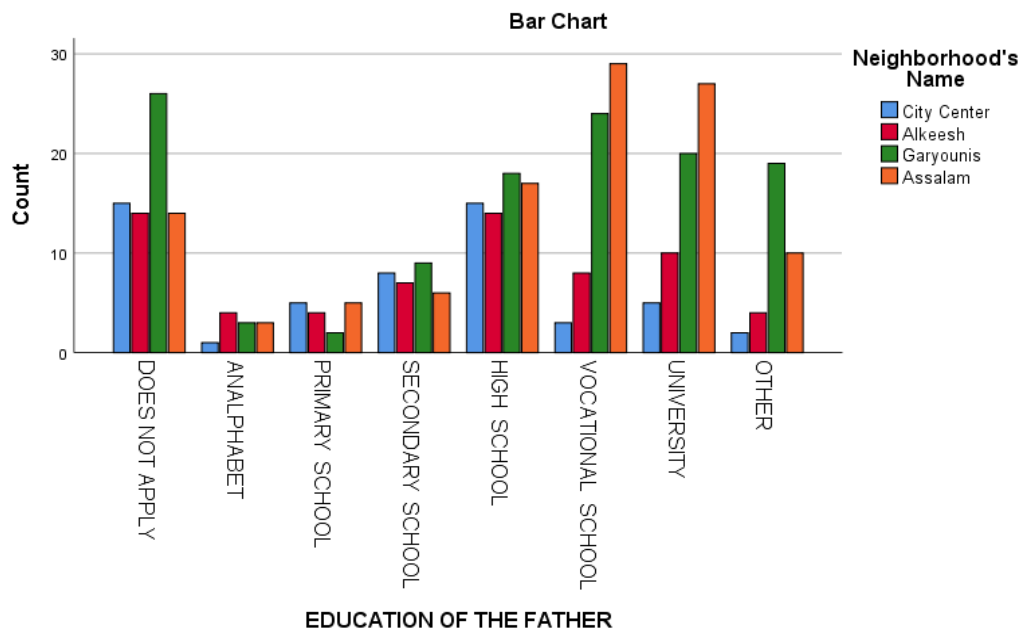


Figure 5.34 Education of the father percentages in four neighborhoods

Regarding the educational achievements of fathers, the study findings indicate that the largest proportion of participants (18.2%) had completed vocational education, while another 18.2% had completed high school (see Figure 5.34). Although the lowest percentage was 3.1%, they possessed an alphabet. When comparing four neighbourhoods based on the educational attainment of dads, it was found that the Assalam neighborhood had a 24.3% rate of fathers with a university education, while the old city neighborhood had the lowest rate at 9.3%. In Old City, the proportion of dads with primary education reached a peak of 9.3%, while in the Comparing Garyounis area, it dropped to a minimum of 1.7%.

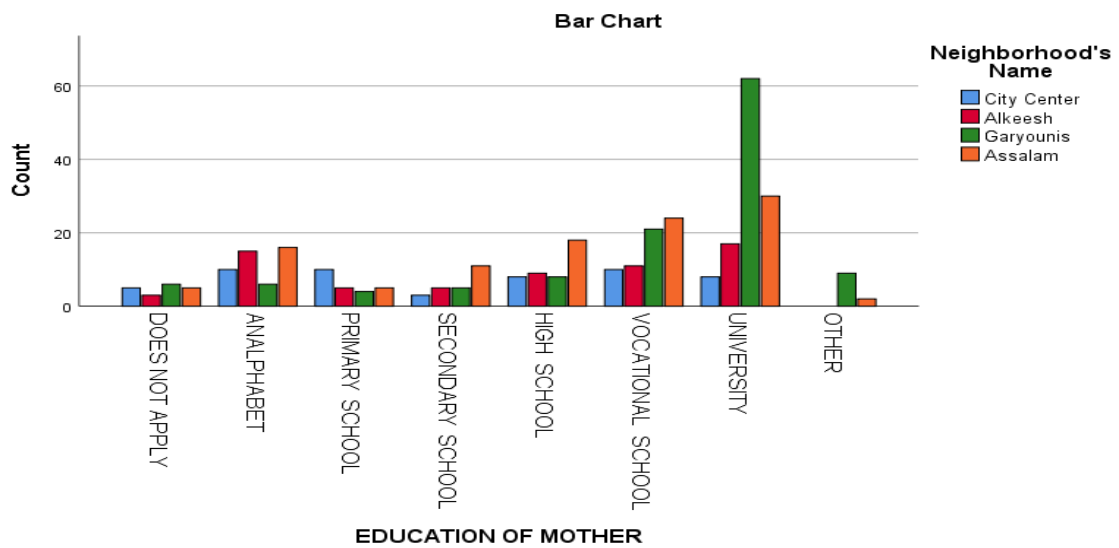


Figure 5.35 Education of mother percentages in four neighborhoods

The study findings indicated that the largest proportion (33.3%) of mothers surveyed had attained a university education. Figure 5.35 shows that a small proportion, specifically 3.1 percent, of individuals obtained degrees other than bachelor's, such as master's and Ph.D. When comparing the four areas, the Garyuonis neighbourhood had the highest percentage (51.2%) of mothers with a university-level education attainment, while the old city neighborhood had the lowest percentage (14.8%). In the Garyounis area, 7.4% of mothers had completed graduate studies, while in the Assalam neighborhood, the percentage was 1.8%. None of the other neighbourhoods had mothers who had completed graduate studies.

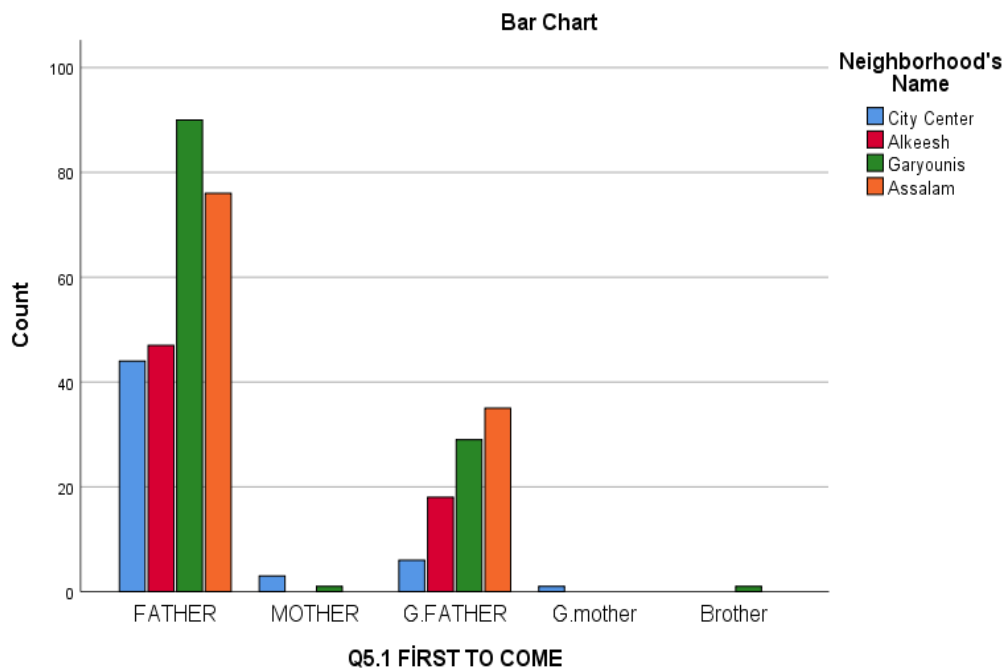


Figure 5. 36 First to come to Benghazi percentages in four neighborhoods

Regarding the initial arrivals in Benghazi, the data reveals that the majority, 73 per cent of respondents, were fathers, while 25.1 per cent were grandfathers (see Figure 5.36). The grandmother and brother initially arrived in Benghazi City with a percentage as low as 0.3%.

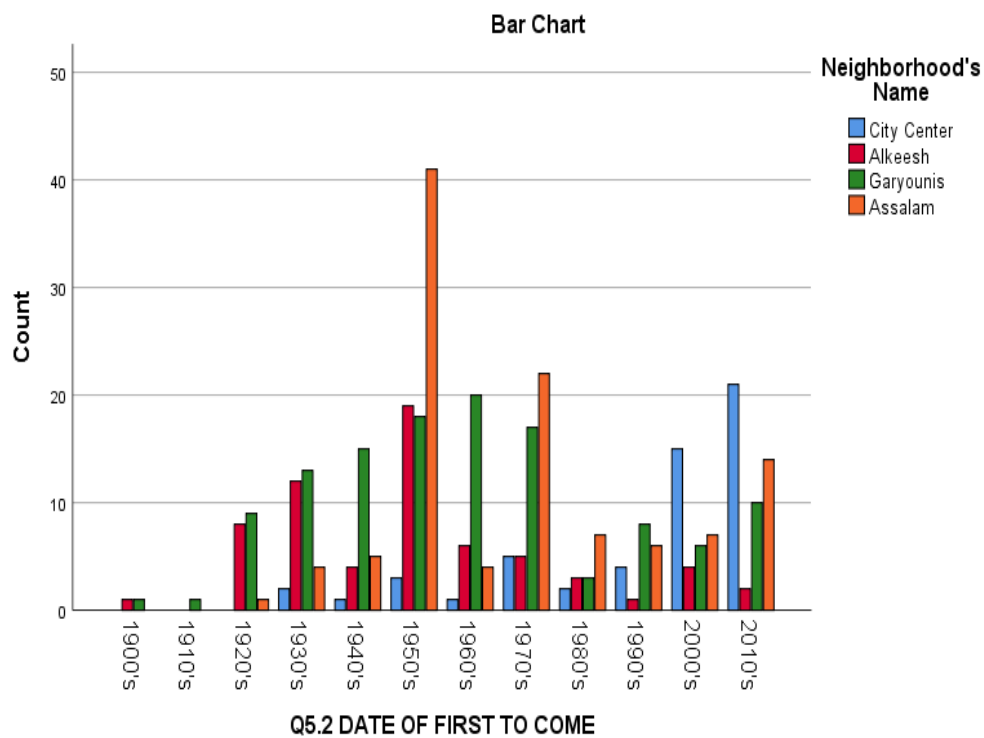


Figure 5.37 Date of first to come percentages in four neighborhoods

According to the data on the date of initial arrival in Benghazi city, 53.2 per cent of people arrived before the 1960s, while the lowest percentage was 4.3% from the 1980s and earlier (see Figure 5.37). The movement persists, as indicated by the findings, with a 13.4 per cent influx into Benghazi from 2010 to 2020.

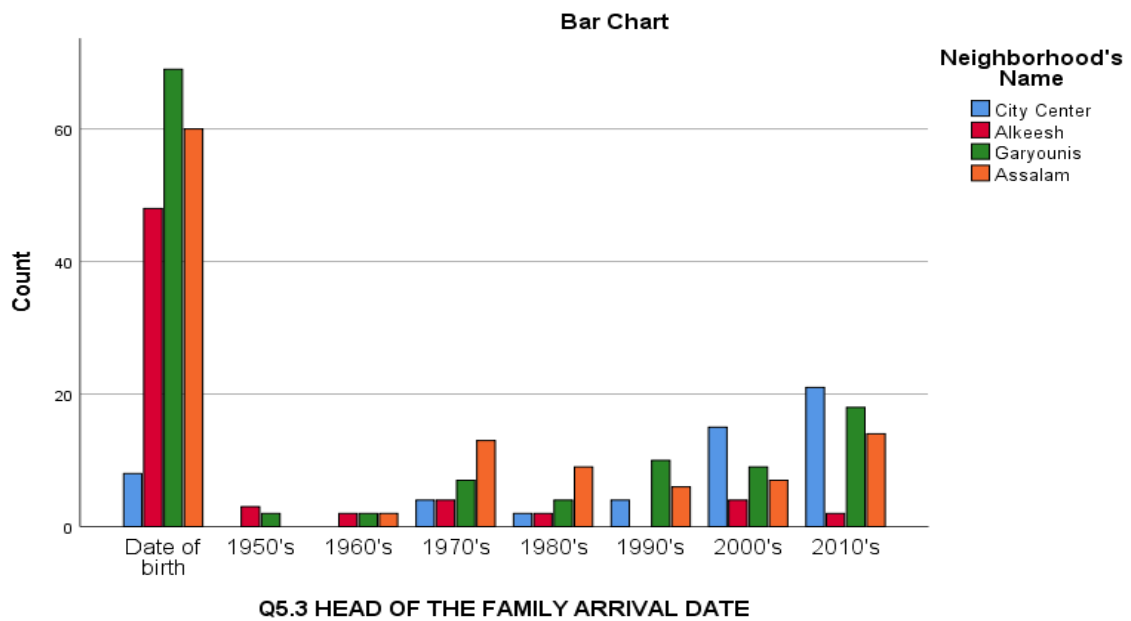


Figure 5.38 Head of the family arrival date percentages in four neighborhoods

Regarding the arrival date of the head of the family in Benghazi City, the findings showed that the largest proportion (52.7 per cent) of individuals who were born there also resided in Benghazi City (see Figure 5.38). The lowest proportion, which was 1.4, occurred between the 1950s and the early 1960s. The analysis of the four areas revealed that the neighborhood with the highest proportion of family heads that were born and raised in Benghazi was Alkeesh, with a percentage of 73.8%. On the other hand, the old city neighborhood had the lowest percentage, at 14.8%. The lowest proportion recorded was 1.7% during the period when the head of the household migrated to Benghazi city between 1950 and 1960, and from 1960 to 1970 in the Garyounis area.

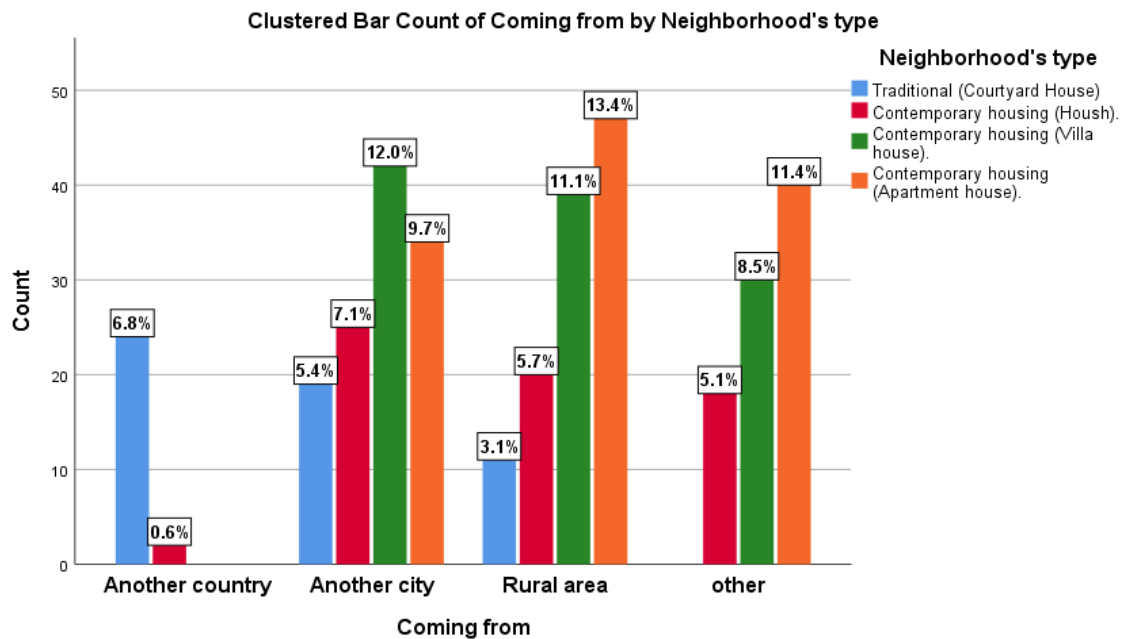


Figure 5.39 Coming from percentages in four neighborhoods

The analysis revealed that residents from various Libyan cities and rural areas were evenly distributed across all neighbourhoods. The majority (24.8%) out from 26% (7.4) percent of residents in the old city neighborhood of residents in the old city neighborhood (courtyard home) are individuals who have emigrated from other countries, due to the more affordable rental prices. Figure 5.39 displays the percentages in a bar chart.

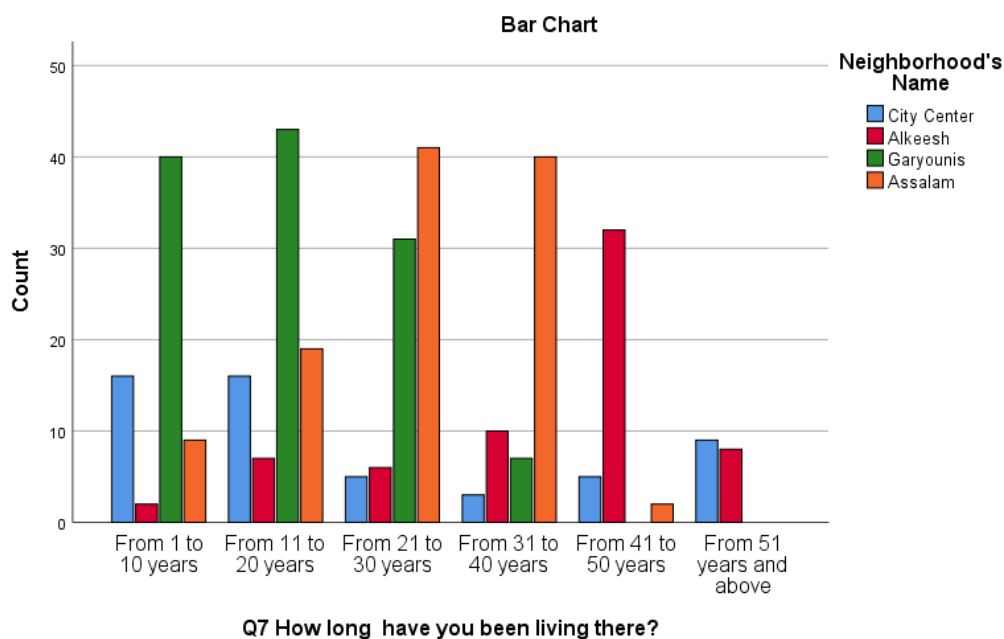


Figure 5.40 How long been living here percentages in four neighborhoods

Regarding the duration of residency, the findings revealed that the largest proportion, 24.2%, was observed in four areas for those who have lived there for 11 to 20 years. Conversely, the lowest percentage, 4.8%, was observed in the same four neighbourhoods for individuals who have been there for 51 years or more. Figure 5.46 visually represents these percentages in a bar chart. The analysis of different communities showed that the Alkeesh neighborhood had the highest percentage, 49.2%, of 41 to 50-year-olds who resided in their current neighborhood. On the other hand, the Assalam neighborhood had the lowest percentage, 1.8%, of 41 to 50-year-olds who lived there. Figure 5.40 displays the percentages in a bar chart.

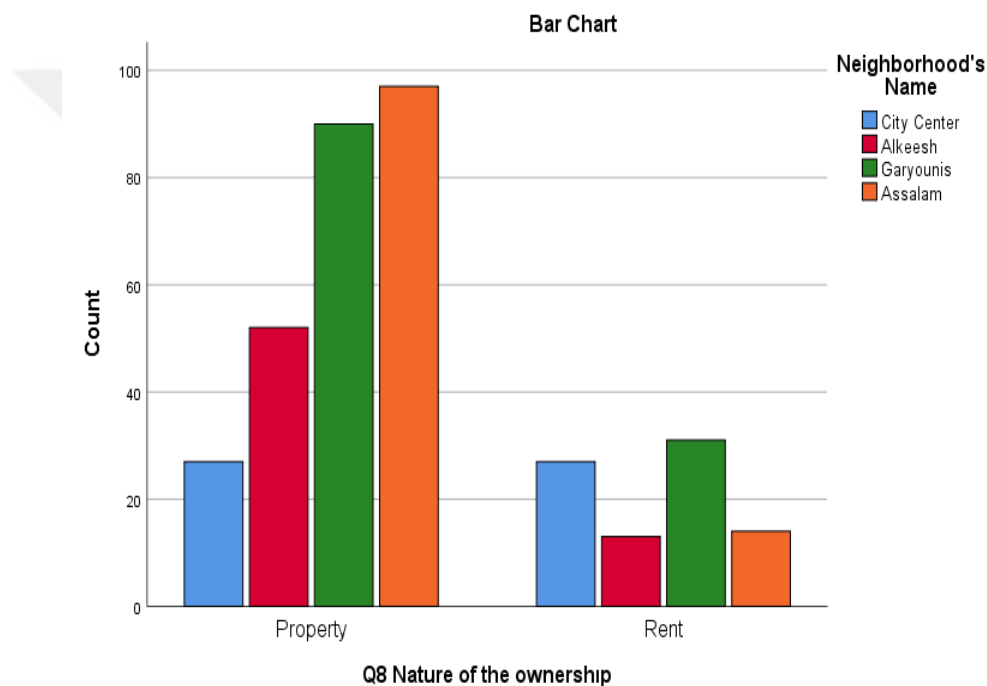


Figure 5.41 Nature of the ownership percentages in four neighborhoods

Based on the provided figure, the data indicates that the majority of households (75.8%) were homeowners, while just 24.2% of families were renters. When analysing the ownership rates among the four communities, the Assalam neighborhood had the highest proportion of property ownership at 87.3%, while the city centre had the lowest percentage of homeownership at 50%. In the city centre area, the rent accounted for the biggest proportion, reaching 50%. Conversely, in the Assalam neighborhood, the lowest proportion of houses that were rented was 12.6%. Figure 5.41 displays the percentages in a bar chart.

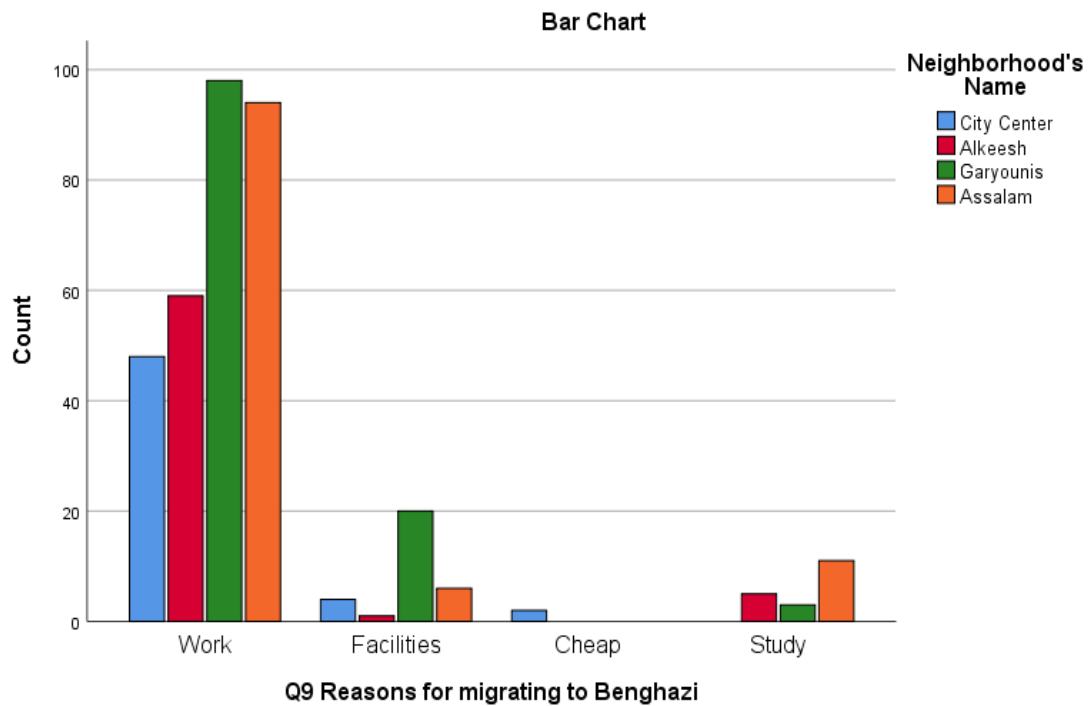


Figure 5.42 Reasons for migrating to Benghazi percentages in four neighborhoods

Regarding the motivations for migrating to Benghazi city, the findings revealed that a significant majority of respondents, 85.2%, relocated in quest of employment opportunities. These individuals originated from suburban areas, as well as other cities or countries, with the aim of enhancing their quality of life through labour. When comparing the four neighborhoods, it was found that a significant proportion of 90.8% of the population in the Alkeesh area consisted of migrants who had moved to Benghazi City in quest of employment. The Alkeesh area in Benghazi City had the lowest proportion of 1.5% in terms of residents seeking better facilities. Figure 5.42 displays the percentages in a bar chart.

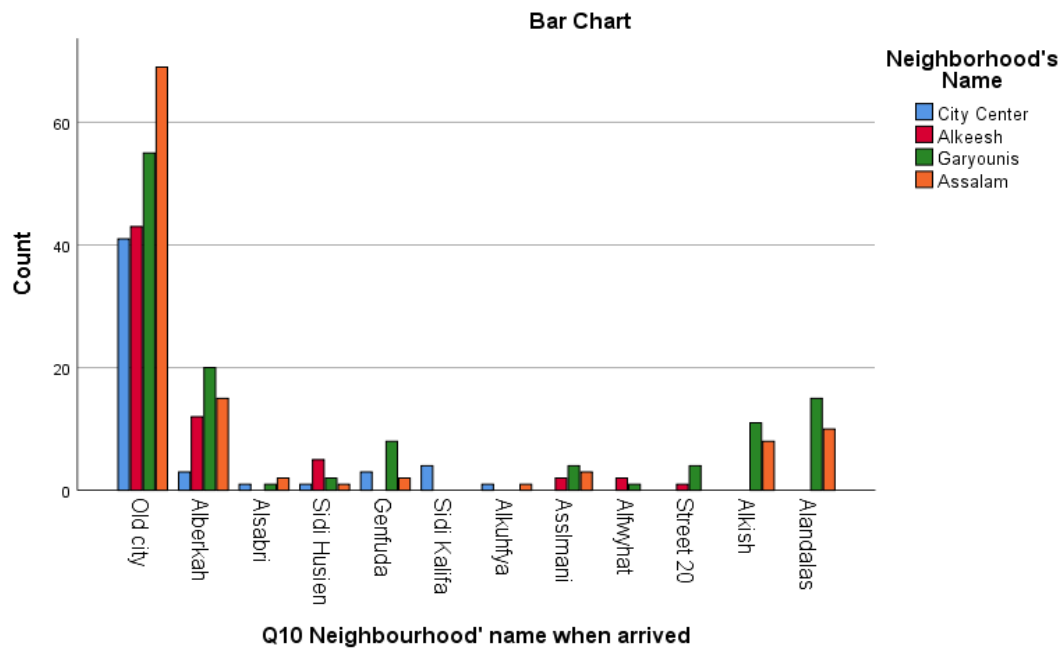


Figure 5.43 Neighborhood name when arrived percentages in four neighborhoods

Regarding the arrival of neighbourhoods and their names, the findings revealed that 59.3% of individuals reside in or are inhabitants of the old city. On the other hand, the neighborhood with the lowest percentage of arrivals was Alkuhfya, with only 0.6%. When comparing four neighborhoods, the old city had the highest percentage of responders who came there, at 75.95%, while Alsabri had the lowest rate, at 0.8%. Figure 5.43 displays the percentages in a bar chart.

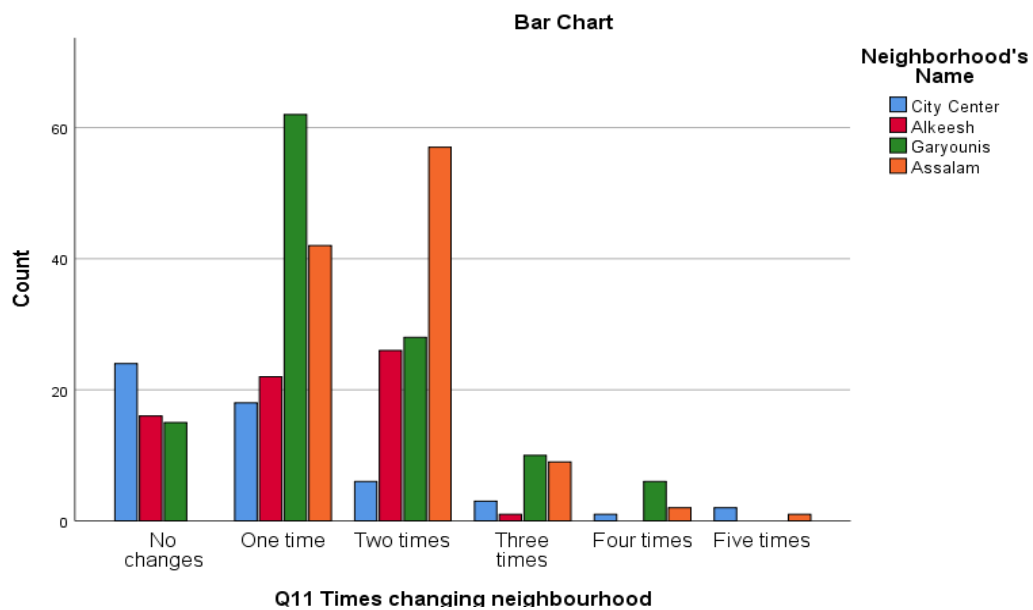


Figure 5.44 Times changing neighborhood percentages in four neighborhoods

The majority of respondents (41.0%) changed their communities once, whereas a small minority (0.9%) changed their neighbourhoods five times. In addition, a total of 15.7% of individuals did not relocate to different communities. Among the four neighbourhoods, Garyounis had the highest proportion (51.2 per cent) of inhabitants who relocated to a different neighborhood once, whereas the Alkeesh neighborhood had the lowest proportion (1.5%) of individuals who relocated three times. Figure 5.44 displays the percentages in a bar chart.

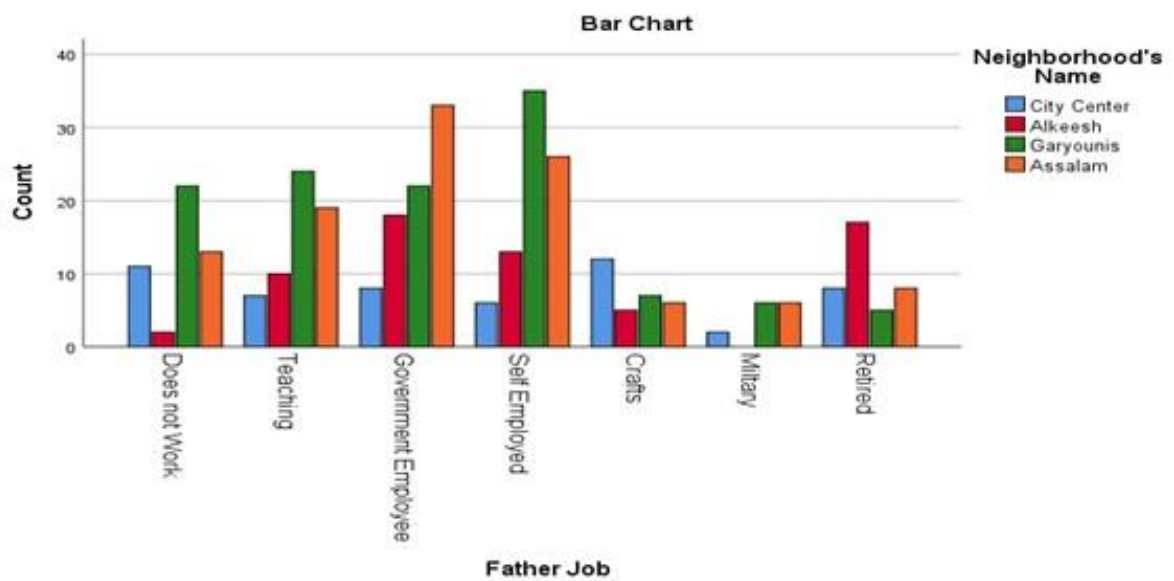


Figure 5.45 Father job percentages in four neighborhoods

Regarding paternal occupations, government employees had the highest proportion, accounting for 23.1%, whereas the military had the lowest, with a mere 4.0%. When comparing neighbouring neighbourhoods, it was discovered that the Assalam neighborhood had the highest percentage of government personnel, with 29.7%, whilst the Old City neighborhood had the lowest percentage, with only 3.7% working in the military. Figure 5.45 displays the percentages in a bar chart.

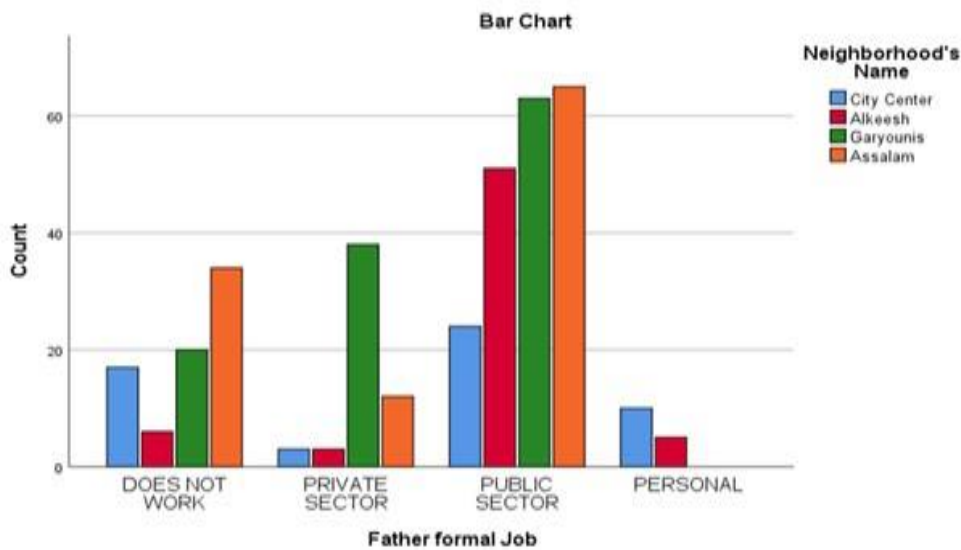


Figure 5.46 Father formal job percentages in four neighborhoods

The findings revealed that the largest proportion (57.8% of the entire sample) consisted of government employees employed as teachers at educational institutions and medical doctors working in hospitals and clinics, among other places. Among the population, just 4.3% were employed in personal jobs. However, while comparing different neighbourhoods, it was discovered that a significant majority of 78.6% in the Alkeesh neighborhood worked in the public sector, whilst a small proportion of 4.6% worked in the private sector in the same neighborhood. Figure 5.46 displays the percentages in a bar chart.

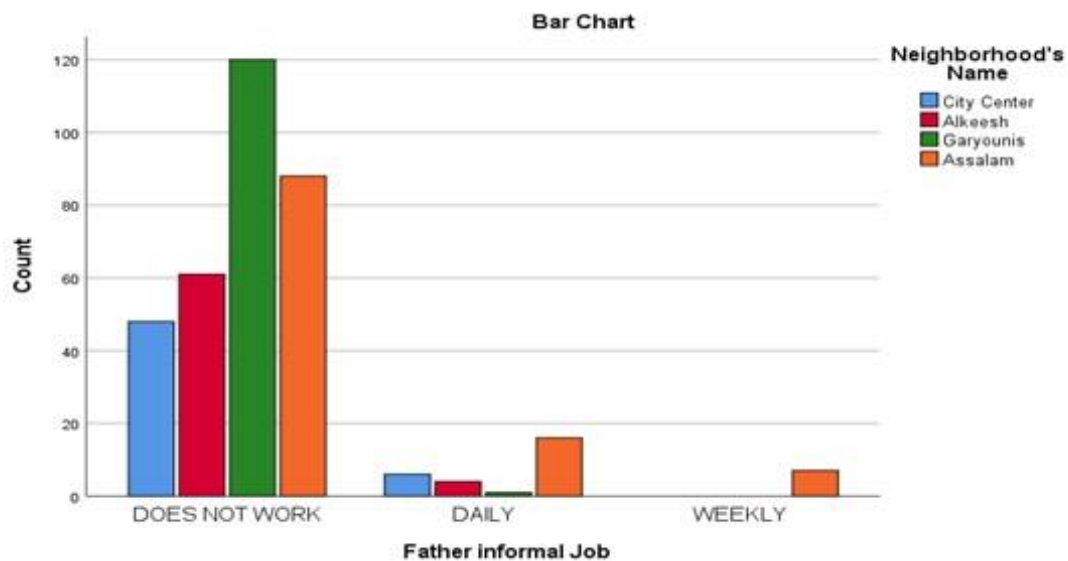


Figure 5.47 Father informal job percentages in four neighborhoods

According to the outcome of the father's non-formal employment, it was found that 90.3% were not engaged in informal work. Out of the total, the biggest proportion, 7.7 per cent, were engaged in daily informal employment, while the lowest proportion, 2.0 per cent, were engaged in weekly informal employment. Upon comparing the four areas, it was discovered that the Alssalam neighborhood had the highest percentage of daily informal employment at 14.4%, while the Assalam neighborhood had the sole occurrence of informal weekly employment at 6.3%. Figure 5.47 depicts the percentages in a bar chart.

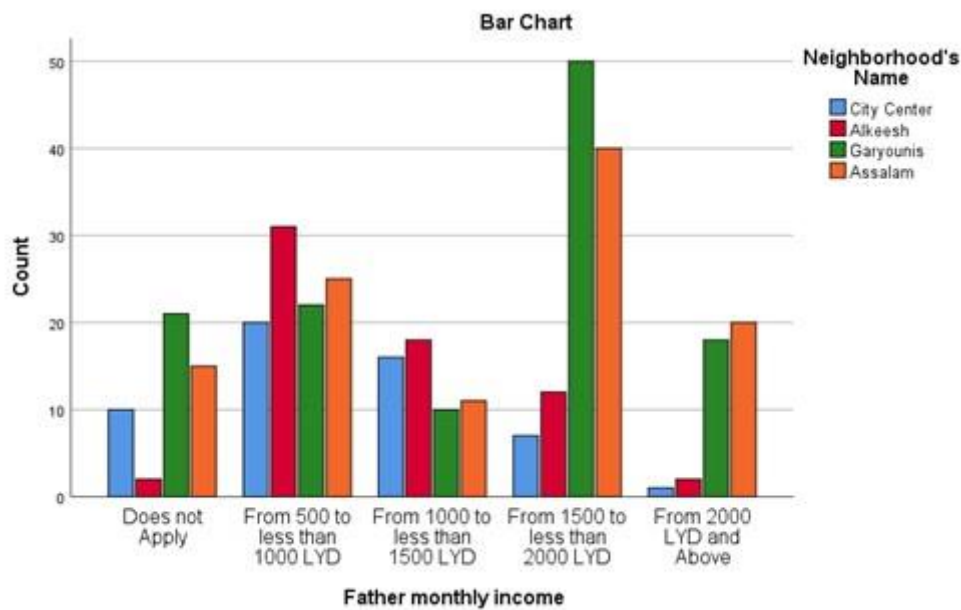


Figure 5.48 Father monthly income percentages in four neighborhoods

Regarding a father's monthly income, the data shows that the highest 31.1% of individuals earn a monthly salary of 1500 to less than of 2000 LYD. Upon comparing the four areas, it was found that the Alkeesh neighborhood had 47.7% of dads' monthly income falling between the ranges of 500 to less than 1000 LYD. On the other hand, the Old City neighborhood had the lowest percentage of fathers, only 1.9%, with a monthly income of 2000 LYD or above. Figure 3.48 displays the percentages in a bar chart.

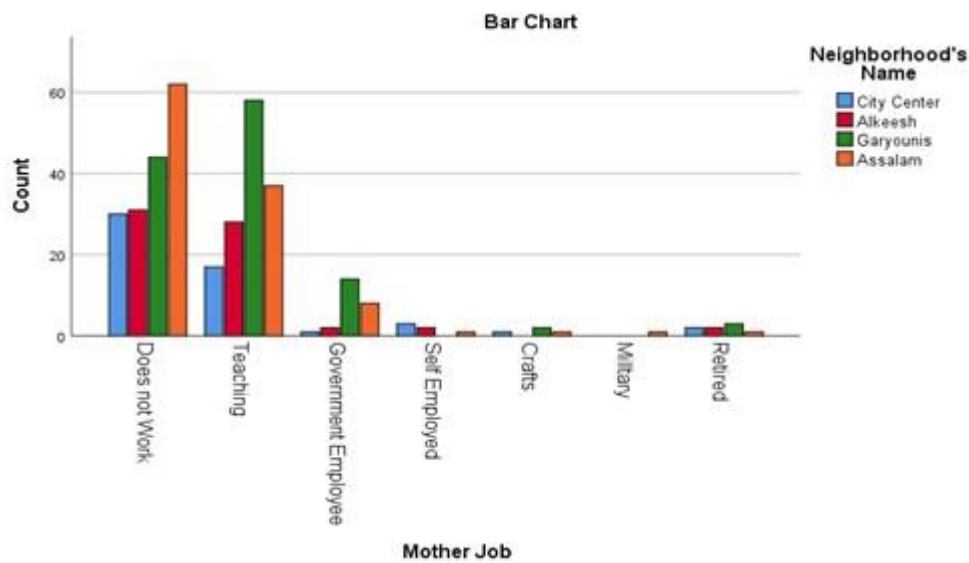


Figure 5.49 Mother job percentages in four neighborhoods

The findings revealed that 47.6% of individuals were unemployed, with the teaching sector having the highest employment rate at 39.9% and the military having the lowest employment rate at 0.3%. When comparing four areas, it was found that the Garyounis neighborhood had the greatest percentage of 47.9% of mothers working in teaching jobs. On the other hand, the Assalam neighborhood had the lowest rate of 0.9% for inhabitants who were self-employed, in the military, or retired. Figure 5.49 displays the percentages in a bar chart.

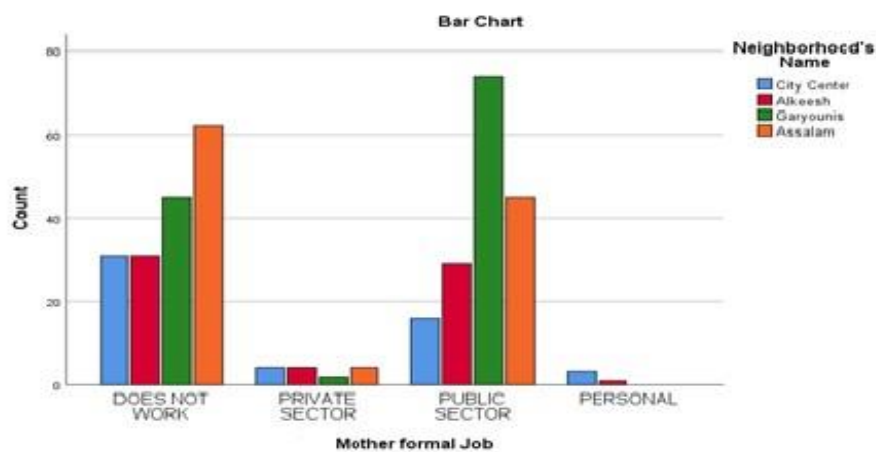


Figure 5.50 Mother formal job percentages in four neighborhoods

Regarding formal employment among mothers, the findings revealed that the majority (46%) were employed in the public sector, whilst a small proportion (1.1%) was engaged in personal occupations. Upon comparing the four areas, it was discovered that the Garyouis neighbourhood had the largest percentage, specifically 61.2%, of moms working in the public sector. On the other hand, the Alkeesh neighborhood had the lowest percentage, specifically 1.5%, of mothers engaged in personal jobs. Figure 5.50 displays the percentages in a bar chart.

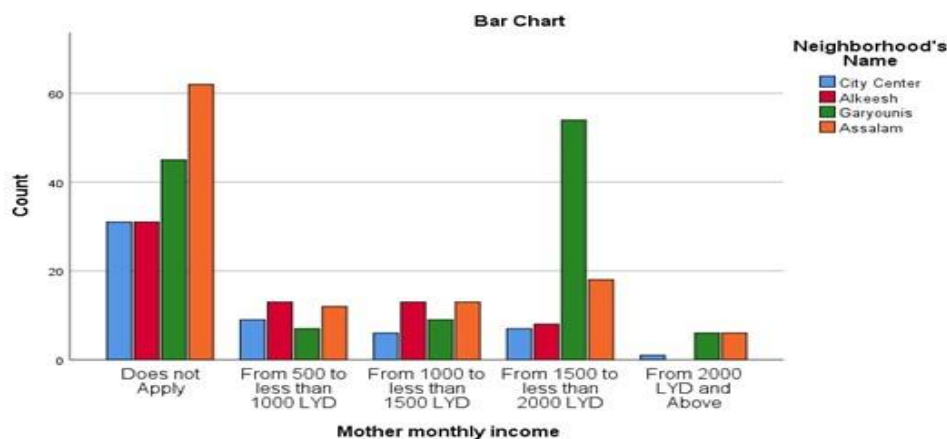


Figure 5.51 Mother monthly income percentages in four neighborhoods

The analysis of the mother's monthly income data showed that the largest proportion of mothers, amounting to 24.8%, earned between 1500 and less than 2000 LYD. On the other hand, the smallest proportion of mothers, accounting for 3.7%, earned 2000 LYD or more. When comparing neighborhoods, it was found that in the Garyounis neighborhood, the highest proportion of mothers (44.6%) had a monthly income ranging from 1500 to less than 2000 LYD. On the other hand, in the Old City neighborhood, the lowest proportion of mothers (1.9%) had a monthly income of 2000 LYD and above. Figure 5.51 displays the percentages in a bar chart.

5.5.2 To Ascertain the Sentiments of the Participants on Their Present residence and Surrounding Area.

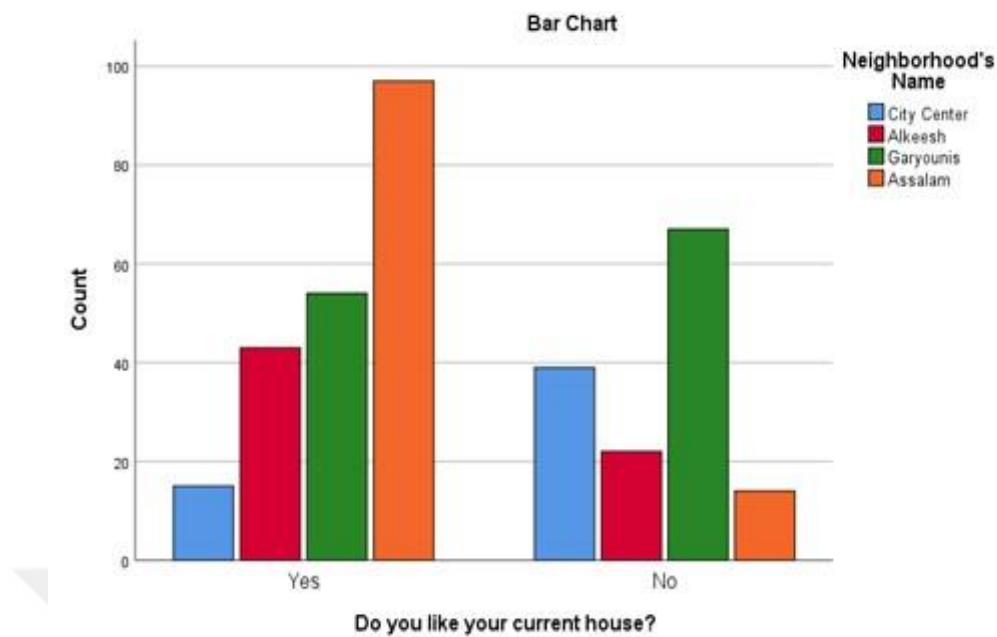


Figure 5.52 Do you like current house percentages in four neighborhoods

The findings indicate that approximately 59.5% of respondents expressed a favourable opinion towards their current residence, whilst 40.5% held a negative view. When comparing different neighbourhoods, the findings showed that approximately 72.2 per cent of residents living in courtyard houses in the old city expressed dissatisfaction with their homes, but 87.3 per cent of those residing in Alssalam villa types reported being content with their current residences. Figure 5.52 displays the percentages in a bar chart, as shown in Table 5.

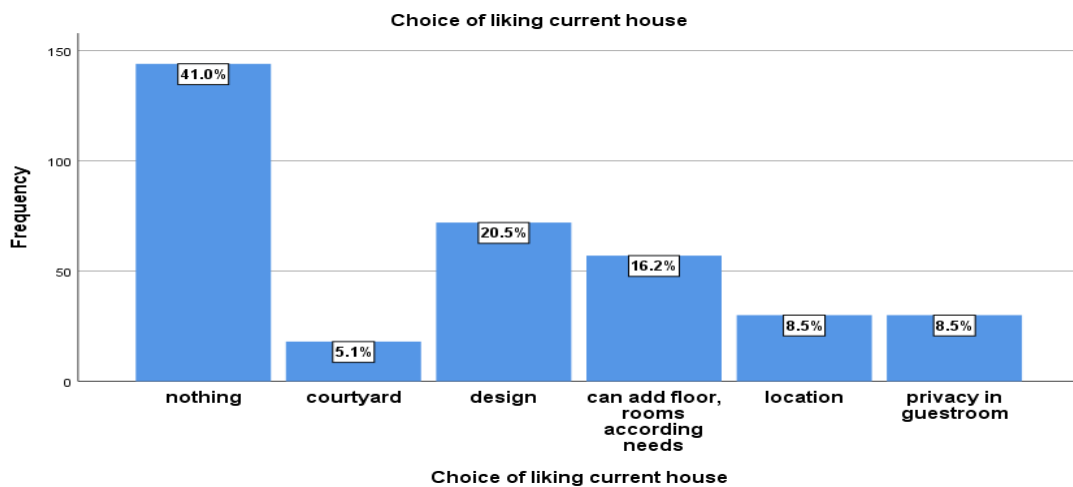


Figure 5.53 Choice of liking current house percentages in four neighborhoods

The sample's descriptive statistics indicate that 41.0% of participants expressed a preference for their current dwelling. However, it should be noted that this question was not applicable to some individuals. The initial preference was for the existing house due to its design, which was favoured by 20% of the participants. Conversely, the final preference was influenced by the presence of a courtyard, which was favoured by 5.1% of the participants. Figure 5.53 displays these percentages in a bar chart.

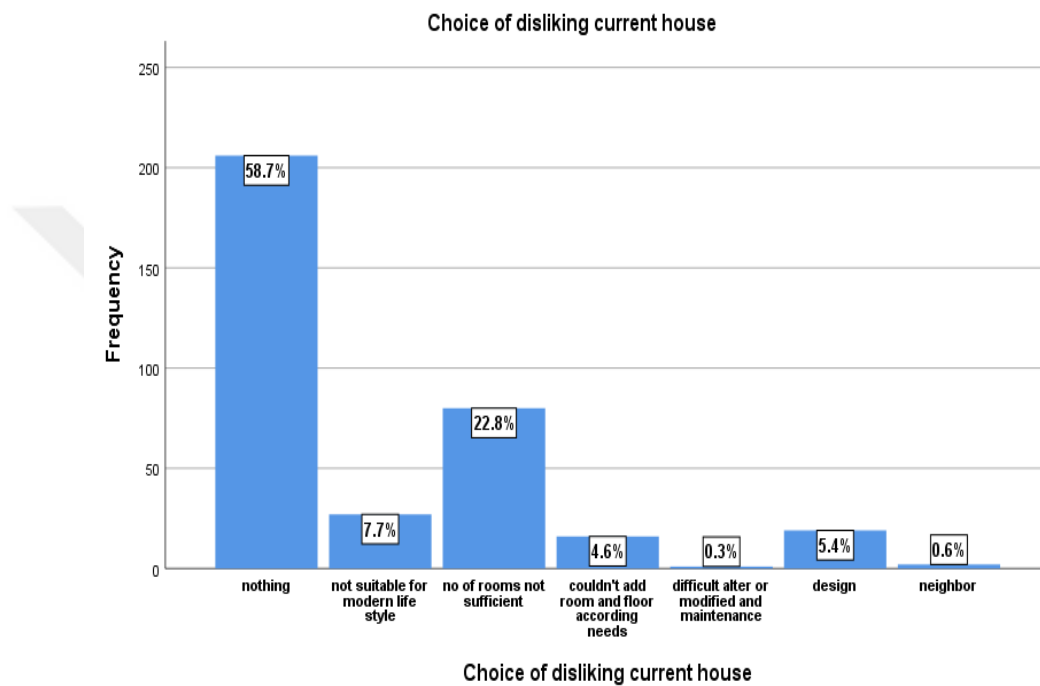


Figure 5.54 Choice of disliking current house percentages in four neighborhoods

Approximately 58.7% of the sample expressed a dislike for their existing dwelling, and this question was not applicable to them when analysing the descriptive data. The primary reason for disliking the existing house was its insufficient number of rooms, which accounted for 22.8% of the sample. Conversely, the least common reason for disliking the house was its difficulty to alter or modify, which only accounted for 0.3% of the sample. The bar chart in Figure 5.54 illustrates the percentages.

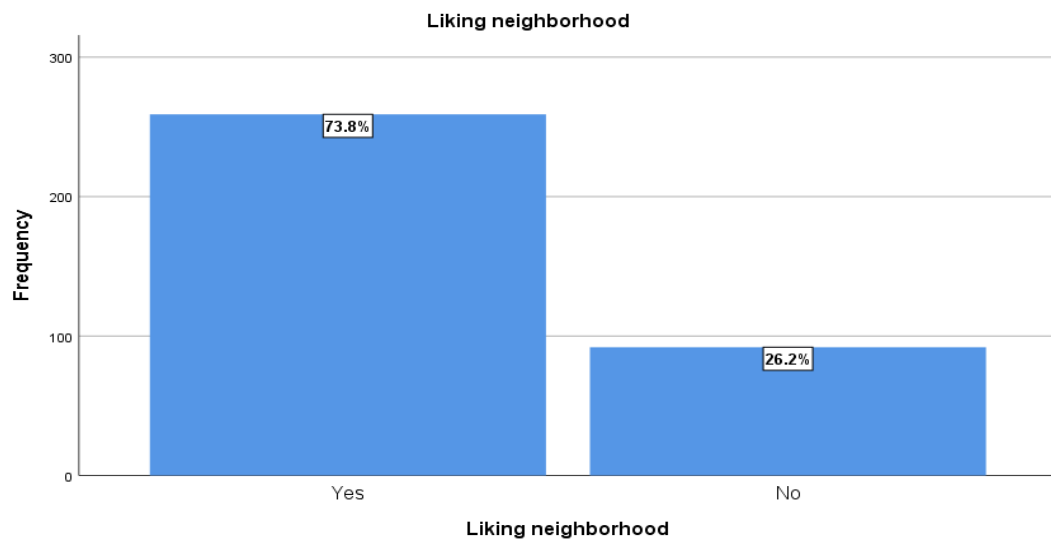


Figure 5.55 Liking neighborhood percentages in four neighborhoods

The descriptive statistics indicate that 73.8 per cent of the sample expressed a positive sentiment towards their area, whereas 26.2 per cent expressed a negative sentiment. The bar chart in Figure 5.55 displays the percentages.

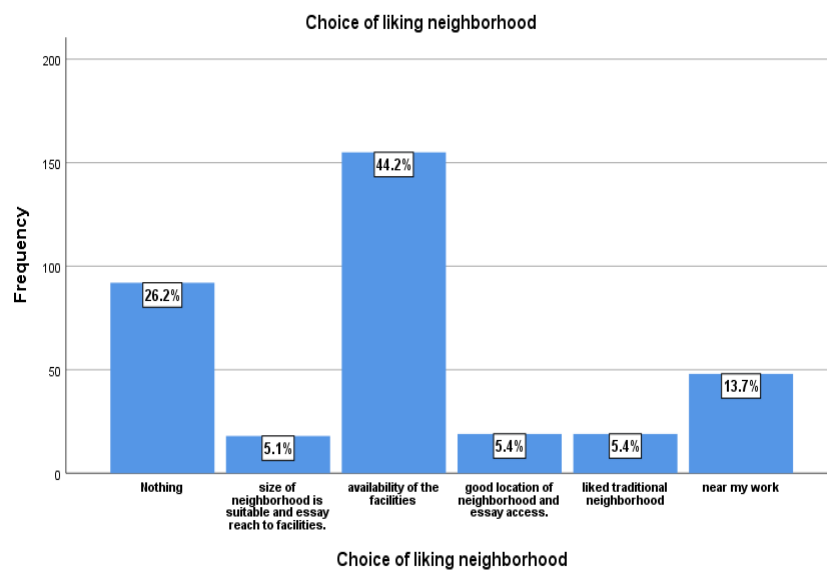


Figure 5.56 Choice of liking neighborhood percentages in four neighborhoods

The descriptive statistics for 26.2% of the sample indicate that this question is not applicable to them in terms of their choice of neighborhood. The first preference was based on the presence of amenities in the existing area, which accounted for 44.2% of the sample. Conversely, the least preferred option was due to the neighbourhood's size being appropriate and its convenient access

to facilities, which accounted for 18.1% of the sample. The bar chart in Figure 5.56 displays the percentages.

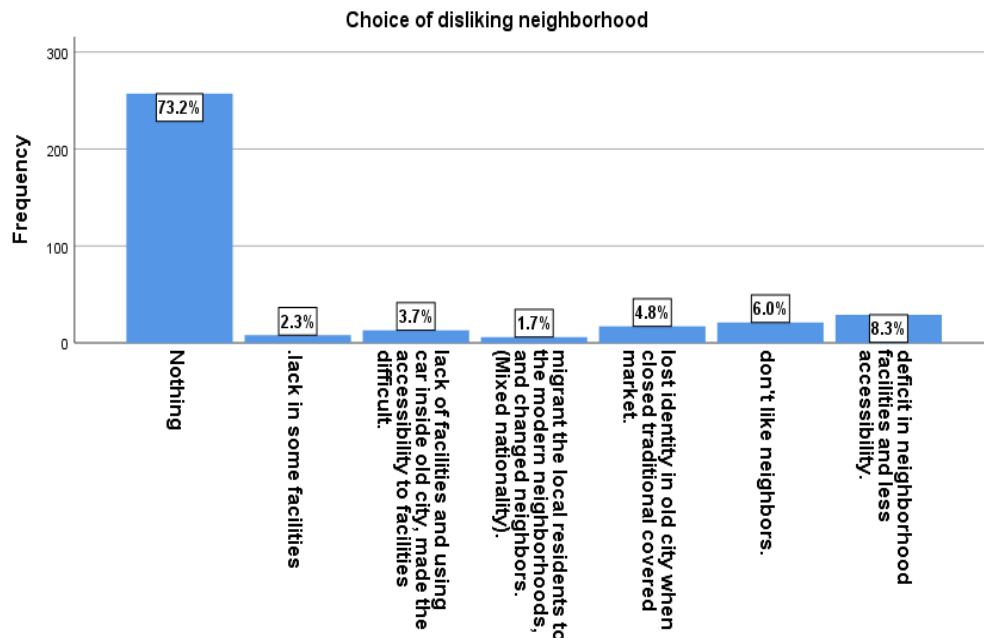


Figure 5.57 Choice of disliking neighborhood percentages in four neighborhoods

The sample data shows that 73.2% of the participants expressed a dislike for their area. However, it should be noted that this question was not applicable to some individuals. The primary reason for hating the current house was the lack of neighborhood facilities and limited accessibility, which accounted for 8.3% of the sample. On the other hand, just 1.7% of the sample cited migration to modern neighbourhoods and changes in neighbors as the main reason for their dissatisfaction. Figure 5.57 displays the percentages in a bar chart.

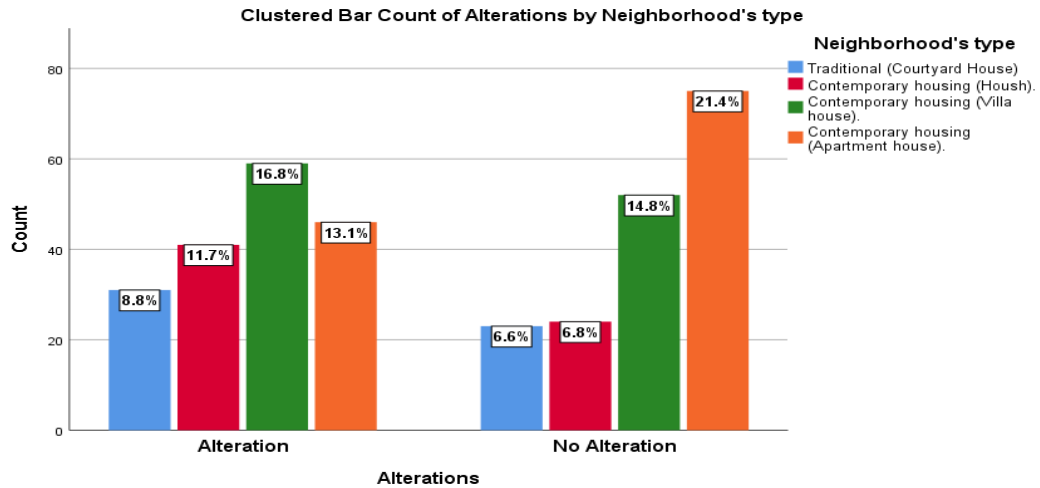


Figure 5.58 Doing alteration in the house percentages in four neighborhoods

Figure 5.58 presents the descriptive statistics regarding house alterations. Among the sample, 50.4% of individuals made alterations to their homes, while 49.6% did not make any alterations. The largest percentage of alterations (16.8%) was observed in the Assalam area, namely in the villa type houses. Figure 5.58 displays the percentages of perception, with the lowest being 8.8%, in the ancient city area characterized by courtyard houses.

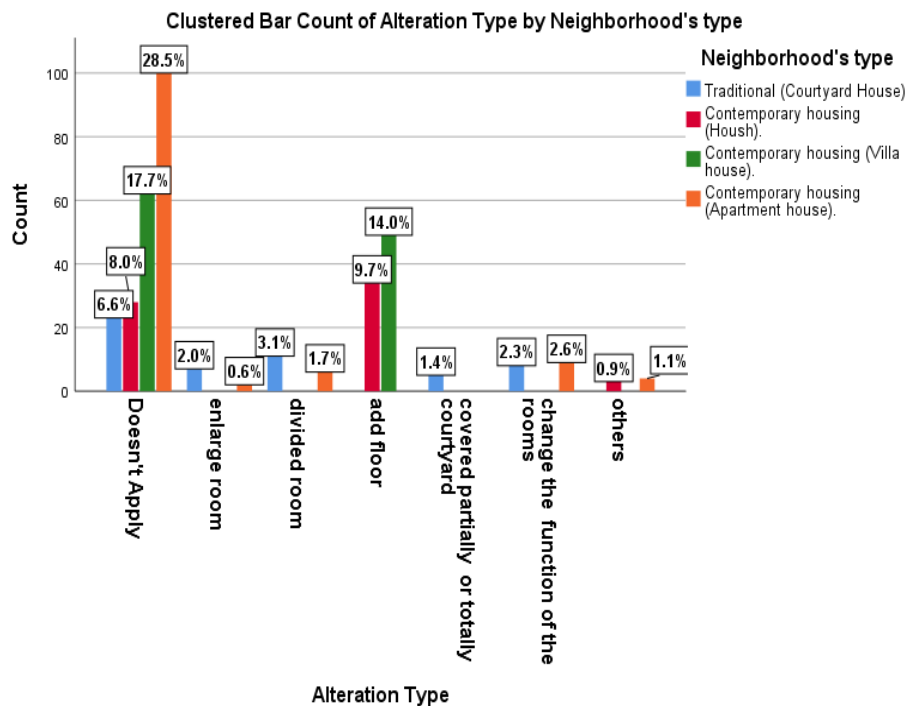


Figure 5.59 Alteration type percentages in four neighborhoods

Figure 5.59 displays the descriptive data on the act of making alterations in one's house. It reveals that 50.4% of the sample population engage in the practice of making alterations in their home. The Assalam neighbourhood (villa) and Alkeesh neighbourhood (housh) had the largest percentage of adjustments, with extra floors accounting for 23.7% of the changes. Other neighbourhoods have the smallest proportion of modification. Figure 5.59 displays these percentages in a bar graph.

5.5.3 To Ascertain the Social Dimension in Four Neighbourhoods.

The social aspect and its various dimensions: The social components encompass elements of social interaction, a sense of belonging, social engagement, safety and security, satisfaction with the neighborhood, satisfaction with housing, and fulfilment of human needs.

5.5.3.1 Social Interaction and Items

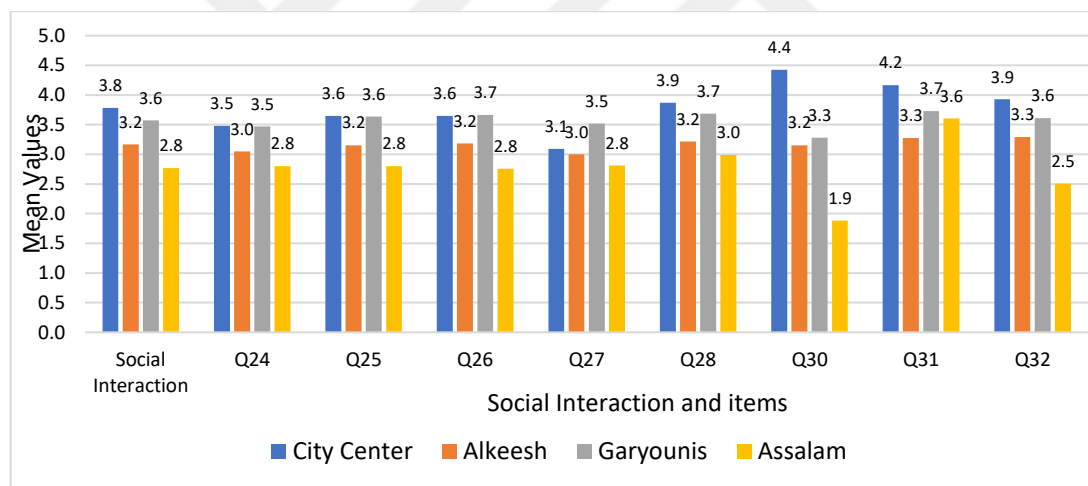


Figure 5.60 Mean values of Social Interaction and items according to Neighborhood's Name

The mean and standard deviation for "Social Interaction" are ($M=3.28$, $SD=0.687$) on a five-point scale. The City Centre Neighbourhood has the greatest mean value of 3.78 with a standard deviation of .368, while the Assalam Neighborhood has the lowest mean value of 2.77 with a standard deviation of .551. The bar chart in Figure 5.60 displays the average values of Social Interaction and items based on the Neighbourhood's Name. Based on the analysis of neighborhood case studies, the findings reveal a significant discrepancy in the replies concerning social contact. Higher scores for social contact were observed in the

old city neighborhood (courtyard house) and Garyounis neighborhood (apartment), which aligns with the findings of a study conducted by Hikmat H. Ali and colleagues (2019).

The study also found that social interaction was particularly strong in areas with high population density. The outcomes of this study challenge the claims made by Freeman (2001) that living in a densely populated city can negatively impact social connections. The results indicate that increased population densities are correlated with increased levels of social interaction, leading to greater chances for individuals to meet, engage in conversation, become acquainted, and have casual interactions.

This aligns with the results of other studies that show a significant correlation between compactness or high density and social interaction. According to the respondents' answers, the level of social interaction in the Assalam neighborhood is seen as the lowest. Some individuals lack intimate companions, while others are occupied exclusively with their family and extended kin, leaving no time for close friendships.

5.5.3.2 Sense of Belonging and Items

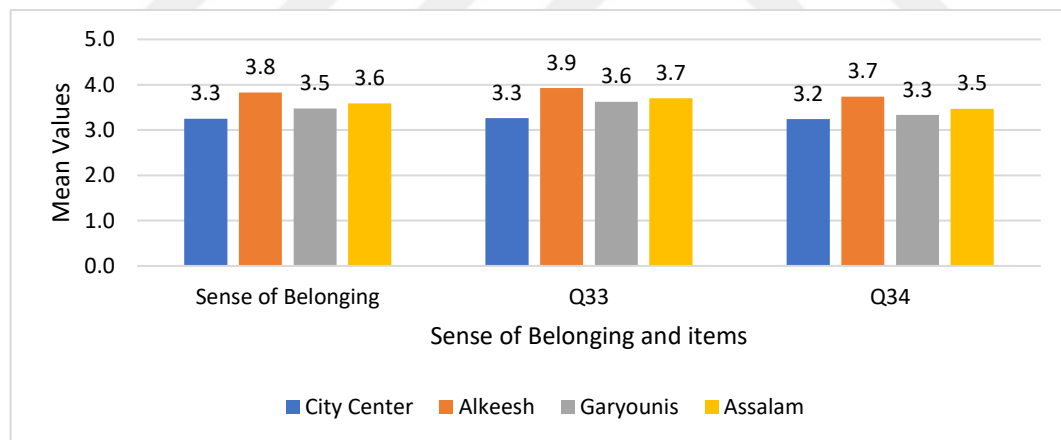


Figure 5.61 mean values of Sense of Belonging and items according to Neighborhood's Name

The result displays the descriptive data for the Sense of Belonging and its corresponding items. The mean and standard deviation for the variable "Sense of Belonging" are calculated to be $M=3.54$ and $SD=0.708$, respectively, using a five-point scale. The Alkeesh Neighborhood has achieved the highest average value ($M= 3.83$, $SD= .675$), while the City Centre Neighborhood has achieved the lowest average value ($M= 3.25$,

SD= .581). Figure 5.61 displays the average values of Sense of Belonging and items categorized by the Neighborhood's Name in a bar chart. The Alkeesh neighborhood is populated by a homogenous community that exhibits a greater degree of conservatism in terms of kinship ties, family connections, and attachment to the locality. The house additionally comprises multiple levels occupied by members of the same family. The Old City, being the least favoured among the population, witnessed a significant migration of its original inhabitants to the newly developed districts in pursuit of a different lifestyle.

Additionally, a majority of the respondents in the Old City were found to be tenants rather than homeowners. Previous findings suggested that. The findings corroborate multiple studies that illustrate the adverse impacts of high population density on the feeling of belongingness (Bramley et al., 2006). This can be rationalized by additional societal issues associated with the historical hub, where there is a greater level of overcrowding.

The findings corroborate According to More, B. (2019), multicultural characteristics were identified as contributing factors to the limited extent of social networks, as residents sought to establish connections with individuals from the same ethnic background. The Alkeesh neighborhood exhibits a heightened sense of belonging, potentially attributed to additional social elements such as more robust kinship and familial connections among its residents. This facilitates individuals in establishing stronger connections with their constructed surroundings, so enhancing their feelings of pride and belonging.

5.5.3.3 Social Participation and Items

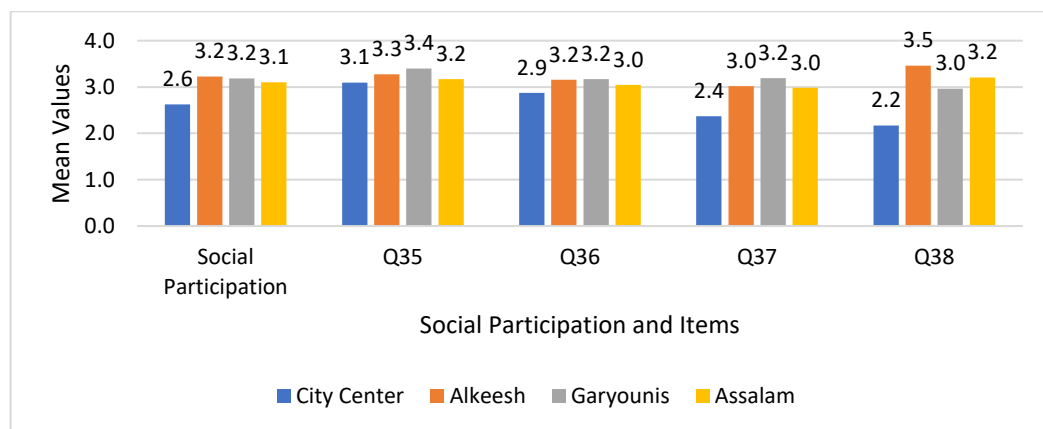


Figure 5.62 Mean values of Social Participation and items according to Neighborhood's Name

Figure 5.62 displays the descriptive statistics for Social Participation and its corresponding items. The average and variability of "Social Participation" are represented by a mean of 3.08 and a standard deviation of 1.024, respectively, on a five-point scale. The Alkeesh Neighborhood has the greatest mean value of 3.23 with a standard deviation of 0.993, while the City Centre Neighbourhood has the lowest mean value of 2.62 with a standard deviation of 1.072. The bar chart in Figure 5.62 displays the average values of Social Participation and elements based on the Neighborhood's Name.

According to the findings, all neighborhoods are classified as having a moderate level of social participation, except for the Old City, which is regarded as the least participatory. Based on the responses of the participants, social participation in their neighborhoods was found to be lacking due to several reasons: the absence of a well-defined and robust program, inadequate self-governance that fails to promote participation, and insufficient provision of services and attention to activities catering to all age groups. Consequently, the residents of the community have exhibited a dearth of engagement.

The ancient city experiences limited social participation due to a high proportion of residents who are renters, leading to frequent fluctuations in the population. Moreover, the old city is inhabited by foreign people who view Libya as a temporary stopover for migrating to Europe under favourable circumstances.

5.14.3.4 Safety and Security and Items

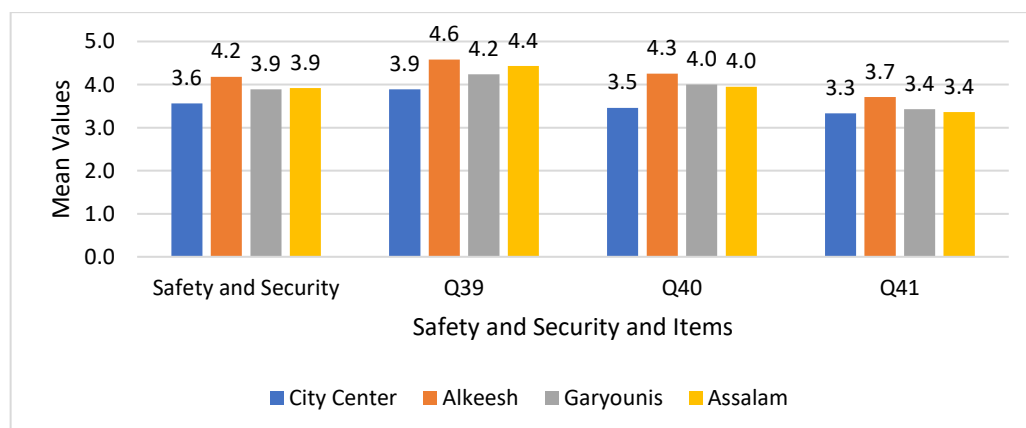


Figure 5.63 Mean values of Safety and Security and items according to Neighborhood's Names

Figure 5.63 displays the descriptive data for the Safety and Security items. The mean and standard deviation for the "Safety and Security" category are 3.90 and 0.600, respectively, on a five-point scale. The Alkeesh Neighborhood has the greatest mean value of 4.18 with a standard deviation of .437, while the City Centre Neighborhood has the lowest mean value of 3.56 with a standard deviation of .560. The bar chart in Figure 5.63 displays the average values of Safety and Security for different items based on the Neighborhood's Name. According to the Likert scale assessment, all neighborhoods are classified as having a high level of safety.

In terms of safety and security, the detached house located in the Alkeesh area provides a heightened sense of safety and security in the surrounding street, cluster, and neighborhood. This creates a feeling of confidence in the protection of the house and its properties. Consequently, this particular form of house is occupied by a homogeneous community that embodies a more traditional connection based on family relationships and a strong sense of belonging to the area, resulting in increased safety and security.

This particular form of house consisted of 2 to 4 levels, all of which were occupied by members of the same family and their relatives. The security and safety rating of the Old City is 3.56 out of 5, which is deemed high according to the Likert scale. The perception of decreased safety in the Old City, as reported by residents, can be linked to several factors. These include the unsafe circumstances of children's play places following the war, increased car usage due to city expansions which have made it unsafe for recreational activities, and the presence of foreigners in the region.

5.5.3.5 Satisfaction with Neighborhood and Items

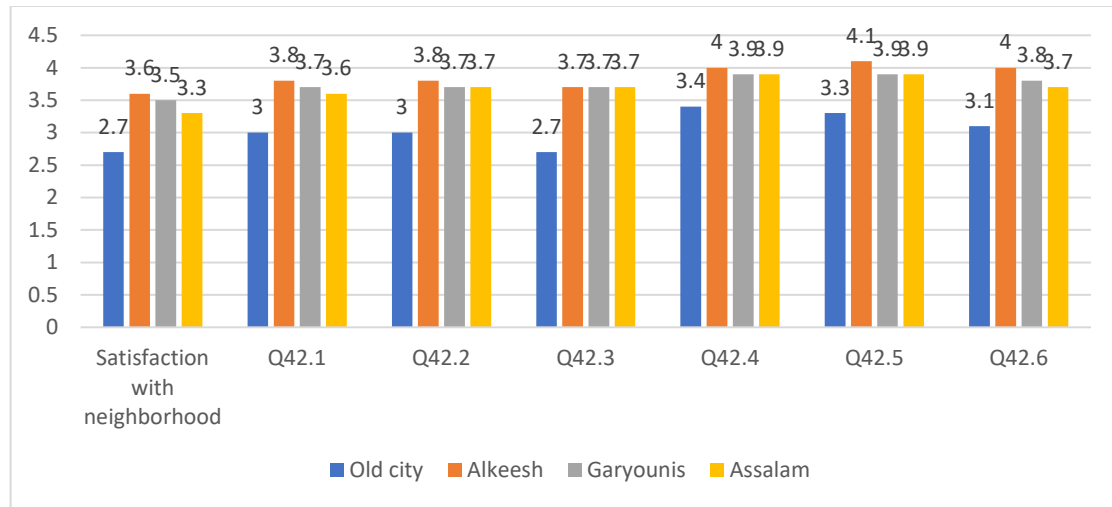


Figure 5.64 A Mean value of Satisfaction with neighborhood and items according to Neighborhood's Name

Figure 5.64A displays the descriptive data for Satisfaction with the neighborhood and related items. The average and standard deviation for "Satisfaction with neighborhood" are ($M=3.30$, $SD=.820$) on a five-point scale. The Alkeesh Neighborhood has the greatest mean value of 3.64 (with a standard deviation of 0.793), while the City Centre Neighborhood has the lowest mean value of 2.70 (with a standard deviation of 0.810). The bar chart in Figures 5.64A and 5.64B displays the average values of Satisfaction with the neighborhood and goods based on the Neighbourhood's Name.

The satisfaction level with services in the residential neighborhood, as measured by the Likert scale, was found to be average in the three neighbourhoods: Old City, Assalam, and Garyounis. Nevertheless, the Alkeesh neighborhood is regarded as the most satisfied with the quality of local services. Several factors contribute to the high level of satisfaction with neighborhood services. These factors include the availability of services in the residential area, convenient location and accessibility from all directions, availability of services at the neighborhood level, easy access to central services at the sector and city levels, and the appropriate size of the neighborhood.

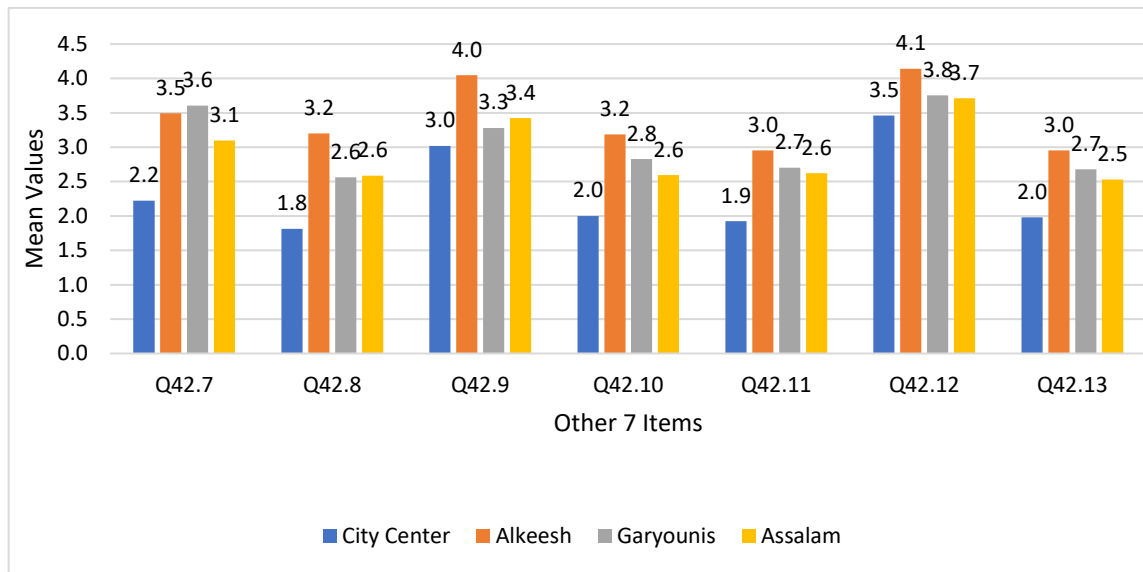


Figure 5.64 B Mean values of Satisfaction with neighborhood and items according to Neighborhood's Name

5.5.3.6 Satisfaction with Housing and Items

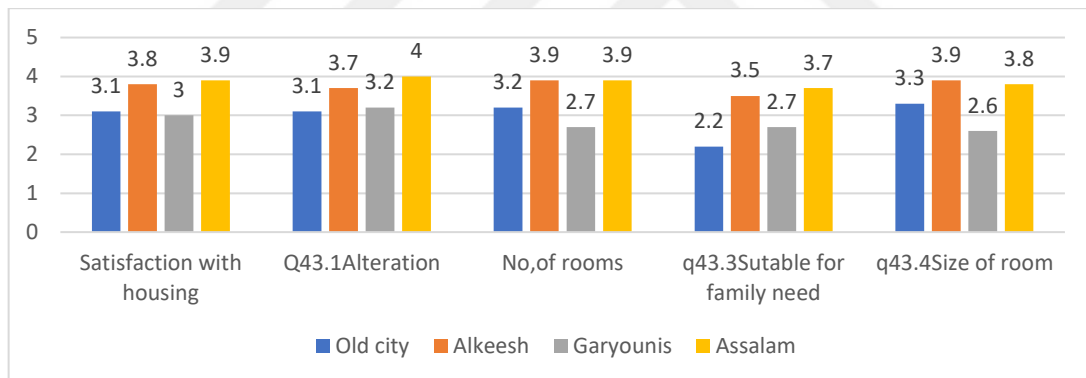


Figure 5.65A mean values of Satisfaction with housing and 4 items according to Neighborhood's Name

The statistical analysis of Satisfaction with housing and related items. The average and standard deviation for "Satisfaction with housing" are ($M=3.42$, $SD=.828$) on a five-point scale. The Assalam Neighborhood (villa) has achieved the highest mean value of 3.9 with a standard deviation of 0.314. On the other hand, the Garyounis Neighborhood has obtained the lowest mean value of 3.03 with a standard deviation of 0.794. The bar chart in Figures 5.65A and 5.65B displays the average values of Satisfaction with housing and products based on the Neighborhood's Name.

Regarding housing satisfaction in the four neighbourhoods, Old City and Garyounis both attained an average level based on the Likert scale. The respondents cited many reasons for their dissatisfaction, including a scarcity of rooms, compromised privacy due to the absence of separate rooms for boys and girls, the lack of a guest room, and limited options for making necessary changes and additions to the house to accommodate their family's demands.

The Assalam neighborhood achieved the highest degree of satisfaction with housing due to various factors. The assortment of villa designs and their varied interiors offered a superior level of contentment in comparison to alternative forms of living. This is because to the autonomy that this form of residence provides. A detached house offers a more tranquil setting compared to apartments, where occupants share entrances, floors, and housing amenities. The villa design fulfils the requirements of a contemporary family and is well-suited for large families. Living in a villa offers the advantage of being able to construct an additional floor just for a family member who is getting married. Libyans have a preference for their children to reside in individual housing units that are located within the same building.

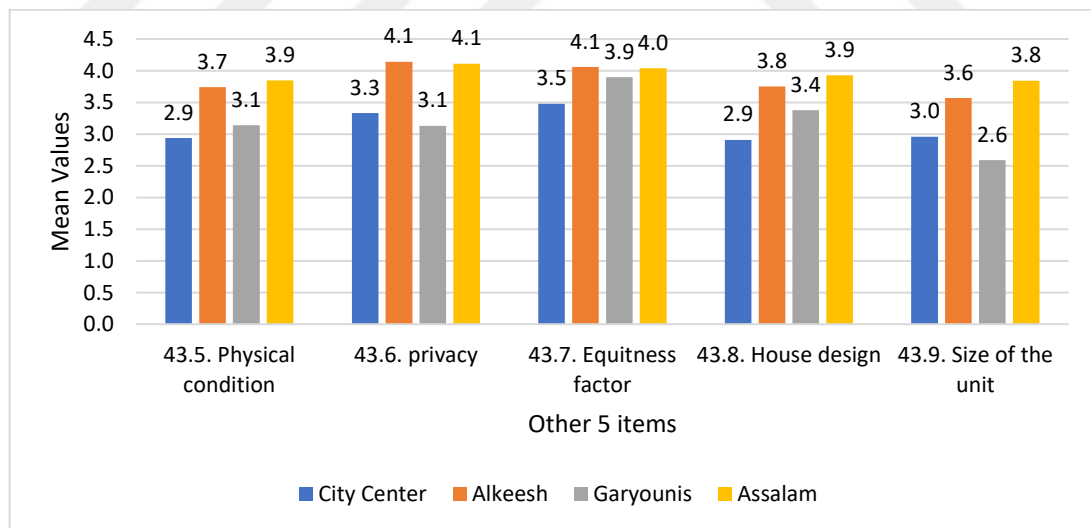


Figure5.65B Mean values of Satisfaction with housing, the other 5 items according to Neighborhood's Name

5.5.3.7 Human Needs and Items

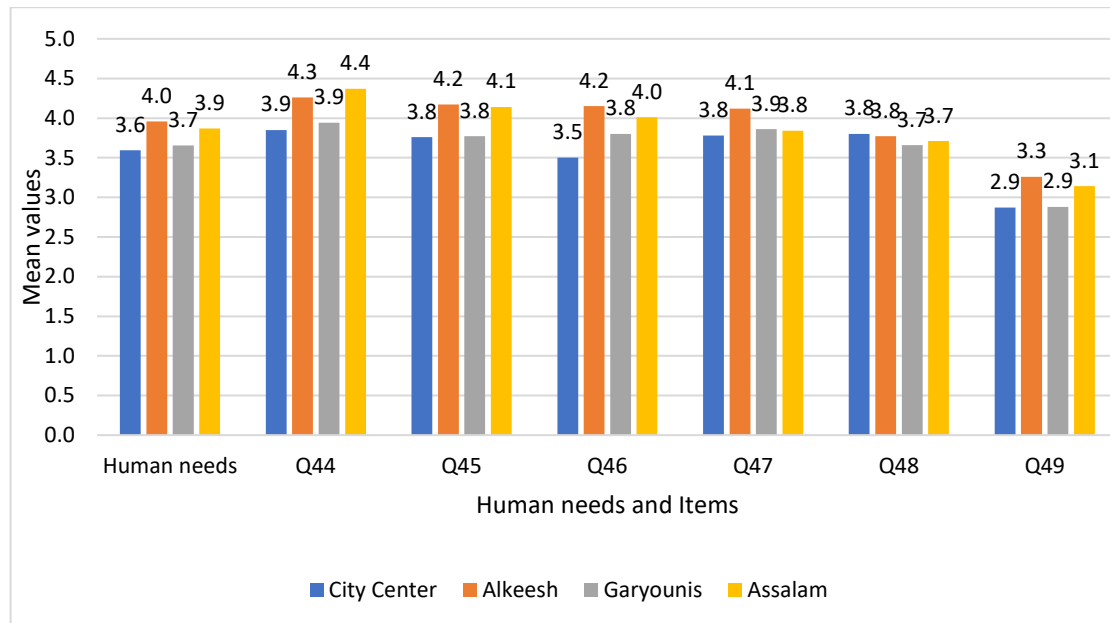


Figure 5.66 Mean values of Human Needs and items according to Neighborhood's Name

The figure 5.66 displays the descriptive statistics for Human Needs and their corresponding items. The mean and standard deviation for "Human Needs" are 3.77 and 0.814, respectively, on a five-point scale. The Alkeesh Neighborhood has the greatest mean value of 3.96 (SD= .774), while the City Centre Neighborhood has the lowest mean value of 3.59 (SD= .739). Figure 5.66 displays the average values of Human Needs and items categorized by the Neighbourhood's Name in a bar chart.

Based on the Likert scale, the assessment of human needs in all four residential areas is judged high, with a range of 3.4 to 5 indicating a high degree of human requirements. Among the four neighbourhoods, the Old City neighborhood obtained the lowest score. The respondents provided causes such as a scarcity of parking places in the vicinity and the conversion of certain dwellings into small factories. These factors have resulted in a decline in privacy for both the residential community and the neighborhood, as outsiders frequently visit. Additional factors contributing to residents' dissatisfaction include the absence of children's recreational spaces, the multicultural composition of the community, and a perceived inadequacy of available amenities.

5.5.4. To Ascertain the Physical Characteristics in Four Neighbourhoods.

5.5.4.1 Mixed Use

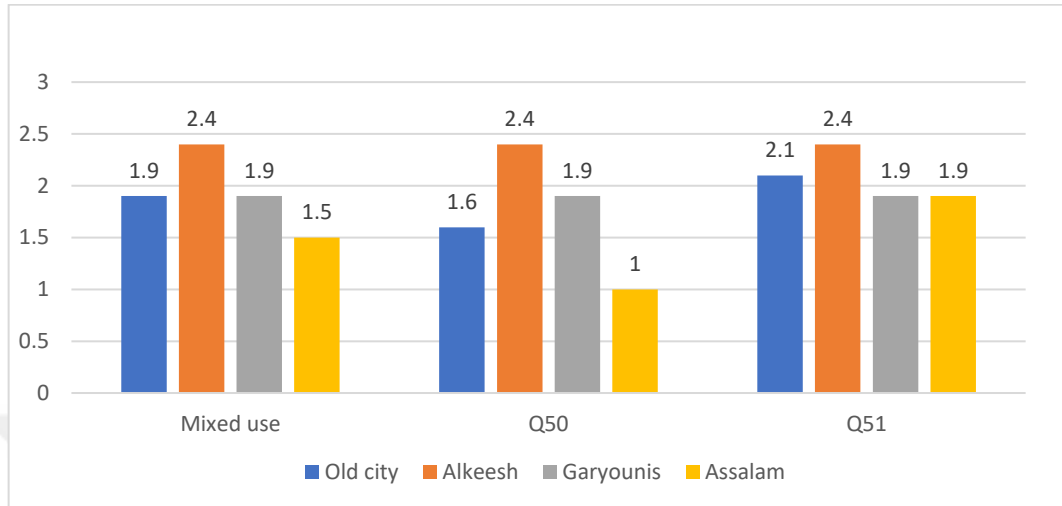


Figure 5.67 Mean values of Mixed Use and items according to Neighborhood's Name

Figure 5.67 presents the descriptive statistics of Mixed Use and its associated items. The average and standard deviation for the "Mixed Use" category are ($M=1.91$, $SD=0.696$) on a five-point scale. The Alkeesh Neighborhood has the greatest mean value of 2.37 with a standard deviation of 0.697, while the Assalam Neighborhood has the lowest mean value of 1.45 with a standard deviation of 0.379. The bar chart in Figure 5.67 displays the average values of Mixed Use and other categories categorized by the Neighbourhood's Name. The level of mixed-use in the Alkeesh neighborhood is somewhat greater compared to other communities. The focus is primarily on the main thoroughfares within the residential vicinity. This phenomenon has become prevalent in the majority of residential neighbourhoods, where a section of the house is utilized as a business space for the family, either to augment the family's income or to generate employment prospects for one of the family members.

5.5.4.2 Availability of Facilities

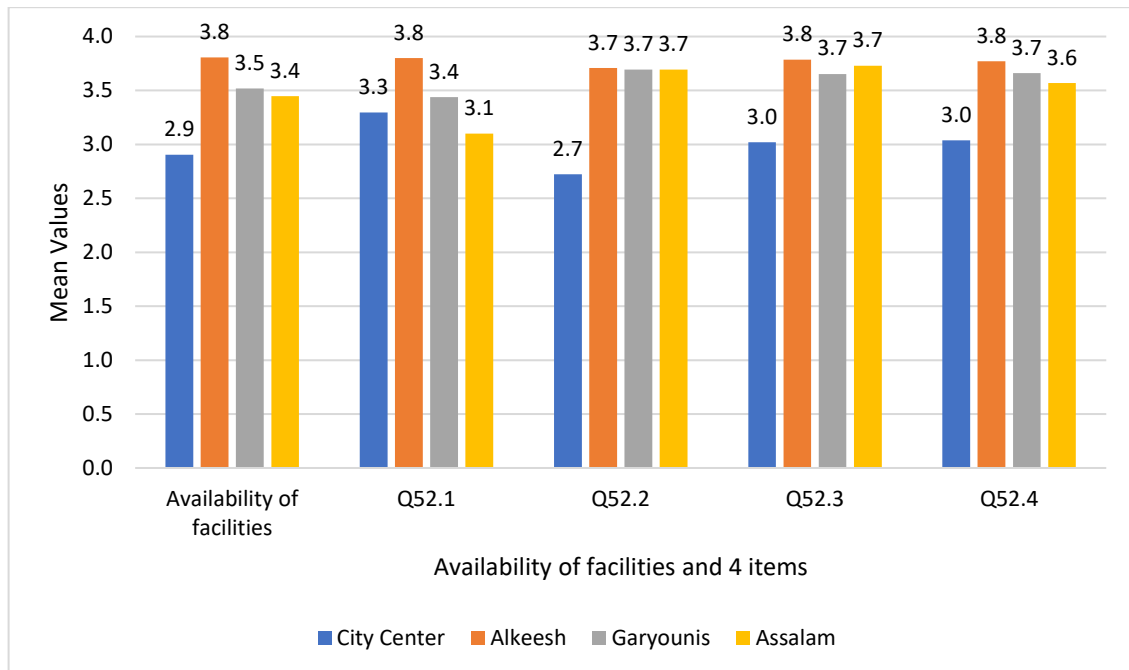


Figure 5.68A Mean values of Availability of facilities and 4 items according to Neighborhood's Name

Figure 5.68A displays the descriptive data for the availability of facilities and commodities. The mean and standard deviation for the "Availability of facilities" variable are 3.45 and 0.747, respectively, on a five-point scale. The Alkeesh Neighborhood has the greatest mean value of 3.81 with a standard deviation of 0.720, while the City Centre Neighborhood has the lowest mean value of 2.90 with a standard deviation of 0.695. The bar chart in Figures 5.68A and 5.68B displays the average values of facility and item availability based on the neighbourhood's name. Services in the Alkeesh neighborhood are accessible due to its strategic location and close proximity to nearby communities that also offer services. The Alkeesh neighborhood benefits from its compact size and the presence of multiple transit alternatives, which contribute to its convenient accessibility and connectivity. More (2019) argues that community centres, parks, sports organizations, pools, and libraries offer opportunities that encourage social relationships and enhance feelings of belonging and inclusion.

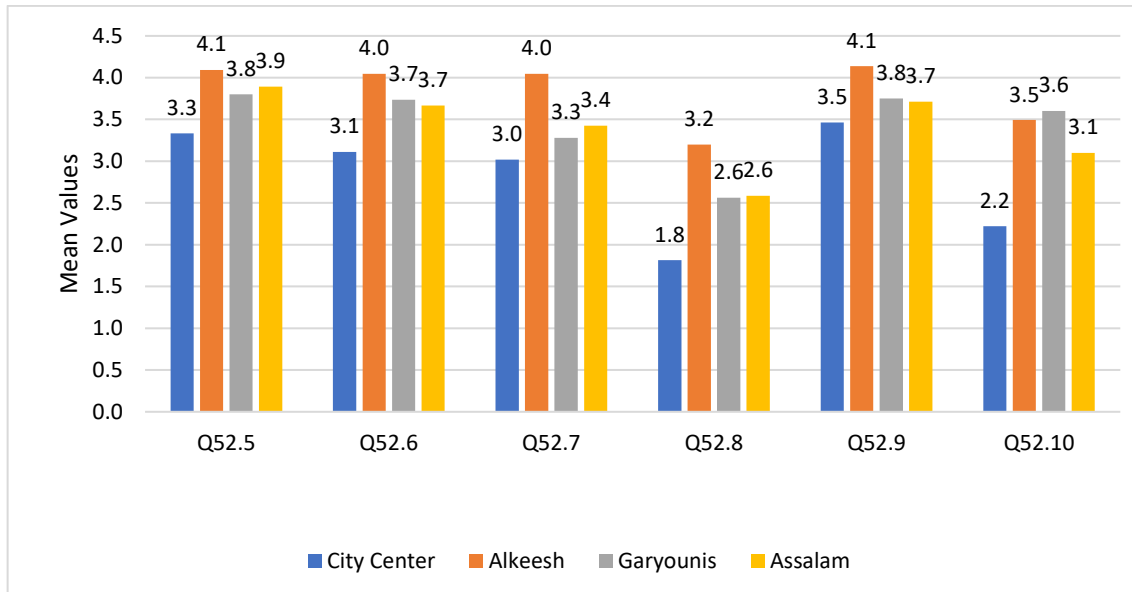


Figure 5.68 B Mean values of Availability of facilities, the other 6 items according to Neighborhood's Name

5.5.4.3 Accessibility

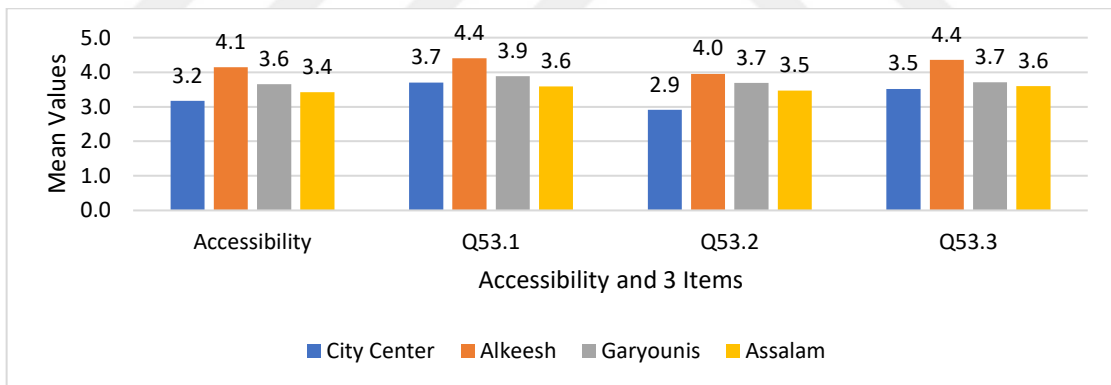


Figure 5.69A Mean values of Accessibility and 3 items according to Neighborhood's Name

Figure 5.69A displays the descriptive statistics for Accessibility and the associated components. The average and standard deviation for "Accessibility" are ($M=3.60$, $SD=.771$) on a five-point scale. The Alkeesh Neighborhood has the greatest mean value of 4.15 with a standard deviation of 0.616, while the City Centre Neighborhood has the lowest mean value of 3.17 with a standard deviation of 0.805. Figures 5.69A and 5.69B display the average values of Accessibility and elements based on the Neighbourhood's

Name in a bar chart. The Alkeesh neighborhood is rated the most accessible. This can be attributed to the accessibility of services, as well as its unique proximity to other areas and the existence of public transit. The Alkeesh area is notable for its close proximity to educational, healthcare, commercial, and other activity at both the local and citywide levels. This creates a location with improved availability of services and increased employment prospects. In a study conducted by More, B. (2019), the reasons behind the selection of a specific neighborhood for residence in Dubai were investigated. The findings revealed that proximity to the workplace and easy access to amenities and locations were the primary factors influencing the choice of a particular community.

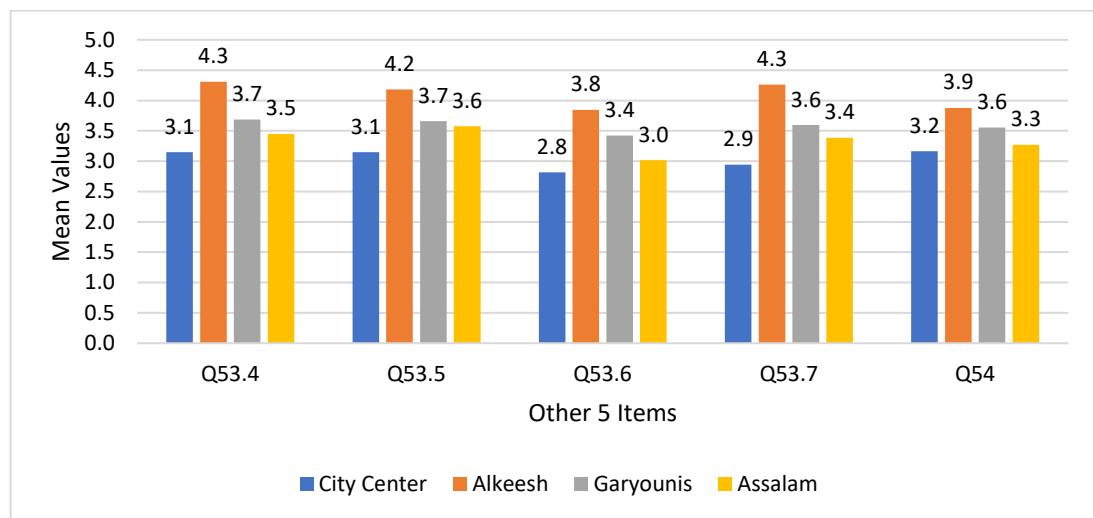


Figure 5.69B Mean values of Accessibility, the other 5 items according to Neighborhood's Name

5.5.4.4 Open Space and Garden

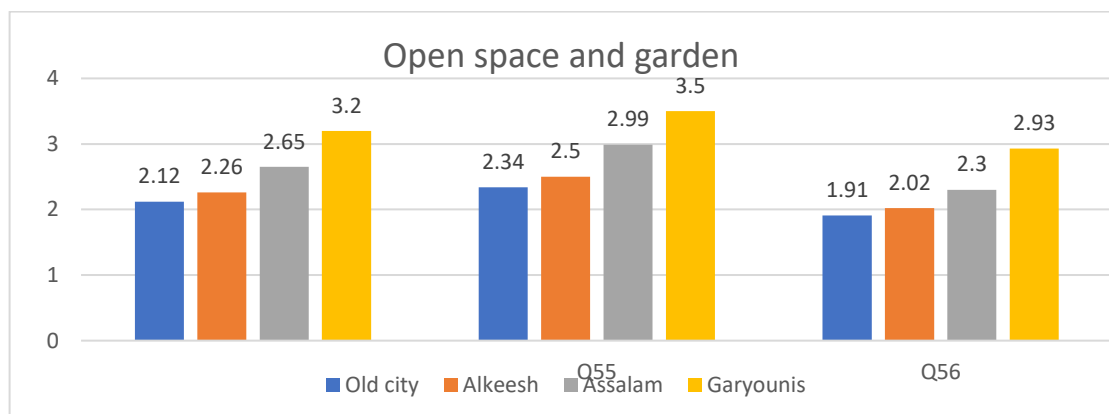


Figure 5.70 Mean values of Open space and garden and items according to Neighborhood's Name

Figure 5.70 displays the descriptive statistics for Open space, garden, and related items. The average and standard deviation for the "Open space and garden" category are (M=2.69, SD=0.679) on a five-point scale. The Garyounis Neighborhood has the greatest mean value of 3.21 with a standard deviation of 0.554, while the Old City Neighborhood has the lowest mean value of 2.12 with a standard deviation of 0.508. Figure 5.70 displays the average values of Open space and garden and items categorized by the Neighbourhood's Name in a bar chart. The Garyounis neighborhood is regarded as having the greatest average value of green and open spaces. When designing the newly created community, urban planning criteria were carefully considered, including the proportion of green and open spaces in the surrounding residential districts. In regards to the historic urban district, conventional communities lack adequate green spaces.

5.6 HYPOTHESIS TESTING

There is a relationship between the built environment and the social aspect.

Answering Research questions

RQ1: Is there a relationship between the built environment and social Aspect?

H1.1: There is a relationship between mixed-use and social Aspects.

H1.2: There is a relationship between the Availability of facilities and social Aspects.

H1.3: There is a relationship between Accessibility and social Aspects.

H1.4: There is a relationship between Open space and garden and social Aspects.

Table 5.6 Correlations between built environment factors and social Aspects

	<i>Mixed use</i>	<i>Availability of facilities</i>	<i>Accessibility</i>	<i>Open space and garden</i>
Social Aspect	.456**	.707**	.584**	-.049-
Social Interaction	.029	.027	.121*	.101
Sense of Belonging	.640**	.216**	.283**	-.031-
Social Participation	.686**	.259**	.253**	.029
Safety and Security	.516**	.205**	.287**	.010
Satisfaction with neighborhood	.194**	.968**	.670**	-.058-

<i>Satisfaction with housing</i>	.176**	.179**	.133*	-.107
<i>Human needs</i>	.286**	.285**	.330**	-.033-
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Table 5.6 shows the relationships between built environment factors and Social Aspects. These relationships were investigated using the Pearson product-moment correlation coefficient. There were positive correlations between Social Aspect and Mixed-use, Availability of facilities and Accessibility, $r = .456, .707$, and $.584$ respectively, $p < .01$, with high levels of Mixed use, Availability of facilities and Accessibility associated with higher levels of Social Aspect. ***H1.1: There is a relationship between mixed-use and social Aspect, H1.2: There is a relationship between Availability of facilities and social Aspect and H1.3: There is a relationship between Accessibility and social Aspect.*** There was no significant relationship between Social Aspect and Open space and garden, therefore, ***H1.4: There is a relationship between Open space and garden and social Aspect,*** was not supported. Significant relationships between dimensions of Social Aspect and the three built environment factors ranged between .121 (Social Interaction and Accessibility) and .968 (Satisfaction with housing and Availability of facilities).

Conducting correlation analysis based on the name of the neighborhood.

Name of the neighborhood: Old City (Courtyard House)

Table 5.6A Correlations between built Environment Factors and social Aspect in Traditional (Courtyard House) Neighborhood

	<i>Mixed use</i>	<i>Availability of facilities</i>	<i>Accessibility</i>	<i>Open space and garden</i>
Social Aspect	.717**	.848**	.663**	-.063-
<i>Social Interaction</i>	.400**	.404**	.450**	-.033-
<i>Sense of Belonging</i>	.567**	.269*	.306*	-.094-
<i>Social Participation</i>	.762**	.615**	.531**	-.076-
<i>Safety and Security</i>	.332*	.287*	.288*	.008
<i>Satisfaction with neighborhood</i>	.556**	.983**	.714**	-.057-
<i>Satisfaction with housing</i>	.292*	.207	.050	-.051-
<i>Human needs</i>	.492**	.449**	.431**	.012
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Table 5.6A displays the correlations between built environment elements and Social Aspects in Traditional (Courtyard House) Neighbourhoods. The Pearson product-moment correlation coefficient was utilized to examine these associations. Significant positive correlations were observed between the Social Aspect and Mixed-use, Availability of facilities, and Accessibility, with correlation coefficients (r) of .717, .848, and .663 respectively. The sample size (n) was 54, and the p-value was less than .01.

These findings indicate that higher levels of Mixed-use, Availability of facilities, and Accessibility are associated with higher levels of the Social Aspect. There was no discernible correlation between the Social Aspect and the presence of Open space and garden. The correlations between dimensions of the Social Aspect and the three built environment characteristics varied from .287 (Safety and Security and Availability of amenities) to .983 (Satisfaction with neighborhood and Availability of facilities).

Neighborhood's Type: Alkeesh neighborhood (Contemporary housing (Housh))

Table 5.6 B Correlations between Built Environment factors and social Aspect in Contemporary Housing (Housh) Neighborhood

	<i>Mixed-use</i>	<i>Availability of facilities</i>	<i>Accessibility</i>	<i>Open space and garden</i>
Social Aspect	.181	.739**	.569**	-.101-
Social Interaction	.025	.067	.153	.090
Sense of Belonging	.633**	.168	.075	-.064-
Social Participation	.785**	.090	.005	-.056-
Safety and Security	.684**	.017	-.016-	-.054-
Satisfaction with neighborhood	-.085-	.963**	.623**	-.168-
Satisfaction with housing	-.079-	.376**	.391**	-.110-
Human needs	.066	.356**	.319**	.077
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 5.6B illustrates the correlations between built environment variables and social aspects in contemporary housing neighbourhoods. The Pearson product-moment correlation coefficient was utilized to examine these associations. The Social Aspect showed significant positive associations with both the Availability of facilities (r = .739) and Accessibility (r = .569), based on a sample size of 65 (n = 65). The p-value was less than .01, indicating statistical significance. greater levels of Availability of facilities and Accessibility were related with greater levels of the Social Aspect. There was no discernible correlation between the Social Aspect and the presence of Open space and garden. The correlations between dimensions of the Social Aspect and other built

environment characteristics varied from .319 (for Human needs and Accessibility) to .963 (for Satisfaction with neighborhood and Availability of facilities).

Neighborhood's Type: Assalam neighborhood (Contemporary housing (Villa house)

Table 5.6C Correlations between Built Environment Factors and social Aspects in contemporary Housing (Villa house) Neighborhood

	<i>Mixed use</i>	<i>Availability of facilities</i>	<i>Accessibility</i>	<i>Open space and garden</i>
Social Aspect	.464**	.702**	.532**	-.034-
<i>Social Interaction</i>	.251**	.151	.115	.081
<i>Sense of Belonging</i>	.670**	.106	.137	.090
<i>Social Participation</i>	.745**	.228*	.224*	.020
<i>Safety and Security</i>	.458**	.071	.119	.109
<i>Satisfaction with neighborhood</i>	.100	.971**	.663**	-.184-
<i>Satisfaction with housing</i>	.198*	.230*	.181	-.001-
<i>Human needs</i>	.335**	.297**	.295**	.102
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Table 5.6C displays the correlations between built environment variables and social aspects in modern housing neighbourhoods, specifically villa houses. The Pearson product-moment correlation coefficient was used to analyse these associations. The Social Aspect had moderate to strong positive correlations with Mixed-use, Availability of facilities, and Accessibility, with correlation coefficients (r) of .464, .702, and .532 respectively. The sample size (n) was 111, and the significance level (p) was less than .01. Higher levels of Mixed-use, Availability of facilities, and Accessibility were associated with higher levels of the Social Aspect. There was no discernible correlation between the Social Aspect and the presence of Open space and garden.

The correlations between dimensions of the Social Aspect and other built environment characteristics varied from .224 (Social Participation and Accessibility) to .971 (Satisfaction with neighborhood and Availability of facilities).

Neighborhood's Type: Garyounis neighborhood (Contemporary housing (Apartment house)).

Table 5. 6D Correlations between Built Environment factors and social Aspect in Contemporary Housing (Apartment house) Neighborhood

	<i>Mixed-use</i>	<i>Availability of facilities</i>	<i>Accessibility</i>	<i>Open space and garden</i>
<i>Social Aspect</i>	.351**	.515**	.512**	.039
<i>Social Interaction</i>	.065	.117	.197*	-.030-
<i>Sense of Belonging</i>	.552**	.147	.351**	.060
<i>Social Participation</i>	.575**	.049	.147	-.018-
<i>Safety and Security</i>	.400**	.117	.270**	.017
<i>Satisfaction with neighborhood</i>	.011	.949**	.610**	-.074-
<i>Satisfaction with housing</i>	.116	-.099-	-.018-	.191*
<i>Human needs</i>	.263**	.124	.311**	-.035-
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Table 5.6D displays the correlations between built environment variables and social aspects in modern housing neighbourhoods, specifically apartment houses. The Pearson product-moment correlation coefficient was used to analyse these associations. Significant positive correlations were observed between the Social Aspect and Mixed-use, Availability of facilities, and Accessibility, with correlation coefficients of $r = .351$, $.515$, and $.512$ respectively. The sample size was 121, and the p-value was less than .01. Higher levels of Mixed-use, Availability of facilities, and Accessibility were found to be associated with higher levels of the Social Aspect. There was no discernible correlation between the Social Aspect and the presence of Open space and garden.

The correlations between dimensions of the Social Aspect and other aspects in the built environment varied from .197 (Social interaction and Accessibility) to .949 (Satisfaction with neighborhood and Availability of facilities).

5.6.1 To Investigate the Influence of Physical Variables in the Built Environment on Non-Physical Social Aspects.

The correlation analysis, observations, and interviews revealed that the presence of mixed-use spaces, availability of services, and accessibility of facilities had positively influenced the social element of the neighborhood.

Table 5.7 Correlating the statistical analysis result with the qualitative findings of the study

Aspect	Correlation Coefficient	Findings from the Benghazi Study	Broader Implications
Mixed Use	0.456	A moderate positive correlation suggests that mixed-use areas in Benghazi enhance social aspects.	Mixed-use development is vital for vibrant social life in urban areas, as it fosters community engagement and social cohesion.
Availability of Facilities	0.707	A significant positive relationship implies that the availability of facilities and services in Benghazi enhances social aspects and satisfaction.	The presence of diverse facilities is directly linked to higher social satisfaction, emphasizing the importance of comprehensive urban planning.
Accessibility	0.584	A significant positive relationship implies that easy access to facilities and services in Benghazi enhances social aspect satisfaction.	Accessibility to urban amenities is key to fostering social interactions and enhancing the quality of life in urban neighborhoods.
Open Space and Garden	-0.049	No significant correlation suggests that open spaces and gardens may not significantly impact social aspects in Benghazi.	While open spaces are often considered important for urban quality of life, their impact on social satisfaction may vary based on cultural and contextual factors.

5.6.2 To Identify the Demographic-Socio-Economic Impact on Social Aspects in the Neighborhood.

Is there an impact of socio-economic factors on social Aspects?

There is a difference in the levels of social Aspects due to family size.

The result presents the descriptive statistics of society based on several aspects of family size. The group consisting of 1 to 3 members had the greatest average value ($M= 3.55$, $SD=.416$), whereas the other two groups, consisting of 4 to 6 members and 7 members and above, had similar average values ($M= 3.37$, $SD=.497$) and ($M= 3.38$, $SD=.465$) correspondingly.

Table 5.8 Analysis of Variance (ANOVA) of social aspects due to family size

		Sum of Squares	df	Mean Square	F	Sig.
Social Aspects	Between Groups	2.181	2	1.090	4.924	.008
	Within Groups	77.062	348	.221		
	Total	79.243	350			

An Analysis of Variance (**ANOVA**) was performed to compare social aspects based on different family sizes. There were notable disparities in the ratings of social aspects, as evidenced by the statistical analysis ($F(2, 348) = 4.924, p = .008$). The mean score difference between the groups, determined using eta squared, was .03, indicating a small effect (Cohen, 1988, pp. 284–7).

The results provide support indicating that there is a significant difference in the levels of social aspects based on family size. Notable disparities were noted in social elements among different family size groupings.

Family size directly impacts housing satisfaction, which in turn affects social dynamics within the area. As previously stated, the cross-tabulation of family size and housing satisfaction revealed that respondents with family sizes of 1 to 3 people were higher satisfied with their residences compared to others.

Table 5.9 Multiple Comparisons of Family size using Tukey HSD

Dependent Variable	(I) Family Size	(J) Family Size	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Social Aspects	1 to 3 members	4 to 6 members	.17890*	.05888	.007	.0403	.3175
		7 members and above	.17227	.07721	.067	-.0095-	.3540
	4 to 6 members	1 to 3 members	-.17890-*	.05888	.007	-.3175-	-.0403-
		7 members and above	-.00663-	.06904	.995	-.1691-	.1559
	7 members and above	1 to 3 members	-.17227-	.07721	.067	-.3540-	.0095
		4 to 6 members	.00663	.06904	.995	-.1559-	.1691
*. The mean difference is significant at the 0.05 level.							

Table 5.9 displays the Multiple Comparisons of family size groups using Tukey HSD. There were notable disparities in social features between the group with 1 to 3 members

and the group with 4 to 6 members, with statistical significance at the 0.05 level. There was no statistically significant disparity in social aspects across any of the groups at the 0.05 level.

There is a difference in the levels of social Aspects due to length of stay.

Table 5.10 Descriptive statistics of social Aspects and length of stay

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Social Aspects	From 1 to 10 years	67	3.1884	.44063	.05383	3.0809	3.2959
	From 11 to 20 years	85	3.3950	.44510	.04828	3.2990	3.4910
	From 21 to 30 years	83	3.4284	.46732	.05129	3.3263	3.5304
	From 31 to 40 years	60	3.5304	.46353	.05984	3.4106	3.6501
	From 41 years and above	56	3.6111	.48193	.06440	3.4820	3.7402
	Total	351	3.4211	.47582	.02540	3.3711	3.4710

Table 5.10 presents the descriptive statistics of social aspects based on the duration of stay. The group aged 41 years and above had the highest mean value ($M = 3.61$, $SD = .482$), whereas the group aged 1 to 10 years had the lowest mean value ($M = 3.19$, $SD = .441$).

Table 5.11 Analysis of Variance (ANOVA) of social Aspects due to length of stay

		Sum of Squares	df	Mean Square	F	Sig.
Social Aspects	Between Groups	6.429	4	1.607	7.637	.000
	Within Groups	72.814	346	.210		
	Total	79.243	350			

An Analysis of Variance (ANOVA) was performed to compare social aspects based on the duration of stay. There were notable disparities in the ratings of social aspects, as indicated by the statistical analysis ($F(4, 346) = 7.637$, $p < .001$). The mean score difference between the groups, determined using eta squared, was 0.08, indicating a medium effect size (Cohen, 1988, pp. 284–7). **The results provide support for indicating that there is a significant change in the levels of social aspects based on the length of stay.**

The findings corroborate the research conducted by certain scholars who identified a correlation between the duration of one's residency and their level of contentment with their area (Tan, 2008). The constancy of living in the same residence enhances the bond between people.

Table 5.12 Multiple Comparisons of Length of Stay using Tukey HSD

Dependent Variable	(I) Length of stay	(J) Length of stay	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Social Aspects	From 1 to 10 years	From 11 to 20 years	-.20664*	.07495	.048	-.4122-	-.0011-
		From 21 to 30 years	-.23999*	.07534	.014	-.4466-	-.0334-
		From 31 to 40 years	-.34198*	.08154	.000	-.5656-	-.1184-
		From 41 years and above	-.42272*	.08306	.000	-.6505-	-.1950-
	From 11 to 20 years	From 1 to 10 years	.20664*	.07495	.048	.0011	.4122
		From 21 to 30 years	-.03335-	.07079	.990	-.2275-	.1608
		From 31 to 40 years	-.13534-	.07735	.405	-.3475-	.0768
		From 41 years and above	-.21608-	.07895	.051	-.4326-	.0004
	From 21 to 30 years	From 1 to 10 years	.23999*	.07534	.014	.0334	.4466
		From 11 to 20 years	.03335	.07079	.990	-.1608-	.2275
		From 31 to 40 years	-.10199-	.07774	.684	-.3152-	.1112
		From 41 years and above	-.18273-	.07933	.146	-.4003-	.0348
	From 31 to 40 years	From 1 to 10 years	.34198*	.08154	.000	.1184	.5656
		From 11 to 20 years	.13534	.07735	.405	-.0768-	.3475
		From 21 to 30 years	.10199	.07774	.684	-.1112-	.3152
		From 41 years and above	-.08074-	.08524	.878	-.3145-	.1530
	From 41 years and above	From 1 to 10 years	.42272*	.08306	.000	.1950	.6505
		From 11 to 20 years	.21608	.07895	.051	-.0004-	.4326
		From 21 to 30 years	.18273	.07933	.146	-.0348-	.4003
		From 31 to 40 years	.08074	.08524	.878	-.1530-	.3145

*. The mean difference is significant at the 0.05 level.

The table (5.12) displays the Multiple Comparisons of length of stay using Tukey HSD. There were notable disparities in social aspects between the group with stay duration of 1 to 10 years (which had the lowest ranking) and the other four groups, which were rated in ascending order, at a significance level of 0.05. The second-order group, consisting of individuals aged 11 to 20 years, had significant changes only when compared to the fifth group, which comprised individuals aged 41 years and above. There were no statistically significant variations in social aspects across the other groups at the 0.05 level.

There is a difference in the levels of social aspects due to of household ownership

Table 5.13 Descriptive statistics of social Aspects and household ownership

	Household ownership	N	Mean	Std. Deviation	Std. Error Mean
Social Aspects	Property	266	3.4911	.44693	.02740
	Rent	85	3.2021	.49918	.05414
	Rent	85	3.0407	.78497	.08514

Table 5.13 presents the descriptive statistics of social aspects based on home ownership. The property ownership group had a higher mean value (M= 3.49, SD=.447) compared to the rent group, which had a mean value of 3.20 (SD=.499).

Table 5.14 Independent samples t-test of social Aspects due to household ownership

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Social Aspects	Equal variances assumed	3.487	.063	5.041	349	.000	.28897	.05732	.17623	.40171
	Equal variances not assumed			4.762	129.846	.000	.28897	.06068	.16891	.40903
Social Interaction	Equal variances assumed	5.204	.023	-1.392-	349	.165	-.11900-	.08547	-.28710-	.04911
	Equal variances not assumed			-1.495-	160.735	.137	-.11900-	.07958	-.27616-	.03817
Sense of Belonging	Equal variances assumed	.071	.790	3.210	349	.001	.27961	.08712	.10827	.45095

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
	Equal variances not assumed			3.287	147.406	.001	.27961	.08508	.11148	.44774
	Equal variances assumed	.499	.480	3.107	349	.002	.39152	.12599	.14372	.63932
	Equal variances not assumed			3.075	139.275	.003	.39152	.12734	.13976	.64328
Safety and Security	Equal variances assumed	1.022	.313	2.786	349	.006	.20304	.07289	.05968	.34639
	Equal variances not assumed			2.675	133.012	.008	.20304	.07590	.05291	.35317
Satisfaction with neighborhood	Equal variances assumed	.364	.547	3.375	349	.001	.33984	.10069	.14180	.53788
	Equal variances not assumed			3.442	146.390	.001	.33984	.09873	.14472	.53497
Satisfaction with housing	Equal variances assumed	.822	.365	3.913	349	.000	.45650	.11667	.22704	.68597
	Equal variances not assumed			4.009	147.556	.000	.45650	.11387	.23147	.68154
Human needs	Equal variances assumed	13.604	.000	4.552	349	.000	.44912	.09867	.25505	.64319
	Equal variances not assumed			3.961	116.672	.000	.44912	.11339	.22455	.67368

Table 5.14 Independent samples t-test of social Aspects due to household ownership

A t-test was performed to compare the social aspect scores between the property and rent groups. There was a notable disparity in scores between the property group (mean = 3.49, standard deviation = 0.447) and the rent group (mean = 3.20, standard deviation = 0.499; $t(349) = 5.041$, $p < 0.001$, two-tailed). The magnitude of the mean differences,

determined using eta squared, was .289 with a 95% confidence interval of .176 to .402. This corresponds to a medium effect size of .07, as defined by Cohen (1988, pp. 284–7). Notable disparities were found among household ownership groups in Social Participation, Sense of Belonging, Safety and Security, Satisfaction with neighborhood, Satisfaction with housing, and Human needs. There were no notable variations in Social Interaction based on the duration of stay groups.

Consistent with the findings of Hassan et al. (2017), the outcome indicates that homeowners generally experience higher levels of satisfaction with their living spaces in comparison to renters. This indicates that homeowners experience greater pleasure with their dwellings and have opportunities to make repairs and modifications. The level of contentment with their property might have an impact on the social dynamics within their area.

There is a difference in the levels of social aspects due to Family income.

Table 5.15 Descriptive statistics of social Aspects and Family Income

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Social Aspects	From 500 to less than 1000 LYD	105	3.3985	.56614	.05525	3.2890	3.5081
	From 1000 to less than 1500 LYD	63	3.4924	.50192	.06324	3.3660	3.6188
	From 1500 to less than 2000 LYD	129	3.4096	.39784	.03503	3.3403	3.4790
	From 2000 LYD and Above	47	3.4024	.44186	.06445	3.2726	3.5321
	Total	344	3.4204	.47870	.02581	3.3696	3.4712
	Total	344	3.2711	.68326	.03684	3.1986	3.3435
	Total	344	3.0778	1.03243	.05566	2.9683	3.1872
	Total	344	3.7665	.81732	.04407	3.6798	3.8531

Table 5.15 presents the descriptive statistics of social aspects based on family income. The group with a range of 1000 to less than 1500 LYD had the greatest mean value ($M=3.49$, $SD=.502$), while the group with a range of 500 to less than 1000 LYD had the lowest mean value ($M=3.40$, $SD=.566$).

Table 5.16 Analysis of Variance (ANOVA) of social Aspects due to family income

		Sum of Squares	df	Mean Square	F	Sig.
Social Aspects	Between Groups	.407	3	.136	.590	.622
	Within Groups	78.193	340	.230		
	Total	78.600	343			

An Analysis of Variance (**ANOVA**) was performed to compare social aspects based on family income. There were no notable disparities in the ratings of social aspects, as indicated by the statistical analysis ($F(3, 340) = .590, p = .622$). **The results do not provide support for which suggests that there is a variation in the levels of social features based on family income.**

Consequently, the citizens of Libya are unwilling to disclose their actual monthly earnings and view such information as a matter of personal privacy.

What are the ideal urban environment and the future development plan for the Benghazi neighborhood?

5.7 THE SHAPE OF FUTURE DEVELOPMENT

This section focuses on the trajectory of future development in Benghazi. Currently, it is crucial to ascertain the level of knowledge and awareness among inhabitants in all four areas on the challenges associated with development in each neighborhood. Obtaining input, advice, and suggestions from residents was crucial in order to plan for future development. The citizens' goals and wishes for future development are considered suitable for providing direction and guidance for future growth in the city of Benghazi.

Figure 5.71 displays the distinct qualities of the perfect home and the relationship between the age of the household head. The defining characteristic of the perfect residence is its suitability for everyday living, family structure, location, and individuality, making it the preferred option for individuals of all age groups. The defining characteristic of the perfect home is its suitability for both family structure and daily living. It is the preferred option for individuals aged 25 to 34 and 35 to 44. The defining characteristic of the perfect home is its suitability to both the local environment and the individual's personality. It ranks as the second preference for the remaining three age groups. Figure 5.71 displays the proportions of the entire sample for the three options within each age category.

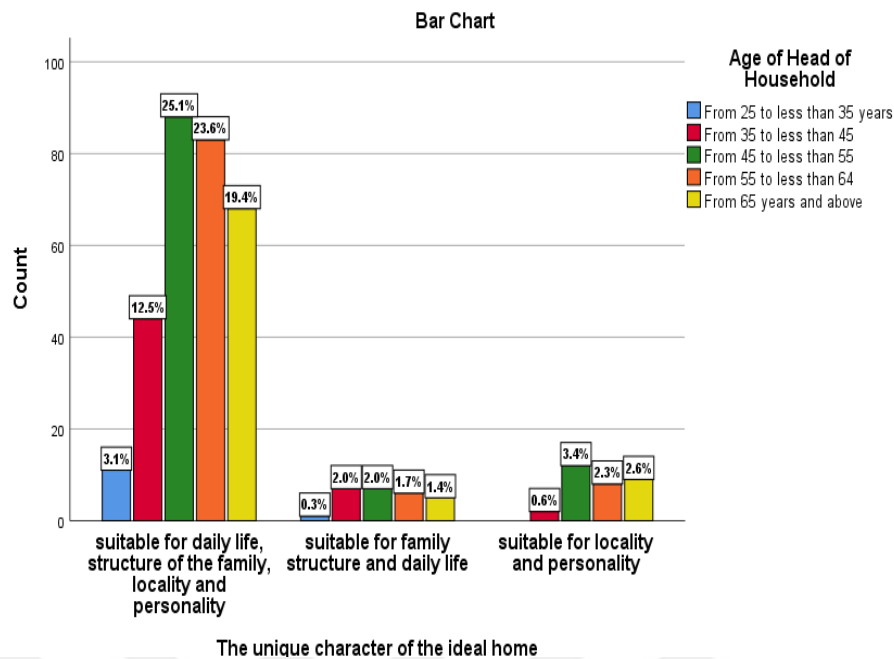


Figure 5.71 The unique character of the ideal home percentage in four neighborhoods

Figure 5.72 displays the cross-tabulation of the ideal home and the age of the head of the household. The perfect home is a residence that combines historic architectural elements with contemporary modifications, making it appealing to individuals of all age groups. The preferred form of residence is a "villa" and it is the second option for individuals aged 25 to 34, 35 to 44, and 45 to 54. The preferred type of residence is a "courtyard house (traditional style)", preferred from 55 -64 and 65 and above age demographics. Figure 5.72 displays the proportions of the entire sample for the three options within each age category.

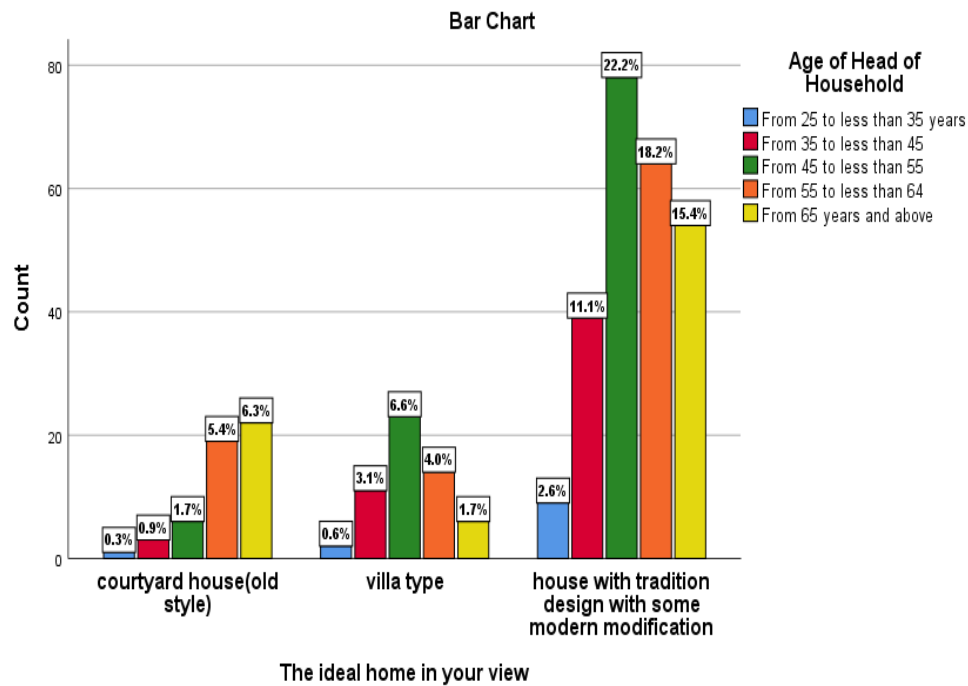


Figure 5.72 The ideal home in your view percentage in four neighborhoods

Figure 5.73 presents the cross tabulation of the ideal neighborhood design and the age of the head of the household. An optimal community design is a fusion of traditional and modern elements, making it the preferred option for individuals of all age groups. The "Traditional" neighborhood design is the second preference for the remaining two age brackets: 55 to less than 64 years, and 65 years and beyond. The optimal neighborhood design is characterized by a contemporary aesthetic and is ranked as the third option. Figure 5.73 displays the proportions of the entire sample for the three options within each age category.

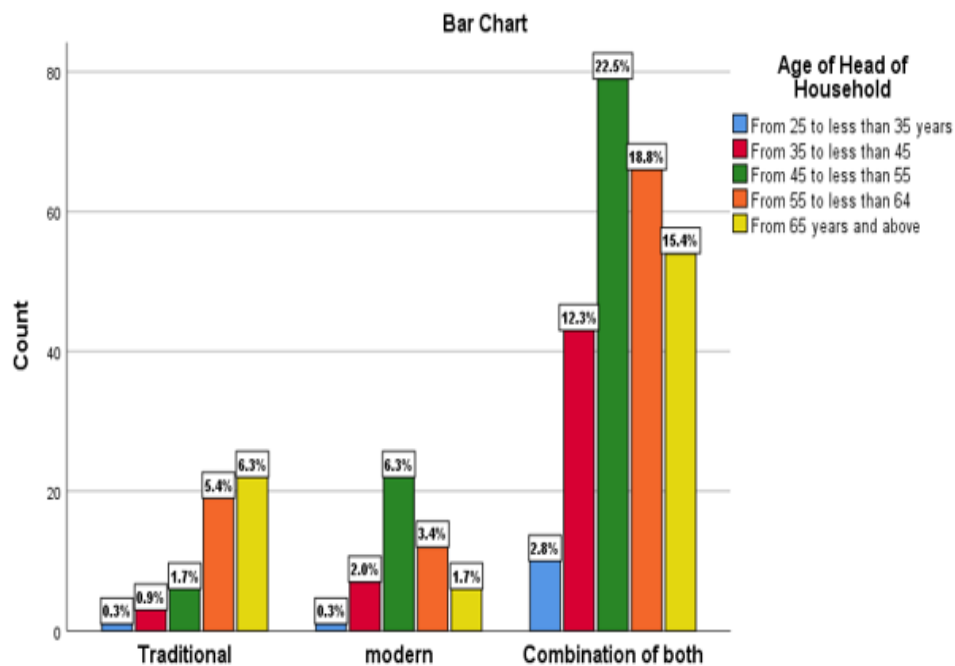


Figure 5.73 The ideal neighborhood design in your view percentage in four neighborhoods

Figure 5.74 displays the cross-tabulation of the Choice of better architecture and planning and the Age of the Head of Household. The selection of superior architecture and planning, namely native architecture and planners, is the primary preference for individuals of all age brackets. The second option for all age groups is to select an improved architectural design and plan that incorporates a blend of both local and international architectural styles and professionals. The selection of superior architecture and planning is "foreign architecture and planners," which is the preferred option for individuals of all age groups. Figure 5.74 displays the proportions of the entire sample for the three options within each age category.

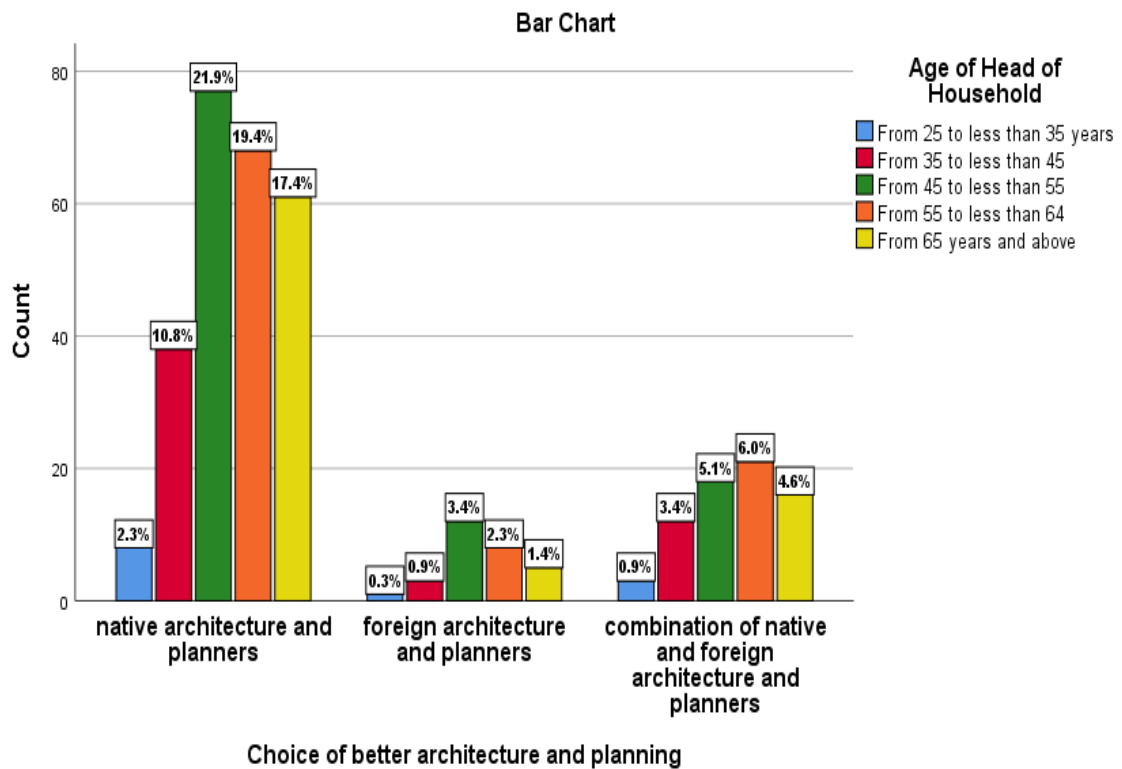


Figure 5.74 Choice of better architecture and planning percentage in four neighborhoods

Figure 5.75 displays the cross-tabulation of the Choice of better architecture and planning and the Age of the Head of Household. The selection of superior architecture and planning involves incorporating valuable concepts from both historical and contemporary sources, making it the preferred option for individuals of all age ranges. Opting for superior architecture and meticulous planning, rather than simply relying on traditional methods, is the secondary preference among individuals of all age groups. Opting for superior architecture and planning is considered a given in current times and is the preferred option for individuals of all age groups.

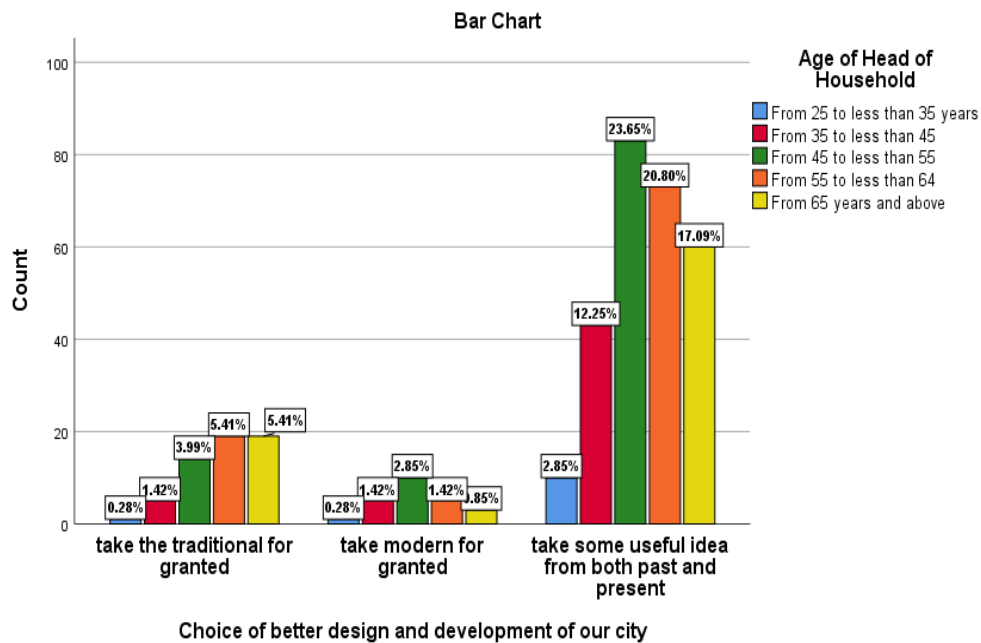


Figure 5.75 Choice of better design and development of our city percentage in four neighborhoods

Figure 5.76 shows the Choice of better architectural and planning forms and the Age of the head of household crosstabulation. The Choice of better architectural and planning forms "resident participation with architects and planners" is the first choice for all age groups. The Choice of better architectural and planning forms "Employing architects and planners in the municipality" is the second choice for all ages. The Choice of better architectural and planning forms is "allowing individual freedom of expression with no checks" is the third choice for the other three age groups. Figure 5.76 shows percentages of the total sample for the three choices in each age group.

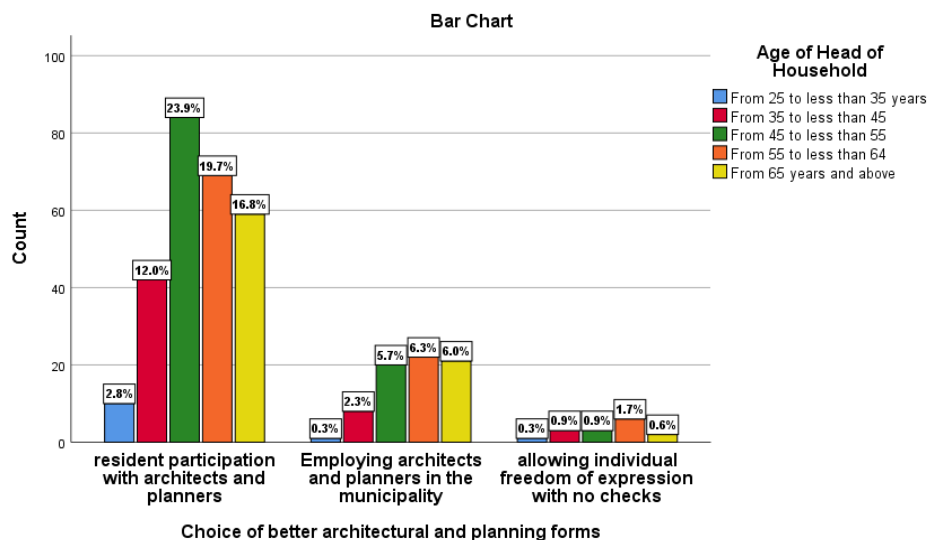


Figure 5.76 Choice of better architectural and planning forms percentage in four neighborhoods

The cross tabulation in Figure 5.77 displays the crosstabulation between the wishes for the city in the future and the age of the head of home. The primary preference for individuals of all age groups is the "Economical and simple form, a fusion of traditional and modern concepts" for the city in the Future. The second preference among all age groups is for the municipality to cease all new developments. The aspiration for the future of the city is a collaborative effort among all members of society and is the preferred option for individuals of all age groups.

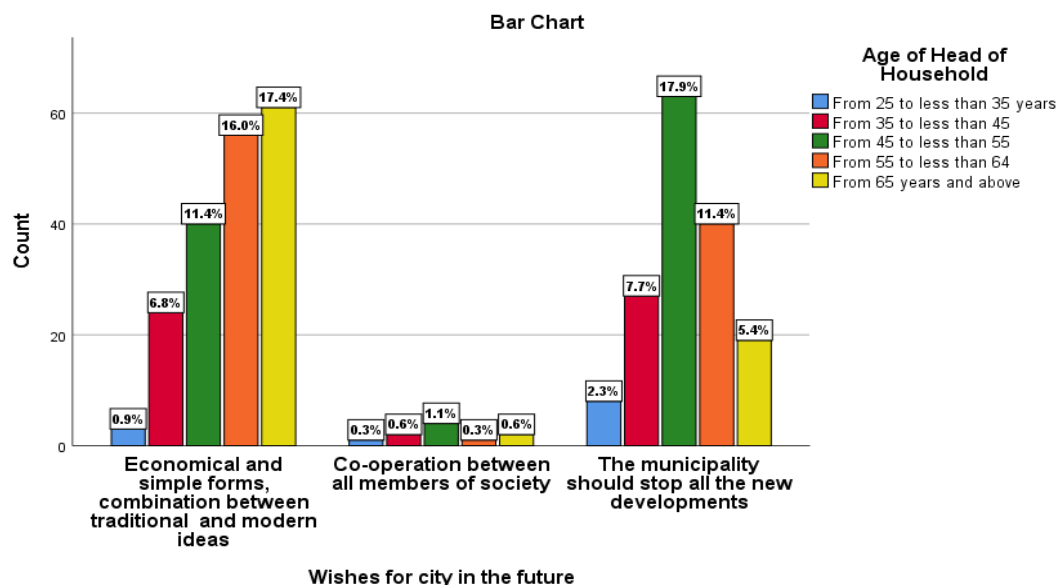


Figure 5.77 Wishes for city in future percentage in four neighborhoods

Figure 5.78 presents a cross-tabulation of the unified planning identity for Benghazi city and the age of the head of home. The primary objective for Benghazi city is to maintain a cohesive planning identity by adhering to the master plan, which is favoured by individuals of all age groups. The second option for people of all ages is to not adhere to the master plan of Benghazi city in order to maintain a cohesive planning identity. The option of maintaining a cohesive planning character for Benghazi city is considered the third preference for individuals between the ages of 45 and 54, as well as those between the ages of 55 and 63. Figure 5.78 displays the proportions of the entire sample for the three options within each age category.

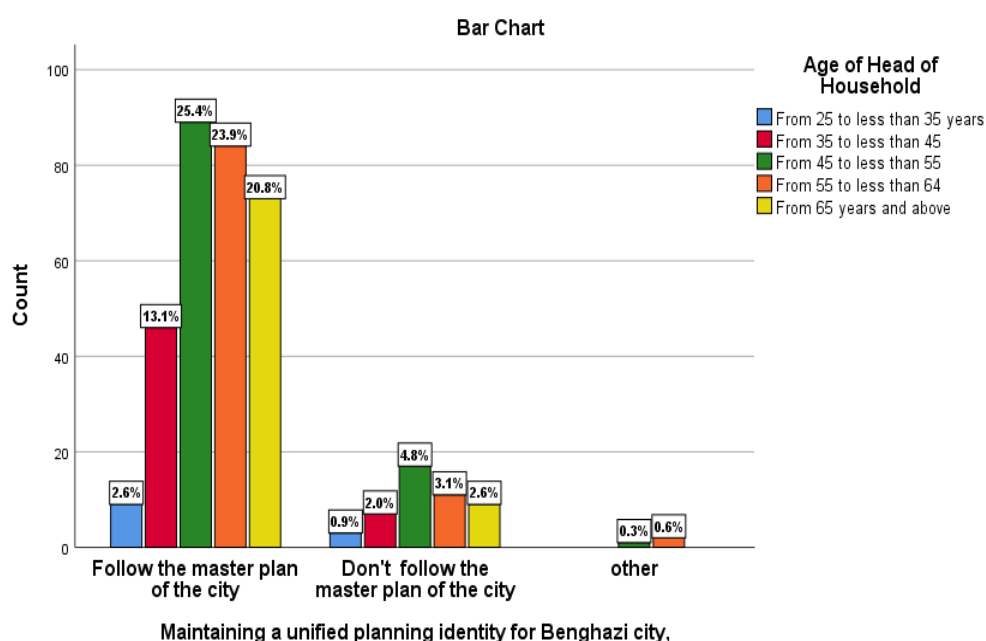


Figure 5.78 Maintaining a unified planning identity for Benghazi city percentage in four neighborhoods

5.8 SUMMARY RESULTS AND DISCUSSIONS

5.8.1. Descriptive Statistics of Demographic and Socio–Economic Variables.

Table 5.17 Summary of Demographic and Socio–Economic Variables

Section	Key Points	Main Results
1. Demographic and Socio-Economic Overview	- Male-dominated household heads - - Varied family sizes with extended family presence - Diverse parental education, influencing socio-economic status.	- 77.5% of household heads are male – - 55.6% of families have 4-6 members – - 18.2% of fathers have vocational education, and 33.3% of mothers hold university degrees. - 30%monthly income 1500-2000L
2. Migration	-The first come to Benghazi. -The date of first coming to Benghazi. -Coming from -How long have you been living here? -the reason for migrating.	- 73%first come to Benghazi were fathers. -55.2% came after the 1950. - coming from other Libyan cities, rural areas, the old city coming from another country.

Section	Key Points	Main Results
		49.2% from 41-50 years. 85.2% migrants for work.
Homeownership Length of stay	- Predominance of home ownership - Long-term residency, with modifications over time -	- 75.8% high homeownership rate - Various levels of modifications and upgrades to homes
3. Social Dynamics and Interaction	- Varied reasons for migration to Benghazi - Different levels of neighborhood satisfaction - Social interaction and community participation linked to residency duration and housing satisfaction	- Diverse migration backgrounds - Varied satisfaction levels with housing and neighborhood -
Social change	nuclear family Family size The open space and garden enhance social interaction.	The majority nuclear family. Alkeesh extended family. The same building but a separate unit. The good quality open space and garden in Garyounis encourages social interaction.
4. Comparative Neighborhood Analysis	- Demographic, socio-economic, and built environment differences across neighborhoods - Unique characteristics in each neighborhood affecting resident satisfaction and social dynamics	- Distinct demographic profiles per neighborhood - Socio-economic status varies significantly across areas - Built environment features differ, influencing resident experiences
5. Statistical Insights	- Cross-tabulation between housing satisfaction, residence tenure, family size, and house modifications - Use of cross-tabulation analysis for deeper understanding	duration of residency - Family size, from where you coming to Benghazi, and house modifications impact on the level of housing satisfaction

Section	Key Points	Main Results
6. Community Aspects	- Varied sense of belonging, safety, and security across neighborhoods - Correlation with social participation and overall satisfaction with the living environment	- Differences in perceived safety and security across neighborhoods - Higher social participation in neighborhoods with longer residency - Strong link between community aspects and overall satisfaction

The respondent's sentiments toward the present domicile and locality: The findings revealed that the participant had a preference for a detached house due to its potential for adding rooms, additional floors, and making alterations and adjustments to address any shortcomings in the house.

Table 5.18 Summary of Results and Discussions about the Respondent

Section	Key Points	Main Results
Like current house	The respondent preferred the villa type and housh type as a detached house.	- 59.5% of households like their current house. 87.3 like a current house (villa type) and (housh type) in Alkeesh neighborhood
Dislike current house	The respondent dislikes their house for many reasons.	- 22.8% of the number of rooms was not sufficient. - 7.7% not suitable for modern life. - Difficult to alter or modify. -
Like the current neighborhood Dislike the current neighborhood.	The respondent's feelings about the neighborhood.	-73.8% liking neighborhood, 44.2% availability of facilities, 5.1% essay reach to facilities. Deficit of facilities and less accessibility.
Alteration and modification in the house	The respondent does some alterations to meet their needs.	-50. 5% of the sample altered their home. Assalam has the highest percentage. - The highest percentage adds a floor.

5.8.2 To Explore the Demographic-Socio-Economic Effect of Social Aspects in the Neighborhood.

Table 5.19 Summary of Results and Discussions – the demographic-socioeconomic effect of social aspects in the neighborhood

Section	Key Points	Main Results
family size social aspects and	There was difference in the level of social aspect due to family size	There were significant differences between family size and social aspect. This means family size has a direct effect on housing satisfaction and then an effect on social aspects.
Length of stay and social aspect	There was a difference in the level of a social aspect due to Length of stay.	There were significant differences between length of stay and social aspect. The continuity in the same house and neighborhood increases the sense of belonging and social aspects.
The household ownership and social aspect.	There was a difference in the level of social aspect for property.	There were significant differences between property and social aspects. Also, cross-tabulation found that the respondent's property had higher housing satisfaction than the renter

5.8.3 The Correlation Between the Constructed Surroundings and the Societal Elements.

The correlation test yielded findings that demonstrate a significant association between the built environment and social aspects.

5.8.3.1 The Availability of Facilities and Their Correlation with Social Aspects

The availability of local amenities plays a crucial role in the planning and design of neighbourhoods, greatly impacting the level of happiness among residents and the overall well-being of the community. Urban design, specifically in relation to older populations, has a significant influence on residential satisfaction. Key variables that contribute to this include public transit, the arrangement of public spaces, and the infrastructure for traffic (Dragičević et al., 2022).

The present study focuses on comprehending the correlation between the presence of amenities in local communities and the social contentment of inhabitants, given the distinct cultural and social milieu of Libya. This study corroborates findings from previous research undertaken in an Arab nation, such as Syria, emphasizing the distinct socio-cultural norms of Libyan society, particularly within the framework of Muslim and Arab populations.

This study offers significant insights into the significance of facility accessibility in influencing social satisfaction and quality of life in neighbourhoods, particularly regarding the cultural and social norms of Libyan society. This statement emphasizes the importance of having accessible facilities in urban planning and community development. It also emphasizes the need to take into account the specific socio-cultural factors of the local community while conducting such assessments.

These observations enhance the conclusions drawn from the Benghazi study, emphasizing the worldwide significance of the presence of facilities in influencing social contentment and the overall standard of living in local communities. These principles emphasize the need of considering both the physical and social aspects of urban planning and community development in order to promote the creation of healthy, contented, and cohesive communities. This strategy is essential in many cultural and socio-economic settings, highlighting the importance of comprehensive urban development policies that address both physical infrastructure and social welfare.

Table 5. 20 The relationship between Facilities Availability and Social Aspects

Social Aspect	Facility Type	Relationship	Importance in Libyan Context
Healthcare	Healthcare Facilities	Availbilty healthcare facilities is crucial for physical well-being, ensuring timely medical attention, and promoting community health.	Especially vital in Libya, where community health is integral to social satisfaction, and healthcare services play a significant role in ensuring the overall well-being of residents.

Social Aspect	Facility Type	Relationship	Importance in Libyan Context
Education	Educational Institutions	The availability of educational institutions enhances literacy, employment opportunities, and community bonds, fostering a sense of community.	In Libyan neighborhoods, access to quality education is essential for social fabric and community cohesion, contributing to both individual growth and the development of the community.
Recreation	Recreational Facilities	Recreational spaces promote leisure, socialization, and community building, vital for mental health and fostering cultural belonging.	In Libya, where cultural norms play a significant role, providing spaces for recreation and community activities contributes to social satisfaction and strengthens cultural bonds within neighborhoods.
Transportation	Transportation Facilities	Efficient transportation enhances connectivity, reduces travel time, and improves access to employment and services, fostering inclusivity.	Accessible transportation is crucial for social inclusivity and economic development in Libyan neighborhoods, ensuring residents can connect with essential services and opportunities while reducing barriers to social interactions.
Commercial Services	Retail and Commercial Services	The presence of retail services meets daily needs and supports the local economy, fostering economic activities and social interactions.	In Libya, where local economies are significant, having access to commercial services within neighborhoods not only fulfills daily requirements but also encourages residents to engage in economic activities and social interactions, contributing to overall well-being.

Overall, the presence of nearby amenities and the layout of communities have a substantial impact on the contentment and overall health of residents. Incorporating these components into urban design can result in enhanced quality of life for residents in different urban environments.

5.8.3.2 Research Corroborates the Conclusions of the Study.

Table 5.21 studies support the findings of the study

Study Authors	Research Focus	Key Findings
Dragičević et al. (2022)	Influence of urban planning on residential satisfaction	- Public transport, public space arrangement, and traffic infrastructure are key factors in residential satisfaction.
Kumar et al. (2021)	Correlation between local facility availability and residential satisfaction	- Availability of neighborhood facilities, including green spaces and recreational areas, leads to improved residential satisfaction and overall happiness.
Cao (2016)	Effects of neighborhood design on life satisfaction	- Neighborhood design and layout, such as land use mix and street connectivity, significantly affect life satisfaction.
Pishgahi & Partovi (2021)	Impact of cross-neighborhood facilities on quality of life	- Presence of cross-neighborhood facilities can positively impact residents' quality of life in diverse urban settings.

5.8.3.3 Mixed Use and Social Aspects

It is used to describe the various functions of the urban environment. Land use patterns are more dynamic than static, and are subject to different forces. The driving factor for land use is the presence of services for residential neighborhoods, as this depends on the requirements of the local population. This is how the land is used Mixed residential neighborhood is different from the others. Therefore, the urban context and the requirements of the population are important in this context.

Table 5. 22 The relationship between Mixed use and Social Aspects

Aspect of Mixed-Use Development	Description	Impact on Social Aspects
Dynamic Land Use Patterns	Mixed-use development describes the various functions of the urban environment, which are subject to different forces and change over time based on the requirements of the local population (Mouratidis, K. 2017).	Enhances social by adapting land use to the evolving needs of the community, creating a dynamic and responsive urban environment that can better serve residents and promote social interaction based on local requirements.
Land Use Diversity	Land use diversity, particularly in mixed-use developments, is believed to improve social characteristics like social contact and the extension of social capital. It encourages people to interact socially and fosters a sense of community (Yoo & Lee, 2016).	Promotes social by creating environments where residents are more likely to engage in social interactions, fostering a stronger sense of community and social capital, and ultimately enhancing the overall well-being of the neighborhood.
Walking and Social Interaction	Mixed-use developments, with compact and diverse land uses nearby, encourage residents to walk more frequently in their local region. This increased walkability leads to more social interactions and community engagement (Rogers et al., 2012; Yoo & Lee, 2016).	Enhances social by promoting walkability and social interactions within the neighborhood, enabling residents to meet, interact, and collaborate more easily, fostering social connections, and potentially addressing community issues collectively.
Safety and Perception of Safety	Research suggests that mixed land use can enhance safety perceptions in neighborhoods. Diverse land uses, including non-residential ones, can lead to reduced perceptions of safety concerns and lower occurrences of criminal activities (Hajipoura et al., 2020).	Contributes to society by improving safety perceptions and reducing safety concerns in mixed-use neighborhoods, making residents feel safer and more secure, which in turn encourages social interactions and community engagement, enhancing overall well-being.

The study's findings corroborate previous research, indicating a significant correlation between mixed-use development and several social factors, including a sense of community, safety, security, and active social engagement.

5.8.3.4 Availability of Amenities and Communal Aspects.

The availability of local amenities in urban settings is a complex matter, determined by factors such as urban planning, geographical location, quality, and other variables. Recent research offers valuable insights into the influence of these factors on the utilization of local amenities and, consequently, the overall quality of life and social sustainability in urban areas. These studies emphasize the crucial importance of easily accessible and well-planned municipal amenities in improving the overall quality of life and promoting social sustainability in urban areas. Furthermore, the state of the roads, availability of pedestrian lanes, and efficiency of public transportation significantly impact the ease of access to various institutions. They propose that comprehensive and considerate urban design is crucial for guaranteeing fair and equal access to local amenities and fostering overall community well-being.

Table 5.23 The relationship between Mixed-use accessibility and Social Aspects

Study Authors	Research Focus	Key Findings
Siqi Yu, Xigang Zhu, & Qian He (2020)	Accessibility of urban parks in Nanjing, China	- Over 60% of real estate units within a 10-minute walk from parks. - Accessibility varied with housing prices and building age.
Sohaimi et al. (2017)	Sidewalk accessibility in Melaka, Malaysia	- Emphasized the need for inclusive sidewalk design. - Introduced the concept of 'shared space' in urban areas.
Heddebaut O. & F. Ciommo (2018)	Impact of transport intermodal infrastructures	- Discussed the impact on social organization and quality of life in urban areas. - Used the case study of Lille European Metropolis.
Barrett, M., Daphne Miller, & H. Frumkin (2014)	Significance of accessible outdoor spaces	- Emphasized the role of accessible outdoor spaces in promoting physical activity and well-being.
Hunter et al. (2010)	Impact of urban renewal on engagement in physical activity	- Explored the role of urban design in facilitating access to local facilities- Studied its influence on physical activity and social interaction.

Study Authors	Research Focus	Key Findings
Prendergast et al. (2016)	Sustainable transport strategies in Grangegorman, Dublin	- Investigated how urban design and transport strategies encourage sustainable transport modes- Focused on improving access to local facilities.

5.8.3.5 Building \Housing Type

Housing, an essential requirement for human beings, and serves as both a place of shelter and a crucial factor in promoting a feeling of safety and enhancing social connections within a community. The social sustainability of housing involves multiple facets, including its design, which can profoundly impact the tenants' quality of life and well-being. For example, the positioning and direction of a structure in relation to natural light, as well as the ability to make changes to meet the changing requirements of occupants, are essential factors (Chiu, 2004). The arrangement of housing in terms of the size of living space, types of rooms, and efficiency of the building, has an influence on its characteristics, functioning, and energy consumption throughout its lifespan (Maliene & Malys, 2009).

Housing preferences, such as detached dwellings or villas, are often shaped by cultural norms and the demand for spaciousness to accommodate future expansions. This is particularly true in nations that promote family-oriented living (Wittmann et al., 2019). The selection of dwelling style can impact various aspects of community sustainability, including pride, neighborhood affiliation, social interactions, security, environmental quality, and overall pleasure. Increased security measures can positively impact social interaction by fostering a sense of safety among residents, hence encouraging their active participation in community activities (Bramley & Power, 2009).

Community sustainability, commonly associated with the "quality of life," is impacted by several elements such as social interactions, safety, environmental quality, and access to services. These factors collectively contribute to the overall health and well-being of a community. The interconnectedness of these factors is evident, with each element exerting influence and strengthening the others, so highlighting the intricate interaction between housing and community dynamics.

Table 5.24 The relationship between housing type and Social Aspects

Study Authors	Research Focus	Key Findings
Chiu (2004)	Influence of building design on quality of life	- Building orientation and exposure to natural light are crucial for residents' well-being- Ability to accommodate evolving needs is important.
Maliene & Malys (2009)	Impact of spatial configuration on housing	- Spatial configuration affects housing character, operations, and energy usage over its lifecycle.
Wittmann et al. (2019)	Cultural preferences for housing types	- Individual housing preferences often stem from cultural norms and the need for space for future expansions.
Bramley & Power (2009)	Influence of housing type on community sustainability	- Choice of housing type can impact factors like neighborhood attachment, social interactions, security, and overall satisfaction. - Higher security levels can enhance social interaction.

5.8.3.6 The Open Space and Garden and Social Aspect

Urban green areas have a substantial impact on improving residential satisfaction and promoting social cohesion. Studies indicate that the subjective perception of the presence of parks and recreational amenities can have a greater and more significant impact on the level of satisfaction among residents compared to measurable elements (Wang et al., 2022). Urban green spaces play a crucial role in fostering positive social interactions, which subsequently lead to enhanced physical and mental health (Jennings & Bamkole, 2019).

The presence of open spaces and gardens in the Garyounis community promotes social interaction by providing a meeting place for neighbors to gather and engage with one another.

Research conducted by Rao (2021) has shown that the existence of trees, grass, and visible greenery in urban areas has a beneficial impact on social interactions among residents. This highlights the significance of green spaces in fostering communal bonds. High-quality green spaces play a dual role in promoting social relationships among

neighbors and assuring safety and adequate maintenance in regions where the elderly reside (Bertram & Rehdanz, 2015).

Furthermore, research has demonstrated that smaller communities that have easily accessible green spaces tend to have stronger social connections and more regular contacts among community members. This highlights the importance of green spaces in fostering community development (Ghanbarpour & Bakhshb, 2016). The presence of well-maintained open spaces and gardens fosters social contact among individuals. The open spaces and gardens of Assalam and Alkeesh were of poor quality and were neglected, resulting in residents mostly socializing in the mosque and stores. As a result of Islamic norms, interaction and conversation with neighbors are essential to every Muslim. The most frequent places to encourage social interaction are near the mosque after prayers is performed. Commercial services are also places to meet and interact.

Table 5.25 The correlation between open space, gardens, and social aspects

Study Authors	Research Focus	Key Findings
Wang et al. (2022)	Influence of perceived availability of green spaces on residential satisfaction	- Perceived availability of parks and recreational facilities can have a significant impact on residential satisfaction.
Jennings & Bamkole (2019)	Role of urban green areas in promoting social connections and well-being	- Urban green areas are instrumental in promoting beneficial social connections, leading to improved health and well-being.
Rao (2021)	Influence of greenery on neighbors' social interactions	- The presence of trees, grass, and greenery positively influences social interactions among neighbors.
Bertram & Rehdanz (2015)	Importance of high-quality green spaces for safety and maintenance in elderly communities	- High-quality green spaces are crucial for ensuring safety and proper maintenance in areas inhabited by the elderly.
Ghanbarpour & Bakhsh (2016)	Role of green areas in promoting social bonding and community development	- Smaller communities with accessible green areas experience increased social bonding and more frequent interactions.

5.9 The Correlation Between the Built Environment and Social Aspect

The correlation between the physical infrastructure and societal elements in urban growth is a complex notion. The relationship between physical structures and urban planning and their impact on social interactions, community participation, and general quality of life is specifically analysed in the context of Benghazi, Libya.

The cited references reveal several prominent themes.

Sociocultural and economic factors: Kezeiri (1983, 1984) and Zukin (1998) examine how modern urban planning in Libya interact with traditional lifestyles, focusing on issues such as population expansion, environmental deterioration, and societal changes. Safour (2021) offers a comprehensive analysis of Benghazi's urban growth and its attempt to strike a balance between modernization and the conservation of ancient customs.

The theories of Ben-Ghiat & Fuller (2016) and Newman & Kenworthy (1999, 2006) examine the changes in urban planning in Benghazi, taking into account historical factors and the impact of urban planning on socioeconomic circumstances.

Farber et al. (2015) and Brown et al. (2014) provide a comprehensive framework for analysing the relationship between city planning and social interactions. They highlight the need of rules that address the physical, social, cultural, and mental components of urban living.

An empirical analysis indicates a noteworthy correlation between the physical infrastructure and social factors within the communities of Benghazi. Public spaces that are well-designed are linked to increased levels of community involvement and social togetherness.

When rewriting about this link using these sources, it is crucial to concentrate on how these studies collectively demonstrate the intricate interaction between physical urban structures and the social life within a city. The results highlight the significance of taking into account both the physical arrangement and the social structure in urban planning and development. It supports the idea of implementing policies that effectively combine modernization with cultural conservation and prioritize community participation in the urban planning process.

Table 5.26 Overview of Results and Comparative Analysis

Aspect	Findings from Benghazi Study	Comparative Arab Insights	Arab Country	Comparative Non-Arab Insights	Non-Arab Country	Referenced Sources
Availability of facilities and social aspect	Availability of the facilities and satisfaction with neighborhood in Benghazi.	Similar importance in Arab countries.	Sria	Availability of facilities and community satisfaction factor.	Various Countries	Kezeiri (1983, 1984), Zukin (1998)
Green area and open space and Mental Health	The improvement Green area and open space facilities will encourage social interaction in Benghazi.	-	-	Aligns with global findings on recreational spaces' impact on social interaction and security.	Various Countries	Ben-Ghiat & Fuller (2016), Newman & Kenworthy (1999, 2006)
(Accessibility)	Accessibility with Efficient transportation linked to and social inclusivity in Benghazi.	-	-	Reflects global trends in sustainable transportation and social inclusivity.	Various Countries	Farber et al. (2015), Brown et al. (2014)
(Mixed -use) Commercial Services and Economic Activities	Mixed -use foster economic activities and social interactions in Benghazi.	-	-	Similar findings in studies from other urban areas.	Malaysia	Wan Rani, W. (2012)
Housing Styles and Neighborhood Dynamics	Housing styles in Benghazi influence neighborhood interactions.	Observed disparities in Arab countries.	Morocco	Global observation of housing typologies' impact on social dynamics.	Various Countries	Mouratidis, K. (2017)
Urban Planning and Social Fabric	Importance of considering both physical plans and social fabric in Benghazi's urban planning.	-	-	Echoes principles of New Urbanism and global insights on urban design's impact on social well-being.	Various Countries	[Refer to specific sources from document]
Balanced Urban Development Policies	Advocates for policies balancing modernization with cultural preservation in Benghazi.	-	-	Aligns with New Urbanism principles for community-focused planning.	Various Countries	[Refer to specific sources from your document]

The table presents a correlation between the statistical analysis results and the qualitative findings of the study, offering a comprehensive perspective on the influence of many features of the physical environment on social aspects in urban communities. These insights can provide guidance for urban planning and development, ensuring that the social demands of communities are fulfilled through careful design and infrastructure development.

1. Strong Connections Across Various Social Dimensions: The correlations between these components of the constructed environment and various aspects of the social dimension shown variation. The study revealed a strong positive connection ($r = .968$) between satisfaction with the neighborhood and availability of amenities. This indicates that the presence of facilities has a significant impact on neighborhood satisfaction.

2. Consequences of the Findings: These findings provide evidence for the hypotheses that there are correlations between mixed-use, availability of facilities, and accessibility with the social element of the neighbourhoods. Nevertheless, the theory regarding the correlation between open space and gardens was not corroborated. This suggests that although mixed-use areas, availability of services, and accessible surroundings play a role in fostering social interactions and a feeling of community, factors such as safety and security, social involvement, and the presence of open spaces and gardens may not have a direct influence on these social elements.

Utilizing Pearson correlation coefficients offers a reliable approach to comprehending the complex connections between the constructed environment and social factors. This study is essential for urban planners and policymakers because it identifies critical aspects of the constructed environment that have a substantial influence on social dynamics. Gaining insight into these connections helps direct future urban planning to cultivate more robust community bonds, promote social engagement, and enhance general contentment with residential surroundings.

5.10 COMPARATIVE ANALYSIS OF CASE STUDIES

We have performed a comparative analysis of the four case studies outlined in the thesis. The purpose of this investigation is to identify and compare the variations and commonalities in the physical infrastructure and social conditions within these communities.

The key findings indicate that neighbourhoods with carefully designed open spaces and gardens, such as the Garyounis neighborhood, demonstrate higher levels of resident satisfaction. Similarly, the Alkeesh neighbourhood, which offers a wide range of facilities and is conveniently located near all levels of amenities, also experiences higher satisfaction with the neighborhood and environmental quality.

Conversely, neighbourhoods such as the City Centre, which lack these characteristics, have lower reported levels of contentment. Abdullah et al. (2021) observed that the subjective perception of the presence of parks and sports facilities had a greater influence on residential satisfaction compared to objective and quantifiable factors.

. Safety and security play a crucial role in determining resident satisfaction. The Alkeesh Neighborhood, which has the best safety and security ratings, also exhibits significant levels of neighborhood satisfaction. This association emphasizes the significance of safety perceptions in the field of urban planning.

The Assalam area, namely the Villa houses, have been shown to have the highest level of housing satisfaction. This finding is corroborated by Madi; H (2015) who discovered that individuals generally prefer detached houses, such as villas. This particular form of house is favoured due to its potential for future expansions, which may be tailored to accommodate the changing needs of the family. The future expansion is of great significance for Libyan families due to their enduring connections with relatives, resulting in the formation of extended family units. The home features a spacious plot of land enclosed by a fence in peaceful surroundings, providing ample areas and spaces that are well-suited for practicing Libyan customs and traditions. Furthermore, the family has the opportunity to contribute to the design of the house.

Garyounis and the old city area achieved the best score in terms of social contact due to its tight layout, high population density, and tiny dwelling sizes, which promoted enhanced social interaction. However, in the Garyounis area, the presence of high-density housing, open-space gardens, and parking facilities led to an increase in social interaction among residents. For example, the housh (Arabic house) housing arrangements in regions such as Alkeesh Neighborhood, known for their shared spaces and close closeness, appear to cultivate a more robust sense of community and connection among residents.

On the other hand, contemporary residential buildings found in the Garyounis Neighborhood, although providing superior facilities, may not have as substantial an impact on fostering a strong communal spirit and a sense of belonging.

By conducting a thorough analysis, we provide answers to the study questions by showcasing the significant impact of urban planning components, such as housing typology and the presence of amenities, on the formation of social connections within communities. These observations are crucial for urban planners and politicians, highlighting the necessity for comprehensive planning that take into account both the physical and social aspects of urban development.

This section consolidates the discoveries from the thesis and illustrates how they help to addressing the research inquiries. The customization of the study should be done to align with the specific facts and outcomes, ensuring accuracy and relevancy.

Table 5.27 Summary of Findings and Comparative Analysis

Aspect	Comparative Findings
Built Environment	-Neighborhoods with availability and accessibility of facilities, such as Alkeesh and Garyounis report higher levels of resident satisfaction and environmental quality. well-planned open spaces and gardens, such as Garyounis increase social interaction. -The mixed-use enhancing the social aspect. Neighborhoods like the City Center, lacking the availability, accessibility, report lower satisfaction levels.
Social aspect	Safety and security significantly impact resident satisfaction. Alkeesh Neighborhood, scoring highest in safety and security, also exhibits high levels of neighborhood satisfaction. Assalam neighborhood (Villa house), scoring highest in housing satisfaction. This type of house is preferred because it offers the possibility for future extensions, depending on family requirements
Overall Implications	The study emphasizes the critical role of urban planning elements, including housing typology and availability of open spaces, in shaping the social fabric of neighborhoods. Insights are instrumental for urban planners and policymakers, highlighting the need for holistic planning that considers both physical and social dimensions of urban development.

5.11 THE SHAPE OF FUTURE DEVELOPMENT IN BENGHAZI CITY

Age group preferences for home, neighborhood design, architecture, and city planning in Benghazi.

Table 5.28 Summary of Findings the shape of future development

Category	Preference/Choice	Age Group	First Choice	Second Choice	Third Choice
Ideal Home	Suitable for daily life, structure, locality, personality	All Age Groups	✓		
	Suitable for family structure and daily life	25 to <35, 35 to <45		✓	
	Suitable for locality and personality	Other Age Groups		✓	
Ideal Home	House with traditional design & modern modifications	All Age Groups	✓		
	Villa type	25 to <55		✓	
	Courtyard house (old style)	45 to <55, 55+		✓	
Ideal Neighborhood Design	Combination of traditional and modern	All Age Groups	✓		
	Traditional	55 to <64, 65+		✓	
	Modern	All Age Groups			✓
Architecture and Planning	Native architecture and planners	All Age Groups	✓		
	Combination of native and foreign	All Age Groups		✓	

Category	Preference/Choice	Age Group	First Choice	Second Choice	Third Choice
	Foreign architecture and planners	All Age Groups			✓
Architecture and Planning	Useful ideas from past and present	All Age Groups	✓		
	Traditional for granted	All Age Groups		✓	
	Modern for granted	All Age Groups			✓
Architectural and Planning Forms	Resident participation with architects and planners	All Age Groups	✓		
	Employing architects and planners in municipality	All Age Groups		✓	
	Individual freedom of expression with no checks	Other Age Groups			✓
Wishes for the City in the Future	Economical and simple form, traditional-modern mix	All Age Groups	✓		
	Stop all new developments	All Age Groups		✓	
	Cooperation among society members	All Age Groups			✓
Planning Identity for Benghazi	Follow the master plan	All Age Groups	✓		
	Don't follow the master plan	All Age Groups		✓	
	Other	45 to <64			✓

CHAPTER 6 CONCLUSION AND RECOMMENDATIONS

6. INTRODUCTION

This chapter presents the primary findings of the research and establishes connections to the theoretical matters and problems that were raised within the context. Additionally, this chapter offers a set of policy proposals and suggestions. These proposals are intended to enhance the current urban environment and provide guidance for future development. Additionally, it offers recommendations for prospective research.

This chapter combines the results of the study with worldwide urban trends, supplemented by pertinent case studies from the Arab world, to offer full insights into urban design in developing scenarios in Benghazi.

The main research question: Is there a relationship between physical aspects (built environment) and social aspects in the neighborhood?

6.1 EVALUTION OF CASE STUDY

The Benghazi survey revealed:

6.1.1 The Initial Section Pertains to the Demographic and Socio-Economic Aspects.

The prevalence of male household heads is 77.5%, while there is a significant at 55.6% of families have a size ranging from 4 to 6 persons.

- Varied educational backgrounds and a combination of formal and informal jobs. The data revealed that 73.2% of the dads were the initial individuals to arrive in Benghazi. The majority of the first members of the family migrated to Benghazi after 1950, leading to a substantial societal transformation in Libya due to the advent of oil. The findings suggest that a significant proportion of household heads relocated from other cities or rural regions inside Libya. The discovery revealed that both the old city neighborhood and Alkeesh had a prolonged residency in the same area, lasting for 51 years or more. The analysis revealed that 75.8% of individuals possessed property ownership of their residence. The discovery revealed that 85.2% of migrants travelled to Benghazi primarily for employment purposes.

6.1.2 The Subsequent Section Pertains to Social Indicators.

6.1.2.1 The Social Interaction: The finding revealed that the Old City neighborhood and Garyounis neighborhood had high social interaction compared to Alkeesh and Assalam neighborhoods.

6.1.2.1.2 The Sense of Belonging: The result indicated that the sense of belonging was highest in the Alkeesh neighborhood compared with Old City, Assalam, and Garyounis neighborhoods. As a result, Alkeesh was an old neighborhood, and the majority of respondents work in the same neighborhood. Martin, M. (2021) concludes by confirming that there is a difference in the sense of belonging for the citizens according to the location and different conditions affecting the perception of a person about a place.

6.1.2.1.3 Social Participation: The results indicate that social participation was lowest in the old city compared with Alkeesh, Garyounis and Assalam neighborhoods.

6.1.2.1.4 Safety and Security: Safety and security were highest in the Alkeesh neighborhood compared with the old city, Assalam, and Garyounis neighborhoods.

6.1.2.1.5 The Satisfaction with the Neighborhood: In terms of the level of neighborhood satisfaction, the results found that the level of satisfaction in the neighborhoods of Alkeesh and Garyounis is higher than in the old city and Assalam neighborhoods. The result with Farhadikhah, H., and Ziari, K. (2021) and Shawash (2000) found that satisfaction with the neighborhood is higher in new neighborhoods than in old neighborhoods.

6.1.2.1.6 Satisfaction with Housing: The results indicated that the level of satisfaction with housing was highest in the Assalam neighborhood (Villa). The result supported by Madi (2015) found that people preferred detached houses (villas).

6.1.2.1.7 The Results Indicate that Alkeesh has Higher Human Needs Compared to other Neighborhoods.

6.1.3. The Third Part is about Physical Indicators.

6.1.3.1 The Mixed-Use: The result indicated that mixed-use was high in the Alkeesh neighborhood.

6.1.3.2 The Availability of Facilities: The finding revealed the high availability of facilities in the Alkeesh neighborhood. The findings agree with Hajjar (2015) that the availability of facilities would contribute to improving the social aspects. Hassan et al. (2017) found that a higher level of neighborhood satisfaction has been observed to be associated with an increase in the availability of public services.

6.1.3.3 Accessibility: The result indicated that accessibility to facilities was high in the Alkeesh and Garyounis. The result agrees with Ali, H, et al.'s (2019) finding that the new city centers provide a higher level of accessibility to services than the old cities.

6.1.3.4 Open Space and Garden: The study revealed that the Garyounis neighborhood had the highest number of open spaces and gardens.

6.1.4. The Link Between the Built Environment and Social Aspects

- **Divergent Perspectives on Urban Density:** The implications of the Benghazi study on urban density and social interaction align with the theories proposed by Glaeser & Gottlieb (2006) and Jacobs. A study by Alawadi (2016) in Dubai, UAE, demonstrated that well-designed urban settings with higher densities can promote and improve social connections.

Mixed-Use and Social Aspects. The outcome of the Benghazi project for mixed-use development exhibited a favourable correlation with safety, security, and fostering a sense of belonging. The research conducted by Hajipoura et al. (2020) provides evidence that mixed land use in neighborhoods contributes to increased safety. Additionally, the study by Mouratidis (2017) establishes that mixed land uses are acknowledged as factors that positively influence overall social well-being.

The Availability of Amenities and Communal Aspects. In Benghazi, a study discovered a direct correlation between the presence of amenities and the level of satisfaction within the neighborhood. Similarly, a study conducted in Syria by Hajjar, I (2015) supports the finding that the provision of amenities plays a role in enhancing the social element of a

community. There exists a correlation between the accessibility of amenities and the communal dimension. Additionally, the findings of the research corroborate the conclusions of previous studies conducted by More, B (2019) and Fahim et al. (2022).

Inclusivity and Communal Interaction. Multiple studies suggest that individuals' contentment and opinions about their communities are strongly correlated with various factors, such as the perceived ease of local transportation, perceptions of service accessibility, the presence of green spaces or aesthetic appeal, perceptions of uncivil behavior, and perceptions of both violent and property crimes. Wanderman (2002), McMillan and Chavis (1986), Ambrey (2016), Ciorici and Dantzler (2019). In a study conducted by More, B. (2019), the author analyzed the factors influencing the choice of residential neighborhoods in Dubai. The findings revealed that proximity to the workplace and easy access to amenities and locations were the primary reasons for selecting a specific community to live in.

Botanical Surroundings and Social Aspects. The findings indicate that the open space and garden in the Garyounis community serve as venues for residents and neighbors to convene and engage in social interaction. Abdullah et al. (2021) observed that the subjective perception of the availability of parks and sports facilities had a greater influence on residential satisfaction than objective and quantifiable factors.

The findings corroborate the research questions and hypotheses: A direct correlation existed between mixed-use development, amenities, ease of access, and social factors.

6.1.5 The Shape of Future Development

The study findings revealed that inhabitants in all four locations exhibit a high level of cooperation and enthusiasm when it comes to expressing their opinions on the most favorable form of future development, especially in relation to their homes and neighborhoods. Moreover, they were aware of the difficulties that have plagued the progress of Benghazi in recent years. An optimal future home and neighborhood for Libyan families would incorporate a blend of contemporary and conventional architectural styles, as recommended by the majority of participants in all four regions. This approach takes into account the shortcomings observed in the existing homes and neighborhoods in each of these areas. They said that to enhance future progress, it would

be most beneficial to adopt a combination of relevant traditional and modern values and concepts. The most suitable architects and planners for the future development project are those who are local. Furthermore, the participation of the general population is necessary in both the selection and design of the constructed surroundings. Ultimately, this research indicates the need for further investigation into this subject in future studies.

The participants from the four regions emphasized the need of complying with the city's Master Plan and building and planning standards. They stressed that all segments of society should consider these guidelines before making any changes. It is essential to build a relationship between all components of the physical environment and social characteristics.

Based on this survey, Libyan families still consider local social characteristics like privacy, extended family, and social harmony to be highly significant. Therefore, the main objective of future development strategies should be to guarantee the peaceful coexistence of local social and cultural values, principles, and desires with modernity. This would enable the establishment of an exceptional environment and improve the quality of life for individuals, all while maintaining the city's distinct identity.

Overall, the Benghazi survey makes a substantial contribution to the field of urban sociology and planning by providing a detailed and sophisticated understanding of the intricate relationship between cultural heritage, socioeconomic factors, urban design, and social interaction within the context of the ongoing Benghazi reconstruction. The lessons of this apply not just to Benghazi and the Arab world, but also to other global settings facing similar issues. This highlights the universal importance of urban development methods that are culturally and socio-economically sensitive.

The preceding research offers valuable suggestions for individuals interested in investigating the correlation between physical and social elements in the development of neighborhoods. Additionally, this chapter offers a set of policy proposals and suggestions. These proposals are intended to enhance the current urban environment and provide guidance for future development. To enhance both the tangible and intangible aspects of the housing projects in Libya. Professional designers and urban planners should establish organized forums to engage in focused talks aimed at gaining deeper insights into the housing and neighborhood requirements in Libya. The objective is to foster a prosperous

future and improve living conditions by developing tailored housing standards for each location in Libya.

6.2 NEIGHBORHOOD THEORY AND SOCIAL CULTURAL THEORY

The theories of neighbourhood, which form the basis for the establishment of contemporary neighbourhoods, The developments mentioned here are the result of various factors such as migration, increasing demand for housing, breakthroughs in construction technologies, societal changes, and the desire for modern and new homes. The modern neighborhood has been introduced in Libya and other Arab states. The contemporary neighborhoods differed from the traditional neighborhoods in various areas. Thus, by analyzing the respondents' preferences and their vision for future housing and neighborhoods, it becomes clear that they seek to combine classic neighborhood design concepts with contemporary ideas. Although it is not possible to go back and live in the past, we can utilize the traditional features of nearby housing that improve and strengthen social relationships, sense of belonging, safety, and contentment with housing and the surrounding area.

City planners are increasingly guided by the notion of variety, as confirmed by social and cultural philosophy. Diversity is an essential factor in creating a fair city that promotes social justice. It suggests incorporating mixed-use spaces to lure individuals to the streets and public areas, thereby enhancing social connections. The study's findings also validate the notion that incorporating mixed-use elements in residential neighborhoods contributes to enhancing security, safety, housing quality, neighborhood satisfaction, and social interactions.

6.3 COMPARATIVE ANALYSIS BETWEEN WORLDWIDE PATTERNS, AND CASE STUDIES FROM THE ARAB WORLD

Global Urban Trends and Socio-Economic Status: The findings from Benghazi are consistent with global trends identified by Sampson et al. (1997) and Dearden (1984), which emphasize the influence of socioeconomic status on housing and access to resources. Arab cities, such as Cairo, exhibit comparable patterns where urban growth and housing choices are greatly influenced by socioeconomic variables (Elshater, 2015).

- Spatial Cognition and Social Status: The relationship between spatial cognition and social rank, as explored by Potter (1982), is also observed in Benghazi. A study conducted in Amman, Jordan by Alnsour and Meaton (2009) demonstrated the impact of socioeconomic position on urban experiences and housing preferences.

-Lifestyle and Housing Demand: Jansen's (2012) research on the impact of socio-demographic factors on housing demand aligns with the findings of the Benghazi study. The impact of socio-economic factors on the urban landscape and residential patterns in Beirut, Lebanon has been significant, as highlighted by Fawaz (2017).

6.4 AREAS FOR FUTURE RESEARCH

Subsequent Investigations Ought to:

- Conduct long-term impact studies: Evaluate the lasting effects of urban design in Benghazi and other developing Arab cities in Benghazi.
- Perform comprehensive longitudinal impact assessments: Assess the enduring consequences of urban planning in Benghazi and other emerging Arab cities.
- Conduct a longitudinal analysis: Examine the sustainability and long-term effects of urban planning in developing Benghazi environments, both in Libya and the Arab region.

6.5 OVERALL SUMMARY

The Benghazi survey highlights the significance of culturally sensitive urban planning in the changing contexts of Benghazi, taking into account global urban trends and case studies from the Arab world. It emphasizes the need of urban planning and reconstruction initiatives being firmly grounded in the cultural, socio-economic, and historical context of the community. This method guarantees that redevelopment not only reconstructs infrastructure, but also safeguards and promotes cultural identity, social cohesion, and resilience among the residents.

Additionally, the survey highlights the importance of incorporating socio-economic factors into urban design in order to improve the overall quality of life and provide fair access to resources and opportunities. Urban planning is especially vital in developing civilizations such as Benghazi, where it plays a significant role in the process of healing and reconstructing the community fabric.

The findings from the Benghazi study, as well as comparative assessments at both global and regional levels, support the adoption of a comprehensive strategy to urban development. This approach should include not just the physical rebuilding but also the advancement of social aspects, public health, and community well-being. The involvement of local communities in the planning process is necessary to ensure that redevelopment programs are aligned with the unique requirements, interests, and aspirations of the intended beneficiaries.

Given these findings, it is recommended that future research prioritize long-term studies to evaluate the lasting effects of culturally sensitive and socio-economically inclusive urban planning in developing Benghazi contexts. This research would offer significant perspectives for politicians, urban planners, and international development agencies involved in sustainable urban reconstruction and development in comparable global settings.

Overall, the investigation into the connection between the physical surroundings and social factors in the Benghazi survey makes a substantial contribution to the discussion on urban sociology and planning. It provides a detailed viewpoint on the intricate relationship between cultural heritage, socioeconomic changes, urban design, and social engagement within the framework of the on-going reconstruction of Benghazi. The lessons of this apply not just to Benghazi and the Arab world, but also to other global settings facing similar issues. This highlights the universal importance of urban development methods that are culturally and socio-economically sensitive.

6.6 SUGGESTION

1. Community Engagement: Foster community engagement by promoting and facilitating active participation in the urban planning process. Active participation of residents is crucial in decision-making processes to guarantee that urban development is in line with their specific requirements and ambitions.

2. Cultural Sensitivity: Prioritize the preservation of cultural identity in urban planning, focusing on cultural sensitivity. Integrate regional architectural styles, traditions, and customs into design aspects to establish a feeling of belonging and cultural coherence.

3. Socio-Economic Factors to be Taken Into Account: When developing urban landscapes, give priority to socio-economic factors. Alleviate discrepancies in the availability of resources and opportunities in order to foster fairness and inclusiveness.

4. Long-Term Impact Assessment: Perform thorough long-term impact assessments to evaluate the efficacy of urban planning projects over an extended period. This will facilitate the identification of areas that require improvement and enhance the process of refining future planning strategies.

5. Comparative Research: Expand the scope of comparative research to encompass additional cities from the Arab globe. Gaining insight into the distinct cultural and socio-economic circumstances of various cities can provide valuable guidance for developing more customized urban planning strategies.

6. Health and Well-Being: Investigate further the correlation between the constructed surroundings and health results in order to enhance understanding of the connection between the two. Advocate for urban design that improves public health and well-being by prioritizing elements such as green areas, ease of access, and safety.

7. Smart Management: Employ intelligent management systems to facilitate urban rebuilding and development. Utilize technological advancements and data-driven methodologies to optimize the allocation of resources and improve the efficiency of urban initiatives.

6.7 IMPLICATION

The thesis examined the physical and social factors of interaction in the development of certain communities. The motivation behind selecting this topic was to investigate the correlation between the physical and social dimensions of community development.

1. The previous findings offer significant suggestions for those interested in researching the correlation between physical and social aspects in the development of neighborhoods. Additionally, this chapter presents a set of policy proposals and suggestions. These proposals are intended to enhance the current urban environment and provide guidance for future development.

2. The study provides evidence that supports research into the correlation between physical and non-physical characteristics to enhance the quality of life within a neighborhood. Additionally, it is necessary to take into account the varying densities and diverse neighborhood patterns.

3. It is necessary to perform a study on the physical and social aspects of interaction for the development of neighborhoods in various locations and portions of Libya.

Researching is crucial for investigating disparities in the correlation between the social and physical dimensions of urban and rural communities.

4. To enhance the overall conditions of both the tangible and intangible aspects of the housing projects in Libya. Professional designers and urban planners should establish organized forums to engage in talks aimed at gaining deeper insights into the housing and neighborhood requirements in Libya. The objective is to enhance living conditions and create tailored housing standards for each location in Libya, thereby contributing to a successful future.

5. The involvement of individuals in the decision-making process is crucial, particularly when it pertains to matters that directly impact their lives. This is particularly crucial when it comes to issues concerning their residences and local areas. Questionnaires are valuable tools for obtaining a comprehensive understanding of individuals' perspectives on projected advancements and their requirements in both tangible and intangible settings. Public meetings can serve as an effective means of gauging the desires and expectations of individuals regarding their residence and community.

6. The results of this study indicate that design, urban planning, and personal relationship design can significantly influence the quality of life. Based on the above findings, professionals and policymakers can acknowledge the following: they possess the capacity to significantly influence others' lives when adequately strategized and formulated. Effective planning and design of urban environments by practitioners and decision-makers can have positive impacts on both current and emerging human interactions. Moreover, the importance of these results is not just in their contribution to discussions on the quality of life, but also in their consequences for sustainable development. These indicators suggest favorable prospects for sustained growth.

7. The evolution of existing neighborhoods can be assessed by examining the presence and accessibility of facilities and services, the integration of multiple land uses, and the quality and quantity of green areas and open spaces. This analysis involves recognizing the strengths and weaknesses of each neighborhood unit by maintaining physical and mental fortitude and treating any weaknesses or susceptibilities.

8. The incorporation and execution of privacy, security, and safety principles derived from the old city into the design of new neighborhoods and the improvement of existing ones, with an emphasis on encouraging walking. This involves merging the benefits of historical elements with contemporary concepts and implementing them in new neighborhoods.
9. Enacting targeted alterations that promote enhanced social engagement in residential regions, such as strategically locating parks and public areas near schools and mosques, where social contact is more likely to occur.
10. Regularly doing research and surveys to identify the difficulties faced by the local community in the neighborhood. • Involving the community in the decision-making process on the housing development in the neighborhood.
11. Further research carried out in various regions of Libya investigates the changing lifestyles and the progress and development noticed in residential communities. Take into account the interactions between people, the accepted behaviors and beliefs of a certain society, and the customary ways of doing things while creating and constructing residential spaces. The objective is to incorporate Libyan architects and planners into all projects to promote the execution of concepts that facilitate the advancement and resolution of existing challenges. Local planners have expertise in the norms, traditions, and prerequisites of Libyan households.
12. Promote a comprehensive approach to urban development that includes both physical reconstruction and social aspects. Ensure that urban planning initiatives give utmost importance to the well-being and quality of life of residents.
13. Acknowledge the significance of psychosocial support in adapting to changing urban environments.
14. Enhance community resilience by bolstering social cohesion and fostering cultural pride. Encourage endeavors and programs that foster community cohesion and commemorate the cultural legacy of residents.
15. Urban Density: Examine the impact of urban density on the development of lively communities. Create urban environments that foster social engagement while also ensuring a harmonious blend of personal space and convenience.

16. Continue performing longitudinal analyses to examine the effects of urban design on outcomes in dynamic contexts. Supervise the advancement of urban projects and modify methods in response to changing requirements and difficulties.

17. Global Significance: Acknowledge the worldwide importance of urban development plans that are sensitive to cultural and socio-economic factors. Exchange valuable knowledge and exemplary methods with other international contexts confronting comparable urban obstacles.

At a Local Scale, we have Offered Suggestions for the Old City Neighborhood.

Rehabilitation is necessary for Benghazi old city to revitalize city, chronicle history, and maintain Cultural legacy and contribution to the solutions of various social and economic problems of these cities were adopted. City rehabilitation for state housing and development policy, as well as cultural heritage protection. For the state. The analysis and findings show that re-qualification of the Benghazi ancient city is critical to preserve the city's identity. Building rehabilitation aims to restore their shape and construction while also eliminating all of the risks they bring. To collapse and prepare for the restoration of her former employment, to gain a new job, and to obtain some of the elements required for her performance. The foundations of rehabilitation must focus, among other things, on social and economic issues, and political rights reviewing the historical and developmental elements that contribute to elimination of poverty; It attempts to preserve history and heritage for future generations.

It is imperative to restore and upkeep the dilapidated and antiquated structures. Demolishing structures to create parking places is unacceptable since it would compromise the historical essence of the city. Moreover, the legislation explicitly forbids property owners from removing historical edifices or erecting modern buildings in the surrounding area. In order to mitigate such behaviors, it is imperative that we protect the confidentiality and cultural legacy of the region.

Address the infrastructural deficiencies of the Old City by rectifying issues with roads, sewage, water supply, waste management, and electricity, which are generating significant hardships for the city's residents. In addition, we refurbished the passageways of the ancient city and expanded the electricity infrastructure to cover all of them.

We have improved the public transportation system to ensure that residents have convenient access to a wide variety of services. Our objective is to convert the Old City into a cultural hub for tourists, while safeguarding its distinctiveness and guaranteeing that the renovation of its structures respects the privacy of the city's inhabitants. The Old City is suffering from ruin and neglect due to the presence of expatriate laborers and people from many ethnic origins. This problem occurs due to the owners' shift to contemporary dwellings.

The Recommendation was Proposed at the Local Level, Specifically in the Alkeesh Area.

Enhance the calibre of the green spaces, open areas, and children's playgrounds by implementing garden furniture and playground equipment, while also ensuring their regular upkeep.

- Highlight the close proximity of green spaces and gardens to educational institutions and mosques; this close proximity promotes and improves social contact among inhabitants, while also cultivating a strong sense of belonging.

The Recommendation was Proposed at the Local Level, Namely Within the Assalam Area.

In order to improve access to various services, it is crucial to prioritize the enhancement of pedestrian walkways and roadways in the vicinity. In addition, it is imperative that we make efforts to enhance the accessibility of public transit in order to ensure convenient and uninterrupted travel experiences inside the city. Enhancing accessibility enhances satisfaction levels and enhances the general quality of life in the local community.

When considering home design and planning, it is recommended that the population of a community does not surpass 4,000. This phenomenon can be attributed to the fact that a community of this magnitude promotes social interaction, unity, and a feeling of belonging, while bigger residential neighborhoods impede this progression.

The Recommendation was Proposed at the Local Level, specifically in the Garyounis Neighborhood.

Regular maintenance and care are necessary for green and open spaces, as well as playgrounds for children. Efficient transit throughout the city is facilitated by strategically

placing public transportation terminals in residential areas, which necessitates attentiveness. The purpose of these proposals and recommendations is to provide guidance for future urban planning in many situations in Benghazi. The focus is on the significance of cultural sensitivity, community involvement, and a comprehensive approach to development that takes into account both physical and social factors.

6.8 EXECUTION PLAN

1. Community Engagement

Objective:

Increase community participation in urban planning processes.

Actions:

1. **Establish Community Forums:** Create platforms where residents can voice their opinions and share ideas.
2. **Conduct Surveys and Polls:** regularly gather feedback on urban development initiatives.
3. **Implement Participatory Planning Workshops:** Organize sessions where community members can directly contribute to planning decisions.

Timeline:

Establish forums and surveys within the first 6 months.

Start workshops in the following 6 months.

Key Performance Indicators (KPIs):

A number of community forums and workshops were held.

The level of community participation in these events is significant.

Community members' feedback satisfaction scores.

2. Cultural Sensitivity in Urban Planning

Objective:

Preserve and integrate cultural identity into urban development.

Actions:

1. **Cultural Assessment Studies:** Conduct studies to understand the cultural significance of areas.
2. **Incorporate Local Design Elements:** Make sure that architectural plans reflect local traditions and heritage.
3. **Collaborate with Cultural Experts:** Engage historians and cultural experts in the planning process.

Timeline:

Complete the cultural assessment within the first year.

Integrate the findings into ongoing and future projects.

KPIs:

the conclusion of social and cultural assessment studies.

There are numerous projects that incorporate elements of local culture.

3. Socio-Economic Considerations**Objective:**

Address socio-economic disparities in urban design.

Actions:

1. **Socio-Economic Impact Analysis:** Examine the potential impact of urban projects on various socioeconomic groups.
2. **Inclusive Development Policies:** Develop policies that ensure equitable resource distribution and access.
3. **Affordable Housing Initiatives:** In urban projects, prioritize affordable housing.

Timeline:

Conduct impact analysis in the first year.

Implement policies and projects over the next 2–3 years.

KPIs:

Completion of socio-economic impact analyses.

Number of inclusive policies implemented.

Affordable housing units were created.

4. Health and Well-Being

Objective:

Enhance public health and well-being through urban design.

Actions:

- 1. Green Space Development:** Increase the number and quality of public green spaces.
- 2. Walkability and Accessibility:** Improve pedestrian pathways and accessibility, as well as public transport.
- 3. Availability of Facilities.**
- 4. Mixed use.**

5. Health Impact Assessments: Regularly assess the health effects of urban projects.

Timeline:

Implement green space projects and walkability improvements within 2 years.

Conduct ongoing health assessments.

KPIs:

Increase in green space areas.

Improvements in walkability and accessibility scores.

Distribution of the facility's location.

Positive outcomes in health impact assessments.

5. Smart Management for Urban Reconstruction

Objective:

Utilize smart technologies for efficient urban reconstruction.

Actions:

1. **Technology Integration:** Use smart technologies to manage projects and allocate resources.
2. **Data-Driven Decision Making:** Use data analytics to inform planning decisions.
3. **Partnerships with Tech Companies:** Collaborate with technology firms for innovative urban solutions.

TimeLine: Begin technology integration in the first year.

Establish partnerships within 18 months.

KPIs:

Technologies implemented in urban projects.

Efficiency improvements in project execution.

Monitoring and Evaluation:

Regular Reviews: To assess progress against KPIs, conduct bi-annual reviews.

Adjustments and Improvements: Make necessary adjustments based on review outcomes.

Stakeholder Feedback: Regularly gather feedback from all stakeholders, including community members, for continuous improvement.

Reporting:

Transparency: Regularly publish progress reports for public viewing.

Stakeholder Meetings: Hold annual meetings with stakeholders to discuss progress and future plans. This execution plan provides a structured approach for implementing the urban planning recommendations, ensuring that each action is measurable, achievable, and aligned with the overall objectives for the development of Benghazi

Table 6. 1 A structured approach for implementing the urban planning recommendations

Objective	Actions	Timeline	Key Performance Indicators (KPIs)
Community Engagement	1. Establish Community Forums: Create platforms for resident participation.	Within the first 6 months	- Number of community forums and workshops held.
Increase community participation in urban planning processes.	2. Conduct Surveys and Polls: Gather feedback on urban development initiatives.	Start workshops in the following 6 months.	- Level of community participation in events.
	3. Implement Participatory Planning Workshops: Organize workshops for community involvement.		- Feedback satisfaction scores from residents.
Cultural Sensitivity in Urban Planning	1. Cultural Assessment Studies: Understand the cultural significance of areas.	Complete cultural assessment within the first year.	- Completion of cultural assessment studies.
Preserve and integrate cultural identity in urban development.	2. Incorporate Local Design Elements: Reflect local traditions and heritage in architectural plans.	Incorporate findings in ongoing and future projects.	- Number of projects incorporating local cultural elements.
	3. Collaborate with Cultural Experts: Involve historians and cultural experts in planning.		
Socio-Economic Considerations	1. Socio-Economic Impact Analysis: Analyze the impact on socio-economic groups.	Conduct impact analysis in the first year.	- Completion of socio-economic impact analyses.
Address socio-economic disparities in urban design.	2. Inclusive Development Policies: Develop policies for	Implement policies and projects over 2-3 years.	- Number of inclusive policies implemented.

	equitable resource distribution.		
	3. Affordable Housing Initiatives: Prioritize affordable housing in projects.		- Affordable housing units created.
Health and Well-being	1. Green Space Development: Increase public green spaces.	Implement green space projects within 2 years.	- Increase in green space areas.
Enhance social aspect and well-being through urban design.	2. Walkability and Accessibility: Improve pedestrian pathways and accessibility.	Improvements in walkability scores.	- Positive outcomes in social aspect and well-being- impact assessments.
	3.Availability of facilities 4. Mixed use 5. Health Impact Assessments: Regularly evaluate health impacts of projects.	Improvement in availability facilities scores . Conduct ongoing health assessments.	
Smart Management for Urban Reconstruction	1. Technology Integration: Adopt smart technologies for project management and resource allocation.	Begin technology integration in the first year.	- Technologies implemented in urban projects.
Utilize smart technologies for efficient urban reconstruction.	2. Data-Driven Decision Making: Use data analytics to inform planning decisions.	Establish partnerships within 18 months.	- Efficiency improvements in project execution.
	3. Partnerships with Tech Companies: Collaborate with technology firms for innovative urban solutions.		

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APPENDIX A

Name of neighborhood-----Type of house

1. Courtyaed house ☐ 2.(housh)Semi courtyared ☐ 3. Flat ☐ 4. Villa ☐

1:QUESTIONNAIRE TEMPLATE (first settlements

PART (A) : SOCIO-DEMOGRAPHICS ANALYSIS :

1. THE HEAD OF HOUSEHOLD		AGE
FATHER		
MOTHER		
CHILD		
GRANDFATHER		
GRANDMOTHER		
BROTHER		
SISTER		
OTHER		

2. NUMBER OF PEOPLE IN FAMILY	NUMBER
FATHER	
MOTHER	
CHILD	
GRANDFATHER	
GRANDMOTHER	
BROTHER	
SISTER	
OTHER	
TOTAL	

3. EDUCATIONAL LEVEL	ANALPHABET	PRIMARY SCHOOL	SECONDARY SCHOOL	HIGH SCHOOL	VOCATIONAL SCHOOL	UNIVERSITY	OTHER
FATHER							
MOTHER							
CHILD							
GRANDFATHER							
GRANDMOTHER							
BROTHER							
SISTER							
OTHER							
TOTAL							

4. Number of children	Gender		Age	Education level	Occupation	THE MONTHLY INCOME
	Male	Femal				
TOTAL						

5. WHO WAS THE FIRST TO COME TO Bingazi?			
FATHER		THE HEAD OF THE FAMILY	ALL OF THE FAMILY
MOTHER			
CHILD			
GRANDFATHER			
GRANDMOTHER			
BROTHER			
SISTER			
OTHER			
THE ARRIVAL DATE			

6. From where do you come to Benghazi? If you are non-Libyan from where you come?

7. How long have you been living there?
.....

8. Nature of the ownership of the unit in which you live? property..... rent.....

9. What are your reasons for migrating to Benghazi?

10. After you come to Benghazi, which neighbourhood (Mehalleh) do you live in?
.....

11. How many times did you change neighbourhood after coming to Benghazi?
.....

12. Number of rooms in the unit? (how many)total
 courtyard living room bed room
 bath room wc. kitchen
 guest room terrace garden
 garage others

13. What is the frequency of use of residential rooms throughout the day?

 courtyard living room bed room
 bath room wc. kitchen
 guest room terrace garden
 garage others

13.1. **Do** you think that the courtyard used in traditional housing was useful for Libyan families?

☐ Yes ☐ No ☐ I don't know

If yes, it provided;

14. Do you like your current house? Yes No.....

14.1. Do you like your neighbourhood? Yes No.....

15. What do you like about your house?
.....

19 NUMBER OF EMPLOYED PERSONS IN THE FAMILY	THE NAME OF THE JOB	FORMAL REGULAR			INFORMAL IRREGULAR			THE MONTHLY INCOME			
		PRIVATE SECTOR	PUBLIC SECTOR	PERSONAL	DAILY	WEEKLY	SEASONAL	500 to 1000 LYD and less	1000 to 1500 LYD	1500 to 2000 LYD	More Than 2000 LYD
FATHER											
MOTHER											
CHILD											
GRANDFATHER											
GRANDMOTHER											
BROTHER											
SISTER											
OTHER											
TOTAL											

15.1. What do you like in your neighbourhood?

16. What do you dislike about your house? And dislike in your neighbourhood?

16.1 Do you have altered your house if yes what type of alteration had done?

16.2. How would you rate the ventilation and lighting in your house? Good satisfactory insufficient.

17. What was your job before you immigrated to Benghazi? and where do you work?

.....

18. After you come to Benghazi, where did you work first?.....

20. How many jobs did you change after you come to Benghazi?.....

21. What's your current job?

22. Where do you work in Benghazi?

23. How do you travel to work?

by walk by bus by own car others

PART (B): SOCIO INTERACTION ANALYSIS :

24. On working days, how much of time (in hours) do you spend in socially interacting with your fellow residents in your community neighborhood?

a. More than 3 hrs. ☐ b. 2-3 hrs. ☐ c. 1-2 hrs. ☐ d. 0-1 hr. ☐ e. None. ☐

if not why?

25. On weekends how much time (in hours) do you spend in socially interacting with your fellow residents in your community neighborhood?

a. More than 3 hrs. ☐ b. 2-3 hrs. ☐ c. 1-2 hrs. ☐ d. 0-1 hr. ☐ e. None. ☐

If not why?

26. How 'frequently' do you and your family 'meet and interact' with your neighbor(s)?

a. very frequently ☐ b. frequently ☐ c. Occasionally ☐

- d. Rarely ☐ e. Never ☐ if rarely or never why?

27. In which environments do you and your family 'meet and interact' with your neighbor(s)?

- a. in your home ☐ b. at your neighbor's house ☐ c. in mosque or shop ☐ d. ☐ on the street where your house is located e. ☐ others

28. What is the level of 'social interaction' in your community neighborhood?

- a. Excellent ☐ b. Very Good ☐ c. Good ☐ dissatisfactory ☐ e. Poor ☐ if dissatisfactory or poor why?

30. How many neighbors do you know inside this neighborhood? _____ (Please indicate a number.

31. What do neighbors mean to your mutual help inside this neighborhood?

- a. very important ☐ b. important ☐ c. natural ☐ d. not important ☐ e. very not important. if not important why?

32. Have you taken part in any social group/club inside your neighborhood

- a. very often ☐ b. often ☐ c. natural ☐ d. Rarely ☐ e. very rarely ☐.if rarely or very rarely why?

PART (C): SENSE OF BELONGING ANALYSIS :

33. Are you 'satisfied' with the overall 'sense of community belonging' within your community neighborhood?

- a. Very satisfied ☐ b. Satisfied ☐ c. Neutral ☐ d. Dissatisfied ☐
e. Very dissatisfied ☐ If dissatisfied why?

34. What is the 'sense of belonging' in this neighborhood?

- a. very strong ☐ b. Strong ☐ c. neutral/hard to say ☐ d. weak ☐ e. Very weak ☐. if weak or very weak why?

PART (D): SOCIAL PARTICIPATION ANALYSIS :

35. How much do you participate in your resident committee affairs?

- a. very frequent ☐ b. sometimes ☐ c. neutral/hard to say ☐ d. little ☐ e. not at all ☐. If little or not at all why?

36. How much do you participate in your neighborhood property management?

- a. very frequent ☐ b. sometimes ☐ c. neutral/hard to say ☐ d. little ☐ e. not at all ☐. If little or not at all why?

37. What do you think about your resident self-governance in your neighborhood?

- a. very good ☐ b. good ☐ c. neutral/hard to say ☐ d. weak ☐ e. very weak ☐. If weak or very weak why?

38. How good is the cooperation of your neighborhood with other nearby neighborhoods?

a. very good ☐ b. good ☐ c. neutral ☐ d. weak ☐ e. very weak ☐. If weak or very weak why?

PART (E): SAFETY AND SECURITY ANALYSIS :

39. How safe you feel inside your cluster?

a. very safe ☐ b. Safe ☐ c. neutral ☐ d. not safe ☐ e. Not safe at all. If not safe or not safe at all why?

40. How safe and secure you feel inside your neighborhood?

a. very safe and secure ☐ b. safe and secure ☐ c. neutral ☐ d. weak safe and secure ☐ e. not safe and secure at all. If not safe and secure why?

41. How safe and secure do you feel on the street where your house is located?

a. very safe and secure ☐ b. safe and secure ☐ c. neutral ☐ d. weak safe and secure ☐ e. not safe and secure at all ☐ (if answer weak and not safe and secure why?

PART (F): SATISFACTION WITH NEIGHBORHOOD ANALYSIS :

42. How satisfied are you with these contents which are related with your neighborhood? Please evaluate by ticking in the following table.

Neighborhood satisfaction	Very satisfied	satisfied	natural	un satisfied	Very un-satisfied
.42.1 Secondary school					
42.2. Primary school					
42.3. Kindergarten					
.42.4 Mosque					
.42.5 Market					
.42.6 Clinic					
42.7. Parking					
42.8. Childeren Playground					
42.9. Shopping					
42.10. Open space (garden)					
42.11. Youth club					
42.12. Public transportation					
42.13. pharmacy					

PART (G): SATISFACTION WITH HOUSING ANALYSIS :

43. How satisfied are you with these contents which are related with your house? Please evaluate by ticking in the following table.

Satisfaction with housing	Very satisfied	satisfied	natural	unsatisfied	Very un-satisfied
43.1. Alteration					
.43.2. No. of rooms					
43.3. Suitable the house for the family's needs now and, in the future,					

43.4. Size of rooms					
43.5. Physical condition					
43.6. privacy					
43.7. equities factor					
43.8. House design					
43.9. Size of the unit					

PART (F): HUMAN NEEDS ANALYSIS :

44.. How do you feel about the privacy your cluster?

a. very good ☐ b. good ☐ c. neutral/hard to say ☐ d. weak ☐ e. very weak ☐. If weak and very weak why?

45. How Do you feel about the privacy in your neighborhood?

a. very good ☐ b. good ☐ c. neutral/hard to say ☐ d. weak ☐ e. very weak ☐. If weak and very weak why?

46. How comfortable is your neighborhood for living for you and your family?

a. very comfortable ☐ b. comfortable ☐ c. neutral ☐ d. less comfortable ☐ e. not comfortable at all ☐. If less comfortable or not comfortable why?

47. Describe your affection with places?

a. very affection ☐ b. affection ☐ c. neutral/hard to say ☐ d. less affection ☐ e. not affection at all ☐. If less or not affection why?

48. Describe your familiarity with places?

a. very familiarity ☐ b. familiarity ☐ c. neutral/hard to say ☐ d. less familiarity ☐ e. not familiarity at all ☐. If less or not familiarity why?

49. Do you feel the neighborhood is appropriate?

a. very much ☐ b. much ☐ c. neutral/hard to say ☐ d. weak ☐ e. not at all ☐. If weak or not at all why?

BUILT ENVIRONMENT ANALYSIS

PART (I) Mixed-use

50. How much exists other use of residential use in residential buildings?

☐ Very high ☐ High ☐ natural ☐ Poor ☐ not at all (non-existent)

51. How much is (commercial) on the ground floor of the residential?

☐ Very high ☐ High ☐ natural ☐ Poor ☐ not at all (non-existent)

PART (H) (Availability of facilities).

52. The availability of the facilities inside the neighborhood according to a catchment area.

Facilities availability (Catchment area)	Very near	near	natural	far	Very far
52. 1. Mosque					
52.2. Kindergarten					
52.3. Primary school					
52.4. preparatory school					
52.5 Market					
52.6 Clinic					
52.7. Shopping					
52.8. ChilderenPlayground					
52.9. Pharmacy					
52.10. Parking					

PART (K) ACCESSIBILITY

53. How do describe you your access to facilities in your neighborhood According to street and pedestrian conditions and transportation? Please evaluate by ticking in the following table.

53. Access to facilities	Very access	access	natural	Weak access	Very weak access
53.1. Access to mosque					
53.2. Access to kindergarten					
53.3. Access to primary school					
53.4. Access to preparatory school					
53.5. Access to shops and. market					
53.6. Access to garden or playground					
53.7. Access to clinic					

54. Feeling equity between residents of the neighborhood (obtain the same level of facilities and services and quality of house).

a. very good b. good c. neutral/hard to say d. weak e. very weak

PART (K) Open space and garden

55. How do you evaluate the open space and garden in your neighborhood?

☐ a. ☐ very good b. ☐ good c. ☐ neutral/hard to say d. ☐ weak e. ☐ very weak

56. how do evaluate the playground and open space in your neighborhood from the equipment (Equipping gardens and open areas (seating places, children's games).

☐ a. ☐ very good b. ☐ good c. ☐ neutral/hard to say d. ☐ weak e. ☐ very weak

Shape Of Future Development

Q57.1- What is the unique character of the ideal home in your view?

Q57.2- What is the ideal home in your view?

☐ House with courtyard (old style) ☐ flat in high rise building

☐ Villa (modern style) ☐ tradition with modern modification

☐ Housh

Q57.3- The ideal neighborhood design in your view, which one of the following styles would you choose?

☐ Traditional ☐ Modern

☐ Combination of both

Q57.4- Do you think that a better architecture and planning pattern for our society and its built environment can be achieved by;

☐ Native architects and planners ☐ Foreign architects and planners

☐ A combination of native and foreign architects and planners

☐ Other

Q57.5- Regarding better design and development of our city, do you agree that we should

☐ Neglect all traditional concepts

☐ Take the traditional for granted

☐ Take modern for granted

☐ Take some useful ideas from both past and present

☐ Other

Q57.6- Do you think that better architectural and planning forms can be achieved for your city by;

☐ people to become involved in designing and planning communities

☐ Employing architects and planners in the municipality

☐ Allowing individual freedom of expression with no checks

☐ Other

Q57.7- What would you like to see happen in your city in the future?

☐ Building regulations observed

☐ Respect shown for public taste, social habits and customs

☐ Co-operation between all members of society

☐ The developments of expensive and complicated architecture forms

☐ The developments economic and simple architectural forms

☐ Other

Q57.8- In order to maintain a unified planning identity for Benghazi city, do you consider that we should consider;

☐ Follow the master plan of the city

☐ Not follow the master plan of the city

☐ Other

APPENDIX B

Validity and Reliability

Social Interaction Scale

Table Component Matrix of Social Interaction Scale and items

Component Matrix ^a	
	One Component
Q25	.803
Q24	.751
Q26	.743
Q30	.710
Q32	.705
Q28	.668
Q27	.531
Q31	.515
Total Explained Variance (%)	46.947
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.835
Cronbach's Alpha	.825
Bartlett's Test of Sphericity: $X^2 (28) = 1041.366, p < .001$	
Extraction Method: Principal Component Analysis.	

A principal components factor analysis was conducted on the 8 items. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .835. The Bartlett test of Sphericity verified the presence of correlations among the variables, it was significant: $\chi^2 (28) = 1041.366, p < .001$. The one factor Social Interaction scale explained 46.947% of the variance. Table (....) shows the factor loadings for each item.

Reliability Analysis for Social Interaction showed that scale reliability, Cronbach's $\alpha = .825$. Results indicate that the scale can be used in measurement of the indicated variable.

Sense of Belonging Scale

Table Component Matrix of Sense of Belonging Scale and items

Component Matrix ^a	
	One Component
Q33	.939
Q34	.939
Total Explained Variance (%)	88.215

<i>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</i>	.500
<i>Cronbach's Alpha</i>	.866
<i>Bartlett's Test of Sphericity: $X^2 (1) = 305.779, p < .001$</i>	
Extraction Method: Principal Component Analysis.	

A principal components factor analysis was conducted on the 2 items. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .500. The Bartlett test of Sphericity verified the presence of correlations among the variables, it was significant: $\chi^2 (1) = 305.779, p < .001$. The one factor Sense of Belonging scale explained 88.215% of the variance. Table (...) shows the factor loadings for each item.

Reliability Analysis for Sense of Belonging showed that scale reliability, Cronbach's $\alpha = .866$. Results indicate that the scale can be used in measurement of the indicated variable.

Social Participation Scale

Table Component Matrix of Social Participation Scale and items

Component Matrix ^a	
	One Component
Q36	.837
Q35	.798
Q37	.793
Q38	.734
<i>Total Explained Variance (%)</i>	62.649
<i>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</i>	.714
<i>Cronbach's Alpha</i>	.800
<i>Bartlett's Test of Sphericity: $X^2 (6) = 468.333, p < .001$</i>	
Extraction Method: Principal Component Analysis.	

A principal components factor analysis was conducted on the 4 items. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .714. The Bartlett test of Sphericity verified the presence of correlations among the variables, it was significant: $\chi^2 (6) = 468.333, p < .001$. The one factor Social Participation scale explained 62.649 % of the variance. Table (...) shows the factor loadings for each item.

Reliability Analysis for Social Participation showed that scale reliability, Cronbach's $\alpha = .800$. Results indicate that the scale can be used in measurement of the indicated variable.

Safety and Security Scale

Table Component Matrix of Safety and Security Scale and items

Component Matrix ^a	
	One Component
Q40	.865
Q41	.820
Q39	.701
Total Explained Variance (%)	63.788
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.625
Cronbach's Alpha	.694
Bartlett's Test of Sphericity: $X^2(3) = 228.199, p < .001$	
Extraction Method: Principal Component Analysis.	

A principal components factor analysis was conducted on the 3 items. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .625. The Bartlett test of Sphericity verified the presence of correlations among the variables, it was significant: $\chi^2(3) = 228.199, p < .001$. The one-factor Safety and Security scale explained 63.788 % of the variance. Table (....) shows the factor loadings for each item.

Reliability Analysis for Safety and Security showed that scale reliability, Cronbach's $\alpha = .694$, Inter-Item Correlations mean = .442. Results indicate that the scale can be used in measurement of the indicated variable.

Satisfaction with neighborhood Scale

Table Component Matrix of Satisfaction with neighborhood Scale and items

Component Matrix ^a	
	One Component
42.2. Primary school	.853
.42.1Secondary school	.833
.42.4Mosque	.827
.42.6 Clinic	.824
42.10. Open space (garden)	.783
.42.5 Market	.782
42.12. Public transportation	.753
42.11. Youth club	.749
42.13. pharmacy	.748
42.7. Parking	.733
42.3. Kindergarten	.733
42.8. ChilderenPlayground	.714
42.9. Shopping	.617
Total Explained Variance (%)	58.945
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.906
Cronbach's Alpha	.932

Bartlett's Test of Sphericity: $X^2 (78) = 4480.159, p < .001$
Extraction Method: Principal Component Analysis.

A principal components factor analysis was conducted on the 13 items. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .906. The Bartlett test of Sphericity verified the presence of correlations among the variables, it was significant: $\chi^2 (78) = 4480.159, p < .001$. The one factor Satisfaction with neighborhood scale explained 58.945 % of the variance. Table (...) shows the factor loadings for each item. Reliability Analysis for Satisfaction with neighborhood showed that scale reliability, Cronbach's $\alpha = .932$. Results indicate that the scale can be used in measurement of the indicated variable.

Satisfaction with housing Scale

Table Component Matrix of Satisfaction with housing Scale and items

Component Matrix ^a	
	One Component
43.4. Size of rooms	.880
43.5. Physical condition	.877
.43.2. No. of rooms	.874
43.9. Size of the unit	.857
43.3. Suitable the house for the family needs now and in the future	.854
43.6. privacy	.822
43.1. Alteration	.820
43.8. House design	.808
43.7. equitness factor	.438
Total Explained Variance (%)	66.283
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.880
Cronbach's Alpha	.931
Bartlett's Test of Sphericity: $X^2 (36) = 2814.008, p < .001$	
Extraction Method: Principal Component Analysis.	

A principal components factor analysis was conducted on the 9 items. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .880. The Bartlett test of Sphericity verified the presence of correlations among the variables, it was significant: $\chi^2 (36) = 2814.008, p < .001$. The one factor Satisfaction with housing scale explained 66.283 % of the variance. Table (...) shows the factor loadings for each item.

Reliability Analysis for Satisfaction with housing showed that scale reliability, Cronbach's $\alpha = .931$. Results indicate that the scale can be used in the measurement of the indicated variable.

Human needs Scale

Table Component Matrix of Human needs Scale and items

Component Matrix ^a	
	One Component
Q45	.822
Q46	.801
Q47	.788
Q48	.760
Q44	.715
Q49	.697
Total Explained Variance (%)	58.549
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.836
Cronbach's Alpha	.838
Bartlett's Test of Sphericity: $X^2 (15) = 909.642, p < .001$	
Extraction Method: Principal Component Analysis.	

A principal components factor analysis was conducted on the 6 items. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .836. The Bartlett test of Sphericity verified the presence of correlations among the variables, it was significant: $\chi^2 (15) = 909.642, p < .001$. The one factor Human needs scale explained 58.549 % of the variance. Table (....) shows the factor loadings for each item.

Reliability Analysis for Human needs showed that scale reliability, Cronbach's $\alpha = .838$. Results indicate that the scale can be used in measurement of the indicated variable.

Mixed use Scale

Table Component Matrix of Mixed-use Scale and items

Component Matrix ^a	
	One Component
Q51Mixedfloor	.868
Q50MIXBUILDING	.868
Total Explained Variance (%)	75.345
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.500
Cronbach's Alpha	.672
Bartlett's Test of Sphericity: $X^2 (1) = 103.505, p < .001$	
Extraction Method: Principal Component Analysis.	

A principal components factor analysis was conducted on the 2 items. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .500. The Bartlett test of Sphericity verified the presence of correlations among the variables, it was

significant: $\chi^2 (1) = 103.505$, $p < .001$. The one factor Mixed Use scale explained 75.345 % of the variance. Table (...) shows the factor loadings for each item.

Reliability Analysis for Mixed Use showed that scale reliability, Cronbach's $\alpha = .672$. Inter-Item Correlations mean = .507. Results indicate that the scale can be used in measurement of the indicated variable.

Availability of facilities Scale

Table Component Matrix of Availability of facilities Scale and items.

Component Matrix ^a	
	One Component
Q52.PRIMRY	.869
Q52.PROPER	.852
Q52.CLINIC	.850
Q52.SHOPS	.819
Q52.PHRMCY	.787
Q52.KINDER	.748
Q52.PARKING	.714
Q52.PLAYGR	.658
Q52.SHOPPING	.655
Q52.1MOSQE	.583
Total Explained Variance (%)	57.667
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.893
Cronbach's Alpha	.901
Bartlett's Test of Sphericity: $X^2 (45) = 2459.000$, $p < .001$	
Extraction Method: Principal Component Analysis.	

A principal components factor analysis was conducted on the 10 items. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .893. The Bartlett test of Sphericity verified the presence of correlations among the variables, it was significant: $\chi^2 (15) = 2459.000$, $p < .001$. The one factor Availability of facilities scale explained 58.549 % of the variance. Table (...) shows the factor loadings for each item.

Reliability Analysis for Availability of facilities showed that scale reliability, Cronbach's $\alpha = .901$. Results indicate that the scale can be used in measurement of the indicated variable.

Accessibility Scale

Table Component Matrix of Accessibility Scale and items.

Component Matrix ^a	
	One Component
Q53APreS	.928
Q53APS	.894
Q53Aclinc	.891
Q53Ashops	.874
Q53Akindergarten	.859
Q53AMosque	.857
Q53Agarden	.801
Q54	.779
Total Explained Variance (%)	74.254
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.944
Cronbach's Alpha	.950
Bartlett's Test of Sphericity: $X^2 (28) = 2580.973$, $p < .001$	
Extraction Method: Principal Component Analysis.	

A principal components factor analysis was conducted on the 8 items. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .944. The Bartlett test of Sphericity verified the presence of correlations among the variables, it was significant: $\chi^2 (28) = 2580.973$, $p < .001$. The one factor Accessibility scale explained 74.254 % of the variance. Table (....) shows the factor loadings for each item.

Reliability Analysis for Accessibility showed that scale reliability, Cronbach's $\alpha = .950$. Results indicate that the scale can be used in measurement of the indicated variable.

Open space and garden Scale

Table Component Matrix of Open space and garden Scale and items.

Component Matrix ^a	
	One Component
Q55	.790
Q56	.790
Total Explained Variance (%)	62.372
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.500
Cronbach's Alpha	.396
Bartlett's Test of Sphericity: $X^2 (1) = 22.017$, $p < .001$	
Extraction Method: Principal Component Analysis.	

A principal components factor analysis was conducted on the 2 items. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .500. The Bartlett test of Sphericity verified the presence of correlations among the variables, it was significant: $\chi^2 (1) = 22.017$, $p < .001$. The one factor Open space and garden scale explained 62.372 % of the variance. Table (....) shows the factor loadings for each item.

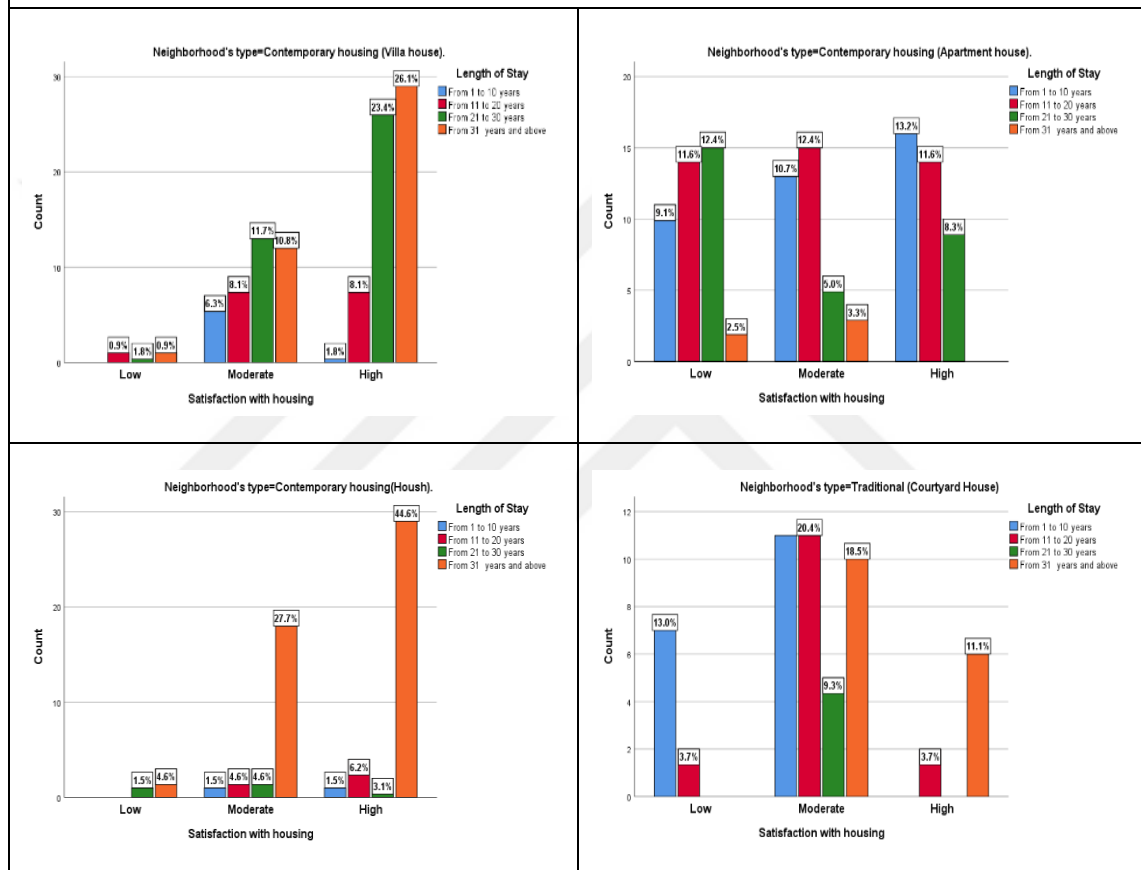
Reliability Analysis for Open space and garden showed that scale reliability, Cronbach's $\alpha = .396$. Inter-Item Correlations mean = .247, $p < .001$. Results indicate that the scale can be used in measurement of the indicated variable.



APPENDIX C

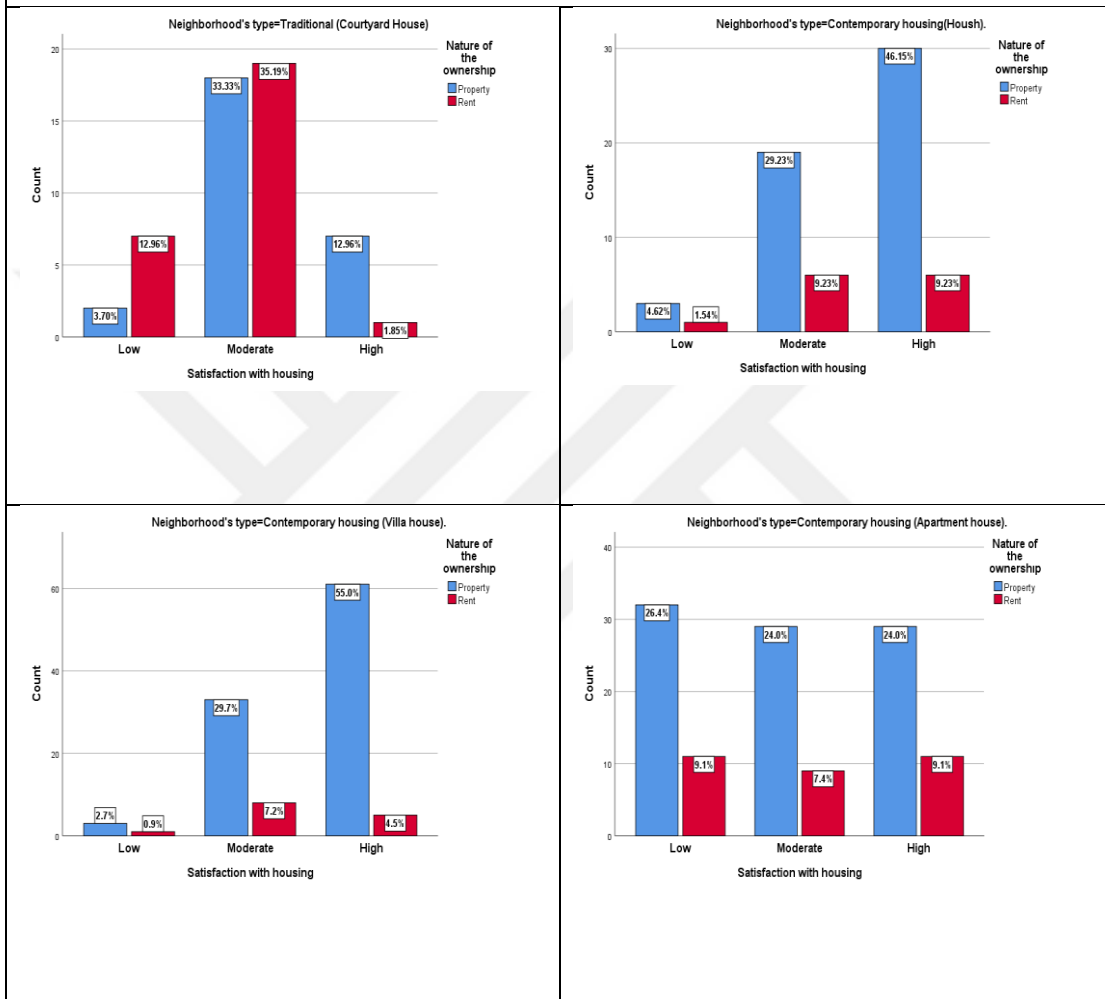
Further analysis cross-tabulation.

Satisfaction with housing----- Length of stay



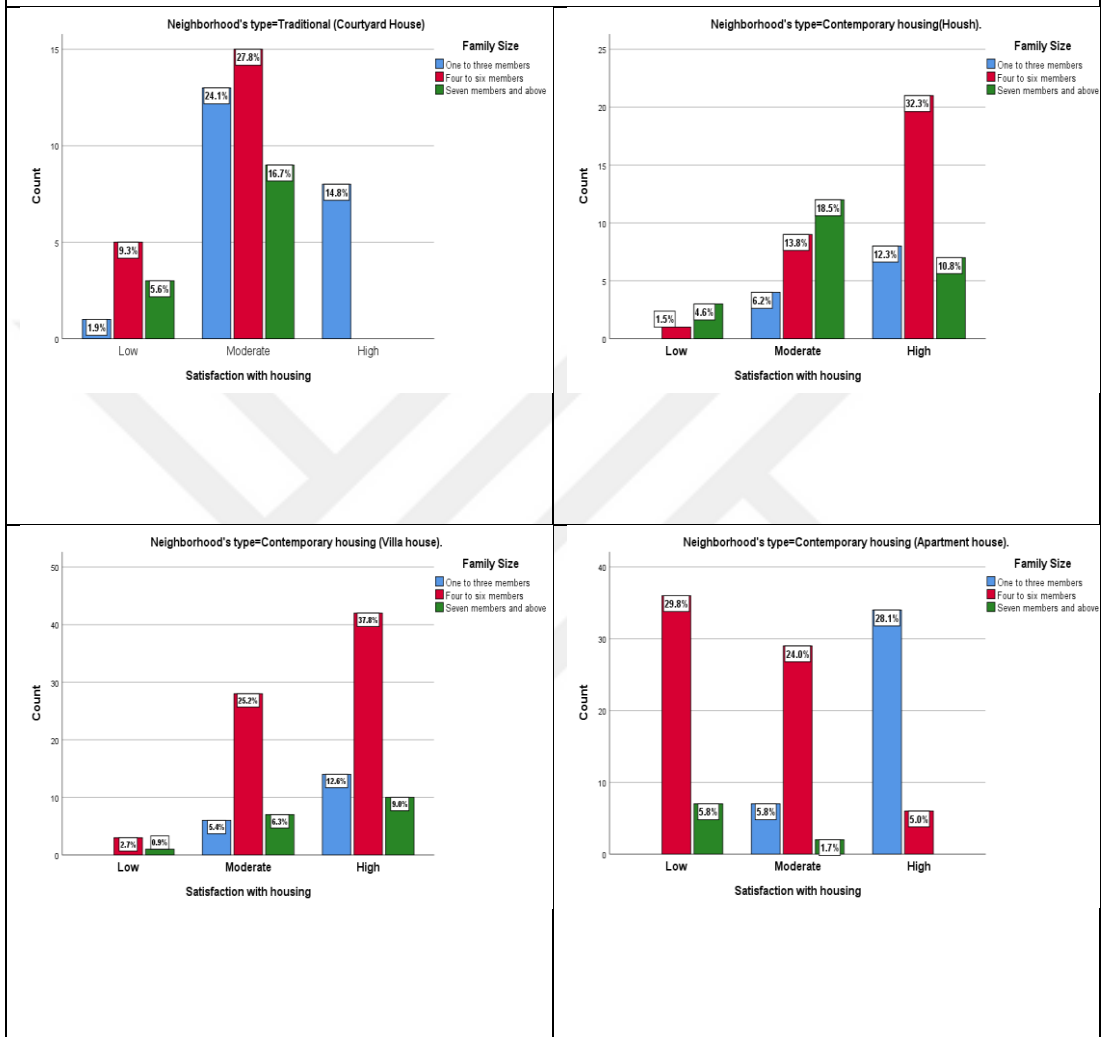
The cross-tabulation result indicated that the highest 18.2% of respondents who were highly satisfied in four neighborhoods had lived in their house for more than 31 years and above. The comparison between neighborhoods found that the highest 44.6% of people who are highly satisfied with housing in the Alkeesh neighborhood stay from 31 and above, while the lowest 0.9 percent of people in the Assalam neighborhood stay from 11 to less than 20 years. The figure shows percentages in four neighborhoods.

Satisfaction with housing----- Nature of the ownership



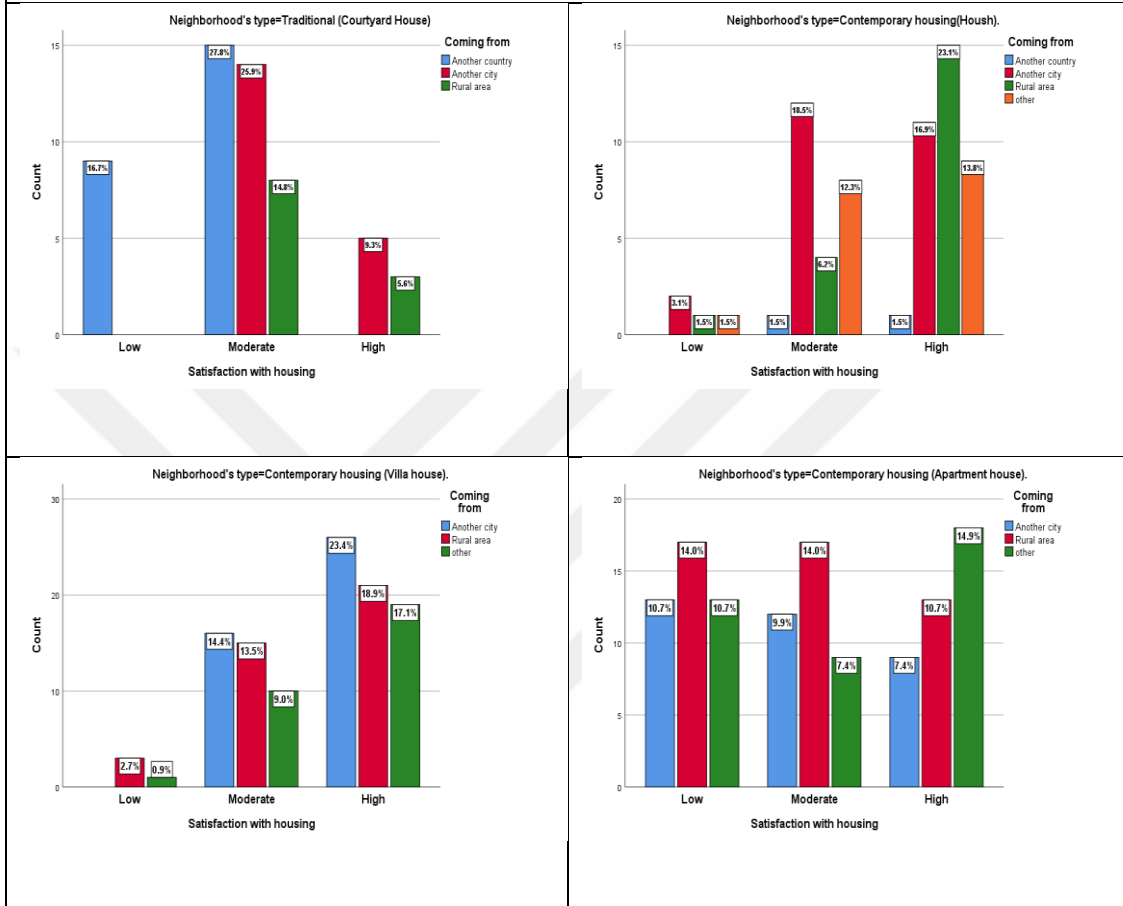
Satisfaction with housing and the character of ownership is demonstrated by the outcome. Property accounts for 36.2% of the cross-tabulation, which indicates a "high" level of satisfaction with accommodation. The satisfaction level with housing is "low," with a rent rate of 6.6%. The findings suggested that individuals who owned property in their residences. Consequently, respondents who owned property were able to modify and adjust their residences to better accommodate their requirements. The figure illustrates the percentages in four communities.

Satisfaction with housing----- family size



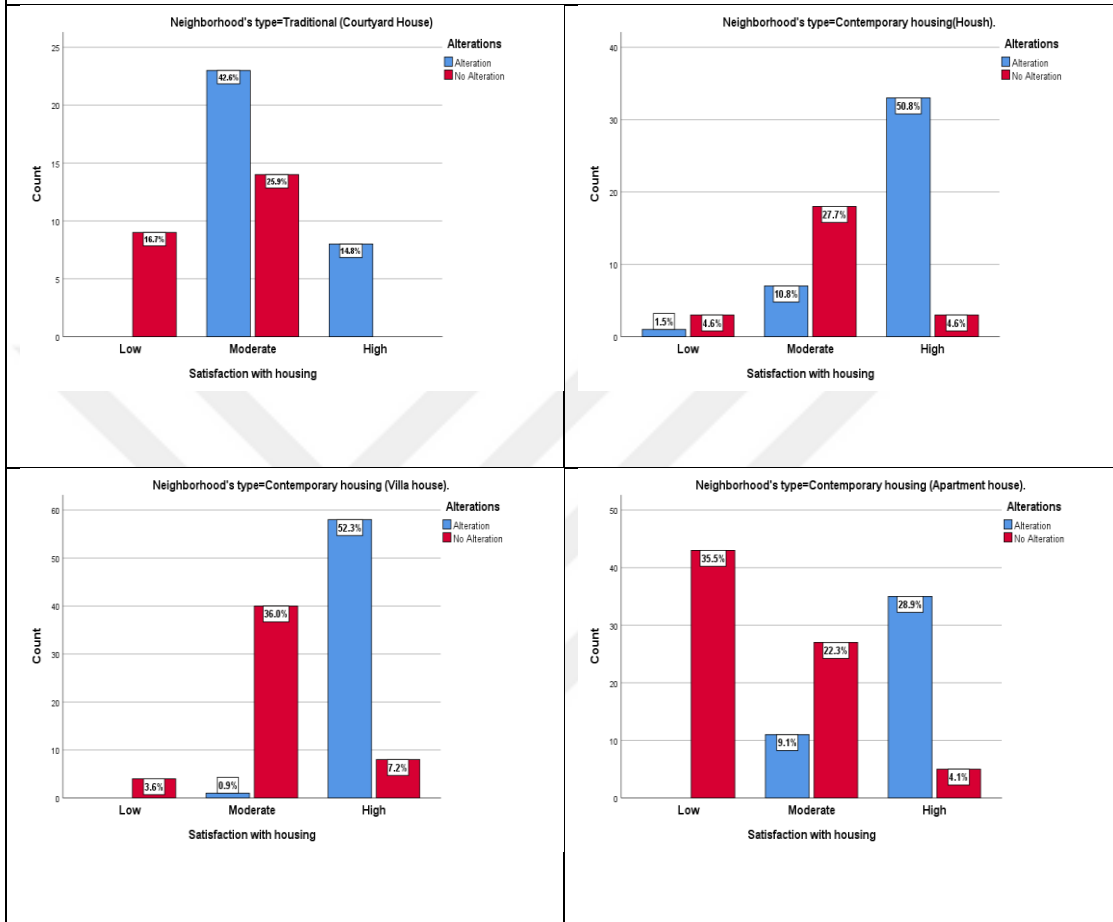
The cross-tabulation of housing satisfaction with family size is illustrated in the result. The findings indicated that respondents with family sizes of 1-3 and 4-6 persons were more satisfied with their residences than those with family sizes of more than seven persons. The figure illustrates the percentages in four communities.

Satisfaction with housing-----Coming from



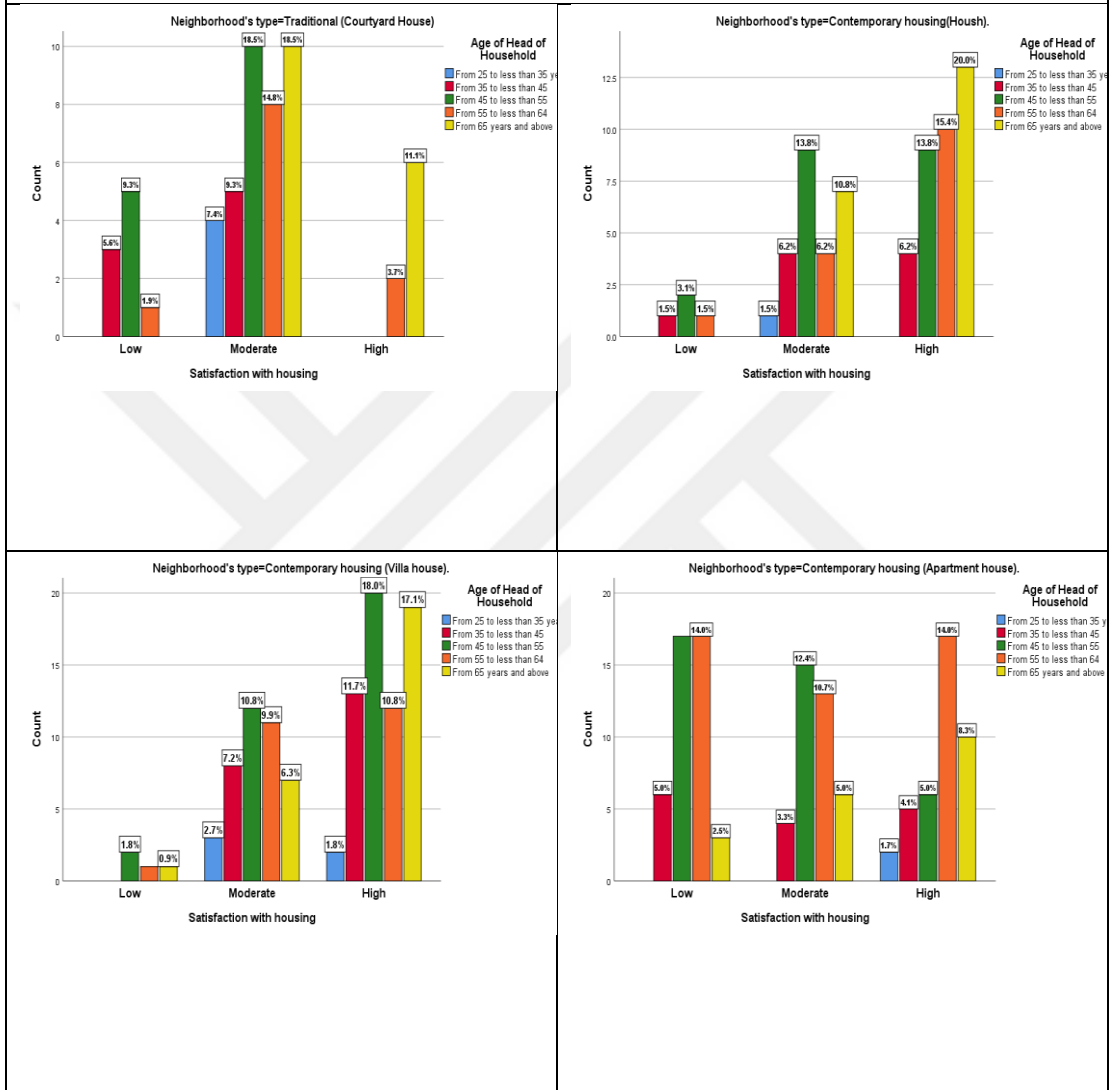
The results show the satisfaction with housing, and according to the cross-tabulation between satisfaction with housing and where it came from in Benghazi, the highest percent was 15.4% from another city with medium housing satisfaction, and the lowest was 0.3% from another country with high housing satisfaction. According to the results of the neighborhood comparison, respondents from other countries reported low housing satisfaction (16.7%) and moderate housing satisfaction (27.8%) in the old city neighborhood (courtyard home). The figure depicts percentages in four communities.

Satisfaction with housing-----Alterations



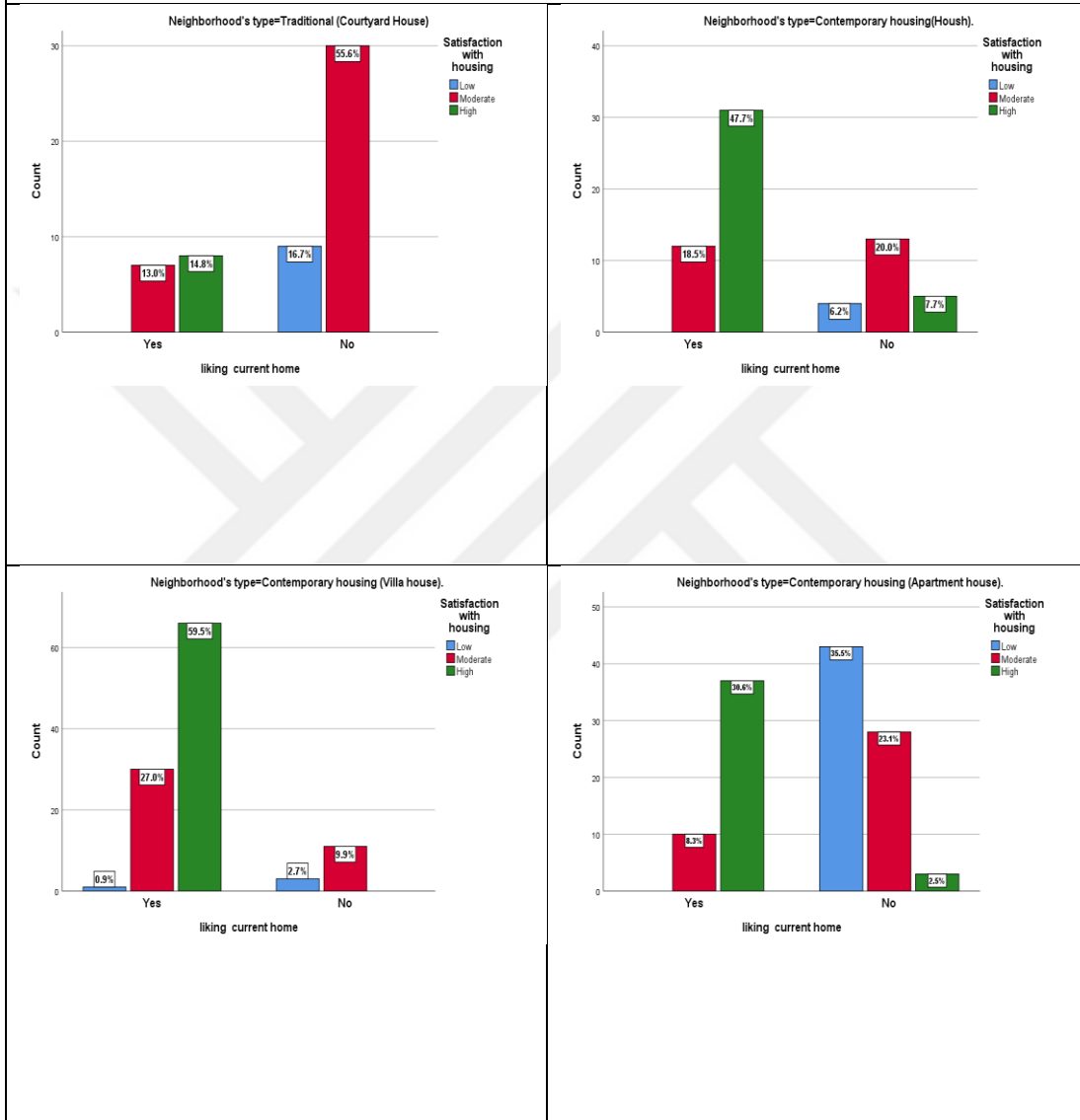
The results reveal that people are satisfied with their housing and the changes they made. A cross-tabulation of the amount of satisfaction with housing and house alteration revealed that the majority of respondents (38.2%) who were highly satisfied with their homes made alterations to accommodate their demands. While the lowest housing satisfaction score of 0.3 had changed. The comparison of neighborhoods revealed that 52.35 persons with high housing satisfaction in the Assalam area made alterations to their homes, whereas only 0.9% of people with medium housing satisfaction in the Assalam neighborhood did alteration. The figure depicts percentages in four communities.

Satisfaction with housing-----Age of Head of Household



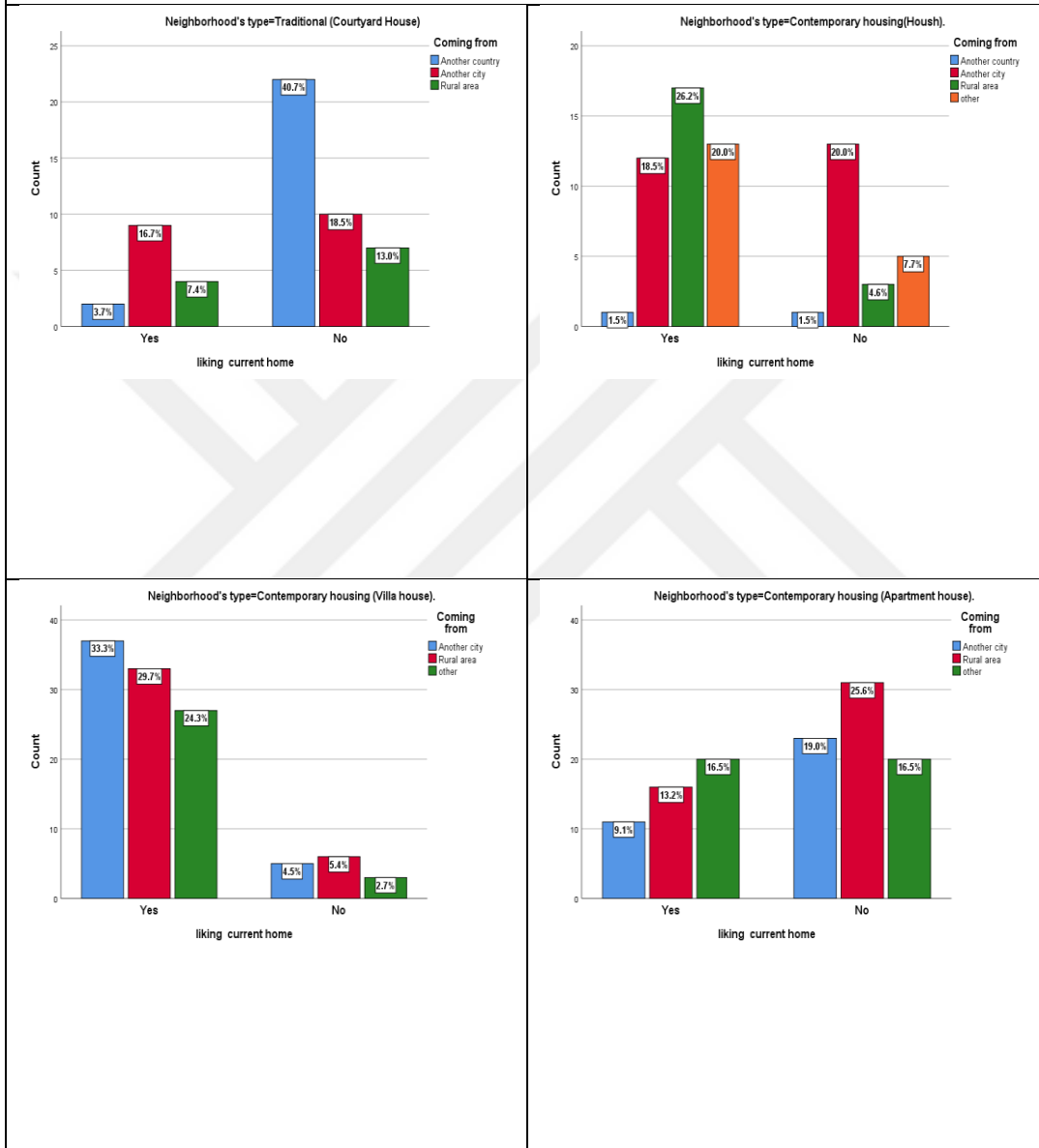
The findings reveal a cross-tabulation between home satisfaction and household head age. According to the findings, 11.1% of those aged 65 and up were highly satisfied with their dwelling in the courtyard house type (old city). While the high level of housing satisfaction was from all age categories in contemporary villa home types (Assalam), also the high level of satisfaction with housing in housh type (Alkish) from the 55 and above age categories. This suggests that older people who were born and raised in a same type of house are more satisfied with their homes. The figure depicts percentages in four communities.

Like your home-----satisfaction with housing



The cross-tabulation of loved house and level of contentment with housing yielded the following results: 57.5% liked their house in four neighborhoods, 16.8% moderate level of satisfaction, and 40.5% very satisfied. However, the Assalam area had the greatest satisfaction rate, at 87.4 percent. The old city has the lowest percentage, 27.3%.

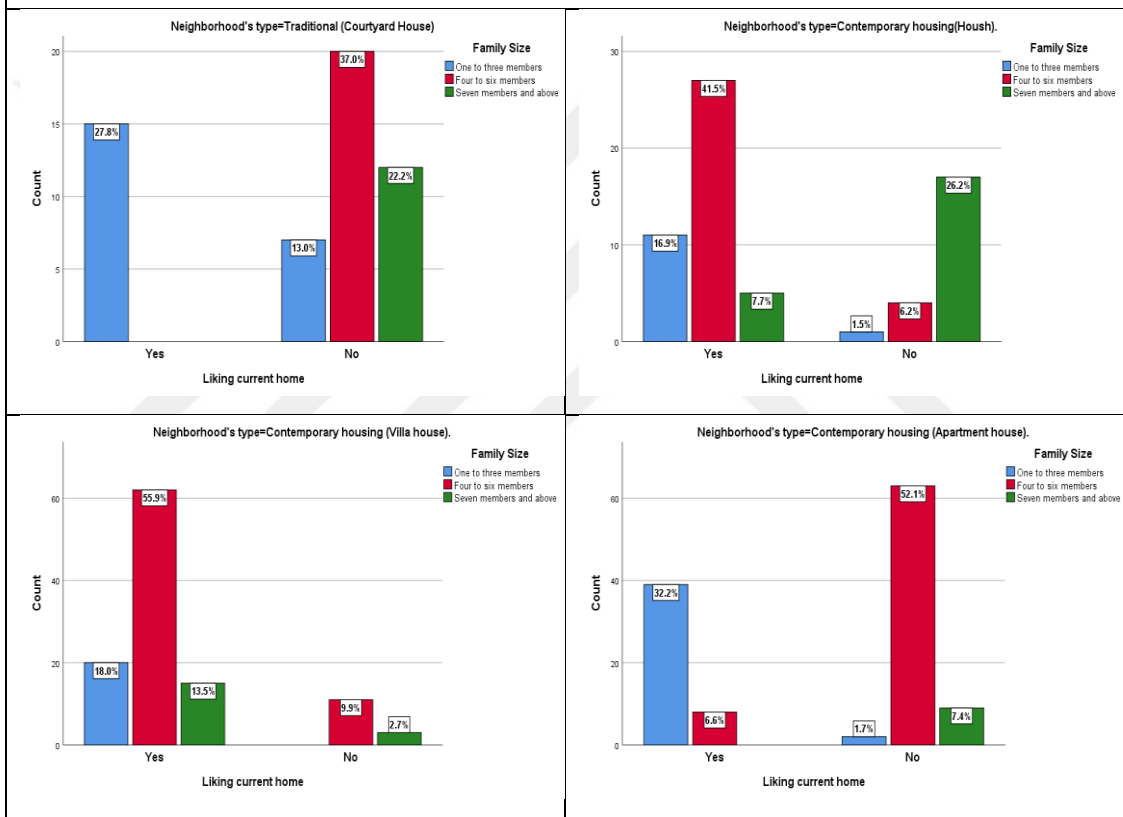
Like your home-----Coming from



The results show: The cross-tabulation between like your home and arriving from another place to Benghazi city revealed that 40.7% of those who disliked the existing house in the old city neighborhood (courtyard house) were from another country. Because the respondents came from various cultural backgrounds, norms and practices influenced their attitudes toward the courtyard dwelling style (an old city). The bulk of those who

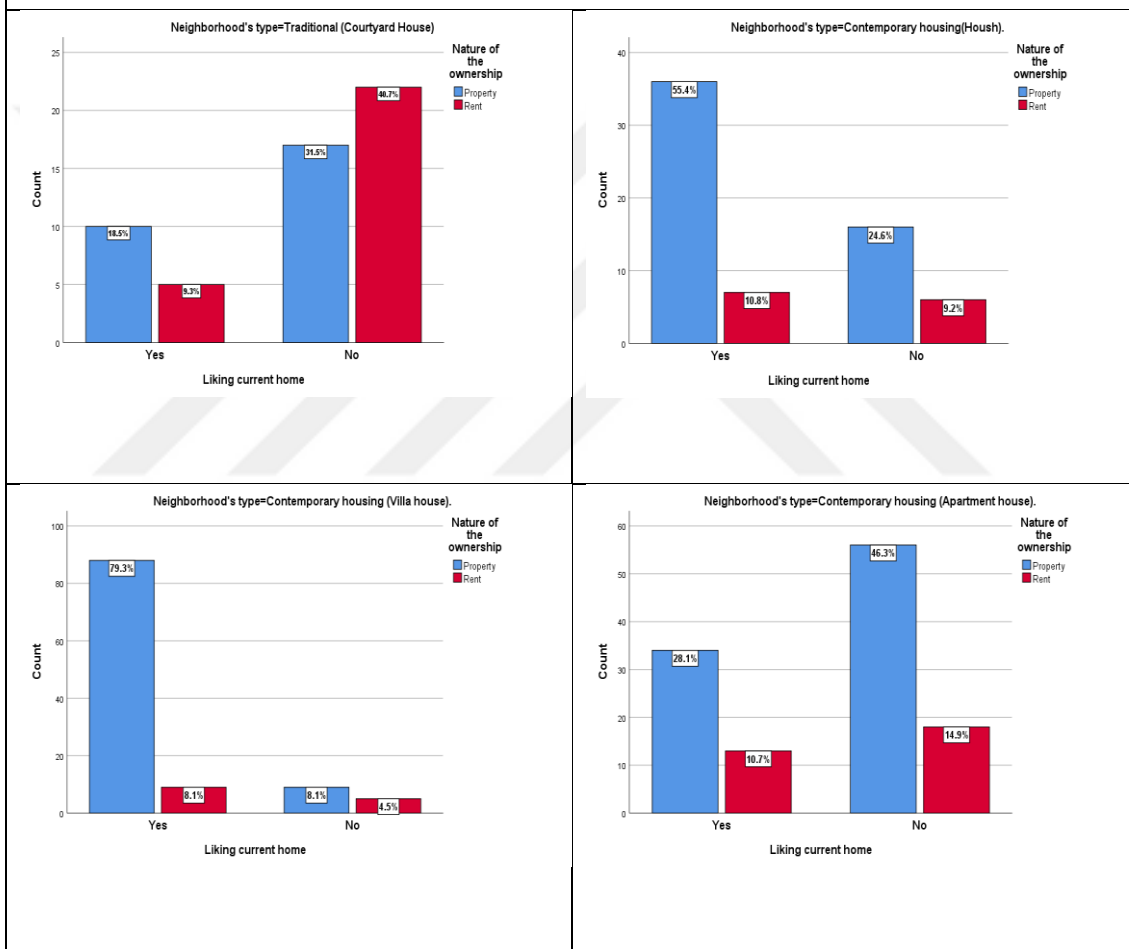
immigrated from other countries chose to reside in the ancient city due to the low rent. The figure depicts percentages in four communities.

Like your home-----Family size



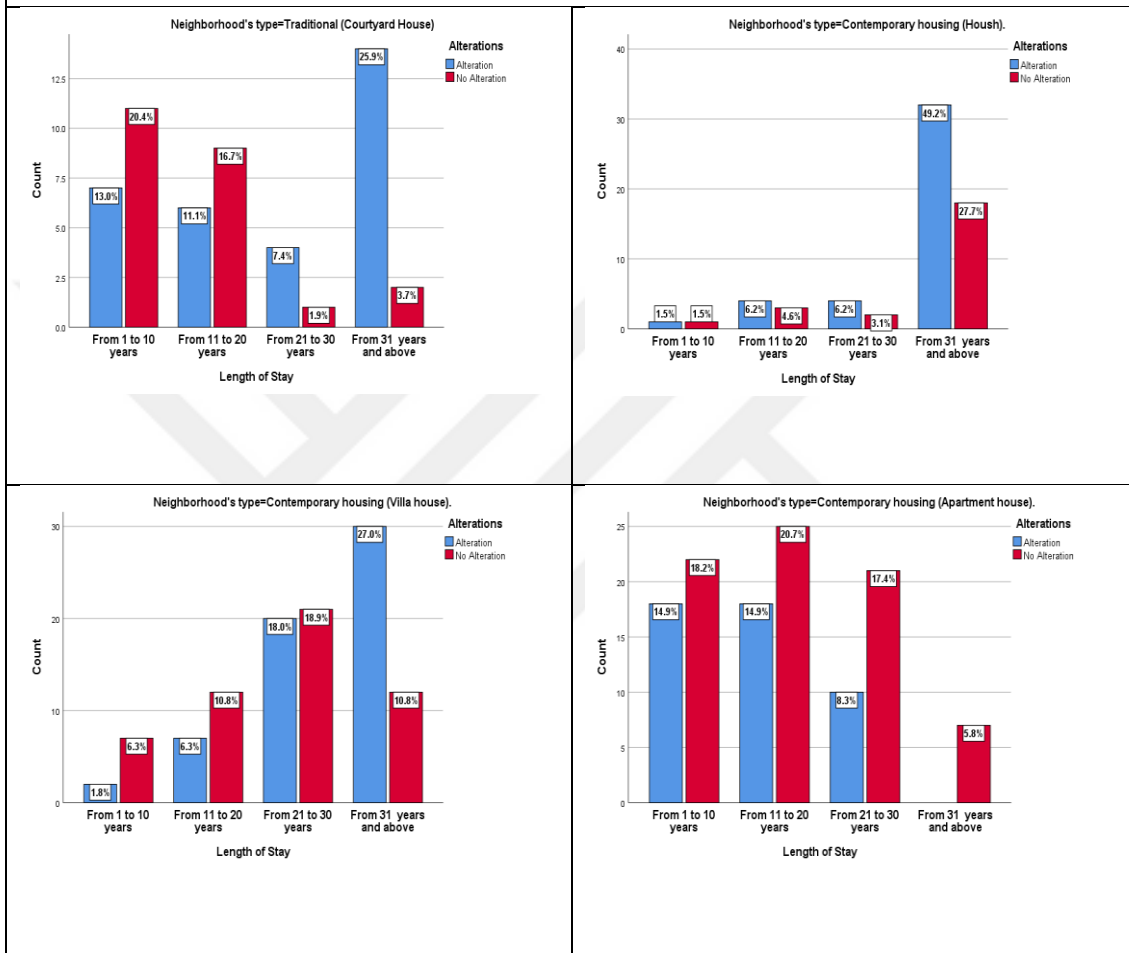
The cross-tabulation of liked existing house and family size revealed that the majority of respondents preferred courtyard houses (old city) and apartment houses (Garyounis neighborhood) with family sizes ranging from one to three people. While respondents who loved their present houses in the villa house type (Asalam neighborhood) were from various family size categories, because the villa house type allowed them to build a floor to accommodate their demands.

Like your home-----Ownership



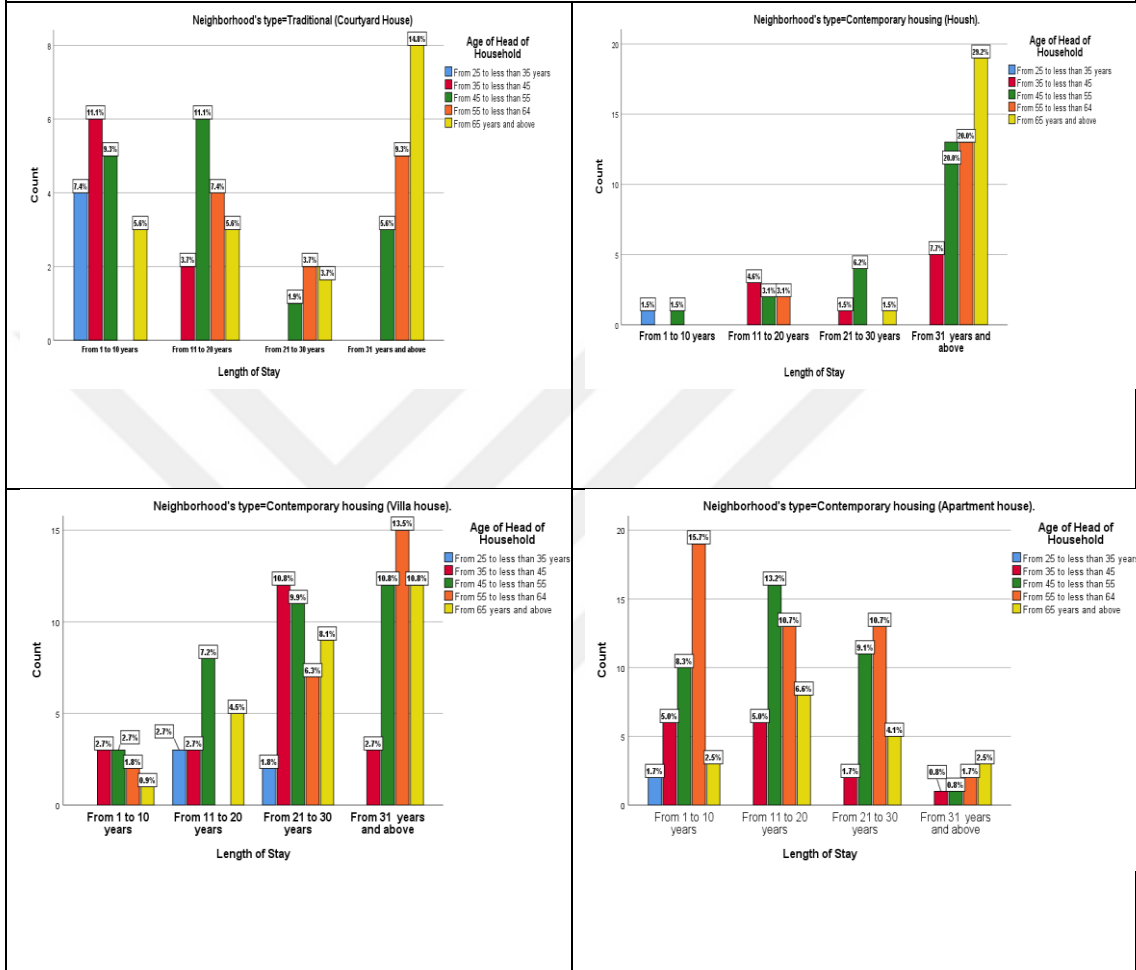
The results of an examination of home preferences based on housing and ownership show that 47.9% of those who loved their existing homes were homeowners. The villa category (Assalsm neighborhood) had the largest percentage of people who liked their existing home and owned it (79.3%). Meanwhile, the courtyard dwelling category (ancient city) had the lowest ownership rate (18.5% out of 50%). The figure depicts the percentage distribution throughout the four communities.

Length of stay-----alteration



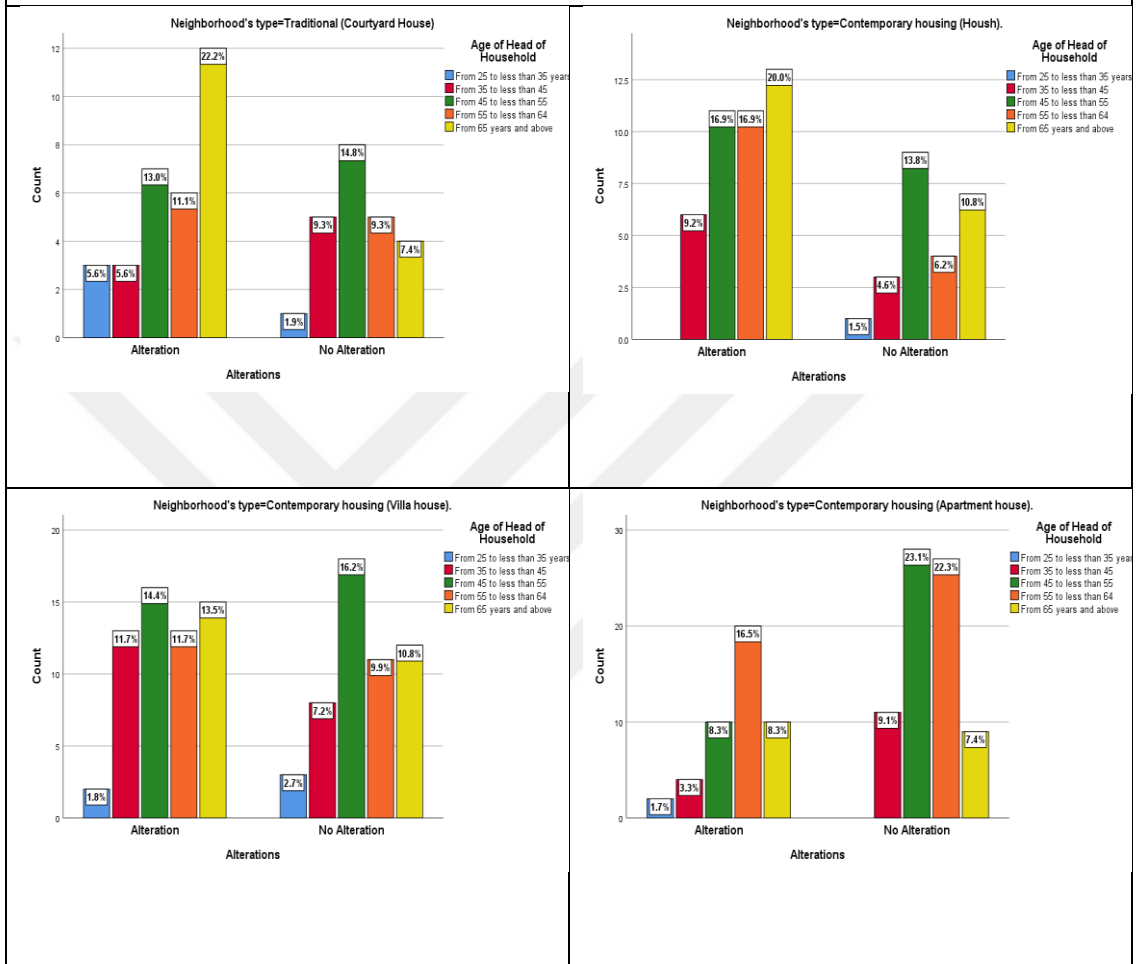
The findings include a cross-tabulation of length of stay and house changes. The data show that 50.4% of respondents in the four areas make changes to their homes. Individuals with a duration of stay of 31 years or more account for the biggest percentage (21.7% of 50.4%). The lowest number, 8% out of 50.4%, is recorded among individuals with a stay of 1 to 10 years. When comparing the four neighborhoods, three had the highest percentage of home improvements among individuals who have stayed for 31 years or more. The figure depicts the percentages in each of the four neighborhoods.

Length of stay-----Age of Head of Household



The findings of the cross-tabulation between duration of stay and age of the heads of household revealed that the greatest percentage of length of stay 31 years and above was 32.8% for households aged 55 years and up. 22% of the 32.8% of household heads are 55 years or older. While the lowest proportion 2.0% from 1 to 10 years duration of stay were households aged 25 to less than 35 years.

Alteration-----age of head of household



The results show a cross-tabulation of alterations and the age of the head of family. According to the statistics, 28.4% of respondents aged 55 and over made changes in all four neighborhoods. When the four neighborhoods are compared, it is found that 33.3% of people in the old city (courtyard house type) make changes at the age of 55 or older, 36% in the Alkeesh neighborhood (housh house type), 25.2% in the Assalam neighborhood (villa house type), and 24.8% in the Garyounis neighborhood (apartment house type). The figure depicts the percentages in each of the four neighborhoods.