THE DIGITAL AGE'S WORKPLACES: A PROPOSAL FOR ACCESSIBLE CO-WORKING SPACES IN NEIGHBORHOODS

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ETHICAL STATEMENT

I hereby declare that in this thesis study I prepared in accordance with thesis writing rules of Gazi University Graduate School of Natural and Applied Sciences;

- All data, information and documents presented in this thesis have been obtained within the scope of academic rules and ethical conduct,

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(M. Sc. Thesis)

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ABSTRACT

Changes in working life with technological developments were directly affected by the Covid-19 pandemic spread from China in 2019, which was accepted as one of the biggest global disasters following the Second World War. It would be meaningful to discuss the place of co-working spaces in our lives in this period when precautions against the spread of the virus reminded us of the importance of living spaces such as home and neighborhood. This study discusses how co-working spaces could take more place in our lives and neighborhoods to make them accessible for everyone considering financial and physical accessibilities. During the study, 20-minute neighborhood and 15-minute city have been firstly investigated as examples of recent studies about socio-technological development in urban design. Then, parameters that include the pandemic affecting the way of working and new types of working spaces have been analyzed. After that, specifications of co-working spaces and their examples have been researched from the perspective of accessibility. In this direction, IDEA Kadıköy has been determined as the case study of the thesis due to the approach toward public use behind the project. Visiting the space has also helped to draw the image of the concept. In conclusion, alternative ways of having these spaces at the neighborhood scale are discussed based on literature research and the case study. Private co-working spaces opened in neighborhoods and co-working spaces owned by neighborhoods, flat owners, or public authorities have been handled separately and discussed with the findings from the research written in the previous sections of the thesis.

DİJİTAL ÇAĞIN ÇALIŞMA MEKANLARI: MAHALLELERDE ERİŞİLEBİLİR PAYLAŞIMLI OFİS ÖNERİSİ

(Yüksek Lisans Tezi)

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GAZİ ÜNİVERSİTESİ

FEN BİLİMLERİ ENSTİTÜSÜ

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ÖZET

Teknolojik gelişmeler ile çalışma hayatında yaşanan değişimler, 2019 yılında Çin'den tüm dünyaya yayılan ve İkinci Dünya Savaşı'nı takip eden süreçte yaşanan en büyük küresel felaketlerden biri olarak kabul edilen Covid-19 pandemisinden de doğrudan etkilenmiştir. Virüsün yayılmasını engellemek için alınan tedbirlerin, ev ve mahalle gibi yakın yaşam alanlarının önemini yeniden hatırlattığı bu dönemde, paylaşımlı ofislerin hayatımızdaki yerini tartışmak anlamlı olacaktır. Bu çalışma, paylaşımlı ofisleri hem finansal olarak hem de fiziksel yakınlık olarak herkes için daha erişilebilir kılma fikri üzerinden bu mekanların nasıl daha fazla hayatımıza ve mahallelerimize dahil edilebileceğini tartışmaktadır. Çalışma boyunca, ilk olarak kentsel tasarımda sosyo-teknolojik gelişmeler üzerine yapılan tartışmalara örnek olan 20 dakikalık mahalle ve 15 dakikalık şehir önermeleri incelenmiştir. Sonra, çalışma şeklini etkileyen pandeminin de dahil olduğu parametreler ve yeni çalışma mekanları analiz edilmiştir. Daha sonra, paylaşımlı ofislerin özellikleri ve örnekleri erişilebilirlik perspektifinden ele alınmıştır. Bu doğrultuda, projenin arkasındaki kamusal kullanıma yönelik yaklaşımı sebebiyle IDEA Kadıköy örnek proje olarak belirlenmiştir. Bu mekânı ziyaret etmek konsepte ilişkin resmi çizme noktasında da yardımcı olmuştur. Sonuç bölümünde, literatür araştırması ve örnek çalışmaya ilişkin verilere dayanarak paylaşımlı ofislerin mahalle ölçeğinde yer almasının alternatif yolları tartışılmıştır. Mahallelerde açılan özel paylaşımlı ofisler ile mahallelerin, kat sahiplerinin ve kamu otoritelerinin sahibi olduğu paylaşımlı ofisler ayrı ayrı ele alınmış ve tezin önceki bölümlerinden elde edilen bulgular üzerinden tartışılmıştır.

ACKNOWLEDGEMENT

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SYMBOLS AND ABBREVIATIONS

In this study, the used symbols and abbreviations are explained below.

Symbols	Definition
m²	Square meter
%	Percentage
#	Number

Abbreviation	Definition
DIY	Do-It-Yourself
ENoLL	The European Network of Living Labs
et al.	and others
Fablab	Fabrication Laboratory
METU	Middle East Technical University
MIT	Massachusetts Institute of Technology
USA	United States of America
w/	With
wi-fi	Wireless fidelity

1. INTRODUCTION

Technological developments and the spread of personal computers have changed the way of working. The Covid-19 pandemic that started in China in 2019 has also given recent shape to working by considering technological infrastructure. Remote working or working from home have been the most frequently expressed concepts. Besides fundamental problems in offices, many problems have started to appear during quarantine periods.

Gandini (2015) describes co-working spaces as the third way of working, which shares similarities with traditional work-life and remote working at home in isolation. Precautions against the spread of the virus reminded us of the importance of living spaces such as home and neighborhood. Here, it comes a question about the place and the future of co-working spaces in workers' lives. This study aims to discuss the integration of co-working spaces and neighborhoods; their importance was again understood with the pandemic and global warming. In this study, research was conducted to understand all dimensions of the existing co-working spaces and to discuss the necessity and opportunity of new ways to add more spaces into our lives. All dimensions of co-working spaces and their examples in the world and Turkey have been researched during the study. In the thesis, co-working spaces have been handled as an alternative working style supported by a simple and accessible physical environment, contrary to other studies which mainly focused on the working environment and venue organization of these spaces and business models based on the exchange of ideas between members.

Recent studies about urban planning emphasize that people need old walkable neighborhoods to put efficiency in their lives. The pandemic has proven that people should meet their needs by walking or cycling close distances. People should not use their cars or transportation means to arrive their offices or schools in city centers far away from their neighborhoods. That reminds urbanists about the importance of urban design based on the human scale. In the light of this research, the research question about locating co-working spaces within close distances has been born from the need for accessible neighborhoods.
In this study, how public authorities and neighborhood residents can become owners of these spaces, as well as private companies, have been investigated.

The motivation of the study

The thesis was shaped around the argument of how to create co-working spaces open to the public at close distances as a part of ideal neighborhood design. When co-working spaces are examined, it is found that private companies generally manage them. Furthermore, it is detected that they are mainly located in city centers and organized as a part of buildings. Considering the learnings from the pandemic about the rising need for ideal neighborhood design and the handicaps of remote working and offices that emerged under precautions against the spread of the virus, the motivation of the thesis comes from the question of how to reevaluate co-working spaces as a part neighborhood to make them available for people. The literature review shows that the design criteria of the co-working spaces managed by private companies is the research question of many studies. There are also some studies concentrated on the collaboration between members. However, no study has been found related to the accessibility of these spaces.

Aim of the study

This thesis aims to find alternative ways of locating co-working spaces in neighborhoods. Current studies conducted on ideal city design prove that people need well-designed neighborhoods where people can live, work and play and residents can approach services at close distances. Learnings from these studies show that integration of working or studying areas with neighborhoods will be essential in the future. The aim of the thesis is searching ways to make co-working spaces a part of future urbanization and to provide them to be publicly used.

Methodology of the study

While the discussions on the importance of the neighborhood and the future of business life are gaining momentum, an answer is searched for whether co-working spaces can be a part of the neighborhood. The literature was first conducted on the history of co-working spaces and neighborhood design proposals developed during the pandemic. It has been tried to create a comprehensive list of spaces in Turkey. Their locations in the urban context and the actors behind their management were questioned to build a foundation for the research question. Then, IDEA Kadıköy has been determined as the case study of the thesis due to

the logic of accessibility in the project. Based on the literature research and the case study, alternative ways of having these spaces at the neighborhood scale are discussed in the conclusion.

Literature review

Co-working space is one of the popular topics in literature on architecture, interior design, and labor economics. The main structure of the study has been constructed by considering other studies and their research questions. Each master thesis frequently quoted in the thesis is grouped according to main research question about co-working spaces.

Although most studies about co-working spaces mainly focused on spatial organization/design of spaces and offices (Aydın, 2020; Çimen, 2008; Dalga, 2007; İmal, 2009; Tunç, 2019; Yalçınpınar, 2009; Sakallı, 1997), some studies also analyze labor/ labor economy in these spaces (Cetiz, 2017; Ertan, 2019).

The design principles of co-working spaces have been mainly investigated in the literature. On the other hand, some studies search the working environment in these spaces and its reflection on workers. Contrary to these studies, this thesis takes the subject as the future style of working/studying and focuses on allocating these spaces in ideal neighborhood design to make them available for everyone.

Limitations of the study

The target of the study is to create awareness about the needs of workers and students and make co-working spaces accessible for everyone considering financial and physical accessibilities. The limitations of investigating these spaces have been determined according to the research question. Therefore, the study has detailly researched management actors of these spaces and their locations in cities. IDEA Kadıköy has been selected as the only case study due to its singularity in handling the accessibility of neighborhood residents as an urban problem.

<u>Structure of the study</u>

The second section of the thesis starts with searching for the recent urban arguments about neighborhoods conducted by considering the lessons learned from the pandemic. In addition, common spaces in neighborhoods have been reviewed. The rest of the section has been mainly focused on the physical environment of working. The transformation of this environment since the First Industrial Revolution and dramatic developments have been questioned in detail. Then, today's working spaces have been put under the scope to draw the route of the thesis. After that, co-working spaces have been investigated, starting from the birth of the idea to the advantages of these spaces to support the aim of the thesis. Venue organization of spaces, members' profiles, relationships among members, and collaborative atmosphere have been investigated.

In the third section, co-working spaces in Turkey have been explained from the perspective of the thesis. A comprehensive list of co-working spaces has been shared in this section and tried to detect differences in management in these co-working spaces.

In the fourth section, IDEA Kadıköy has been analyzed as a case study of the thesis. General information about IDEA, experiences from the visit, and photographs taken during the visit have been presented in this section.

In the fifth and last section of the thesis, the evaluation of the literature review and the case study, and suggestions for accessible co-working spaces in neighborhoods have been presented.

2. CHANGES IN URBAN DESIGN AND WORKING SPACES

In this section, neighborhoods and co-working spaces are examined to constitute the main structure of the study by considering the change in urban planning and the way of working and exploring the proper position of co-working spaces in the urban context. Firstly, socio-technological changes in urban spaces and common spaces in neighborhoods will be mentioned in the section. Secondly, "working" will be handled in detail by looking at the transformation of the working life, the workforce, and working places. At the last, detailed information about co-working spaces will be shared.

2.1. Socio-Technological Changes in Urban Spaces

Urban space has an organic structure shaped by social, economic, political and technological changes. That is why it has been discussed by different professions all the time. While planners evaluate the evolution of urban space from the upper scale, architects argue the position of buildings or the future of building design over the perspective of new approaches to urban space.

From the beginning of the 21st century, climate change has become a critical issue worldwide. To reduce the adverse effects of climate change or slow it down, sustainability has been one of the main topics of urban design. In addition to that, social issues are another problematic area that needs to be solved. However, the pandemic of Covid-19 has changed the direction of sustainable, ecological and socially oriented works. Antonio Guterres (2020), the Secretary-General of the United Nations, has announced that this pandemic is accepted as one of the biggest global disasters in the following period of the Second World War.

Thanks to technological developments, business and educational life have moved to homes during the pandemic. Offices, schools, and libraries were closed, and all the functions of these areas were transferred to the houses. The number of deaths in metropolises is higher than in the small cities. The pandemic caused more death in metropolises in compare to the small cities (Ergönül, 2020). Therefore, one of the most frequently used concepts in the pandemic agenda was "distance". Among the spatial strategies developed to move urban

services to an accessible distance for all, taking into account different social groups, pioneering ideas about new interpretations of habit-based spaces such as neighborhood scale or neighborhood unit also emerged (Çılgın, Olgun and Dinç, 2020; Olgun, 2020).

Çılgın and her friends (2020) emphasize "pedestrian movement distance" in their article and believe that these parameters, which are given below, should be defined in the centralization of urban services.

- Neighborhood scale as minor spatial divisions,
- Connections in the network structure on a neighborhood scale,
- A horizontal and organic interaction from the local instead of the central and hierarchical system.

Ning (2020) deals with the subject of "distance" in his article through the thoughts of ancient philosophers. According to Lao Tzu (B.C. 6th century), an ideal society lives in an ideal environment where they do not need to go to distant places to satisfy their basic needs. Also, Mencius (B.C. 4th century) believed that people should live in close unity to be friends, watch over each other, and support one another in sickness. These sentences prove that the distance surrounding living spaces have always been a problem argued for centuries.

With the increasing importance of the concepts of distance and neighborhood, old debates about people-centered strategies in urban design have become the main topic of recent conversations. These debates started in the following years of the 1930s when cars and other motorized vehicles were the main elements of city planning. Due to rising mechanization in city and movement problems, design paradigms have changed the direction of people-centered strategies. The 20-minute neighborhood and the 15-minute city principles were born as modern and evolved concepts derived from their predecessors, such as walkable city and neighborhood-unit planning. Despite the dependence on motorized vehicles like railways or highways for connection between people and the city center in old people-centered planning, these new concepts create poly-centric cities to bring the destinations closer (Manifesty and Park, 2022).

Concepts of the 20-minute neighborhood and the 15-minute city share the same principles. Their different names come from their different adjustments in each country (Manifesty and

Park, 2022). In this section, each concept will be explained in detail according to its application in countries.

2.1.1. 20-Minute neighborhood

The concept of a 20-minute neighborhood first came out for Portland in the early 2010s, and then Melbourne followed the concept that became known as Melbourne Plan. In this neighborhood, residents can easily access most activities and services within a 20-minute walk, cycle, or public transport trip from their homes (Mackness, White and Barrett, 2021). This concept has become popular again after the mayor of Paris Anne Hidalgo's campaign. In her recent campaign, she suggested this urban strategy to arrange density and generalize walkability in neighborhoods containing homes, workplaces, and other services (Eltarabily and Elgheznawy, 2020).

The 20-minute neighborhood has been applied as a pilot project for Melbourne between 2017 and 2050. This planning strategy defines places to accommodate Melbourne's future population and employment growth by setting actions and policies to promote jobs, services, and public transport to homes. While the plan defines connected and walkable places as the places where people can live, work, and play, it also aims to make the 20-minute neighborhood concept a reality for everyone by offering affordable housing options for those who cannot walk. It is aimed to create a sustainable, accessible, and egalitarian city through the communication of these neighborhoods with each other, where daily needs are met in neighborhood activity centers (Olgun, 2020).

As seen in Figure 2.1, the urban plan of Melbourne was shaped around some essential urban elements determined according to the needs of people, which are also given below.

- Environmental transportation (public transport, walking, and cycling)
- Housing for everyone and safe streets
- Planned open and green spaces
- Education opportunities
- Shopping and health services
- Employment and connection to jobs and services

8
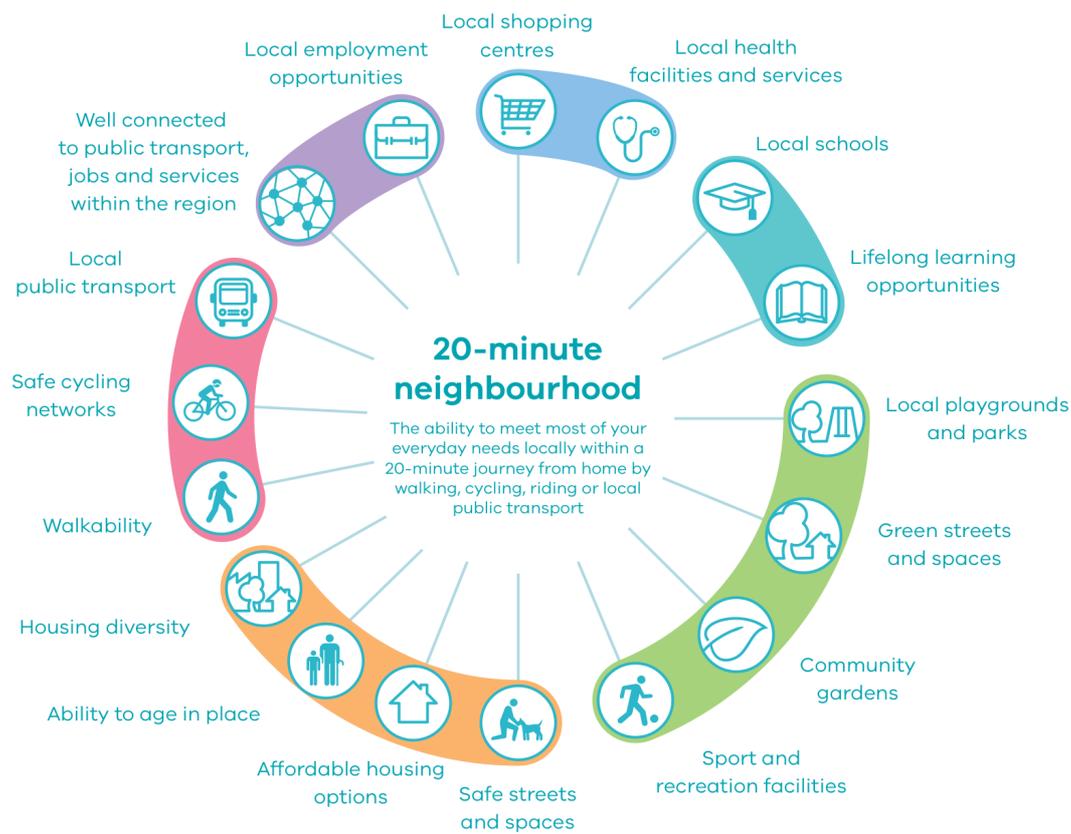
Figure 2.1. Plan Melbourne (URL-1)

The pandemic, movement restrictions, and quarantines have led to behavioral changes such as the increase in working from home. These changes highlighted spatial inequities in accessing local services and amenities, which are essential for health also. Movement restrictions made people aware that cities have been planned around the dependence on car use. Therefore, the 20-minute neighborhood was born an approach that puts people first instead of cars. The properties and advantages of this neighborhood are shown in the list given in Table 2.1 (Mackness *et al.*, 2021).

Table 2.1. Advantages of 20-minute neighborhood (Mackness *et al*., 2021)

20-MINUTE NEIGHBORHOOD
Vision-led concept
Future-focused spatial visions developed with local stakeholders.
Exchange of ideas about different scale urban and transport plan, strategies about walking, cycling and management.
Combined time-space dimension
Compactness, walkability, cycling
Closeness between people and activities
Adaptability of areas into different functions
Reduce the need to travel
Physical proximity

Sustainable forms of transport and compactness of the neighborhood promise less waste time in traffic, less noise pollution and greenhouse gas emission, and more air quality. These features meet the carbon emission target of the Paris Agreement, which was also accepted in Turkey in 2021. Also, the vision-led concept allows neighborhoods to take the necessary precautions against global warming and environmental pollution (Mackness *et al*., 2021).

2.1.2. 15-Minute city

The widespread use of cars caused urban sprawl and linear and perpendicular city grids in city planning. According to Appleyard (1980), the lost time in traffic, the demand for fuel, and financial burdens on vehicle maintenance result from cars' dependence. Carlos Moreno, a Sorbonne professor, believes that if we move to the post-vehicle era, roads and car ownership should push away the priorities of the oil era. Moreno's approach is called "chrono urbanism" (Olgun, 2020).

In the pandemic of Covid-19, the risk of infection has increased due to physical contact in workplaces, and schools and overcrowding of public transport vehicles, especially during rush hour. Working and learning styles were firstly reviewed, and specialists suggested teleworking and remote learning without commuting to work or school to reduce infection rates. Although urban plans promote the separation of work and residence in many countries,

the pandemic has highlighted the strictness of this planning. Also, working from home brought about an intertwinement of work and living spaces in this period. To respond to the threats to safety and security posed by pandemics, including infectious diseases, people's lifestyles, including work and mobility, must first become autonomous, self-sufficient, and fragmented. In addition, the leverage of cyber-innovative technologies can improve communication skills and facilitate compassionate mobility practice (Chou, Aoki, Yoh, and Doi, 2021).

Chou *et al*. (2021) explain that the city has three specifications: civitas (a people-centered creative city), urbs (a segmented, autonomous, and independent compact city), and cyber (a smart city) (Figure 2.2). 15-minute city, based on Moreno's chrono urbanism, was born as a city vision during the Covid-19 pandemic.
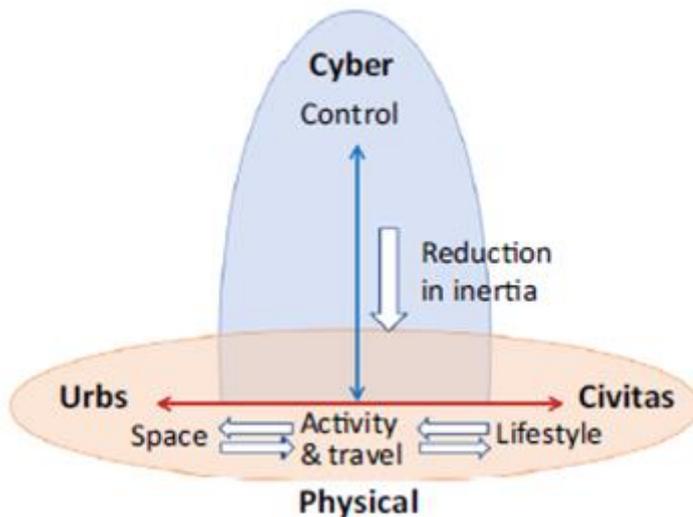
Figure 2.2. Components of a city (Chou *et al*, 2021)

The 15-minute city concept, similar to the 20-minute neighborhood, is also based on walkability, and long-term planning suggests a sustainable ecosystem, proximity to essential services, sustainable mobility, social interaction, and citizen participation. In this planning concept, it is recommended to use bicycles instead of private vehicles. Promoting walkability and cycling aims to prevent social inequality, which is evident in car-dependent cities (Moreno, Allam, Chabaud, Gall, and Pratlong, 2021).

In 15-minute city, modern and developed technologies are meant to achieve sustainability and resilience. Entering the current technology in building and planning will provide better and optimal spaces and structures. The foundation of this concept is based on Moreno's "living city" version of cities, which is fed by the need to "repair" urban and social fragments. His living city promises a better quality of life due to services including living, working, commerce, healthcare, education, and entertainment (Moreno *et al*., 2021).

According to Moreno, there are four components to consider when building a 15-minute city: density, proximity, diversity, and digitalization. Relations between these four concepts are visualized in Figure 2.3.

Figure 2.3. The 15-Minute City framework (Moreno *et al*., 2021)

Density

This concept refers to an optimal density in which planning where residents can reach their basic needs without the need for their cars. Optimal density is considered to provide solutions for issues such as food supply, multiple uses of existing areas, and energy production. Minimizing the need for automobiles and building the infrastructure of bicycle paths and walkable roads can be steps to realize Moreno's social functions in existing urban areas. In this respect, it is thought that density-based design will prevent social inequality. It is also

aimed at cities having a structure that provides high value with lower costs. The 15-minute city will increase the benefit of technological developments while at the same time improving service delivery and increasing livability (Moreno *et al.*, 2021).

Proximity

Neighborhood residents can reach services within a 15-minute radial distance in 15-min city. This situation compensates for the time lost while commuting and plays an essential role in reducing its environmental and economic adverse effects. That will be a crucial social indicator influencing the social interaction of the city's residents. The 15-minute city allows access from residential areas to workplaces, commercial spaces, education centers, health facilities, and other institutions in a shorter time. Since this allows for multimodal use, it will enable residents to receive better service. However, proximity alone is not enough for ideal city planning (Moreno *et al.*, 2021).

Diversity

In the context of the above framework, diversity is twofold in the 15-minute city concept.

- Mixed-use neighborhoods
- Commercial and entertainment components and diversity in people and culture

While mixed-use neighborhoods create economically vibrant urban textures, they provide sufficient housing opportunities to the city's residents with inclusive and sustainable practices. This approach reduces travel, which is necessary to reach basic needs. Brookfield (2017) states that increasing diversity in a neighborhood improves service delivery, maintains its place, and increases interaction between the community. Having a multicultural structure in a city plays an important role in creating job opportunities, promoting economic vitality, and creating new employment opportunities (Moreno *et al.*, 2021).

Digitalization

With digitalization, smart cities, including applications such as online shopping, cashless transactions, and virtual communication, have emerged. The opportunity to offer similar

services in the comfort of home and office will reduce the need for commuting to work. Digitalization has made it possible for people to work from home and stay in touch during the Covid-19 period. That has helped them reduce social contact and get things done from home without going to their office or workplace. Proximity-based planning is expected to be a part of urban jargon after the pandemic due to its benefits. The digital solutions offered by the 15-minute cities and a reduction in automobile use and emission will be a step toward the solution to climate change. Less use of cars and new applications like iBike that allow people to share bicycles will also affect the dependency on non-renewable energy sources. With all these aspects, digitalization complements the other three successful concepts mentioned above (Moreno *et al*., 2021).

"Distance" is the weakness of most urban planning models. The Smart City is one of these models. Advanced technology in smart cities has not been a solution to the problem of reaching the basic needs in the shortest distance since the restrictions emerged with Covid-19. When the societies' reactions to the Covid-19 pandemic are evaluated, it seems possible that the transition to the locality will occur after the pandemic as a direct result of these differences. Different societies will choose to adopt distinct solutions according to the needs and aspirations of their communities. For the availability of essential services at accessible distances, undisrupted human interaction, and facilitation of cycling and walking, most cities need to be restructured to ensure proximity-based planning (Çılgın, 2020; Ekuklu, 2020; Moreno *et al*., 2021).

Recent studies have shown that motorized vehicle-centered cities have suffered from different problems. Climate change and the pandemic have become the alarm bell for one or two-centered cities. All countries had to survive against the virus during the pandemic by movement restrictions. The obligation of business and education has forced people to rethink cities. The argument of Manifesty and Park (2022) proves that the healthy planning of cities should be polycentric, including business, education, shopping, and other services to be available for people within reasonable distances. This truth has been the foundation of this study and shaped the way of handling co-working spaces.

2.1.3. Common spaces in neighborhoods

Economic factors such as industry complexes, banks, trading companies, and corporations dominate today's urban environment (Stavrides, 2016: 1). As mentioned in 20-minute neighborhoods and 15-minute city concepts, urban planning based on only economic factors prevents polycentric cities. Beyond this urbanization, Stavros Stavrides proposes alternative spaces for these contemporary cities.

The approach of Stavrides (2016: 54) through common spaces has been evaluated as the third way of spaces differs from public and private spaces. The writer defines these spaces as a relationship between social groups and the world created by their members. Common spaces are composed of complicated social interactions beyond being only the place where people can. Moreover, these spaces are created by the community who have been in the movement according to the needs and demands of society.

Stavrides (2016: 107) calls the common space a threshold space, including expresses of the community. Furthermore, he believes that common spaces will continue to be redefined according to the needs of collective actions. The community of potential common space transforms the space into a shared space considering their needs. Although these spaces differ from public and private spaces, there are also rules to define the use of these spaces to prevent problems caused by various user groups (Stavrides, 2016: 106).

Like other concepts explained previously, while Stavrides's common spaces highlight the importance of neighborhoods, the formation of a new association between residents is also aimed at the same time by gathering them together to solve their problems.

2.2. Transformation of Working Life

Working life has changed continuously over the centuries. Although people were previously agricultural workers, the first working class was born in the years following the First Industrial Revolution in the 18th century. Thanks to the Industrial Revolution, machine production has emerged. This transformed energy production based on body strength and manual labor into a technology based on steam power and, therefore, the use of coal and

wood. The workplace of this period was factories in which workers were exposed to an unhealthy and stuffy atmosphere for long hours of the day (Çimen, 2008: 13). During this period, people started to migrate from villages to cities to work in factories (Cetiz, 2017: 23). In the early 19th century, the distinction between work and living spaces started due to the development of railways and commercial institutions. The establishment of banks and insurance companies began to shape office buildings (Çimen, 2008: 17).

In the 19th and 20th centuries, during the Second Industrial Revolution, inventions such as electricity, the automobile, installation and central heating, oil and chemicals, the telephone, the radio, and television laid the foundation of the modern world (Gordon, 2012). The use of automobiles has been the solution to the distance between work areas and living spaces. Furthermore, with the invention of the telephone, administration and production were separated due to development in communication systems. The establishment of limited companies has changed people's perspective against offices that were previously accepted as dark and unnecessary places. All revolutionary actions have caused some changes; working became independent from seasonal conditions, standards about working emerged, and complex tasks were divided into subtasks. Also, these developments gave rise to widespread middle-class and white-collar workers. (Çimen, 2008: 17)

In the 1970s, the Third Industrial Revolution started with rapid technological developments such as automation systems in factories, personal computers, cell phones, telecommunication systems, and the internet. According to Gülden (2015), previous office concepts became unsatisfactory due to these critical advances resulting from widespread digitalization.
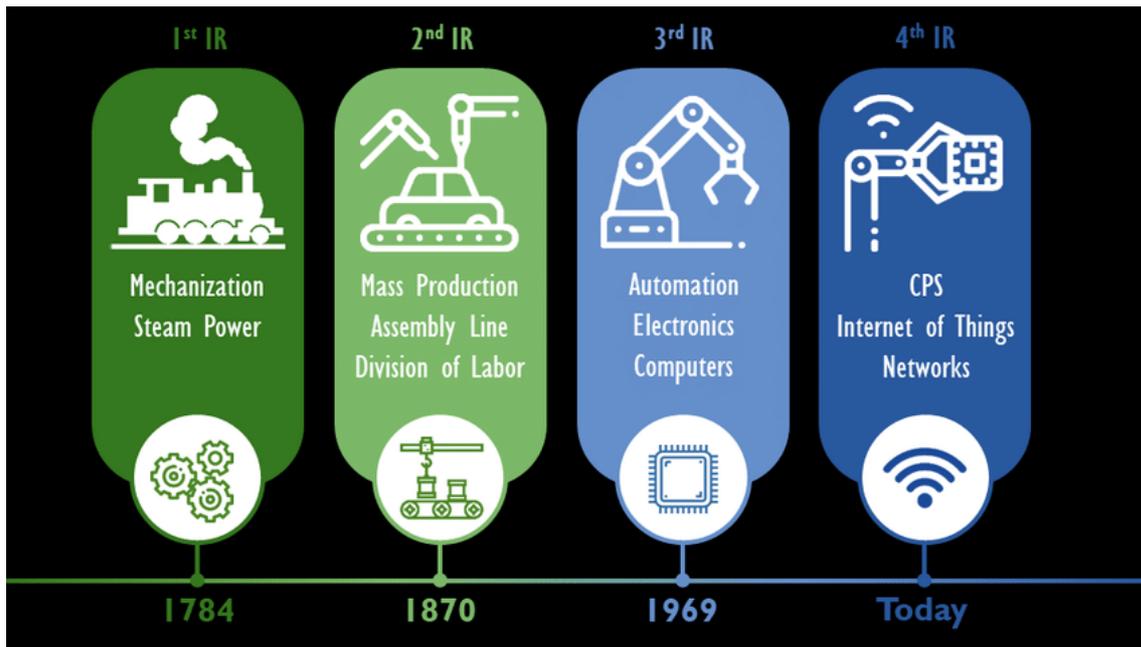
Figure 2.4. The four-industrial revolution (Speringer, M. and Schnelzer, J., 2019)

In the 21st century, advanced digitalization within factories, the internet of things (IoT), intelligent objects and factories, Big Data, and Virtual Reality were born due to new industrial production. This new era has been referred to as Industry 4.0 instead of the fourth industrial revolution as a reminiscence of software versioning. For instance, artificial intelligence is essential in processing data-based developments (Ertan, 2019: 10). Lasi (2014) believes that there are two development directions in Industry 4.0. These directions are huge application-pull and technology-push in industrial practice (Figure 2.4). Due to application-pull, high innovation capability in entrepreneurship, individualization on demand, flexibility in production, decentralization in decision mechanism, and resource efficiency against shortage have been essential for work life. On the other hand, while technology-push has importance in people's lives via buzzwords such as Apps, smartphones, 3D printers, and laptops, it can be said that this push led to mechanization and automation systems, digitalization and networking, and also miniaturization of necessary space for computers in job-related areas. (Lasi, 2014)

According to Avent (2016, cited in Johannessen, 2019: 80), it is projected that automatization and robotization will shape 50 percent of today's workplaces over the next 20 years in the United States of America (USA). Occupations like industry, transport, teaching, medicine, architecture, dentistry, the service sector, education, and journalism will be affected by robotization (McAffee and Brynjolfsson, 2017, cited in Johannessen, 2019:

1). Johannessen (2019: 3) believes that the future words will be robotization, information, artificial intelligence, and extreme focus on cost-efficiency. That is why physical labor will lose its importance in the economy. These technological developments also serve high-quality end products, reduce production costs, and create technological unemployment in the future. While factories and physical labor were common after the first industrial revolution, the specialized work environment has become dominant in the 21st century (Ertan, 2019: 11). Furthermore, physical labor left its place to knowledge and innovation workers (Johannessen, 2019: 21).

Technological developments have shaped the transformation of the way of working. The road from the factories to offices has changed its rotation towards flexibility. Advanced applications, the Internet, personal computers, and digital communication are expected to give new shapes to working styles and working spaces.

2.3. Workforce and Skills

People born after the 1920s have been categorized as different generations according to their social characteristics affected by various events in history. Although there are many years between these generations, they all work side-by-side in the market despite their different ideas, habits, behaviors, and attitudes (Hammill, 2005). Figure 2.5 shows the names and birth years of these generations.

| TRADS 1928-1944 | → | BOOMERS 1945-1964 | → | GEN X 1965-1979 | → | GEN Y 1980-1994 | → | GEN Z 1995+ |

Figure 2.5. Generation timeline (Cilliers, 2017)

Although these generations are living together, they have different social structures. Their distinct understanding of work, work-life balance, and ethics are detailed in Table 2.2. The table shows that the meaning of working has changed generation by generation and the dependency on working has lost its effect towards the newest ones.

Table 2.2. Generation characteristics (Hammilll, 2005; Marginean, 2021)

	GEN Z	GEN Y	GEN X	BOOMERS	TRADS
CORE VALUES	Live and breathe technology	Realism, confidence	Skepticism, fun, informality	Optimism, involvement	Respect for authority
WORK ETHICS & VALUES	Entrepreneurially minded, innovative, more open towards business and international activities	What's next, multitasking, entrepreneurial, tolerant, goal-oriented	Eliminate the task, self-reliance, skeptical, want structure and direction	Workaholics, work efficiently, personal fulfilment, desire quality	Hard work, sacrifice, duty before fun
WORK IS	An expression of their personalities	Means to an end, fulfilment	Difficult challenge, a contract	Exciting adventure	Obligation
INTER ACTIVE STYLE	Digitally connected, participative	Participative	Entrepreneur	Love to have meetings	Individual
MESSAGES THAT MOTIVATE	Action-oriented, eager to innovate and to impact the world	Work with other bright and creative people	Do it your way, forget the rules	You are valued	Your experience is respected
WORK & FAMILY LIFE	No clear balance	Exact balance	Balance	No balance, work to live	Work, work, work

Generation Y, millennials, is the newest, youngest, and most talented workforce of the 21st century, and forms 50 percent of the global workforce of 2020 (Arora, 2017). This generation will keep shaping the understanding of working for at least two decades (Asthana, 2008, cited in Gülden, 2015). The millennials like to work within organizations that offer an excellent work-life balance, quality, variety, fun, training, and flexibility (Arora 2017; Controls, 2010 cited in Gülden, 2015).

Due to technological advances in the last four decades, almost mother language of Generation Y become digital language and technology. This young group of people is called 'digital natives' unlike previous generations, digital immigrants migrate to the latest technology (Palfrey and Gasser, 2008; McCrindle, 2010; Gülden, 2015).

In addition to Generation Y, the dominant group of workforces, Generation Z, nation of Facebook, has started to enter their first jobs. Generation Z is expected to be 27% of the global workforce by 2025 (McCrindle, 2018, cited in Marginean, 2021). This new generation is creative, opens to change and improvements, and wants to see their jobs as an expression and representation of their personalities (Half, 2015, cited in Marginean, 2021). These youngest workers are obstinate, independent, pragmatic, and willing to make apparent changes in the world with their competitive souls (Patei 2017; Jenkins, 2015; Accounting Principals, 2017, cited in Marginean, 2021).

Generation Z is more isolated, lonelier, and less healthy than previous generations (Weller, 2017; Cigna, 2018, cited in Marginean, 2021). They prefer a fun, informal, and relaxed environment at work with flexible working hours (Villa and Dorsey, 2017, cited in Marginean, 2021). Also, they see the role of workplaces as a part of their personal life (Half, 2015, cited in Marginean, 2021). In addition, they have a problem balancing the workplace and personal life (Patel, 2017, cited in Marginean, 2021).

Owing to the lack of research about generations in Turkey, it is hard to say about the work habits of these generations. However, it is possible to say that Generation X, millennials and Gen Z have been exposed same technological changes as those in other countries. Thus, these generations in Turkey are supposed to show similarities with characteristics in Table 2.2.

In each generation, people have had to have different skills to keep pace with changes in the world. Knowledge workers or information workers have started to take their places in the new economy (Johannessen, 2019: 21). It is expected from these people to have some skills to catch changing world. According to Wilks and Sousa (2018), creativity, management capability, complex problem solving, critical thinking, adaptation to the team working, emotional thinking, and orientation are among the expected skills. Csobanka (2016) explains social structure of generations in detail in Table 2.3.

Table 2.3. Social structure of generations (Csobanka, 2016)

Baby Boomers (great generation)	X Generation (digital immigrants)	Y Generation (digital natives)	Z Generation (nation of Facebook)
-Consumption -Competitions and idealism -PCs on late ages -Face to face communication	-Disco and hip-hop culture -TV and videogames -Individualism -PC on young ages -Entrance to information society -Beginning of the internet	-Digital technologies: e-mail, sms -Optimism -Brands popularity -The internet -Media dependence -First digital citizens -Virtual and real social communication -Interest in cultural contents -Social activities -Visuals and audios -Rush in goals -Games	-No world without internet -Social networks -Global connectivity -Flexibility -Tolerance to differenciation -Device skills -Online contacts -Multitasking -Quick decisions -Freedom -No legal sensitivity on digitalization -Emotional incompetency

In addition to all these skills, an undergraduate degree will not be enough in the future. These knowledge workers will have graduated from specialized educational programs and have master's degrees or doctorates (Trot, 2015; Wilson, 2017, cited in Johannessen, 2019: 2). Figure 2.6 shows that people have to be more qualified to survive in the competitive environment of the fourth industrial revolution. Although basic information about machines and physical labor are enough for the first industrial revolution worker, people of the digital age have to improve their many skills to catch work opportunities.
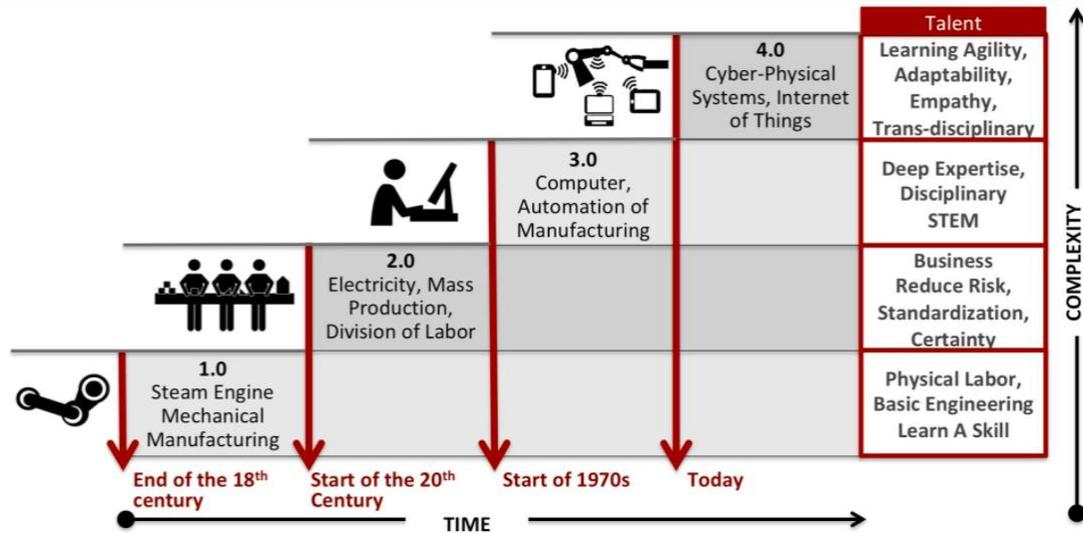
Figure 2.6. Complexity of revolutions (URL-2)

Professions of knowledge workers will be affected by robotization and technological changes. Susskind and Susskind (2015: 3) say that doctors, nurses, architects, priests, lawyers, and others will be among these professions. Johannessen (2019: 28) believed that in the future, doctors and nurses would be multi-educated to understand both anatomy and engineering to operate robots in surgeries. Lawyers, architects, teachers, and economists will also have to educate themselves to be a colleague of robots.

This section has shown that while expectations about the workforce and required characteristics of workers have changed constantly, it brings questions about the future of workplaces together. According to the research about Generation Z, they want independence and flexibility in their jobs and working environment. This perspective proves the truth of looking for alternative working spaces for people with different working styles.

2.4. Evolution of Working Practice and Office Design

From the first industrial revolution to the knowledge economy, all changes in the working style and employee qualifications have reshaped offices according to the needs of the time. While virtual meeting spaces have been discussed as third places, this section aims to understand the physical effects of social, economic, and technological changes on working spaces.

In the 17th and 18th centuries, working spaces were not designed as modern office buildings. Due to the widespread consumption of coffee in Europe, people used coffeehouses as workspaces. Furthermore, coffeehouses started to rent partitions to different professions as an office in these centuries. In the first half of the 18th century, The Admiralty Office building in London, where the paperwork of the royal navy was conducted, is among the first examples of modern office buildings (Schilvelbusch, 2012, cited in Danışan, 2021; URL-3).

Figure 2.7. The Admiralty Office, London (URL-3)

The invention of the elevator and the steel cage systems made it possible to build multistorey buildings. Home Insurance Building in Chicago, designed by William Le Baron Jenney in 1883, is the first example of the multistorey steel cage building. Since then, the number of skyscrapers has risen through their high cost of construction (Willis, 1995: 46).

Figure 2.8. Home Insurance Building, 1883, Chicago (URL-4)

Workplaces and living areas began to separate from each other thanks to the increase in the use of railways at the beginning of the 19th century, which caused growth in commercial institutions, and the phenomenon of rental offices emerged. In this process, with the establishment of private banks and insurance companies, the participation of professional groups in office work began to be observed. Thanks to the increase in office buildings in the middle of the 19th century, complex tasks were divided into sub-tasks. That is why the sizes of the workspaces differed according to each department's requirement. The hierarchical order has made one's own office a symbol of status (Hascher, Jeska, and Klauck, 2002, cited in Çimen, 2008: 17).

In the first industrial revolution, the middle class and white-collar workers became essential to organize general office tasks instead of physical labor. Fordist working order was the first phase of the new human model in working life, including eight hours of working with the hourly wage method, and the fixed wage working group was born (Gordon, 2012). The strict production control mechanism at the factories has also been applied to people working in offices (Heskett, 2013: 74). In the same period, Taylorism, the white-collar factory concept, was born as a management system of workers, a bureaucratization of the structure of control. This control consists of three general categories: the division of labor, the structure of control over task performance, and the implicit employment relationship (Littler, 1978).

Larkin Administration Building, designed by Frank Lloyd Wright in New York between 1903 and 1905, is accepted as the first example of the open plan of the Taylorist, and it was far beyond its time with its design approach (Hascher, Jeska and Klauck, 2002 cited in Dalga, 2007: 42).

Figure 2.9. Larkin Company Administration Building, 1903, New York (URL-5, URL-6)

Hierarchical period office arrangements, which were also effective at the beginning of the 20th century under the influence of scientific management, were created by Frederick Taylor. In this design, it can be seen that crowded groups use a single space together, and the bosses maintain control of their private rooms. Having a stable, hierarchical, supervised, non-personalized environment, treating people like robots that are incapable of thinking, and working under a controller are the principles of Taylorism (Duffy, 1997 cited in İmal, 2009; Lovell, n.d.).

In the third industrial revolution, due to information technology, flexibility, and the importance of communication, the Taylorist office order lost its popularity. In the 1950s, due to steel, glass, advanced air-conditioning, and fluorescent lighting in construction, high-rise buildings started to need less natural lighting and ventilation. These developments make

corporate offices autonomous from the outside world, and open plans were also designed to give flexible working arrangements for workers (Lovell, n.d.).
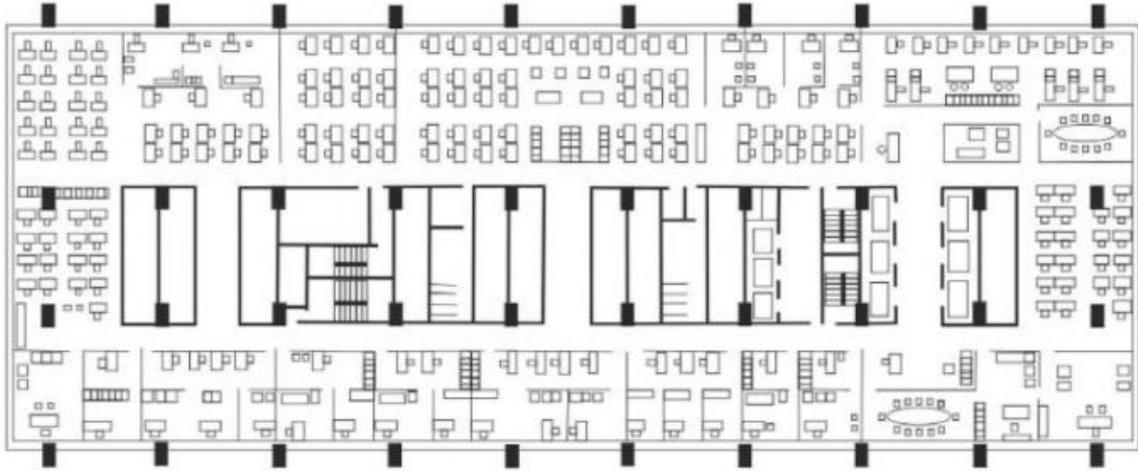
Figure 2.10. Example of open plan in the Chase Manhattan Bank (Lovell, n.d.)

With the "bureaulandschaft", office landscape, open plan spaces based on communication were created in which there was no hierarchy, and everyone was equal. The large volume offices were not designed according to a specific geometrical arrangement. It is entirely different from the traditional system (cell type office), where flats are designed according to people's relationships and workflow, and their separations are provided by plants and low boards (Ecevit, 1980 cited in Sakallı, 1997: 8). However, due to the lack of privacy and an uncomfortable work environment in these offices, bureaulandschaft disappeared over time (Gülden, 2015; Çimen 2008: 27).
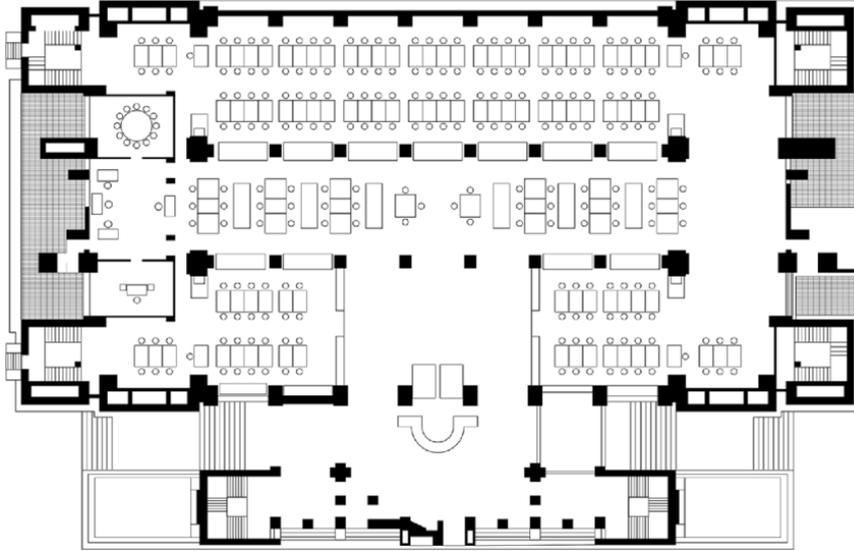
Figure 2.11. Bürolandschaft of GEG Versand Kamen Binası (Wothington, 1997 cited in Ertan, 2019: 20)

In the same period with bureaulandschaft, Herman Miller's Action Office design in the 1960s, an open-plan system with cubicles, was preferred as an alternative to the office landscape (Gülden, 2015). Firstly, modular furniture, a series of desks, and workspaces are considered freedom of movement in this plan organization. Then, because of privacy problem in this organization, cubicles were started to be used, which triggered the process known as "Cubicle Farms" of the 1980s.

Figure 2.12. Action office (Lovell, n.d.)

In the 1970s, open-plan offices began to be questioned as status was not given up, and not all jobs were in the same structure. In the 1980s, office design was essentially reformed due to the widespread use of personal computers, and now the office designs have begun to shape user requests (Worthington, 1997 cited in Tunç, 2019: 14). Although cubicle farms of the 1980s were born to give workers freedom in plan organization, vertical panels between cubicles prevented communication. This organization was unsuccessful despite its contemporary purpose (Lovell, n.d.).

Office buildings have emerged as an example of business management, communication systems, and building technologies coincides in Europe and the USA after the 1990s (Yalçınpınar, 2009: 40). Since most of the time is spent in offices, the approach has emerged in the 1990s evaluates workspaces not only for work but also for living. The year of 1990 has been a milestone to make users to be considered before the planning of buildings (İmal, 2009: 25).

2.5. Change in the Way of Working

With the development of technology towards the end of the 20th century, the period of questioning the meaning of the work and the position of labor has started for the employees (Ören and Yüksel, 2012). In addition, teleworking attracted managers' attention as an opportunity to decrease costs (Lovell, n.d.).

Hot desking was a new organizational scheme of a fully open plan in this period. In this scheme, workers took whatever desk was available. Workers shared the same desks instead of having assigned spaces for them. (Spence, 2018). This organization provided even less privacy than the Taylorist plan (Lovell, n.d.).

In the 21st century, it is claimed that a new social structure, defined as a knowledge or information society, started to be formed because the 'information' was noticed as a key to leading people (Kaypak, 2011). Despite the Fordism tradition, while the industrial working class has lost its central position in society, knowledge workers became a pioneer in the market (Hardt and Negri, 1994: 8). Also, Hardt and Negri (1994: 8) believe that;

"Labor in societies tends toward immaterial labor- intellectual, affective, and technico-scientific labor; the labor of the cyborg and these new forms of labor are immediately social due to their networks of productive cooperation."

This new form of labor causes the differentiation of the function of knowledge and talent in the production process, which increases the importance of human capital in the economy. After all, an invisible capital broke all taboos inherited from the past (Toffler, 2009). Hardt and Negri highlighted that production has become the production of social life in post-Fordism and is not just the production of objects anymore. Cognitive and communicative activities produce residual value. Also, according to them, work becomes thoroughly socialized and occupies people's lives, time, and future, and causes the blur of distinction between life and work (Negri and Hardt, 2009: 141).

As a result of the increasing technological developments and new types of work, the work has become less dependent on the place where it is performed, and it has become increasingly common to do the work in the places and times that are traditionally reserved for leisure time (Naswall *et al.*, 2008, cited in Kıcır, 2019). As a result, the world of the Post-Fordist and Post-Taylorist has been a scene for the creative class who has freedom about their jobs and their lifestyle while the industrial worker class never had (Gandini, 2015). Digital Nomads, mobile knowledge workers, can choose to work anytime, anywhere due to personal computing, which led to the electronic cottage (Kleinrock, 1996, cited in Ertan, 2019: 21; Toffler, 1980, cited in Spinuzzi, 2012). Nonetheless, this freedom can cause isolation and an inability to build trust and relationships with other people, so their ability to collaborate and network can be damaged (Spinuzzi, 2012). This situation makes it necessary to 'work alone together' (Liegl, 2004).

Therefore, new office concepts have made it easy to network, interact, share, mentor, and collaborate with colleagues (Ertan, 2019: 21). Johannessen (2019: 23) believes that the "pajama" workers, innovation or knowledge workers, want to work in 'third places,' not the actual office or home, to be more creative.

The relationship between flexible working practices such as homeworking, hot desking, teleworking, virtual team working, mobile working, non-territorial working and their workplaces is given Table 2.4.

Table 2.4. Flexible working practices (retrieved from Gülden, 2015 cited in Ertan, 2019: 22)

Flexible Working Practices	
Working from home	Still connected with offices
Teleworking	Work is conducted by the help of digital technologies from remote location
Hot desking	Sharing bookable workstations by workers in a team or special zones in offices
Virtual team working	Working together with the rest of team in different geographic locations using communication technologies
Mobile working	Without permanent offices, working in different locations after travels by using laptops and other communication tools
Non-territorial working	Working in sharing workstations in offices

2.6. 21st Century Workspaces

The change in the workforce and approach to work has caused the 21st century to create its workspaces. This section is handled research to understand current new collaborative working environments. New trends of workspaces frequently mentioned in current publications were compiled in Ertan's (2019: 26) study. Here, these workspaces will be explained in detail by considering the spirit of the study.

2.6.1. Home-office

A considerable part of the working population in the world still uses the concepts of 'work' and 'working' in offices, plazas, offices, and workplaces. Considering that the critical elements of "doing business" are still shaped by face-to-face communication, meeting, bargaining, and agreement, everything is transferred to the digital environment, and face-to-face communication is limited to the camera view. That means the usual ways of doing business and the special. It can be predicted that it will radically change the dynamics of personal life (Ekuklu, 2020).

Working from home, *telecommuting*, refers to the way the skilled workforce works at home using communication technologies. In this form of work, all or part of the work is carried out in a home environment regardless of the workplace environment (Olson and Primps,

1984). According to the news by Baazil and Cras (2022), remote working has been a legal right following the legislation approved by the Dutch parliament in the Netherlands. This decision will be a big step toward giving workers flexibility in choosing the way of working.

In the early-to-late 2000s, workspaces have been a combination of work and play to reflect the company's spirit of youth and spontaneity. In addition to that, there are also regular work-from-home employees in the United States and Europe. In the United States, these employees have risen by 173% since 2005, now standing at 4,7 million employees or 3,4% of the workforce (Walsh, 2020). In Turkey, 3% of employed people have worked from home in 2020, according to recent data from Eurostat (2022). Percentages of people who work from home are given according to total employed ones and their gender in Figure 2.13. Despite fluctuations over the years, it can be said that working from home in Turkey has again entered an increasing trend in recent years.
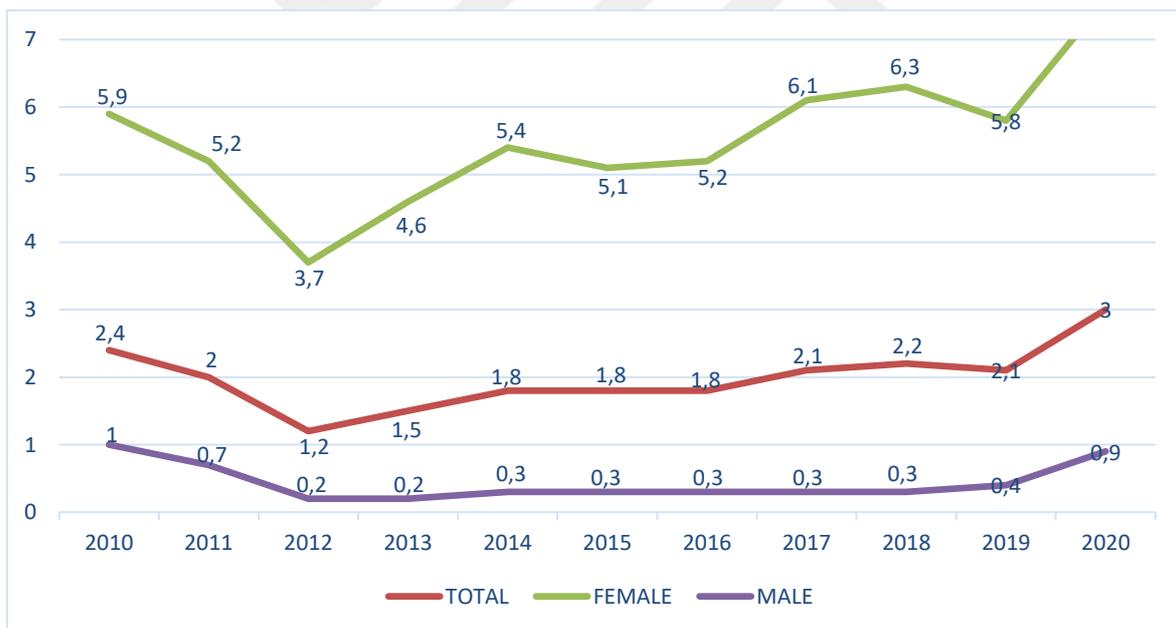
Figure 2.13. Percentage of employed persons working from home (%) (Eurostat, 2022)

The Covid-19 pandemic, which started in China at the end of 2019 and spread to the world, has changed the world's routine. Work-life has also been affected by this pandemic radically. The Covid-19 outbreak has changed the way we work and our perception of the city and its needs. One of the most critical components of the post-pandemic digital society will be the issue of "remote work", which has started to take its place in our lives. Depending on the adaptation to the digital world, this new pandemic forced companies to deal with new

challenges or take advantage of new opportunities. All around the world, the companies full of white collars had to pass to remote working due to precautions like social distance and self-quarantine (Ekuklu, 2020; Dicu, 2020; Matei, Abrudan and Abrudan, 2020).

Precautions against the pandemic made people adapt to unexpected or unpleasant situations and find new ways to cope with these challenges. Workers who mainly had to work from their homes maintained their goals via email and videoconferencing. Likewise, while mobile phones, laptops, and other technological devices have become an integral part of daily lives, the need for paper files have been decreased. Classic business understanding has also been affected by all these developments, and it is predicted that the need for physical workspaces will decrease (Matei, Abrudan, and Abrudan, 2020).

Although people know that job requirements can even be controlled in remote working conditions, there are some difficulties working from home. The advantages and disadvantages of working from home during the quarantine period of Covid-19 are given in Table 2.5.

Table 2.5. Working from home during quarantine period (Akbaş and Türkmendağ, 2020; İlyas, 2022: 23)

ADVANTAGES	DISADVANTAGES
Financial savings	Need for technological infrastructure
Time savings	Flexibility in working hours
Ease of taking care of the home	Different behaviors of superiors
Autonomy	Working conditions in homes with children
Increased work efficiency and creativity	Increase in workload
Comfortable and flexible work	Lack of working environment
Healthy environment	Interruption in concentration
Moving away from the stress environment at work	Difficulty in managing work and out of work relations
	Lack of communication and collaboration with colleagues

Employers often prefer working from home, as it helps reduce costs and makes it possible to receive better quality services. Employees tend to work from home with the idea that they can use their time as they wish, devote as much time to their families and private lives as possible, and be freer (Kıcır, 2019). According to the study of Ussher, Rotik, and Jeyabraba (2021), 79% of the employees have the opportunity to work from home for short periods, and only 22% of these employees are willing to work from home all of the time. On the other hand, another group of employees complains about disadvantages of working from home such as lack of working environment, need for technological infrastructure, interruption in concentration, inability to access office supplies, unsociability, lack of communication and collaboration with colleagues. Because of these handicaps, 57% of employees do not prefer working from home all the time (Akbaş and Türkmendağ, 2020).

People preferring flexibility in their lives and working hours and refusing the mobbing and other office problems have started to choose freelance working in recent years (Table 2.6). In Ilyas's research conducted with 112 freelancers, it is seen that flexibility of this type of working satisfy the large majority of this group (Table 2.7).

Table 2.6. Reasons for choosing freelance (İlyas, 2022: 184)

Percentage	Reasons
56%	Flexibility
28,6%	Mobbing in offices
37,5%	Problems in offices
37,5%	Refusing the regular working hours

Table 2.7. Advantages of freelance working (İlyas, 2022: 185)

Percentage	Advantages
88,4%	Flexibility in timing
76,8%	Flexibility in physical working environment
67%	Allocate time for hobbies
58%	Getting rid of the pressure of offices

On the other hand, this study has proven that freelancers deal with many problems like time management, lack of working conditions, loneliness, and financial incompatibility (Table 2.8).

Table 2.8. Problems of freelance workers (İlyas, 2022: 184,185)

Percentage	Problems
58,9%	Not getting a regular job
58%	Lack of social security
42%	Wrong time management
36%	Financial incompatibility
37,5%	Not receiving payment
33%	Lack of knowledge sharing
35,7%	Loneliness
20%	Problems in social relations

In the absence of an office, freelancers are jointly deprived of the financial and intangible resources offered by the office. In addition to material means of production such as electricity, wi-fi, food, coffee, computers, and an ergonomic working environment, it also takes away from the commonality of sharing experience and knowledge in the workplace. Furthermore, spending most of the day alone appears to have serious adverse effects on their social and psychological well-being (İlyas, 2022: 195).

2.6.2. Incubation centers

Incubation centers are offices created to commercialize the ideas of technology-based entrepreneurs. These centers aim to give young people or start-ups a chance to develop their ideas with the help of mentors. (Ertan, 2019: 27). Özdoğan (2016) says there are many services in these incubators, which are given below.

- Low rental prices
- Shared system to reduce expenses
- Professional business support and mentoring
- Inside and outside business network support

Incubation centers are generally located inside technoparks. Young entrepreneurs work with technoparks and universities to gain self-sufficiency for their future work lives. Telephone, secretary services, telefax, café, meeting rooms, and conference halls are other services in these centers (Aydın, 2020; Ertan, 2019: 62).

2.6.3. Accelerators

Accelerators are spread from the USA to new geographies and sectors. The first program was established in 2005 for digital startups. Developing business plans, investments tactics, and tests of prototypes are some of the services in this program. In contrast to incubation centers, accelerators organize highly selective programs of limited duration, between 3 and 12 months. In addition to pre-accelerator programs prepared to support entrepreneurs in the pre-startup stage, accelerator programs are given to entrepreneurs and startups for their business future (Bone, Allen, and Haley, 2017: 9).

Miller & Bound (2011) and Cohen & Hochberg (2014) listed characteristics of accelerators in Figure 2.14 as fixed duration program, payment rather than fees, seed funding, focus on services over physical space, admission in cohorts, startup services, and selective approach (Bone, Allen, and Haley, 2017: 13).
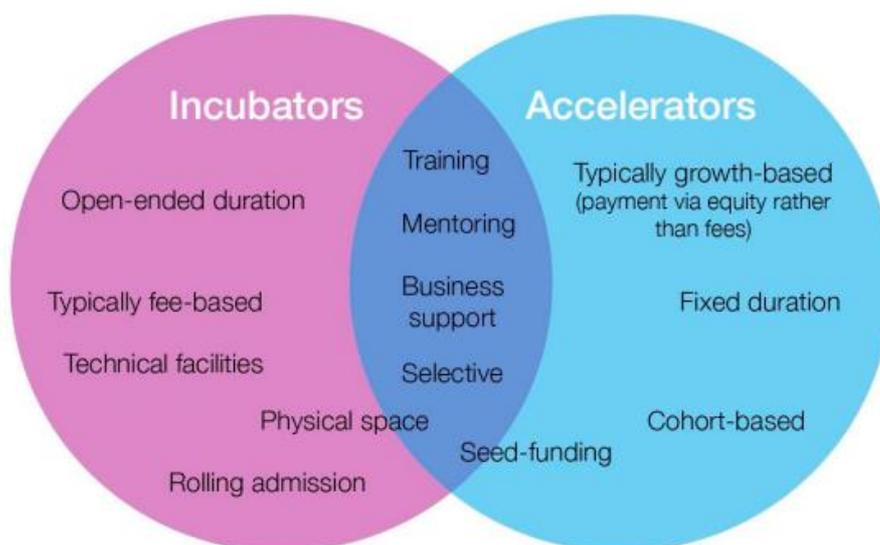
Figure 2.14. Features of incubators and accelerators (Bone, Allen and Haley, 2017: 14)

2.6.4. Hackerspaces

The purpose of these hackers is far beyond stealing people's bank accounts or corporate information. This community consists of Do-It-Yourself (DIY) enthusiasts in the field of

technology. People of this culture come together to work on their projects and learn from each other in this co-working atmosphere wherever a community of enthusiasts in a common motivation. Digital platforms such as hackerspaces.org have been developed as an alternative to physical spaces to make communities interact through internet networks (Schlesinger *et al*., 2010; Bauwens, 2005, cited in Ertan, 2019).

Figure 2.15. Hackerspaces (URL-7)

2.6.5. Makerspaces/ maker lab

Makerspace or maker lab is also a collaborative workspace. These spaces can be opened in a school, library, or separate public or private facilities to make, learn, explore and share. Kids, adults, entrepreneurs, and students can use these spaces to network and use equipment in makerspace, such as 3D printers, laser cutters, CNC machines, and soldering irons (Makerspaces.com, 2004). Maker Lab is another DIY movement to prepare people for the needs of the fields of science, technology, engineering, and math, which are critical 21st century skills (Aydın, 2020: 14; Makerspaces, 2004).
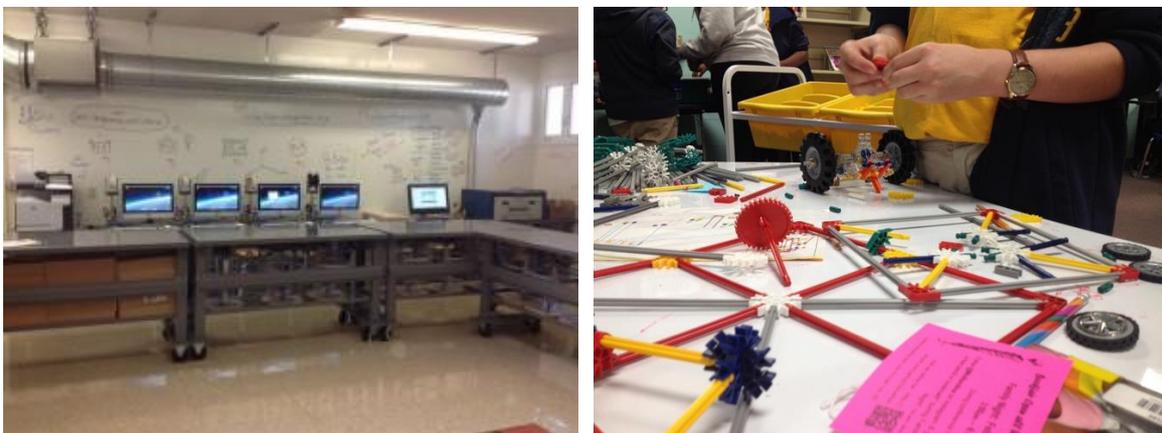
Figure 2.16. Maker spaces (URL-8)

Electronics, 3D printing, 3D modeling, coding, and robotics are some skills that can be learned in Maker Labs. These spaces are also available to start-ups like incubators and accelerators. A collaborative environment and access to equipment encourage users to be part of the culture of openness and apply to learn and help people gain talent in entrepreneurship. There is confusion about fab labs and maker spaces because they give similar services to their users. While fab labs are commercial organizations, maker spaces are a product of public enterprise to attract local community members (URL-8).

2.6.6. Fablabs

The first Fabrication Laboratory (Fablabs) was founded by Professor Neil Gerhenfeld in 2001 at the Massachusetts Institute of Technology (MIT). Gerhenfield's purpose was to give a chance to engineering students to learn how to use digitally controlled equipment to continue manufacturing other machines. In addition to engineering students, architecture, industrial design students, and artists are also among the users of this lab. Fablabs are spread all over the world, also in developing countries. According to MIT, these labs are in third place, and there should be some rules to be applied to all fablabs in the world. That is why MIT publishes international Fablab conference archives online and serves MIT's training program for the Fablab community to have the same grammar and principles (Liotard, 2017).

Fablabs and makerspaces have a similar organizational structure. Although makerspaces are owned by public institutions, fablabs are commercial organizations directed by MIT rules.

Figure 2.17. Fablabs (URL-9)

2.6.7. Living labs

Living labs are an innovation milieu developed by MIT's Professor William Bill Mitchell. The aim of testing new technologies in home-like constructed environments has been called living labs since 2000. These labs have been evaluated as an environment, a methodology, and a system. These perspectives and their relations are given below:

- Environment - technological platforms and user communities
- Methodology - data transfer and methods for user involvement
- System – living lab and its interdependent parts (Bergvall-Kareborn, Holst and Stahlbrost, 2009)

According to The European Network of Living Labs (ENoLL), living labs are:

"… practice-driven organisations that facilitate and foster open, collaborative innovation, and real-life environments or arenas where both open innovation and user innovation processes can be studied and subject to experiments and where new solutions are developed. (ENoLL, n.d.)"

Co-creation, multi-method approach, real-life setting, multi-stakeholder participation, active user involvement, and multi-method approach are elements of living labs. Living labs work with citizens, research organizations, companies, cities, and regions in the direction of these

elements for co-creation, rapid prototyping and validation to scale up innovation, and businesses (ENoLL, n.d.).

2.6.8. Co-working spaces

Gandini (2015) describes co-working spaces as a 'third way' of working, halfway between standard and traditional work-life, and independent work-life as freelancers, digital nomads, and remote workers who work at home in isolation. The popularity of these spaces makes people dream about the work environment, including collaborative, inspiring, and stimulating. These spaces have their organizational arrangements offering alternative work settings (Lopez, 2013).

Figure 2.18. Co-working space (URL-10)

New types of workspaces listed in this section share similarities. Although co-working spaces provide only working and studying areas, users come together in other workspaces to use laboratories, 3D printers, machines, etc. These alternative functions serve a particular group of people interested in specific subjects. On the contrary, co-working spaces can be used by people who need a place to work and study. Detailed information about co-working spaces is given following section.

2.7. A Detailed Overview of Co-Working Spaces

Co-working spaces, the main subject of this study, are chosen as a research question due to their comprehensive structure and appeal to many different user groups. These spaces have started to become widespread in Turkey as well, and they have started to attract the attention of those looking for new alternatives with the opportunities they offer.

In this section, co-working spaces have been researched in all dimensions. During the research, many studies from Turkey and worldwide have been investigated. Working environment, venue organization, and business models based on the exchange of ideas in these spaces were generally discussed in other studies. This section aims to criticize the accessibility of these spaces through the inferences from the literature review.

2.7.1. Spatial characteristics of co-working spaces

Co-working refers to a specific way of organization that brings together all economic actors to create a highly collaborative community (Capdevila, 2014). According to Florida (2011: 243), the place is the factor that brings together economic possibilities and ability, jobs, and people organically to catch creativity, innovation, and growth. As a result, co-working spaces have emerged in various forms and various urban contexts to critically question the traditional concepts of offices and the place of creative work (Brown, 2017). There are multiple popular definitions for co-working spaces. Moriset (2013) defines co-working spaces planned to attract creative people and entrepreneurs who endeavor to break isolation and find a convivial environment that favors meetings and collaboration as "serendipity accelerators," and these spaces are preferred by people to break the loneliness. Despite creativity and skill of knowledge works, their success comes from teamwork and collaboration (Grant, 2014, cited in Johannessen, 2019: 24). Co-working emerged to create an atmosphere with support infrastructure to help entrepreneurial firms or freelancers grow by providing a collaborative environment and networking opportunities (Arora, 2017).

Co-working spaces have improved the socioeconomic conditions of knowledge professionals in the knowledge economy (Gandini, 2015). According to Moriset (2013), co-working spaces are coherent with the two-face economic trend: the emergence of a knowledge economy and Schiller's (1999: 19) digital capitalism shaped by the widespread

use of computers and the Internet. As a result of these developments, Florida (2012: 41) asserts that a new economy has been based on creativity, which he calls a creative economy, which has gained its power from a creative class that contains people in science, engineering, architecture, and design, education, arts, music, and entertainment. However, Moriset (2013) believes that the scope of Florida's class has been getting larger because it is possible to count software professionals, engineers, scientists, lawyers, and consultants as a part of this creative class.

Belk (2014) believes co-working spaces bring 'another brick' to the globally popular term of 'sharing economy' driven by the digitalized economy. Accordingly, the main users of co-working spaces, particularly in the distinct specialized co-working spaces, are self-employed persons, freelancers, or micro-businesses (Bouncken and Reuschl, 2018). Although companies have started to rent entire floors for their employees in co-working spaces in recent years, according to Foertsch's (2020) data, freelancers are still the largest group, with 42% membership worldwide. Start-up firms, incubators, and small-sized enterprises have flexible working programs without certain positions and can be counted among members of co-working spaces. Adopting project-based work or the self-employed method, the new generation composed of independent people prefer the new office trend that is rising all over the world instead of the coffee shops or a room reserved in the house to spend their nomadic lives. (Döm, 2018 cited in Tunç, 2019: 20)

In addition, Ross and Ressia (2015) explain reasons for choosing co-working spaces:

- Flexible working conditions that are designed by taking into consideration of macro-social economic reality
- The third way of working that is an alternative for both working from home and corporate office life
- The social boundary which separates working and home activities and creates social interaction
- Collaborative working conditions where people put their skills into practice

Tunç (2019: 40) sorts spatial properties of co-working spaces as proximity, openness, variety, flexibility, access to private rooms, territoriality, social capital, and accessibility.

Proximity is a physical closeness to share the knowledge and skills gained with other employees (Boud and Middleton, 2003). The co-location of economic actors in co-working spaces leads to an emerging collaborative community. (Capdevila, 2014). In the same way, Castilho and Quandt (2017: 33) believe that:

"..., *a co-working space creates business ecosystems fed by knowledge sharing and learning practices in a particular space that results in opportunities for innovation in business, services, and products.*"

In these spaces, the network is assumed to produce a mutually beneficial ecosystem (İlyas, 2022: 44). According to the research of VIDA Coworking, 82% of members developed a professional network thanks to co-working, and 64% believed that work and business referrals should be fed by the co-working network. Work engagement and motivation have been developed by 84% of members, and 80% believed they have a chance to want help and guidance from their coworkers (URL-11, 2022). Furthermore, coworkers have a chance to be part of a global economy far away from the national economic crisis (İlyas, 2022: 64).

Although there are some debates about privacy issues in open-plan offices, open planning encourages social interaction between members (Irving and Ayoko, 2014). Variety in co-working spaces that enable members to work alone or within a group or use virtual offices, meeting rooms, skype rooms, cafes, kitchens, and so on is an essential factor in choosing a co-working space (Tunç, 2019: 43). Since the office buildings are dynamic structures with an intense information flow, the space designs and furniture flexibility make them easy to use (Altınok, 2012). Tunç (2019) believes that if any member needs a private space for some reason, co-working spaces should supply this environment with sound insulation, visual privacy, and other technique requirements. These spaces should create a peaceful environment to make their members feel belongingness to be sustainable. These spaces enable individuals who will never come together throughout their working life to cooperate for common purposes and to create a social network. Also, this good social network allows members to have status in society. Florida (2011: 88) explains that the creative class has cultural, political, and economic freedom to choose where to live and work. Therefore, the proximity of location and flexible working hours are significant to create accessibility (Tunç, 2019: 41).

The co-working environment provides flexibility, autonomy, and opportunities for social interaction in a space where there is the integration of different elements of different working practices like home office concepts, telework, and incubators (Bouncken and Reuschl, 2018). Bouncken (2018) also says co-working spaces provide office spaces and social spaces that can be used for different functions, such as a cafeteria. According to the research of VIDA Coworking, 89% of members report they are happier than the time before joining a space. 83% of users do not complain about loneliness anymore, and 86% feel they are a part of a society grown in these spaces. Furthermore, 90% of co-working users said they meet other members for social reasons, and 54% meet with other users after work and on weekends (URL-10, 2022). In addition to office services, co-working spaces also promise their members accessibility to necessary networks and sources to make their dreams come true and the proper communication to solve problems (İlyas, 2022: 66).

Co-working-space providers can offer the space free but typically charge a fee for their members, using a membership model including flexible memberships of hours, days, and weeks, or rent out the space for a flexible hourly or daily fee (Bouncken, 2018). Members can rent meeting and conference rooms and use wireless fidelirt (wi-fi), private audio or video call cabins, individual lockers, cafés, recreational zones, and social interaction areas. (Arora, 2017).

There are also versatile equipment rental opportunities, including telephone lines, video, and audio equipment, computers, printers, and even cloud storage for startups that need larger data resources (Huang, 2019). Zeytun (2014) also says that some brands provide childcare or secretary services, and some of them let their members use the address of co-working spaces as their work addresses.

İlyas (2022: 94) summarizes the services of co-working spaces as the community in that people can be part of in exchange for certain fees. Also, she believes that this formation provides primary conditions to offer a liberal equal opportunity for every member (Copjec, 2002: 172, cited in İlyas, 2022: 94).

2.7.2. Co-working spaces in the world

The co-working space idea was first developed in 2005 in San Francisco (Gandini, 2015). Silicon Valley in San Francisco has a high concentration of technology industries and hardware companies with socially organized work patterns based on social networks and tacit or shared knowledge (Pratt, 2002). Google and Facebook are the leaders in creating the best working environment for their employees by trying unconventional offices after the idea of open workspaces, which is shifting from closed office plans to an open office culture (Arora, 2017). In the following years, Apple, Ernst & Young, Deloitte, and IBM were designed their offices according to this trend (Moriset, 2014).
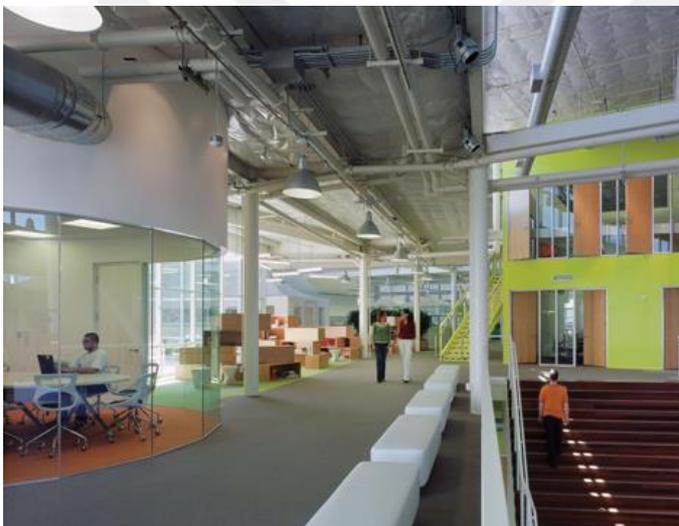
Figure 2.19. Google Office in Silicon Valley (URL-12)

Spiral Muse, the first official co-working space, opened as a collaborative workspace and was founded by a software engineer to serve as a non-profit collaboration guide in 2005 in San Francisco. Citizen Space in San Francisco started the global co-working movement and opened in 2006 (Cetiz, 2017: 42). Later, Jelly was founded by two roommates, and it attracted the media's attention, and then the number of these spaces has gotten to rise in the following years. This trend has reached such a point that conferences began to be held. In 2011, Co-working Unconference was organized, which can be counted as the first official conference (Zeytun, 2014).

Figure 2.20. Citizen Space, San Francisco (URL-13)
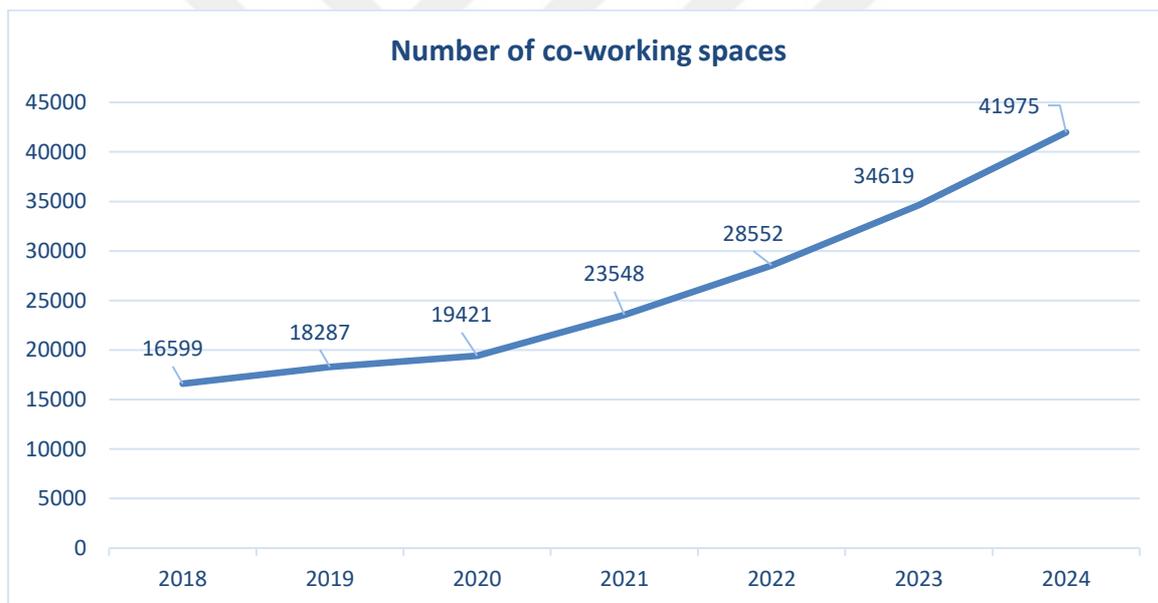
Figure 2.21. Post pandemic coworking industry projection (Risio, 2020)

As shown in Figure 2.21, the number of co-working spaces was almost 17.000 worldwide in 2018, and this number is expected to reach 40.000 by 2024. Although the industry has shown slower growth in 2020 due to the adverse effects of the pandemic, it is expected to have a rapid growth trend in the following years. The industry's market size is expected to reach $13.03 billion by 2025, a growth rate of 12% (URL-11, 2021).

The ranking of the countries hosting the most spaces worldwide is given in Figure 2.22. All global co-working spaces have almost 680 square meters (m^2) in average space size and 83

people capacity. North American spaces have the largest average space size with 910 m^2, and the following spaces are in Asia with 752 m^2 on average space size. While Asia hosts the highest average capacity with 114 members, South America has the lowest member capacity with 54 people (URL-11, 2022).
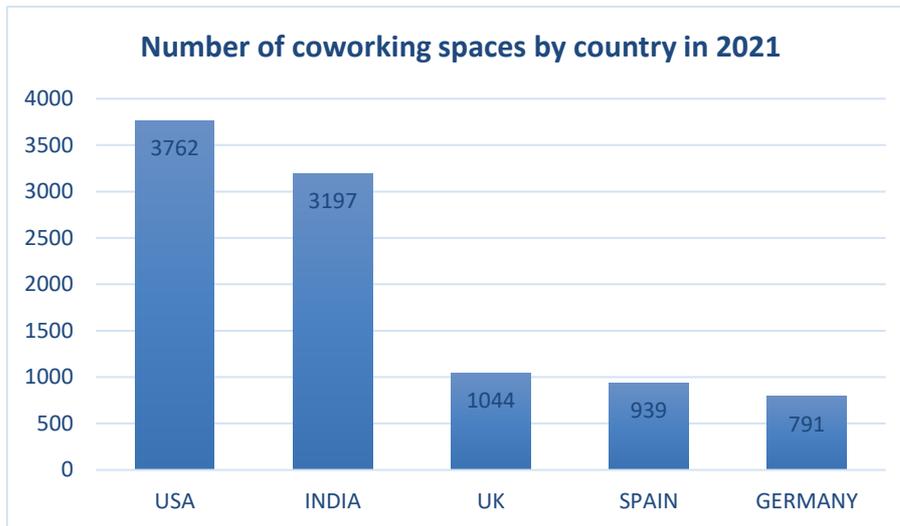
Figure 2.22. Number of coworking spaces by country in 2021 (John Muller and George C (2021)

According to future estimations, 5 million members will be working in these spaces by 2024, a 158% rise compared to 2020 and more than double of 2021's 2.4 million members (Figure 2.23) (Risio, 2020; URL-11).
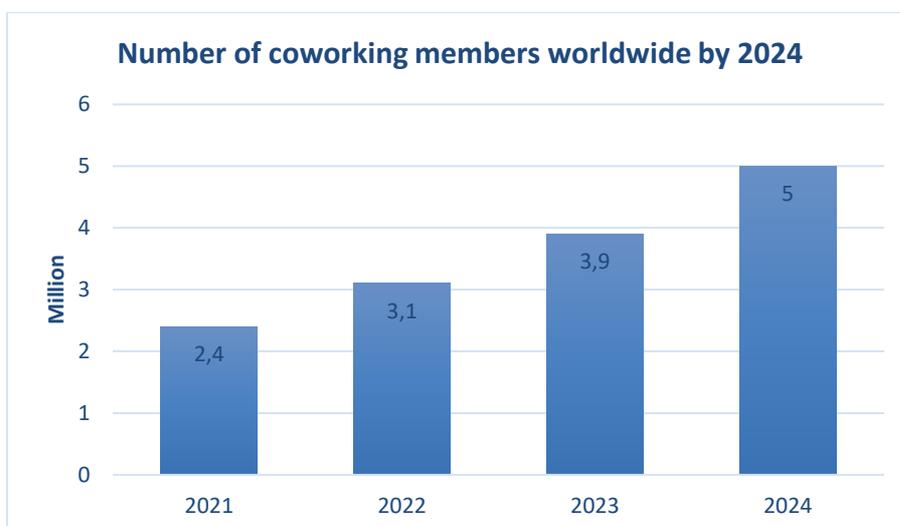
Figure 2.23. Number of coworking members worldwide by 2024 (John Muller and George C (2021)
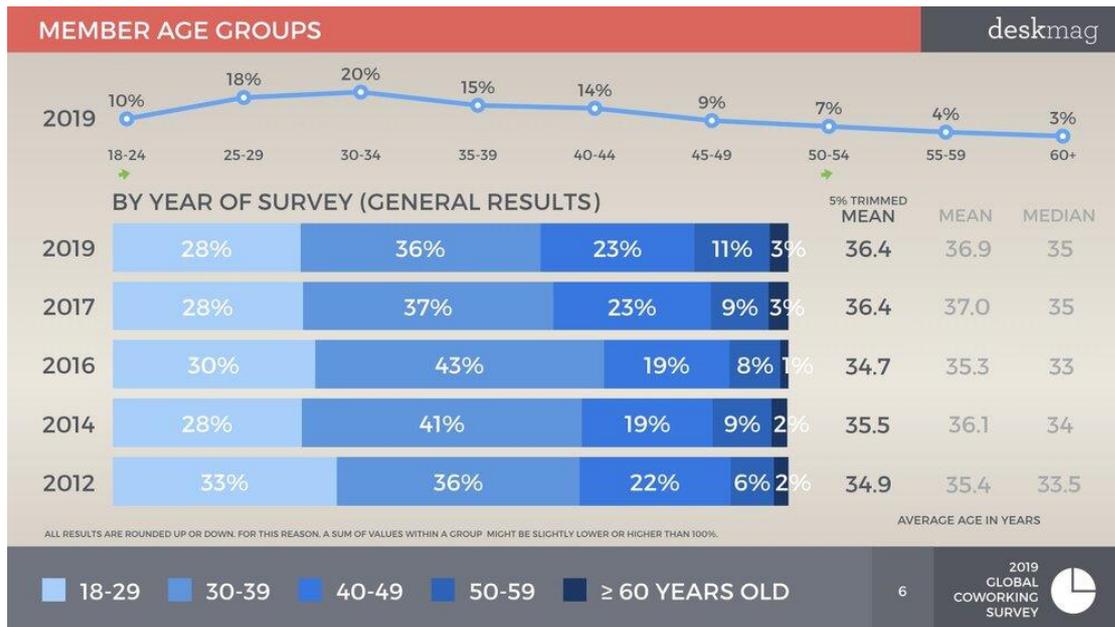
Figure 2.24. Member age groups (URL-14)

In Figure 2.24, it is possible to read the age of members year by year. It cannot be wrong to say that the share of middle-aged people who started to follow this new work trend is also rising. Similarly, in 2022, 65% of co-working users are younger than 40. Although most co-working space members are between 30 and 39 years old, 12% are older than 50 (Stevanovic, 2022).

Foertsch (2019) and Stevanovic (2022) believe that female members have been rising steadily for years. The rate of women coworkers in the co-working workforce is 44%. However, this number increases to 46% in the freelance sector (Stevanovic, 2022).

Figure 2.25. Member professions (Stevanovic, 2022)

Figure 2.25 shows that IT professionals dominate the members of co-working spaces with 22%. PR, marketing, and sales employees at 14% and consultants at 6% follow the IT professionals. Although the IT industry is gaining strength in its leading, the number of consultants is decreasing compared to previous years (Stevanovic, 2022).
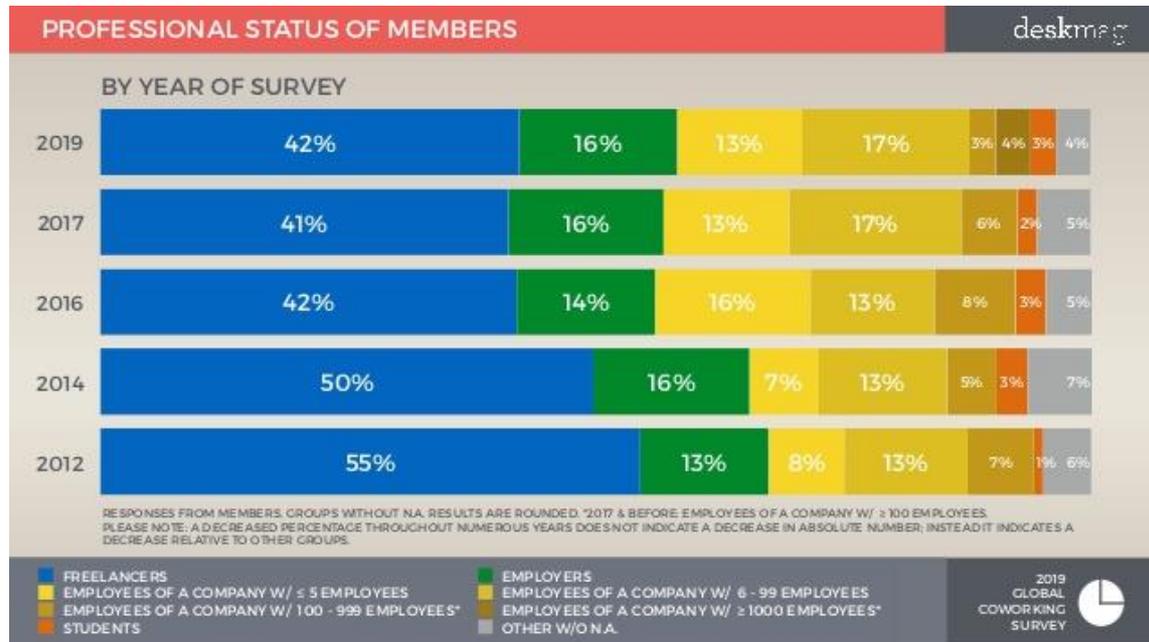
Figure 2.26. Professional status of members (URL-14)

In 2019, freelancers were the leading user group of co-working spaces worldwide, as shown in Figure 2.26. Employees of companies similar to previous years followed this group. In 2022, freelancers are still the largest group of professions with 41% of the workforce, and the corporate workers follow this group with 36%. Big companies like Microsoft, Spotify, Pinterest, and HSBC have started to prefer co-working spaces (Stevanovic, 2022).

The members who have bachelor's degrees are the majority of all members (Figure 2.27).
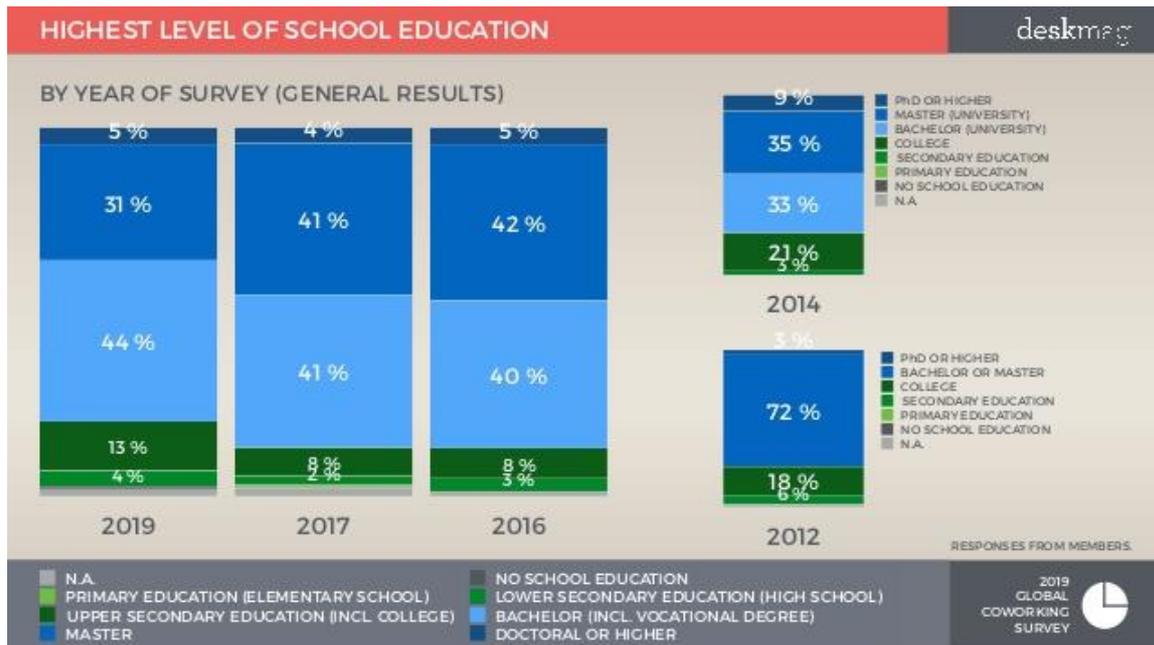
Figure 2.27. Highest level of school education (URL-14)

In general, startup companies sign a lease for a larger office to be used as a co-working space and take responsibility for organizing and managing the resources. Owners of co-working spaces are mostly limited companies. With the increasing number of members, companies move to larger spaces and grow their business models (Huang, 2019). However, most of the popular venues leading this business are chain businesses. In her article, Huang (2019) gave names of large co-working space companies in the US that also have other offices worldwide. The first five companies are Impact Hub, WeWork, Your Alley, Knotel, and District Cowork. Regus dominates the industry with 11% of the market share in the world. The top five co-working space companies worldwide share 14% of the overall market coverage (Stevanovic, 2022).

2.7.3. Effects of the pandemic on co-working spaces

According to the research report by Global Workplace Analytics (Lister, 2020), by the end of 2021, 25-30% of the workforce will continue to work remotely. Also, the same report has shown that percentage of employees who want to work from home at least some of the time is 80%. This group has wanted to evaluate remote working by considering the experiences during the quarantine period. In addition to that, managers and executives' fear about the performance of their employees while working outside of the office has reduced in this period.

The Report of Global Workplace Analytics (Lister, 2020) has also highlighted that employees spend 50% of their time at their desks. This fact can be evaluated as proof of the enormous waste of money and space in classic office understanding. Furthermore, this report calculated that the employer whose employees work remotely could save about $11.000 for every person. It has also been determined that:

"The annual environmental impact of half-time remote work ... would be the greenhouse gas equivalent of taking the entire NY State workforce off the road."

All results of calculations and research have proved that remotely working helps sustainability, financial and timesaving.

Although both employees and employers have noticed the advantages of these 'compulsory conditions', classic office understanding will continue in the post-pandemic era. The contrary to past, the offices will be designed more flexibly, and some will be designed as "far home" and more like a home environment because most of the employees in the future will probably use 50% of their weekly working time as remote working. At this point, the understanding of co-working spaces will attract attention as an approach combining collaborative work, traditional work, and remote work. From this perspective, it will not be wrong to say that the traditional approach to large-area projects is a candidate to be both an environmental and economic burden and to stand idle in many aspects because flexible multi-purpose and smart designs and projects will gain more importance than ever in the future (Nakay, 2020).

Some of the measures taken by co-working spaces during the pandemic process are given below.

- More frequent sanitization of all high-frequency touchpoints (84,56%)
- Making hand sanitizer accessible throughout the space (74,16%)
- Creating and sending out an email with tips for prevention (68,46%)
- Posting signs around your space with tips for prevention (57,05%)
- Limiting space access (37,25%)
- Space closure (20,13%) (URL-23, 2020)

Deskmag, an online magazine about co-working and its subjects, has investigated how coronavirus affected co-working spaces in 2020 in Europe. The quarantines applied worldwide, the obligation to stay away from the crowd and the prohibition of physical events brought by the pandemic also affected the co-working spaces. According to the study conducted in Europe, co-working spaces that opened before 2020 supplied more online services, private offices, and temporarily restricted discounts, and their marketing expenditures have increased (Figure 2.28). On the other hand, there were fewer community-orientated activities and rented hot desks than in previous years and working hours per staff, and the number of staff decreased in these spaces (URL-21).
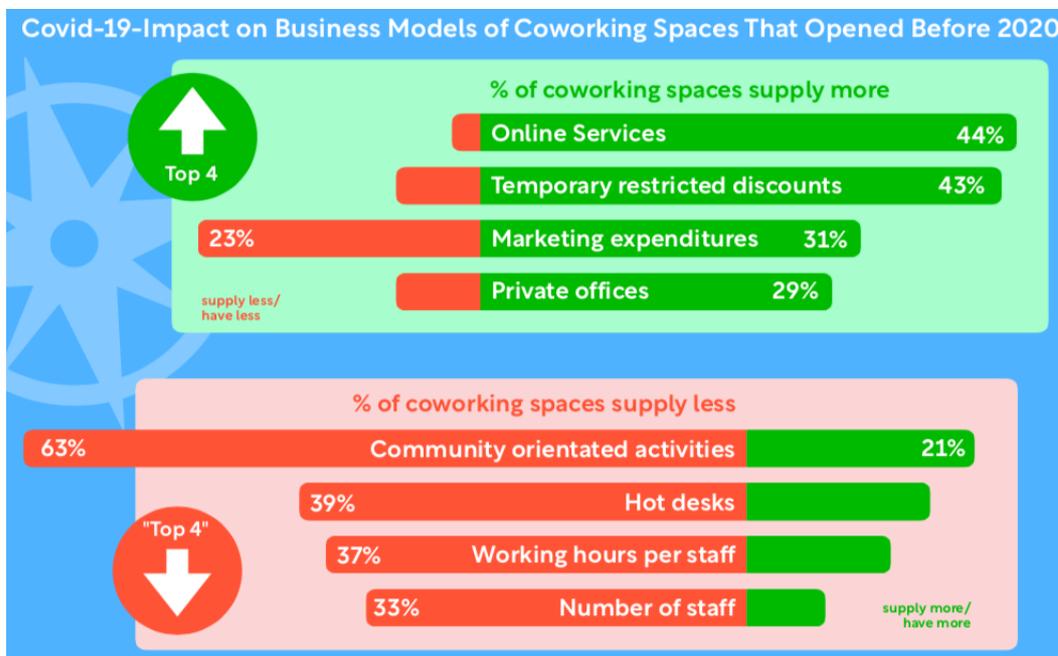
Figure 2.28. Pandemic impact on business model (URL-21)

After the restrictions of the first wave of the pandemic, demands for hot desks, individual offices, and dedicated desks have been increased again. Furthermore, meeting spaces and events spaces stayed empty. Physical distancing, strict hygiene rules, and prohibition of more significant events became frequently pronounced words in 2020, as shown in Figure 2.29 (URL-21).
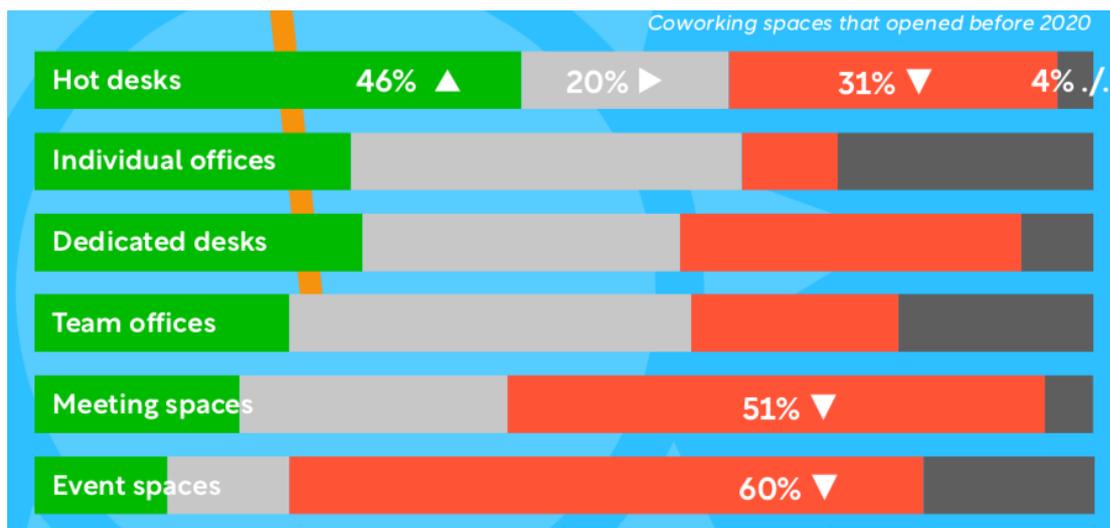
Figure 2.29. Development of demand in summer 2020 (URL-21)

According to Deskmag (2020), numbers of contracted members, maximum allowed capacity per co-working space, and the number of members physically working at a co-working space per day were negatively affected according to the data in 2020, and these variables have been affected by the crowd of the cities and capability of co-working spaces. The proportional distribution of these changes is given in Table 2.9.

Table 2.9. Development of co-working spaces in 2020 (URL-21)

	Co-working Spaces That Opened Before 2020	Co-working Spaces in Cities w/> 1M That Opened < 2020	Spaces w/ Private Offices as #1 Revenue Pre-Pandemic
Number of memberships	-23%	-32%	-20%
Capacity of co-working spaces	-20%	-15%	-8%
Number of members physically working	-53%	-68%	-70%

The pandemic has affected the co-working spaces as well. Nevertheless, research has shown that co-working spaces will continue their popularity when normal life begins again. Based

on the experiences during the pandemic period, since time spent in transportation from home to the workplace and on the way back and time spent on breaks started to be seen as a loss, it is estimated that people now want to work closer to their homes and working from home will increase (Figure 2.30). It is thought that this situation will also reflect on real estate prices, and business travel will decrease due to online experiences (Akbaş and Türkmendağ, 2020; URL-21)

Figure 2.30. Expected trends in the real post-pandemic (URL-22)

According to the research conducted by John Muller and George C (2021), 68% of American workers prefer the hybrid workplace model. Moreover, 33% of workers say they do not want to return to the office full-time. That is why companies' interest in co-working spaces is getting high to decentralize office space and give chances to employees who wish to work closer to home without wasting time commuting. After the working from home experience during the pandemic, 57% of employees want an office closer to home.

The study shows that co-working spaces are the second most popular answer, given the question of what the best alternative to regular offices is (Figure 2.31).
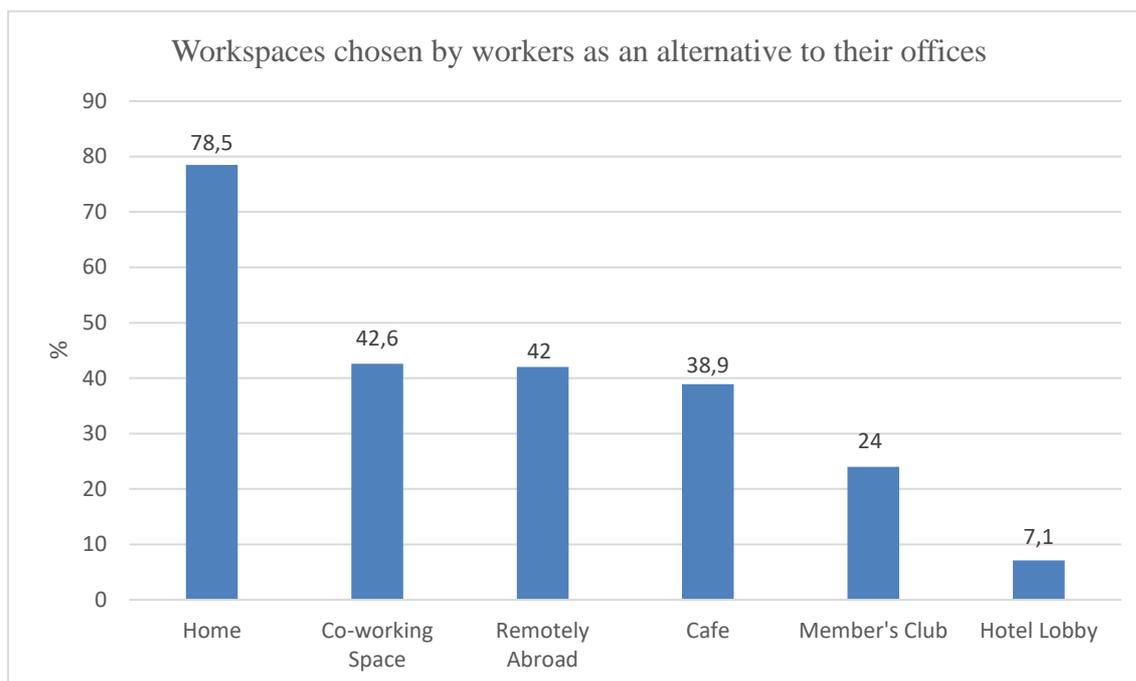
Figure 2.31. Workspaces chosen by workers as an alternative to their offices (John Muller and George C (2021)

In 2021, increases and decreases occurred in the services in co-working spaces offered, as shown in Table 2.10.

Table 2.10. Changed services during 2021

INCREASED SERVICES		DECREASED SERVICES	
SERVICE	%	SERVICE	%
Online Services	44	Community Oriented Services	63
Temporary Discount	43	Hot Desks	39
Marketing Expenditures	41	Working hours per staff	37
Private Offices	29	Number of staff	33

The digital society and global digital citizen, which has been used as a conceptual and relatively intellectual expression until now, can no longer be the subject of only the technology-oriented business world and the academic world but can become a concept that will affect the society at every layer, just like the Industrial Revolution. While redefining the concepts of space, communication, and socialization, the pandemic can also completely change the concept of "interaction". It will reduce physical interaction, the concept of being

together to a necessity, spread digital interaction, and force the society to change as the duration of the pandemic gets longer (Ekuklu, 2020).

The concepts of work, socialization, organization, and action can be permanently changed by being wholly freed from the physical. It can be possible with online collaboration tools, which have become widespread during the pandemic, for communication and solidarity. That will only be possible by establishing a culture, unwritten moral principles, and style related to all technological tools (Ekuklu, 2020).

In the post-pandemic era, co-working spaces would be a choice as a working environment for new remote workers. However, these spaces will have to adapt themselves to changing conditions. It is impossible to keep many people together as before. For this reason, more partitions and private offices will be designed in co-working spaces to keep people safe (Molla, 2014). Ventilation, openable windows, lower desk density, more expansive spaces, corridors and doorways, reduced limits for contained spaces such as lifts, and more staircases will be the main parameters in the future design (Priday, 2020; Wainwright, 2020). That is why it is clear that safety against viruses will be the main problem for co-working areas and offices in the post-coronavirus world (Molla, 2014).

3. CO-WORKING SPACES IN TURKEY

Co-working spaces have gained popularity in literature thanks to developments during the pandemic. This thesis has criticized these spaces from the perspective of 'accessibility.' It is aimed to highlight the affordability and location of these spaces from the perspective of accessibility.

Ideapol is accepted as the first co-working space in Turkey. On the other hand, the rise of this trend started with the foundation of Urban Station, which has branches in Chile, Mexico, and Colombia (Zeytun, 2014). According to Coworker's (2022) data, the number of spaces registered on the website is 87 in Turkey. In addition to that, there are many spaces in Turkey which are not registered on this website.

Private companies have generally founded these spaces by providing services for a certain fee, similar to examples in the world. In addition, these spaces are located in city centers, the main transportation arteries of the cities, and designed as a part of existing office buildings. According to research related to co-working spaces in Turkey, it is determined that there are very few numbers of spaces owned by public institutions.

It has been tried to create a comprehensive list of spaces in Turkey. For this purpose, a table has been prepared according to data on the website of Coworker and the list prepared by Ertan in her thesis study (Table 3.1).

Table 3.1. Co-working spaces in Turkey (retrieved from Ertan, 2019: 70; URL-15, 2022)

Name of Co-working Space	City	Management
01 Startups	İstanbul	Private
16D	İstanbul	Private
Ağaoğlu MyOffice 212	İstanbul	Private
Akasya Kent Kule	İstanbul	Private
Ancowork	Ankara	Private
Archerson	İstanbul	Private
Atölye İstanbul	İstanbul	Private

Table 3.1. (continue) Co-working spaces in Turkey (retrieved from Ertan, 2019: 70; URL-15, 2022)

Name of Co-working Space	City	Management
Beyond Ofis	İstanbul	Private
Bodrum Coworking	Muğla	Private
Cloud7	İstanbul	Private
Co-11 Sanayi	İstanbul	Private
CoBAC Workspace	İstanbul	Private
Coda Offices	İstanbul	Private
Coolwork	Ankara	Private
CoZone	Ankara	Private
Creative Working Space	Antalya	Private
Daire Coworking	İstanbul	Private
Dam	İstanbul	Private
Dreamwork Offices	Adana	Private
eOfis	Ankara, İstanbul, İzmir, Bursa, Konya, Mersin	Private
Erai Turkey	İstanbul	Private
Fil Lab	Ankara	Private
Fyi	İstanbul	Private
Galata Business Center	İstanbul	Private
GNN Offices	İzmir	Private
Habita	İstanbul	Private
Hamam Arts Hub	İstanbul	Private
Hipokampüs Ofis	Muğla	Private
IDEA Kadıköy	İstanbul	Non-Private
Ideapol Cowork	İstanbul	Private
InogarArt	İstanbul	Private
Impact Hub İstanbul	İstanbul	Private
Joint Idea	İstanbul	Private
Joker Ofis	İstanbul	Private
Kamara	İstanbul	Private
Kolektif House	İstanbul	Private

Table 3.1. (continue) Co-working spaces in Turkey (retrieved from Ertan, 2019: 70; URL-15, 2022)

Name of Co-working Space	City	Management
Koperatiff Coworking	İstanbul	Private
Korino Coworking	İzmir	Private
KWORKS	İstanbul	Private
Limit	Ankara	Private
Lokal Cowork	Muğla	Private
Lokasyon	İzmir	Private
Le Büro İstanbul	İstanbul	Private
Levent Ofis	İstanbul	Private
Middle East Technical University (METU) Students Co-Working Area	Ankara (under construction)	Non-private
Moment Beştepe	Ankara	Private
nuvEGE	İzmir	Private
Office55	Antalya	Private
Office İstanbul	İstanbul	Private
Ofis	İzmir	Private
Open Up Office	İstanbul	Private
Originn	İzmir	Private
Paragon Tower	Ankara	Private
PlazaCubes Coworking	Ankara, İstanbul, İzmir	Private
Piyano Butik Ofis	İzmir	Private
Regus	İstanbul, İzmir, Ankara, Adana, Gaziantep, Bursa	Private
Sevrcorp	İstanbul	Private
Stüdyo Hisar	Eskişehir	Private
SwissOffices	İstanbul	Private
The House	İstanbul	Private
The Workery 38-39	Bursa	Private
Tur-an Office	Antalya	Private
TURnKEY	İstanbul	Private

Table 3.1. (continue) Co-working spaces in Turkey (retrieved from Ertan, 2019: 70; URL-15, 2022)

Name of Co-working Space	City	Management
Unit090	Eskişehir	Private
Unusual Office	İstanbul	Private
Urban Station	İstanbul	Private
Via Flat	Ankara	Private
Webtures Dijital Bilişim	İstanbul	Private
Wen Offices	İstanbul	Private
Withco	İzmir	Private
Woop Point	İstanbul	Private
Work C	Antalya	Private
Work Up	Ankara	Private
Workhaus Coworking	İstanbul	Private
Workhall	İstanbul	Private
WorkHUB	İstanbul	Private
Workinstation	Adana	Private
Workinton	İstanbul, İzmir	Private
Yazane	İstanbul	Private
Yeşil Düş Vadisi	Kocaeli	Private
Young Lions Zone	İstanbul	Private

Table 3.1 shows that most of the spaces are managed by private companies, which causes users problems in affording fees for these spaces. IDEA Kadıköy and METU Students Co-Working Area draw attention due to their management. Contrary to other spaces in Turkey, IDEA Kadıköy, managed by the Municipality of Kadıköy (Tunç, 2019: 120) and METU Students Co-Working Area, has been constructed by the university to provide students with alternative and comfortable study areas and activity spaces (URL-24). Although İlyas (2022: 129) mentions the co-working space managed by the Municipality of Şişli in İstanbul, no information has been found during the research.

Location is also important to criticize the accessibility of these spaces. Most spaces in the table are mainly located in city centers, the main transportation arteries of the cities, and

designed as a part of existing office buildings. On the other hand, the location of IDEA Kadıköy and METU Students Co-Working Area differs from the others. IDEA Kadıköy is in Moda to serve neighborhood residents, and METU Students Co-Working Area is on the campus of METU.

When all co-working spaces are evaluated from the window of accessibility, IDEA Kadıköy and METU Students Co-Working Area are separated from the others in terms of affordability and location. On the other hand, the controlled entry to the METU campus prevents the accessibility of people. Therefore, only IDEA Kadıköy has been chosen as the case study due to its welcoming approach to people who want to use this space.

IDEA Kadıköy has been visited to see the atmosphere of the space. This visit has created a chance to take photographs of the space and learn details about the project thanks to conservation with space managers.

4. IDEA KADIKÖY

In Turkey, studies about co-working spaces mainly focus on these spaces' design features, services, and organization models. Many examples are written on the collaborative atmosphere of the co-working model. While the demand for co-working spaces in the world is increasing day by day, public institutions are far from meeting this demand has been the subject of this study. IDEA Kadıköy differs from the others due to its non-private management.

In this section, detailed information about IDEA Kadıköy fed by observations from the visit will be shared. In order not to disturb the people using the IDEA, photography is not allowed inside the building. That is why photographs on the official website of IDEA Kadıköy have been used to give an opinion about the space.

4.1. IDEA Kadıköy As a Project

IDEA Kadıköy owned by the Municipality of Kadıköy is the first example of co-working spaces that are funded by public institutions to provide a proper space as a solution for freelancers, different occupational groups, or students (Tunç, 2019: 120).

The name of the space, IDEA, symbolizes the initials of İşlik, Derslik, Etkinlik, and Aşlık, which are the parts of the organization. Before the conceptual framework of the IDEA model was created, the literature has been reviewed in the context of co-working space, co-production in public, and new public services, and at the end of this process. According to the information taken from the managers, IDEA aims to experience the production of public knowledge and to understand the public's approach to the new way of working.

Figure 4.1. A View from IDEA Kadıköy (Taken by the writer)

In the process of the IDEA Kadıköy application, field observation studies were carried out within the central neighborhoods of the Kadıköy district, and spatial analyzes were prepared (Akkaya and Erdoğan, 2019a: 7). Then, Caferağa was chosen as the location of the project, and it opened its doors to the people of Kadıköy in 2017 (Figure 4.2).

Figure 4.2. Location of IDEA Kadıköy (Akkaya and Erdoğan, 2019b)

IDEA has a unique location in the neighborhood. The building is surrounded by housing units and a large green area. Close distance to housing units enables people to arrive at IDEA by walking or cycling from their homes. Also, people who use the space can enjoy the vista of the Park of Moda and the sea thanks to the topographical feature of the building. The advantages of the location make IDEA popular among neighborhood residents (Figure 4.3).
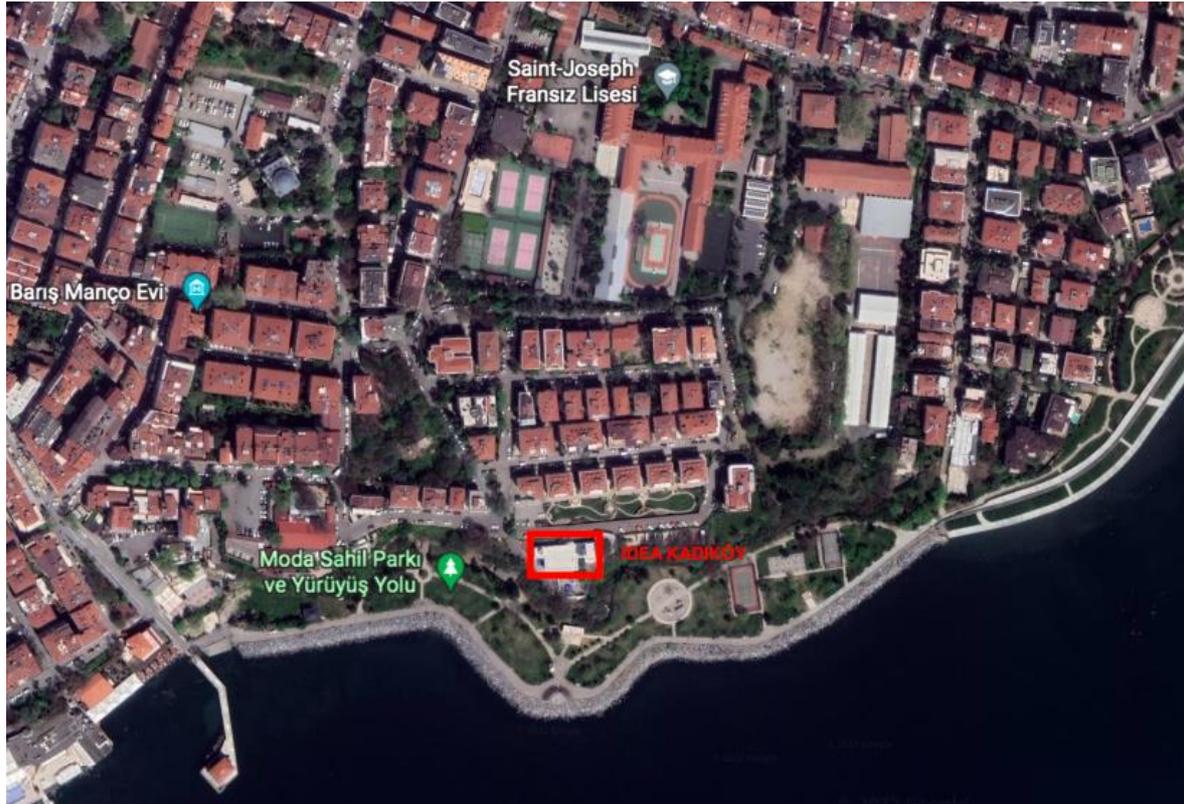
Figure 4.3. Texture of the neighborhood (URL-25)

Taking all kinds of activities and initiatives to meet the residents' common needs is defined among the municipalities' obligations and responsibilities in the Municipality Law (Belediye Kanunu, 2005). It is written in the Law that municipalities may conduct surveys in order to determine the opinions and thoughts of the town residents regarding the municipal services. Similarly, interviews were conducted with users, and their profiles were analyzed before creating the concept of IDEA (Akkaya and Erdoğan, 2019a: 10).

The conceptual framework has been shaped around co-production, diversity, interaction, innovation, sharing, learning, and solidarity. IDEA aims to support co-working and production in public spaces for benefit of society, thanks to the diversity of users and spaces.

Networks in IDEA Kadıköy depend on mutuality, which provide social interaction, social capital and social benefits (Akkaya and Erdoğan, 2019a: 17, 25).

4.2. Spatial Organization of IDEA

The Municipality Law (2005) allows municipalities to dedicate their real estate to projects of education and social services with the approval of the Ministry of Environment and Urban. To create a suitable area for co-workers, they can transform their buildings into co-working spaces as the Municipality of Kadıköy did. The Municipality transformed an old two-storey restaurant building into a co-working space (Figure 4.4). This transformation is explained as the idea of a new public area developed under the roof of the Municipality of Kadıköy.

Figure 4.4. Façade of IDEA Kadıköy (Taken by the writer)

Achievements in the area have been lined up below.

- It is shaped by production, interaction, learning, and experience.
- It is a joint and individual work and production area.
- It offers spatial and social diversity in the public sphere.
- It supports social interaction (URL-16).

There are many types of services in the building named as atelier *(işlik)*, classroom *(derslik)*, activity *(etkinlik)*, cafeteria *(aşlık)*, meeting rooms, and the Moda Neighborhood Bistro. These services are spread over different floors. The building includes four floors and services in floors are listed in Table 4.1.

Table 4.1. Services in IDEA

Floors	Services
2nd Basement Floor	WC
1st Basement Floor	Classroom, Café and Activity Spaces
Ground Floor	Ateliar and Meeting Room
1st Floor	Terrace (not used)

Detail information about services in IDEA have been explained in detail below.

Atelier (*işlik*)

This part of the IDEA serves İşlik Community, constituted by workers interacting with each other and the public. They learn from each other and together. This area aims to provide experience transfer among members and create an appropriate discussion platform (Figure 4.5).

Figure 4.5. Atelier area in the IDEA Kadıköy (URL-18)

The Atelier is the heart of the space. Professionals who want to work in IDEA have a chance to apply each month with their projects. The managers evaluate each application according to the project qualification by considering the candidates' profiles. It is seen that IDEA cares about women, so women candidates are given priority to provide them with appropriate workspace. Accepted applications have been announced in the fourth week of each month. Moreover, accepted professionals can maintain their membership for up to 12 months.

Professionals are chosen between small entrepreneurs rather than big companies. Although Atelier hosted a community of between 50 and 60 professionals at the same time, the average number is 30 after the pandemic. Also, more than half of the members are women in Atelier.

Services in Atelier show differences according to type of membership. Information about these services is listed in Table 4.2.

Table 4.2. Services in the Atelier

Fee	"fee tariff" determined by Municipality of Kadıköy.	
Membership	Monthly, Weekend, Fixed-Desk, Weekdays in Working Hours, Weekdays in Evening Hours	
Common Services	Wireless internet	
	Meeting room	
	Security services	
	Daily cleaning service of İşlik space	
	Heating, cooling and ventilation service of İşlik space	

The Atelier area offers a spacious, quiet, and pleasant working environment. Each member is working on their tables by respecting other members' rights. It is understood that design parameters in other professional co-working spaces have been considered while designing this area. That helps to create a cosmopolitan community in Atelier. Furthermore, the physical accessibility of the space and cheap membership fees are primary reasons for members choosing the IDEA as their new workspace.

Classroom (*derslik*)

Classroom is the most demanded section of the IDEA. This area provides semi-loud working space (Figure 4.6). This area is open to university students and researchers in the learning process and needs a short-term working area. People can use this area without paying a fee. Similar to the Atelier area, people have a chance to work in a bright, clean, and pleasantly furnished area. Offers in the classroom area are listed in Table 4.3.

Table 4.3. Services in the Classroom

Fee	-
Membership	-
Working Hours	09.00-21.00 (seven days)
Services	Wireless internet service limited to 2 GB per day
	Daily cleaning service of Derslik space
	Heating, cooling and ventilation service of Derslik space
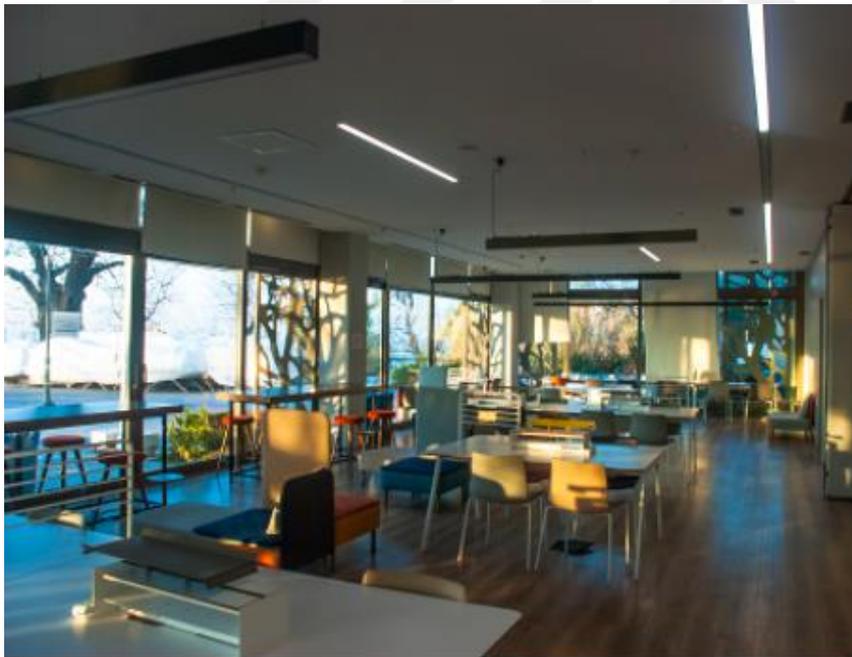
Figure 4.6. Classroom area in the IDEA (URL-17)

Activity (*etkinlik*)

Member individuals and institutions of IDEA Networks collaborate with nonmember individuals and institutions in activity space. The modularity of this space allows two

simultaneous events according to the number of participants and the space requirement. Also, the enclosed area of this space can be used as a classroom during out of activity (Figure 4.7).

Figure 4.7. Activity are in the IDEA Kadıköy (URL-20)

The garden of IDEA is used for Moda Neighborhood Bistro when it is not used for any activity (URL-20). Properties of the activity area are shown in Table 4.4.

Table 4.4. Properties of the Activity (URL-20)

Indoor Activity Space	Two activity space for 30 people/ one activity space for 80 people
	Wireless internet
	Audio system
	Barcovision
	Flip chart
	Meeting tables
Ourdoor Activity Space	500 m^2 of usage area
	Wireless internet
	Audio systems
	Barcovision

<u>Meeting Room and Bistro</u>

Meeting room in the ground floor, including a meeting table, chairs, and projector, serves up to 30 people for meeting purposes in exchange for a certain fee.

On the first basement floor, the Bistro provides a healthy food and beverage service for all visitors at reasonable prices in Kadıköy. Also, the people of Kadıköy can benefit from the Bistro and its affordable products by enjoying incredible vista in the garden of the space. During the visit, it was observed that IDEA appeals to people of all ages, and it has become an important attraction point for people where they can breathe in their neighborhoods, reach within a short distance, and receive service at affordable prices.

5. DISCUSSION AND CONCLUSION

Changes in working life with technological developments were directly affected by the Covid-19 pandemic started in China in 2019, which was accepted as one of the biggest global disasters following the Second World War. This biological disaster has caused a radical transformation in every part of people's lives. In addition, the most frequently used concepts have become distance and remote work since 2020, which is the start date of quarantines.

This study aimed to discuss how co-working spaces could take more place in our lives and how they could be included in our neighborhoods so that their importance was understood again, together with the pandemic and adverse effects of global warming. It would be meaningful to discuss the place of co-working spaces in our lives during this period when precautions against the spread of the virus reminded us of the importance of living in sheltered and accessible spaces: home and neighborhood.

Co-working spaces' working environment, spatial organizations, and business models based on the exchange of ideas in these spaces were generally discussed in other studies in the literature. However, no study was found on the accessibility of these spaces. While the discussions on the importance of the neighborhood and the future of business life are gaining momentum, an answer is sought as to whether co-working spaces can be a part of the neighborhood. This thesis differs from the others regarding handling these spaces together with neighborhoods by questioning the accessibility.

In the thesis, the literature review started with the socio-technological developments in urban design. It is observed that recent studies have proven the urgency of turning to old city planning understanding not only to catch the changing lifestyles but also to minimize adverse effects of global warming and environmental pollution.

As opposed to current city planning, understanding depends on car use, 20-minute neighborhood, and 15-minute city approaches, which put people first instead of cars. Although these approaches have been placed among recent urban design discussions, they are based on walkability and long-term planning, suggesting a sustainable ecosystem, proximity to essential services, sustainable mobility, social interaction, and citizen

participation like the ancient city plans. In these neighborhoods, sustainable forms of transport and compactness of the neighborhood, which promises less time in traffic, less noise pollution and greenhouse gas emission, and more air quality, meet the carbon emission target of the Paris Agreement put into action in Turkey in 2021. These concepts remind us of one of the oldest urban design methods in which services are located according to the walking distances of people. Even though our cities are developing around the city centers, these new concepts offer neighborhoods that include all services. They are aimed to provide sustainable neighborhood life where people can live, work, and play.

Stavrides's approach toward common spaces can be evaluated as proof of how people search for alternative spaces to express themselves. In his suggestion, common spaces are born as a result of collective movement fed by the needs of society. Also, it is possible to interpret these spaces as shared spaces in neighborhoods open to everyone who can follow the rules of spaces.

The search for working spaces has clearly proven the dramatic change in working. Although offices were directly related to factories during the First Industrial Revolution, today's workers have changed the meaning of offices. Technological developments and their effects on generations bring about change in working life and cause the born of the 21st century workspaces. Especially personalities of the Y and Z generations played an essential role in the formation of these spaces.

In addition, the pandemic has broken taboos and helped people to gain awareness about their lifestyles. Since the beginning of the pandemic, people have understood the significance of accessibility. Technological devices that let people connect to the world and experience working from home in this period have changed the direction of routines about working. Studies investigating this period have shown that people do not want to waste their time and money to arrive at their offices and need alternative working spaces that solve financial and physical accessibility problems.

Home offices, maker spaces, fablabs, and co-working spaces have been born in recent years to be used for new workers who have different personalities and discipline in working from their ancestors. Especially white-collar workers worldwide have had a chance to work from home during the precautions against the spread of the pandemic. Despite the advantages of

working from home, studies have proven that people who work from home have complained about a lack of sociability, lack of communication and collaboration with colleagues, psychological effects of being closed at home, and difficulty in working conditions.

The literature about co-working spaces was first conducted on their historical developments to get better information about co-working spaces. Then, their examples in the world and Turkey have been researched in all dimensions. These spaces are handled as the third way of working in the study.

People with flexible working conditions can reach a suitable working environment, including physical arrangements and social interaction in these spaces, which have evolved from the co-working concept to support their members to find a collaborative environment and networking. Members can easily afford their needs while using these spaces: wi-fi, electricity, office supplies, tables organized according to different purposes, coffee, and snack. Freelancers, start-up firms, incubators, small-sized enterprises, workers with flexible working programs without certain positions, and students mainly prefer these spaces. Remarkably, big companies have recently started to use co-working spaces for their workers.

In the third section of the thesis, it has been tried to create a comprehensive list of spaces in Turkey. Also, many examples in Turkey and their locations in the city were examined. The list has proven that private companies have generally founded these spaces by providing services for a certain fee in Turkey, similar to examples in the world. In addition, they are located in city centers, the main transportation arteries of the cities, and designed as a part of existing office buildings.

IDEA Kadıköy has been chosen as the case for the thesis because of its uniqueness and detail information about the space is given in the fourth section of the thesis. IDEA is the first example of a non-private co-working space managed by a municipality. The Municipality of Kadıköy opened this space as a social project by only transforming an old restaurant building into a co-working space. The Municipality paid attention needs of the people of Kadıköy. The space continues to serve different users, including professionals, students, and visitors.

Remote workers who have trouble working from home have expressed wanting to work in spaces near their homes instead of their old offices. Statistics have also shown that the number of remote workers will continue to increase. Legalizing remote work in the Netherlands has also drawn attention to this subject.

From this point of view, it would not be wrong to say that people will need alternative working spaces in their neighborhoods, and they would like to solve pursuit about suitable working spaces accessible way. For this reason, co-working spaces have been chosen as a proposal of the thesis among new working spaces due to their working environment and applicability.

This study focused on the workers' feelings and physical working environment of future working life. That is why ways of maximizing the comfort of remote working have been searched. Studies highlighted the positive sides of working from home: timesaving, autonomy, comfortable and flexible working, increased efficiency and creativity, healthy and stress-free environment, workers reported many problems with working routines. On the other hand, lack of working environment, need for technological infrastructure, interruption in concentration, inability to access office supplies, unsociability, and lack of communication and collaboration with colleagues is the most known difficulties in working from home.

We have witnessed that many buildings like offices, schools and libraries stayed empty during the pandemic. This experience towards the reevaluation of the city has made digitalization noticeable. Laptops and the internet have undertaken the many functions of offices and schools. Although the popularity of working from home has continued since the start of the pandemic, it is a fact that workers and students need alternative ways to change the monotonous daily routine in homes.

In light of information taken from the research, three alternative ways of having these spaces at the neighborhood scale have been proposed. These possible alternatives grouped according to management styles have been explained below.

Private co-working spaces in neighborhoods

Private companies generally manage co-working spaces and provide a service to their members for different fees. People can use these spaces according to the type of their memberships, which are daily, weekly, monthly or annual, affecting the service's price. They can also provide alternative services such as meeting rooms, Skype rooms, coffee corners and silence areas.

Despite the advantages of this professional management and the comfort of the working style, even people who can afford the membership price have to use their cars or public transportation to get to these spaces. The pandemic has shown that it is possible to continue working life and studying at home thanks to technological devices. People are aware that they have a chance to talk to their managers in their kitchens, join meetings in their pajamas or follow their classes via their laptops; spending time in traffic and money to arrive at their offices is unnecessary and also causes carbon emission. From the perspective of this environmental consciousness, it is possible to evaluate the necessity of transportation means to arrive at commercial co-working spaces as another version of ordinary working life. On the other hand, students who need alternative spaces for studying have to lose their time during transportation.

People who work from home have trouble with the working conditions. This research proves that workers' rising tendency to seek alternative working/studying spaces to offices or homes should be evaluated as a profitable investment by entrepreneurs. Private companies can open new spaces in neighborhoods to be available for those people to get rid of the loneliness of working from home and the monotony of offices. These spaces will not be used only by professionals but also by students who cannot work at home or find libraries at close distances. These spaces will become known thanks to move these spaces into neighborhoods and pulling more members into the spaces. Decreasing the cost of transportation and accessibility of their new location will increase the demand for these spaces and diversify the members' profiles.

Furthermore, renting a space in a neighborhood will be cheaper than in city centers. Cheaper rent will decrease either initial investment cost or both operating costs. Thus, these

companies will be able to serve in exchange for low prices, which will help to raise the number of members in these spaces.

<u>Co-working spaces owned by neighborhoods</u>

Neighborhoods should be designed according to the needs of residents. As mentioned in the thesis's second section, residents should reach the services reasonably far from their homes. Legalizing remote working workers in the Netherlands will be a big step toward giving workers flexibility in choosing the way of working. With the widespread of remote workers, the need for alternative working areas will increase. Therefore, co-working spaces should be accepted as an essential service and should be part of neighborhood design available at close distances.

Here it will be true to remember the common spaces of Stavros Stavrides. The approach of Stavrides through common spaces proposes the third way of spaces differs from public and private spaces, similar to the proposal of the thesis. The writer defines these spaces as a relationship between social groups and the world created by their members. Moreover, these spaces are molded by the community who have been in the movement according to the needs and demands of society. So, it is possible to accept neighborhood co-working spaces as a common space in this neighborhood. While residents of neighborhoods or apartments are handled as the community, co-working spaces are born from these community's needs. Residents can create their own common co-working spaces by paying attention to the needs of their neighbors.

In neighborhoods, nongovernmental organizations or neighborhood associations can be the pioneer in opening co-working spaces. Neighborhood empty spaces can be considered as co-working spaces to serve remote workers and students among residents. Expenses of spaces can be met under the management of these groups, or they can provide these services in exchange for a fee. There could also be rules about using common co-working spaces by different members, like Stavrides's thoughts about common spaces.

In Turkey, some legal regulations already support this idea. According to the Law of Property Ownership (Kat Mülkiyeti Kanunu, 1965), flat owners are obliged not to disturb each other, not to violate each other's rights, and to comply with the provision of the

management plan while using the common areas. Co-working spaces can be counted among common places mentioned in the Law, such as shelters, laundry rooms, and boiler rooms. Parallel to the Law, the current arrangement in the Regulation of Planned Areas (Planlı Alanlar İmar Yönetmeliği, 2017) in 2021 paved the way for library areas up to 50 m2 in buildings with more than 40 units by eliminating this area from the calculation of total m2 of buildings. According to the arrangement, this library area has to be a common noncommercial area related to the main stairway of the building. Moreover, this area is used by only residents of the building. Library areas in apartments can be arranged by considering the requirements of co-working spaces associated with the help of all flat owners. Details about the usage of these spaces can be identified in the management plan to be acceptable for each flat owner.

Furthermore, it is also written in the Law that the owners are obliged to participate in the maintenance, protection, reinforcement, and repair expenses of the common places and the operating expenses of the common facilities. This arrangement will not only solve the problem of the cost of the spaces but also help people looking for a suitable working/ studying atmosphere close to home.

The Regulation about the permission to library areas in buildings can only be evaluated in a small group of buildings meeting the minimum of 40 dwelling units in Turkey. That is why, due to the restriction of the number of dwelling units in buildings, the lack of co-working spaces in apartments should be completed with the movement in neighborhoods.

Co-working spaces owned by public authorities

In addition to private companies and neighborhood residents, public authorities can take responsibility for these spaces. Municipalities can accept these spaces as a public service similar to opening parks or cultural centers. Moreover, taking all kinds of activities and initiatives to meet the residents' common needs is defined among the municipalities' obligations and responsibilities in the Municipality Law (Belediye Kanunu, 2005). It is written in the Law that municipalities may conduct surveys in order to determine the opinions and thoughts of the town residents regarding the municipal services. These surveys will present this need of people. Likewise, The Municipality of Kadıköy, which is the first example of non-private co-working spaces in Turkey, has opened IDEA Kadıköy as a result

of the observation of the profile of Kadıköy residents. Different users can benefit from free or paid services according to their needs in IDEA. This project provides a suitable working environment for users and creates a landmark in Kadıköy to be known as a meeting point, similar to the project's aim.

In addition to public authorities' awareness of the necessity of these spaces, there should also be regulations about business models. Empty areas in public buildings, neighborhoods, or districts can be evaluated as co-working spaces thanks to legislative studies carried out to create standards for every municipality.

Municipalities can have their buildings constructed for different purposes. The Municipality Law (2005) allows municipalities to dedicate their real estate to projects of education and social services with the approval of the Ministry of Environment and Urban. To create a suitable area for co-workers, they can transform their buildings into co-working spaces as the Municipality of Kadıköy did. The Municipality has transformed old and empty restaurant buildings into IDEA Kadıköy. Furthermore, the clause related to library areas in the buildings in the Regulation of Planned Areas is also valid for shopping malls. If the conditions mentioned above are met, library areas can also be planned in shopping malls. Municipalities can change this clause to extend its scope or apply the current situation to their shopping malls.

In the study, no research has been conducted to support commercial co-working spaces managed by big companies as the best alternative to existing offices. The organizational logic behind these spaces was evaluated as valuable for the world's future. Co-working spaces have been negatively affected by the pandemic also. However, the style of working in these spaces will continue in the future. That is why moving the co-working spaces to the neighborhoods will be a step toward post-pandemic life.

The thesis has been written to create awareness about the need for new types of workers and highlight the importance of neighborhoods and their public units. The idea of moving the co-working spaces into close distances is to be accessed by the broader circles that need these spaces. Also, it will make these spaces affordable for people looking for a suitable environment for working. Besides the housing units, including other essential services and co-working spaces in neighborhoods will facilitate people's daily lives. The development

and dissemination of such proposals will not be limited to facilitating working and academic life; it will be one of the steps to provide a solution to global warming by reducing the carbon footprint.

We hope to see co-working spaces in our neighborhoods or apartments which are used by everyone at accessible distances in exchange for affordable prices in the future. If this comes true, solidarity behind these spaces, user profiles, stories about choosing spaces, and user experiences can be examined in detail in future studies.

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