



KADIR HAS UNIVERSITY
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**UNDERSTANDING THE EXPECTATIONS OF
OCCUPANTS ON COWORKING SPACE**

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UNDERSTANDING THE EXPECTATIONS OF OCCUPANTS ON COWORKING SPACE

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MASTER'S THESIS

Submitted to the School of Graduate Studies of Kadir Has University in partial fulfillment of the requirements for the degree of Master's in the Program of Design

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DECLARATION OF RESEARCH ETHICS

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UNDERSTANDING THE EXPECTATIONS OF OCCUPANTS ON COWORKING SPACE

ABSTRACT

As coworking is a new form of workplace trend, freelancers, independent entrepreneurs, and remote workers are sharing the open-plan space where occupants is driven by social interaction. This paper aims to understand the design of coworking space and the relationship between coworking space and satisfaction. Admittedly, coworking spaces are widespread, but the literature is insufficient, especially on design information which provides features of space and how design features of space affect the outcomes of occupants.

Existing literature review attempts to support an idea of the positive influence of the design of the coworking space on the outcomes of occupants. Simply a coworking space can be interpreted as an open planned space with a set of shared and private areas where people share from desks to all amenities and facilities of the environment.

The literature is reviewed through the lens of digital economy, spatial arrangements of coworking space, and post-occupancy evaluation; interviews were used as a primary data. The research was conducted based on, physical and social qualities of the coworking environment and attempted to reveal the obscured variables and their impact on occupants' satisfaction. For this research, twenty (20) interviews were taken from nine (9) managers and eleven (11) members from five (5) different coworking spaces. Findings confirm that the physical and social qualities of coworking space has positive impact on occupants' satisfaction. There are also possible limitations. The research design was a cross-sectional study conducted in Istanbul (Turkey). A cross-sectional study implies that research participants were not studied over time, resulting in a weaker interpretation and the possibility of extracting vivid and more in-depth data for the research. Implications of this research could be two-fold. First, from an academic perspective, study provides a guidance how design contemporary coworking spaces to achieve better conditions for occupants or the community. Second, from a managerial

perspective, study provides information on how social qualities such as community, events, and collective activities positively impact the interaction of occupants in a particular coworking space.

Keywords: Coworking space, Shared space design, Knowledge economy, Mutualism, Environmental design, Social design, Workspace, Space sustainability;



ÖZET

Ortak kullanımın yeni bir işyeri eğilimi biçimi olmasıyla birlikte, serbest çalışanlar, bağımsız girişimciler ve uzaktan çalışanlar, insanların sosyal etkileşimden etkilendiği açık açık alanları paylaşıyorlar. Bu çalışma, ortak çalışma alanının tasarımını ve ortak çalışma alanı ile memnuniyet arasındaki ilişkiyi anlamayı amaçlamaktadır. Kuşkusuz, ortak çalışma alanları yaygındır, ancak ampirik çalışmalar özellikle de mekânın özelliklerini sağlayan tasarım bilgisi ve mekânın tasarım özelliklerinin kullanıcıyı nasıl etkilediği gösteren araştırmalar yetersizdir.

Mevcut literatür taraması, ortak çalışma alanı tasarımının kullanıcıların memnuniyeti üzerindeki olumlu etkisi hakkındaki fikri desteklemeye çalışmaktadır. Basitçe, bir ortak çalışma alanı, masalardan çevrenin tüm olanaklarına ve tesislerine kadar kullanıcıların paylaştığı bir dizi ortak ve özel alanlara sahip açık planlı bir mekân olarak yorumlanabilir.

Literatür dijital ekonomi objektifinden değerlendirilmiş, ortak çalışma alanının mekânsal düzenlemeleri ve doluluk sonrası değerlendirme; görüşmeler birincil veri olarak kullanılmıştır. Araştırmada, çalışma ortamının fiziksel ve sosyal niteliklerine dayanılarak yapıldı ve gizlenmiş değişkenler ile bunların kullanıcıların memnuniyeti üzerindeki etkileri ortaya konmaya çalışıldı. Bu araştırma için beş (5) farklı ortak çalışma alanında dokuzu (9) yönetici/menejer ve onbiri (11) kullanıcı olmak üzere toplam iyirmi (20) görüşme alınmıştır. Bulgular, birlikte çalışma alanının fiziksel ve sosyal niteliklerinin kullanıcıların memnuniyeti üzerindeki olumlu etkilerini doğrulamaktadır. Bunun yanında olası sınırlamalar mevcuttur. Araştırma tasarımı İstanbul'da yapılan kesitsel bir çalışmadır. Kesitsel bir çalışma, araştırma katılımcılarının zaman içinde çalışılmadığını, bunun için daha zayıf bir nedensel yorumlamanın araştırma için daha canlı ve daha derinlemesine verilerin çıkarılması olasılığına yol açtığını göstermektedir. Bu araştırmanın sonuçları iki grup olabilir. Birincisi, akademik bir bakış açısıyla çalışma, kullanıcılar veya topluluk yararına daha iyi çalışma koşulları elde etmek için çağdaş

alıřma alanlarını nasıl tasarlayacađınıza dair bir rehber sunar. İkinđisi, ynetimsel bir bakıř aısıyla alıřma, topluluk, olaylar ve kolektif faaliyetler gibi sosyal niteliklerin, kullanıcıların belirli bir alıřma alanındaki etkileřimini nasıl olumlu ynde etkilediđiyle ilgili bilgi sađlar.

Anahtar Kelimeler: alıřma alanı, Ortak mekan tasarımı, Bilgi ekonomisi, Karřılıklılık, evre tasarımı, Sosyal tasarım, alıřma alanı, Alan srdrlebilirliđi;



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1. INTRODUCTION

1.1 BACKGROUND OF THE RESEARCH

How can design work for the community? The frequency of this question's answers makes them increasingly important. Design is a solution for physical and social development addressing the requirements of society. However, previous generations believed that design's only contributions were made via its capacity to solve problems; the ways in which design can be utilized for developmental purposes continues to be discussed. Previous studies showed that workspace design focused on pre-occupancy evaluation in practice, adopting many approaches and methodologies in different settings. However, there are still gaps in the research and improvement of the structures of these design practices is needed with the aim of post-occupancy evaluation, as well as their adaptation to occupants' needs.

The primary motivation of this thesis comes from the interest in the coworking space phenomenon. This study aims to understand the expectations of the occupants of coworking spaces, considering their experiences in the context of environmental psychology. It also aims to help researchers see the insufficiencies of coworking space designs. As there is growing attention across Turkey to coworking space environments, an analysis of the design of coworking spaces may lay the groundwork for future research and provide guidance for managers and founders of coworking organizations, designers, and architects in terms of how to design multifunctional coworking space. Bringing together the experience and the knowledge of academics and the expectations of managers and members of coworking spaces, this study may be beneficial for contributing to the development of the coworking concept. However, without a comprehensive analysis of the design of coworking environments, research will not be able to fill the design gaps effectively.

1.2. RESEARCH AIM AND QUESTIONS

Linking previous academic studies about workspace design and the coworking space phenomenon, this study sheds light on the existing research gap, which leaves many questions without answers. In parallel, this thesis aims to explore the necessary physical qualities required for increasing the effectiveness of the design of coworking space in the context of performance evolution. Therefore, understanding the coworking space design, structure, and operation is of crucial importance. The analysis of these subjects is expected to help the development of coworking concepts within the search for future directions.

During the literature review, the following topics are addressed:

- The role of the digital economy in the emergence of coworking spaces.
- The physical characteristics of the coworking environment.
- The “coworking” concept.

The research then aims to accomplish the following objectives:

- To understand the relationship between the occupants and their physical work environment.
- To analyze the physical qualities that impact occupants’ satisfaction.
- To assess whether coworking space design affects occupants’ satisfaction.

Along with the above-mentioned aims, this thesis also focuses on the following questions:

- Which physical qualities of coworking space impact occupants’ satisfaction?
- Does coworking space design impact occupants’ satisfaction?

In light of the answers to the above questions, this research tries to contribute to the development of the coworking concept in urban areas of Turkey by drawing attention to

the potential of coworking space design, seeking to raise awareness of the insufficiencies of coworking structures.

1.3. STRUCTURE OF THE THESIS

In this thesis, theoretical background research is done based on previous studies about workspace design practices and the expectations of coworking spaces' occupants, which have been conducted in the field and aimed at the development of coworking space design. The findings of the research are extracted from the analysis of data collected from selected coworking spaces in Istanbul.

The study consists of five chapters. Figure 1.1 shows the structure of the thesis and the objectives of each chapter.

Chapter 1 presents the background of the research and the aims of the study, as well as the research questions.

Chapter 2 provides a literature review on the emergence of coworking space and its role in knowledge societies, giving insight into the digital economy and an overview of the advantages and disadvantages of the coworking phenomenon.

Chapter 3 describes the methodology followed in the research in detail. This study is based on a qualitative method that includes the collection of data related to the organizational structure design of coworking spaces from two different sources, managers and members, based on interviews with the managers and members of coworking spaces. This chapter outlines the methods employed in data collection, analysis of data, and preparation of questionnaires. It also presents a brief introduction to the case studies.

Chapter 4 presents the findings of the study carried out with occupants of coworking spaces and compares the content analysis of the results and interpretations in light of the findings of the literature review. Major experiences and expectations of occupants of coworking spaces and discussion are presented in this chapter.

Chapter 5 comprises the conclusion of the research. The main expectations of occupants regarding the physical qualities of coworking spaces are summarized. Future directions for research in the field of coworking space design are also suggested.

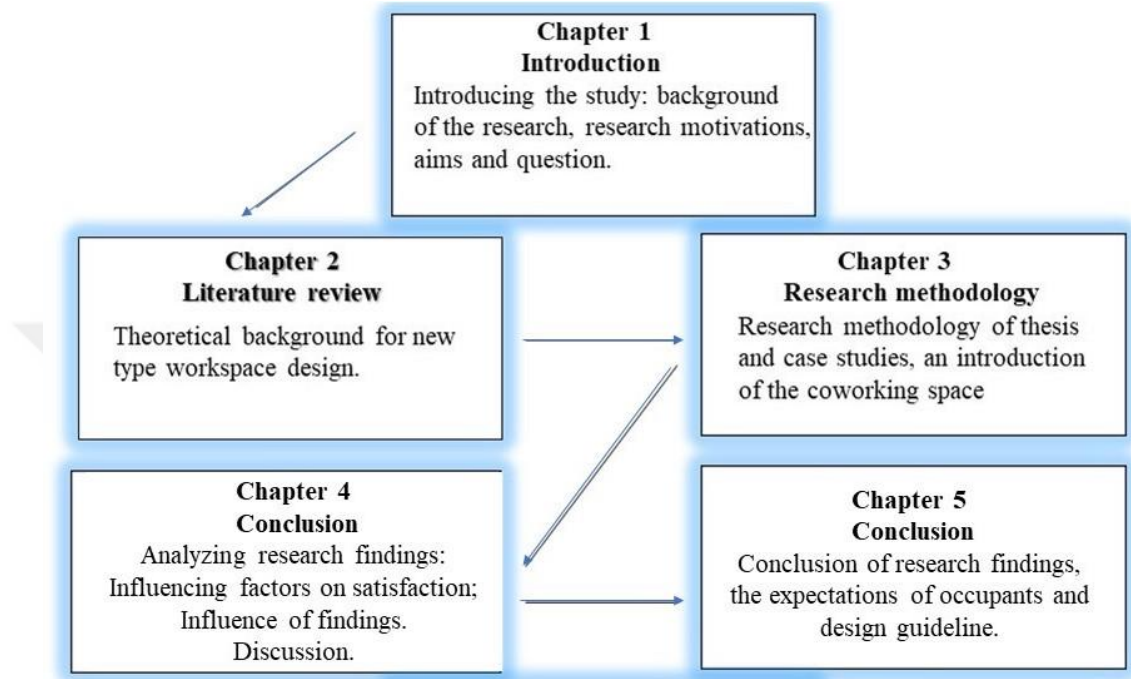


Figure 1.1: Structure of the Thesis

2. LITERATURE REVIEW

2.1 GLOBAL CHANGE OF WORK AND WORKSPACE

In the last two decades, the world has witnessed an incredible boom in the number of coworking spaces. Despite their short history, coworking spaces are growing and they are gaining more popularity every year. Each year more such workspaces are established and they serve more members than the year before. Coworking spaces have become a new working trend and are particularly important in the context of the modern economy or the so-called digital economy (Baym, 2015; Lee, 2018; Moriset & Malecki, 2009). The requirements for such shared spaces and their rapid expansion depend on interwoven factors such as the development of the digital economy (Baym, 2015; Lee, 2018; Moriset & Malecki, 2009; Botsman & Rogers, 2011), waves of global crisis (Dolfsma & Soete, 2006; Cooke, 2002), the rise of the creative class (Naylor & Florida, 2003; Florida & Tinagli, 2004; Florida, 2002, 2003) Cappelli & Keller, 2013; Osnowitz, 2016; Botsman & Rogers, 2011), and the isolation of people popularly referred to as “lonely eagles” (Moriset, 2013; Naylor & Florida, 2003). These factors, together with the changing nature and meaning of work, have changed workspace environments. Modern workspaces are now often “coworking spaces.”

It is widely accepted that satisfaction is a metric of spatial comfortability (Becker, 1981; Morgan & Anthony, 2008), and considering that massive flows of freelancers and nomadic workers are now converging upon coworking spaces, we can reasonably assume that these spaces meet all the needs of these peoples. Otherwise, why would so many urban people prefer them?

Global economic crisis: Waves of global economic crises have impacted the structures of the traditional economy, with systemic shifts from the “modern economy” to a “knowledge economy” (Dolfsma & Soete, 2006; Cooke, 2002). The main output of knowledge economy is access to information and data. The rise of the so-called sharing economy (Botsman & Rogers, 2011) and the digitalization of the economy (Moriset & Malecki, 2009) have shaped a profound new community. In light of this, it can be

predicted that modern society will generally be free of uniform styles or conditions of work.

This sort of knowledge society is consequently built upon non-standard forms of employment for meeting society's requests and needs (Stehr, 1994). The practices and the meaning of work have been altered by both the knowledge economy and social mobility. Unusual forms of work have become the most popular and profitable in today's economic landscape, in which people work on an irregular or daily basis with teams and freelance workforces (Cappelli & Keller, 2013; Osnowitz, 2016).

Accordingly, knowledge workers need new places that will facilitate such a nomadic and unpredictable work life. This kind of workplace represents a balance of sorts between home and the traditional workspace, and these modern workplaces allow for informal and formal meetings, collaboration, learning processes, and so on. Such modern workplaces are referred to differently by various scholars, but "third place" has been the most commonly used name for them. This phrase was coined by Oldenburg in 1999. He asserted that people always want to be a part of a community and in this case they need a place that will be accessible for all people, where individuals can behave informally and hold meetings happily beyond the isolation of home (the "first place") and the work office (the "second place") (Oldenburg, 1999).

According to Oldenburg (1999), the reason for the fast spread of "third places" has been their ability to facilitate and enhance community life, fostering creative interaction. Such places serve communities on a daily basis and may include coffee shops, bookstores, libraries, bars, or lobbies (Oldenburg, 1999). There are a few important criteria for creating an attractive "third place": they must be located in well-known parts of the district or city, independent, and small-scale, and they must have a reasonably established history (Oldenburg, 1999). Moreover, a third place must be "neutral ground" allowing for a flexible work style, where users can come together in a free and "accessible" manner without any social or financial barriers, feeling socially welcome in a place with a low profile, where the users feel at home (Wenger, McDermott, & Snyder, 2002).

The rise of creative class: These third places have been the main reason for the rise of the knowledge-creative class (Naylor & Florida, 2003), together with the digitalization

of the economy (Moriset & Malecki, 2009), which have also completely shifted all of the output and usage of the workspaces where creative workers are working nowadays. As Moriset (2013) explains, the rise of the “creative class” (Naylor & Florida, 2003) has been triggered by urban startups, self-employed knowledge workers, entrepreneurs, freelancers, hackers, artists, and so on, who passionately look for third places to integrate into new communities, become members of social movements, and increase their opportunities and social interactions. More precisely, they seek places where working relationships can be simplified through networking, connections, and collaboration (Bilandzic & Johnson, 2013). Furthermore, these places remain the primary hot spots of “creative cities” in advanced economies because urban development projects supported by local authorities are now based on the emergence of “creative districts” (Moriset, 2013). Indeed, nowadays, this policy is being adopted by many post-modern tech companies that intend to maximize the performance of workers through social interaction.

The development of the digital economy: It is impossible to deny the fact that the emergence of coworking spaces in the post-modern business environment is the result of the development of information and communication technologies (ICT). The knowledge economy brought about a new way of working and sharing ideas. In the past, traditional organizations had to provide their employees with workplaces and employees generally had to work fixed hours (9 am to 5 pm), but with the use of wireless Internet and ICT, the workspace environment has changed and workers may function independently of space, location, and time (Kyrö & Arto, 2015). Considering the rapid growth in ICT, the importance of the workplace is still significant (Lemmon, Jensen, Wilson, Posig, & Thompson, 2018). However, connections in the digital age can be utilized to take work anywhere with the help of wireless Internet providers (Liegl, 2014; Baym, 2015). Obviously, flexibility in the workplace (Hill et al., 2008), telecommuting (Castells, 2011), and the possibility of new scheduling arrangements (DeGuzman & Tang, 2011; Sundsted, Jones, & Bacigalupo, 2009) have been significant reasons for the rapid increase of freelancers, mobile or nomadic workers, independent professionals (Bögenhold et al., 2014), contractors (Barley & Kunda, 2006), interim managers (Goss & Bridson, 1998), free agents (Pink, 2001), and entrepreneurs (Ács & Audretsch, 2006; Waters-Lynch & Potts, Butcher, Dodson, & Hurley, 2016).

There are diverse explanations about the ways in which conventional rules regarding work environments have been rejected. In the beginning, the focus was on the “loft environment” and a new society that would share space beyond formal boundaries (O’Connor & Liu, 2014; Podmore, 1998; Shaw, 2006; Zukin, 1989). In 2005, stories on coworking began circulating in the USA, and after three years, Dan Fost, a *New York Times* reporter, wrote about this movement (Fost, 2008). He described how a young American programmer named Brad Neuberg had suffered from the restrictions of office work and created a more modern workspace (Fost, 2008). He was seeking a way to maintain independence while having a job. In 2005, Neuberg made a decision that changed the work office structure from its very roots. He rented a space in a building and started to offer his “space arrangement,” which he called a coworking space, in San Francisco. After a short while, from the USA to China, people started following his idea: setting up a shared workplace and renting desks to community members with different professions.

Isolated people as “lonely eagles”: The other main reason for the gathering of these professionals is to create a sharable and accessible environment in these so-called coworking spaces. All of these mobile workers want to establish communication, ease their loneliness, and integrate into a community of members who originate from various diverse knowledge industries. In light of this, it can be said that a coworking space is an open and accessible workplace that allows the collaboration and connection of different people with diverse types of knowledge. (Garrett, Spreitzer, & Bacevice, 2017). The majority of freelancers or individuals who prefer to work from home may become isolated from the community. Therefore, many of them are starting to prefer to work in coworking spaces where they do their work parallelly with other individuals as a part of a diverse community; thus, they eliminate their loneliness. This also shows that a coworking environment is not a mere open-plan layout for its occupants. It represents a possibility for them to work alongside each other and share the resources of the space: in other words, they are “working alone together” (Spinuzzi, 2012).

According to Kwiatkowski and Buczynski (2011), the coworking philosophy is composed of five core values:

- Collaboration: a physical joining of people or groups to work together, sharing ideas and getting mutual benefit from each other.
- Openness: people talk freely to each other, believing in a transparent and free work culture.
- Community: building connections, getting mutual support, and sharing each other's values.
- Accessibility: the coworking space is accessible to all types of workers, socially, physically, and financially.
- Sustainability: resources (tangible or intangible) are used together, which protects the economy and ecology by providing long-term success and profit.

Marcelo F. Castilho and Carlos O. Quandt (2017) explain that collaboration could be interpreted differently for different subjects. Coworking may be seen as either a product of the space or the space itself. Based on this argument, we can explore collaboration from two perspectives: as a “product” of coworking space and as a “producer” of coworking space. Indeed, collaboration is an advantage of face-to-face communication and an accelerator of serendipity or cooperation and ideas among coworkers. The main principle of coworking space, meanwhile, is creating pleasant and unimagined encounters (Moriset, 2013). The term “accelerator of serendipity” was popularized by C. Messina, who established Citizen Space together with Neuberg and Hunt in 2006 (BIHR, 2009; Moriset, 2013). Respectively, Gottmann (1973), Bourdieu and Wacquant (1992), and Sassen (1991) had also previously written about certain urban places and events as so-called serendipity-producing environments. These articles contributed similar concepts about the spaces that produce serendipity in cities and events (Moriset, 2013).

Bourdieu and Wacquant (1992) highlighted the sociological background of serendipity production by noting the connection between social and geographic spaces. His concept could be linked to the theory of “proximity” (Boschma, 2005), where physical proximity does not always contribute an expected result if it is not supported by a particular type of “social or professional proximity” (Ibarra & Andrews, 1993).

As emphasized in Bourdieu and Wacquant's (1992) study, it can be said that a coworking space full of strangers cannot function for a very long time. Moreover, if, in

particular, a coworking space is shared by people who have more or less the same skills or jobs, no actual coworking will evolve; this is the main point that managers and founders of coworking spaces need to pay attention to.

Considering the information above and linking to Spinuzzi's (2012) activity theory perspective on coworking spaces, one cannot deny that the result of collaborative knowledge work emerges in coworking spaces. Collaborative knowledge work is not a simple process of work from human to human; it also involves transfers from physical space to social connections and vice versa. In other words, collaborative knowledge work is a community-oriented learning, enacting, and assimilating process (Garrett et al., 2017). As each practice defines a different version of community interaction and engagement, a coworker can pursue the desired type of engagement. However, coworking spaces do not always have positive impacts on individuals due to noise, other distractions, and social complexity (Bouncken, Aslam, & Reuschl, 2018). However, the needs of discourse or discussion generate socialization, which shapes and transforms communities. Conflict resolution and group decision-making have always been variations of collaboration contexts within communities (Huxham, 1996).

Social interaction is one of the important aspects of collaboration in the process of "working alone together" (Doulamis, 2013; Heerwagen, Kampschroer, Powell, & Loftness, 2004; Suire & Vicente, 2009; Tumen & Zeydanli, 2016). Therefore, present-day architecture has been steered towards conceiving the relationship between spatial design and the satisfaction of workers through social interaction. Many scholars from different fields consider that if a space does not provide sufficient "balance between the need to interact and the need to work efficiently by oneself" (Heerwagen et al., 2004), then the main problem is the design. Thus, pre- and post-occupancy evaluations are essential steps for design process of public projects. Unfortunately, most of the time, workspaces are built with untested assumptions and unstated values (Becker, 2005).

2.2 PHYSICAL CHARACTERISTICS OF COWORKING SPACE

A large number of studies about the environment of workspaces have shown that occupants or users always welcome spaces with specific workspace features. These environmental features are significant for users because the workspace environment is a space in which many people spend the majority of their time.

Ambiance and environmental features: Physical qualities of a work environment impact the occupants' work performance by influencing their motivation, satisfaction, sense of belonging, and social interaction. These include features of the ambiance of the environment such as lighting, noise, and air quality (Becker, 1981; Humphries, 2005; Karasek, 1990; Veitch et al., 2004). Usually, if a workspace environment satisfies a person's expectations, then it is positively associated with professional life and well-being; otherwise, it is negatively correlated with satisfaction, causing stress, anxiety, depression, and dissatisfaction (Wells, 2000). For example, Galasiu and Veitch (2006) describe how occupants respond positively to daylight and shadow control in workspaces.

Lighting and daylight: Many researchers have proved that the level of lighting and the type of illumination is significant to workers (Hedge, WR Sims Jr, & Becker, 1995). Furthermore, it was recently discovered that blue-enriched white light positively impacts users' moods, performance, self-assessment, and sleep quality (James, 2008). Adequate lighting will shape, shade, separate, and join spaces (Clements-Croome, 2006; Jay, 2002; Waxman, 2006). All workspace interiors are different; each area needs an appropriate lighting approach that will be neither too bright nor too dull (COPE Project, 2003). Studies have shown that indirect lighting (uplight) and direct lighting (downlight) should also be considered by designers and their ratios must be estimated; indirect lighting makes a space seem more spacious and more extensive than direct small and dark lighting does (Bunnell, 2005; COPE project, 2003). Indirect lighting creates a more tranquil scene, giving a feeling of ample space and satisfaction (Bunnell, 2005). Consequently, lighting plays an enormous role in the workplace for users' well-being, health, safety, visibility, collective activities, mood, comfort, aesthetics, and many other factors based upon the use of natural or artificial lighting; the installation of

the lighting system has to meet all of the requirements of the users/occupants (COPE Project, 2003).

Noise: Noise is an unavoidable issue of workspaces, and particularly in contemporary open plan workspaces. A large number of studies have studied the effects of noise on workers' performance and health, and the results have emphasized that acoustic distractions negatively influence workers' well-being, health, and work commitment (Leather, Beale, & Sullivan, 2003). Sources of work-related noise can be physical, such as the repetitive movements of elevators, ventilation systems, or typing, as well as social (Kopec, 2012). Regardless of its source, noise is distracting; it triggers a high level of stress, cognitively demotivates workers, and makes privacy impossible (Gary W. Evans & Johnson, 2000; Newcombe, 2002). However, extremely silent workspaces separate people from the community and create feelings of isolation. The stating the fact that there is also need to identify appropriate level of noise in a work environment for the satisfaction of the users (Sundstrom, Town, Rice, Osborn, & Brill, 1994). For instance, fascinating research on this topic was conducted in Canada. For one month, 56 developers worked with music playing in their workspace, and at the end of the study it was shown that their work quality was significantly improved from the original set up with no music. Thus, the presence of music in the workspace positively influenced their mood and work interactions (Lesiuk, 2005; Stone & English, 1998).

Air quality: There are many reports about respiratory problems, headaches, and chronic irritation of the eyes, nose, and throat among working people every year (Apte, Fisk, & Daisey, 2000). The leading cause of all these problems is poor air quality. Inappropriate workspace design or work environment conditions leads to "sick building" syndrome. Poor indoor air quality comes from thermal issues, overcrowded workspaces, weak ventilation systems, and the absence or closure of windows, which also results in a lack of natural light (Brasche et al., 2001; Clements-Croome, 2003). Researchers have shown that all evaluated environmental factors can negatively affect users' health and well-being, which consequently decreases their performance. On the other hand, appropriate indoor temperature regulation according to seasons and geographical region, circulation, and natural ventilation can increase occupants' general satisfaction, job satisfaction, and performance (Clements-Croome, 2006; Wagner et al., 2007).

Furniture: Comfortable and ergonomic furniture also influences users' well-being, concentration, and performance (Dilani, 2004; Milton et al., 2000). The ergonomics of a workspace is an essential point to be contemplated by designers. Uncomfortable or painful furniture will automatically decrease the users' work focus and consequently lead to a lack of motivation, satisfaction, and a decline of performance (Heerwagen et al., 1995; Kopec, 2006).

Spatial configuration: Workspace planning is a complex and challenging process because many factors have to be considered, starting from how the space interacts with its occupants and relates with other spaces, as well as the organization and transition of spaces and the arrangement of circulation (Buxton, 2015; Ching, 2014; Dechiara et al., 2001; Karlen & Fleming, 2016). According to Karlen and Fleming (2016), the space and size of a workspace environment may transform users' behavior: it could be inviting or repulsing, integrating or segregating, unifying or dispersive (Karlen & Fleming, 2016; Ondia et al., 2018). Moreover, varieties of space and circulation arrangements and their connections with each other define the features of the environment, such as closed or open plans, flexibility, privacy and safety, sequences, ambience, indoor and outdoor accessibility, and hierarchical needs (Buxton, 2015; Ching, 2014; Dechiara et al., 2001; Karlen & Fleming, 2016). All of these environmental features contribute to the shaping of users' behaviors. The last two decades have shown us that traditional hierarchical workspace plans have insufficient capacity for modern society and particularly for the modern creative class (Naylor & Florida, 2003).

Closed plan: A closed-plan workspace provides users' privacy more fully than an open-plan workspace. Each worker has a separate office and has the possibility to work in total quietness without any distractions by colleagues and personalize the space freely. The environmental configuration and characteristics of closed-plan workspaces generally recall home offices. Working in a closed-plan workspace or a home office may seem like a perfect solution, but there are also disadvantages, such as visual and aural isolation from the community and lack of social interaction (Cooper & Kurland, 2002; Hill et al., 2003).

Open plan: The open-plan layout is an attractive urban workspace layout of the 21st century (Myerson & Ross, 2003). This workspace is called “open plan” due to the lack of spatial modifiers (physical barriers such as walls, screens, etc.), which usually positively influences social interactions and collective work activities, collaboration, socializing, and learning (Williamson et al., 2009).

Open-plan workspaces have both structural advantages and disadvantages. To begin with, they offer flexibility, which meets the needs of a new trend of working in areas where users are independent and more teamwork-oriented than in closed-plan workspaces (COPE Project, 2003). Becker (2002) claims that users of open-plan workspaces are more productive than those in privately planned workspaces.

Brill, Margulis, and Konar (1984) claim that physical enclosures such as partitions, screens, objects, and symbols change the nature of a workspace, which directly influences the level of connection, collaboration, and social interaction.

Moreover, the absence of visual and aural barriers provides effortless interaction with other users, all of whom can see each other without separation by physical partitions (Ajala, 2012). On the other hand, a number of studies claim that the lack of physical barriers does not provide the desired level of privacy, and acoustic and optical distractions also lead to a lack of privacy; both of these factors could seriously decrease the performance of users (Brennan, Chugh, & Kline, 2002; Kupritz, 1998).

Furthermore, the density of users and the absence of permanent spatial separators make it easier for users to share each other’s moods, which may not always positively affect the social environment (Totterdell, Kellett, Teuchmann, & Briner, 1998).

Colors, presence of artworks, personal items and use of plants: Personalization of space could also be considered as an aspect of the desire for privacy. Most users seek to create some emotional bond with their workspaces; that is why they want to decorate their corner or desk with signs, artwork, or similar personal items to mark the territory or signify identity (Becker & Steele, 1995). Personalization may seem to be an insignificant detail in open-plan workspaces, but it is actually a powerful tool to create user attachment (a sense of belonging) to a space and to foster interaction, which respectively increases workspace culture, motivation, and overall satisfaction (Inalhan, 2009; Inalhan & Finch, 2004; Kopec, 2012; Waxman, 2006; Wells, 2000). According to

the nature of the workspace, different colors create different feelings among the users of the space. Warm colors have an effect; cold colors give a feeling of comfort rather than urgency. In general, for a more positive social and psychological environment, use of colors, presence of artworks, personal items, and use of plants should be considered (Kopeck, 2006; Küller & Mikellides, 1993; Stone & English, 1998). Researchers also support the idea of indoor plants in open layout workspaces, which are positively associated with the level of oxygen, perceived attractiveness of the space, and privacy, conditions that seem to promote levels of mood, performance, and productivity (Abbaszadeh et al., 2006; Bringslimark et al., 2007; Chang & Chen, 2005; Larsen et al., 1998).

Accessibility to the outdoors: Access to the outdoors is one of the fundamental needs for the satisfaction and motivation of users of a workspace. This could be a simple view of nature from a window, or time to take a break outdoors. First of all, natural light inside a workspace decreases the levels of stress and anxiety and positively impacts users' satisfaction and motivation; that is why the existence of windows to provide sunlight in a workspace is crucial (Borisuit et al., 2015; Tregenza & Wilson, 2013). Secondly, access to the outdoors has healing and restorative effects for mentally fatigued and stressed people (Kaplan, 1993; Lottrup, Stigsdotter, Meilby, & Corazon, 2012; Lottrup, Grahn, & Stigsdotter, 2013).

Over the past decade, designers, scientists, and architects have been studying how open space environments like coworking spaces influence users considering the features of amenities, aesthetics, spatial configurations, and cultural diversity under one roof. Many studies have found that users benefit from coworking spaces more than conventional closed-plan workspaces (Gandini, 2015; Spinuzzi, 2012). In fact, for users/occupants, coworking space provides a higher level of flexibility, a more comfortable spatial configuration and location, and a better sense of community when compared to traditional simple workspaces, among other benefits (Bacevice et al., 2019; Bueno et al., 2018; Doulamis, 2013; Gerdenitsch et al., 2016; Kwiatkowski & Buczynski, 2011; Lee, 2018; Merkel, 2015; Moriset, 2013; Ondia et al., 2018; Rus & Orel, 2015; Uda, 2013).

The “coworking” concept: Coworking spaces provide a shared community environment for people almost everywhere in the world. Remote workers, independent

entrepreneurs, digital freelancers, or artists often seek out coworking spaces. More than a million people already prefer coworking spaces to offices; when an opportunity arises to choose a workspace, they leave their offices to become members of coworking spaces (Charlie, 2018 and 2019) It is estimated that the number of coworking spaces is going to reach 22,400 by the end of 2019. This number has been growing exponentially year after year (E. Mazareanu, 2019). Figure 2.1 illustrates the statistics from 2005 to 2020.

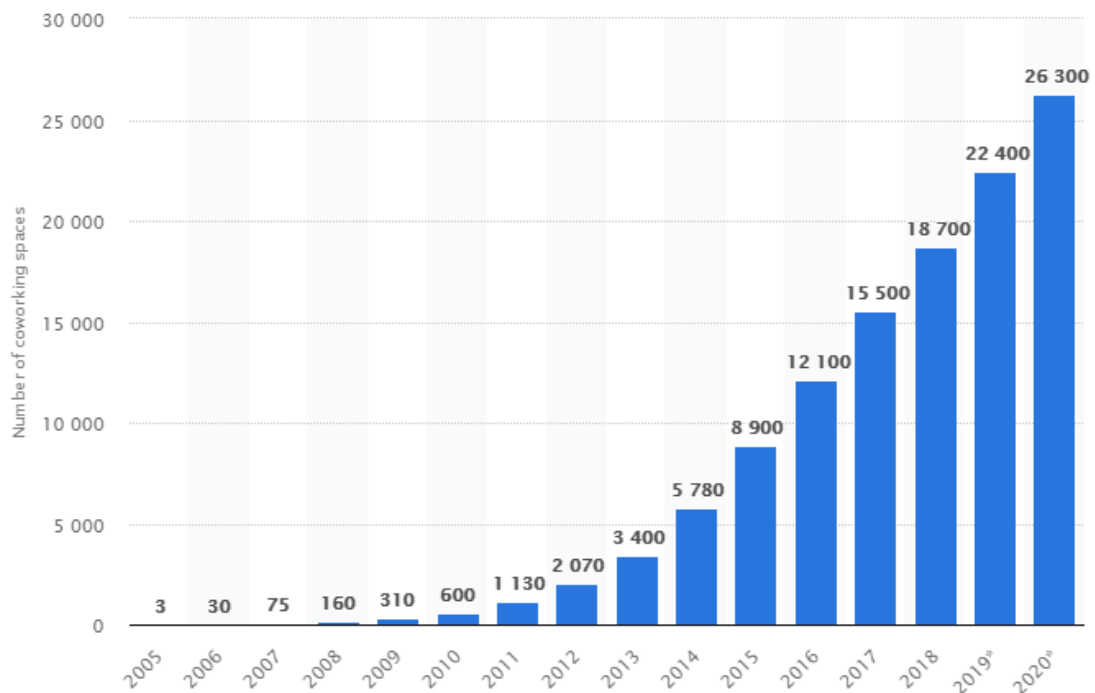


Figure 2. 1: Number of Coworking spaces from 2005 to 2020. Photo from <https://www.statista.com/statistics/554273/number-of-coworking-spaces-worldwide/>

Thus, it is not surprising that coworking spaces have also become popular and widespread in Turkey. Turkey has always been the main bridge between the two oldest continents, Asia and Europe, and Istanbul plays an essential bridging role within the country (Dedekoca, 2018). In the last decade, this dynamic city has become one of the most active startup and freelancer hubs in the region. As the transformation of global work continues, the requirements for coworking space have grown in Istanbul, as well, and coworking spaces have become crucial for people to work and socialize. People are therefore searching Istanbul for the right places to accommodate their needs. In 2012, Istanbul had only one coworking space, Yazane, but the number of coworking spaces

has increased dramatically since then, and such spaces have become accessible to people residing in different parts of the metropolis (Dedekoca, 2018). Based on today's economy, the core skills for workers are creativity, interdisciplinary thinking, problem-solving, and the ability to collaborate with others (Bilandzic et al., 2013), and workspaces need to provide an environment that will meet all these workers' needs to help improve their performance. That is why such spaces are mostly sought by Turkish knowledge workers. Even the most famous brands of our time prefer to use the concept of coworking space in their headquarter buildings; the plan layout of coworking spaces is configurationally similar to the open-plan layout. Some have more facilities for users, and some offer only the basics (Doulamis, 2013). Coworking spaces may thus be differentiated according to their facilities. Coworking space may link many different areas under one roof, such as workstations, informal seating, conference rooms, breakout spaces, kitchens, reception desks, printing facilities, libraries, meeting rooms, or private areas, each of which serves for different activities. Coworking spaces are considered to be the ideal workspaces of our century, but they also have weak spots, such as a lack of user privacy (visually and acoustically) and a lack of diversity of resources. In fact, many studies have supported the idea that a lack of privacy among users negatively affects concentration, motivation, attachment to place, performance, and job satisfaction (Kim & De Dear, 2013; Oldham, 1988; Sundstrom, Burt, & Kamp, 1980; Sundstrom et al., 1994; Sundstrom, Herbert, & Brown, 1982; Sundstrom, Town, Brown, Forman, & Mcgee, 1982). The next main disadvantage of coworking space is providing minimal resources for users/occupants or resource allocation; this leads to a lack of place engagement, motivation, and a meaningful emotional bond with the space and other users (Giuliani, 2003). Relevant studies on this topic have demonstrated that the possession of material items builds territorial satisfaction in a workspace, which in turn builds emotional bonds with the space, a sense of identity, a feeling of control of the space, and bonds between the users, all of which consequently positively affect the users (Becker & Steele, 1995; Inalhan, 2009; Inalhan & Finch, 2004). Furthermore, it has also been proved that the presence of artwork on walls and personal interior decorations provide a feeling of comfort within a workspace. The spatial configuration of coworking space is also an essential factor of convenience. These different spaces with different facilities can be connected to each other smoothly, making it possible to

generate a variety of performance results. For example, collaboration may occur in one space while productivity occurs in another connected space, or perhaps both occur in the same space but at different times, or in different spaces but at the same time (Waber et al., 2014). Smart combinations of different spatial environments of coworking space will lead to new transformations of workspace in the future.

2.3 THE NEED FOR POST OCCUPANCY EVALUATION OF COWORKING SPACE

Post-occupancy evaluation of the design and physical qualities of coworking space, or a coworking space evaluation, can be applied for what it tells us about both coworking space usage and occupants' satisfaction. Such field instruments were utilized in early studies on workspace, which addressed the physical and social settings for work. The most important such work, and still the most prominent today, is Herzberg's analysis of the physical qualities that impact worker motivation. His research addressed several vital qualities of the work environment that affect the occupants' motivation, which can create negative, positive, or apathetic feelings among the users (Herzberg, 1966). These physical qualities of the work environment can particularly influence the occupants' motivation, be it negatively or positively. This work further specified that conditions that are supportive of work performance are not as actively noticed as negative effects. A "threshold effect" exists, which means that those work conditions that affect motivation can be measured in terms of their propensity to move from a neutral status, or "no effect," to a "negative effect" status; there is no "positive effect" category.

Designers should pay attention to this theoretical basis in line with the results of studies on environmental ambience and comfort to maintain the concept of spatial satisfaction. Functional comfort or ambient features are also linked with psychosocial aspects of a workplace, such as the occupants' motivation and sense of belonging. The occupants' expectations of the physical qualities of coworking space could help guide the required coworking space design and structure. A sense of comfort involves not only receiving support from the environment, but also being able to act on the environment to achieve a desired and productive result. The opposite is also true: when occupants of a

workspace suffer while accomplishing their tasks because the physical environment is uncomfortable, it can be confidently stated that they are not satisfied; these occupants have to work longer and harder to compensate for spatial barriers or other design insufficiencies in order to get their work done. They may lose motivation and experience stress due to the physical aspects of their work environment. “Workspace discomfort” describes the degree to which occupants have to compensate and expend their energy in performing work activities in unfavorable physical conditions (Vischer, 2007). All work environments can be ranked somewhere between entirely comfortable to completely uncomfortable by using feedback from occupants at a given point in time. Satisfaction related to the physical qualities goes beyond ergonomics and can be characterized as the existence of a supportive atmosphere, in which the physical qualities of the workspace’s general environment help rather than hinder the attainment of work objectives. Spatial dissatisfaction with physical qualities affects occupants’ satisfaction adversely when those negative qualities are of high intensity or are prolonged; they slow down an individual’s ability to process and understand the number and predictability of critical information and cues, which increase with task complexity.

Potential stressors (i.e. physical qualities that interfere with task performance, motivation, attachment to place, and social relationships such as interaction and networking) include “spatial or architectonic details, ambient features and resources, and view or visual access from the workspace. Therefore, dissatisfaction can impact physiological processes, produce negative affect, limit motivation and performance, and impede social interaction” (Evans, 1984; Vischer, 2007, 2008). These physical stressors in the workplace affect occupants’ sense of belonging and effectiveness. Physical environmental stressors and configurations also affect social relationships, as the adverse effects of exposure to stressors reduce “cooperative behaviors, such as social support, altruistic behaviors, and teamwork” (Evans et al., 1987). On the other hand, spatial configuration and sufficient circulation play primary roles in social relations in the workspace.

This study focuses on post-occupancy evaluations of the experiences and expectations of coworking space occupants regarding the spatial features of a coworking space environment.

3. METHODOLOGY

3.1 RESEARCH METHODOLOGY

This research aims to identify the fundamental design approaches for increasing the satisfaction of occupants of coworking spaces. A qualitative methodology was applied to gain a deeper understanding of the occupants' expectations about coworking space design and structure, as well as the main physical and social qualities, challenges, and opportunities that they face by conducting semi-structured interviews with community managers and members of the selected cases (Groat & Wang, 2013; Yin, 2011). The qualitative research approach enables an in-depth analysis of "coworking space" within specific contexts by capturing as many variable elements as possible (Groat & Wang, 2013).

3.1.1 Selection of the Occupants

Coworking spaces connect different actors from different disciplines. These include spaces that involve remote workers, freelancers, independent entrepreneurs, artists, and so on, enabling them to share space while working. To accomplish the aims of this thesis, it is necessary to have a deeper understanding of occupants' experiences and expectations about coworking space design; that is why research was conducted in selected coworking spaces in Istanbul (Groat & Wang, 2013; Yin, 2011). Table 3.1 provides a comparison of the five (5) coworking spaces selected for this study, which are categorized according to characteristics such as the number of managers and members who accepted to be interviewed. For this study, have been contacted with ten (10) Istanbul based coworking spaces via email and five (5) of them replied positively. However, community managers do not let the third substance to collect the signs of participants individually, instead of this they had informed their occupants about this research and to ask willing occupants volunteered for participation. Each coworking organization has signed an ethical approval form as a representative agent of all the participating occupants.

Table 3. 1: Classification of coworking spaces.

Coworking space	Manager	Member
CS1	1	-
CS2	3	4
CS5	1	-
CS4	3	-
CS3	1	7

Among the twenty (20) participating occupants of coworking spaces, the youngest was twenty-one (21) years old and the eldest was forty-eight (48) years old. Figure 3.1 shows the occupants' age groups.

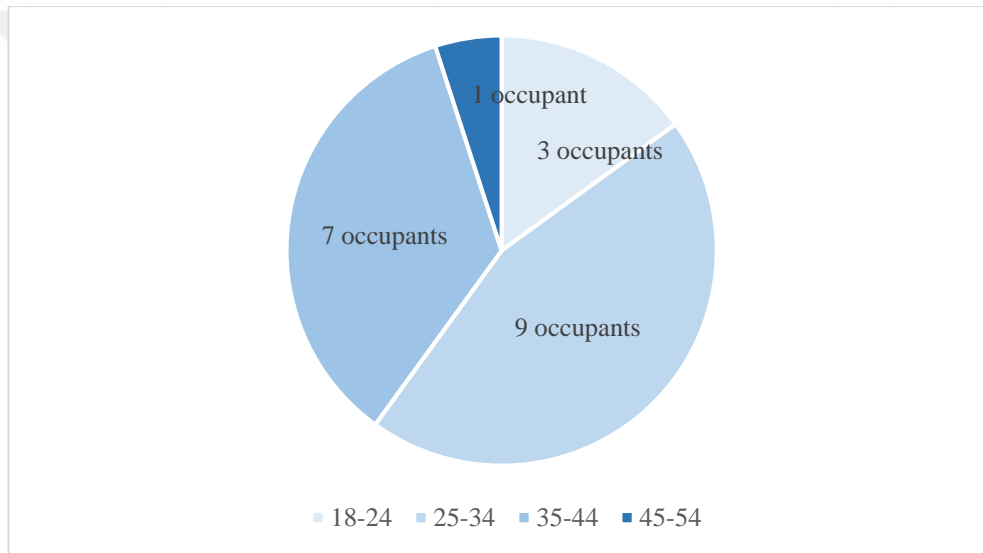


Figure 3. 1: Age groups of participating occupants.

Among the twenty (20) occupants of coworking space, nine (9) are managers and eleven (11) are members. Of the nine (9) managers, five (5) are female and four (4) are male. Of the members, five (5) are female and six (6) are male. All occupants are Turkish. (Figure 3.2).

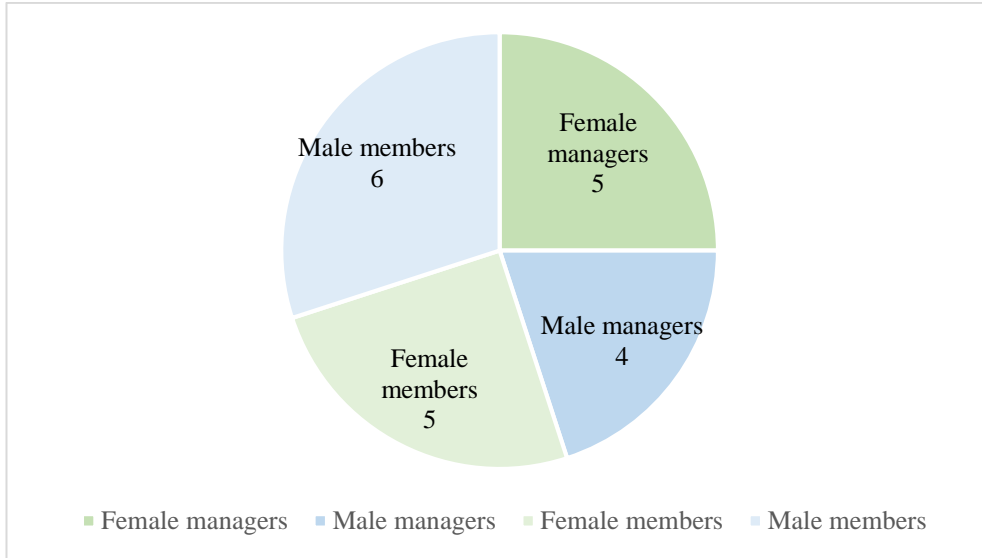


Figure 3. 2: Female and male participating occupants.

From the sample of twenty (20) occupants (nine (9) managers and eleven (11) members), only three (3) managers have a graduate degree, while seventeen (17) occupants (six (6) managers and eleven (11) members) have a bachelor’s degree (Figure 3.3).

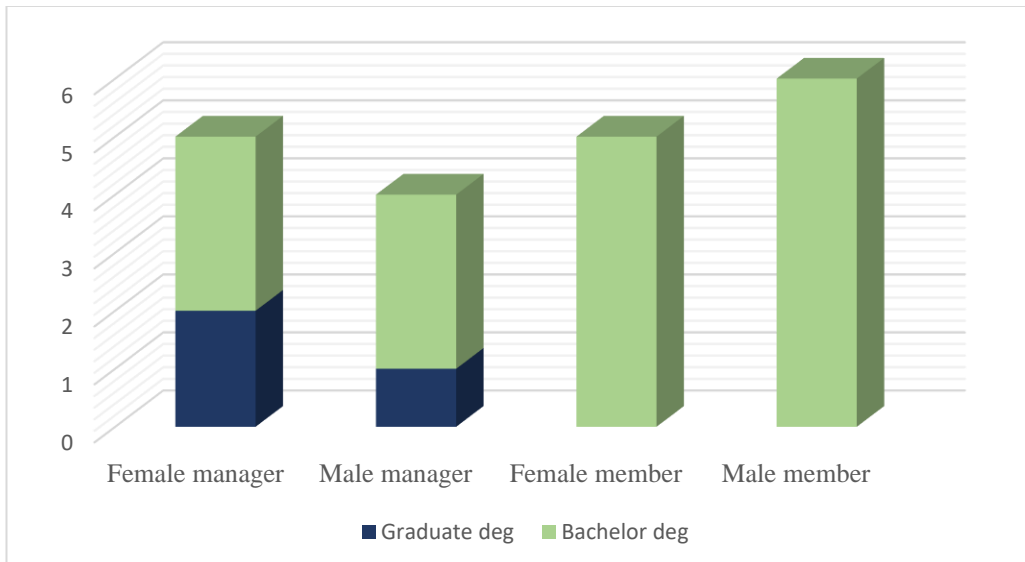


Figure 3. 3: Different educational levels of participating occupants.

3.1.2 Data Collection Procedure

Four coworking space organizations (representing a total of five coworking spaces), which have different themes, were selected according to the criteria given in the previous section and the participants were chosen among those who are willing to participate. These coworking spaces were examined in terms of design and their spatial difference were analyzed thoroughly. Upcoming chapters describe the themes of each coworking space.

This study aims to address the occupants' post-occupancy evaluation of the design of the coworking spaces. The post-occupancy evaluation method identifies overlooked design issues and emphasizes occupants' expectations about coworking space while seeking answers or proper solutions (Kepez & Üst, 2017; Kooymans & Haylock, 2006; Zeisel, 2006). The interview data collection method was utilized among the five selected coworking spaces located in Istanbul. Interviews were used to collect primary data about the design of the coworking environment. In light of the theoretical framework, interview questions were also developed for each group of the occupants of the coworking spaces, with one group of managers and one group of members. Semi-structured interview were conducted with the volunteers to understand the physical work environment and social environment from the occupant's perspective (managerial issues and the presence of other occupants considered within the context of the coworking space environment). I also took notes on the coworking environment, spatial arrangement and generalize patterns at each case.

I spent two days in each coworking space to conduct the interviews and to observe freely whether the current coworking space design had a significant impact on occupants' satisfaction, with the goal of understanding the relationship between the occupants and their physical work environment.

3.1.3 Design of the Data Collection Tool

The interview method was used as the data collection tool. Daily occupancy performance surveys may also be a source for post-occupancy evaluations, but

considering the complex nature of coworking space, the interview method is better suited to understand a deep awareness of design issues. The second reason for utilizing interviews as a data collection method was that web surveys have already been heavily used in similar research (Bueno et al., 2018; Ondia et al., 2018). Those works were very similar to each other and had almost identical questionnaires; it was thus hoped that interviews might yield a fresh perspective on the topic. The third reason was the cavalier attitude of the coworking organizations. Initially, I sent introductory emails to nearly all of the coworking spaces in the Istanbul region. I did not receive a single reply, neither to the emails nor to a web survey. I then decided to visit the coworking spaces one by one. Analyzing my expectations and experiences during that period, it became clear that people prefer face-to-face interactions more than web surveys. They do not take web surveys seriously, or their responses to web surveys produce data of lower quality (Heerwegh & Loosveldt, 2008).

3.2 LIMITATION OF THE RESEARCH STUDY

There are limitations to the study that need to be discussed. The research had a cross-sectional design and was conducted in only one city Istanbul. A cross-sectional study implies that the research participants were not studied over time, resulting in weaker causal interpretations. With a larger sample and an enlarged database covering the experiences of the individuals in previous coworking spaces, some information on the effect of transitions from one coworking space to another could be retrieved and analyzed.

Additionally, the restrictions imposed by some coworking space managers in order to avoid creating disturbances for the members created some limitations in the possibilities of generalizing from the study. Moreover, none of the coworking spaces agreed to share their layout plans which is limiting the spatial analysis to the general survey of environmental features (Table 3.2).

3.3 DESCRIPTION OF THE STUDIED COWORKING SPACES

A coworking space can be simply interpreted as an open planned room and a variety of other spaces on a single or multi-floor plan layout. Basically, all coworking organizations consist of shared and private spaces. Table 3.2 describes the themes of the five different coworking space configurations examined in this study and their main features. Shared spaces include the coworking spaces, kitchenettes, lobbies, and breakout zones while meeting and conference rooms may be considered as more formal types of shared space. Private spaces include private offices and phone booths, offering more privacy. Further resources beyond the basic scope of coworking spaces are also offered. Coworking space organizations may provide primary resources for the work environment such as Internet access, storage, power sockets, furniture such as desks and various types of seating, printing facilities, unlimited beverages, virtual office services, secretarial services, events planning, and various other services in light of the organization's theme.

Table 3. 2: Spatial analysis of the selected coworking spaces

	Coworing space				Meeting room	Conference hall	Kitchen				Phonebooth	Lobby	Breakout zone	Outdoor s		Storage	Offic e		Printing Facilities	Event Space
	Semi- private	Plain/ open	Permanent/dedicated desk	Transient/hot desk			Nested into coworking space	Close to entrance	Jointed breakout/lobby zone	Centralized				Garden/ Courtyard	Terrace		Private	Shared		
CS1		+		+	+		+			+						+	+	+		
CS2	+	+	+	+	+	+				+	+	+		+	+	+	+	+		
CS3	+	+	+	+	+	+	+		+		+	+	+		+	+	+	+	+	
CS4		+	+	+	+				+		+	+			+		+	+	+	
CS5	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	

Kitchenette areas are situated between spaces and are very comfortable for collective interaction. This space meets all the kitchen needs of the occupants. However, each food corner has a specific theme. Figure 3.4 shows different kitchen areas, such as kitchenettes joined with a breakout area or lobby, kitchens nested into coworking space, or kitchens centralized or located on circulation area. Kitchen areas are almost always interrelated with coworking space and outdoors or informal areas are maximizing the chance of encounters and increases communication between occupants.

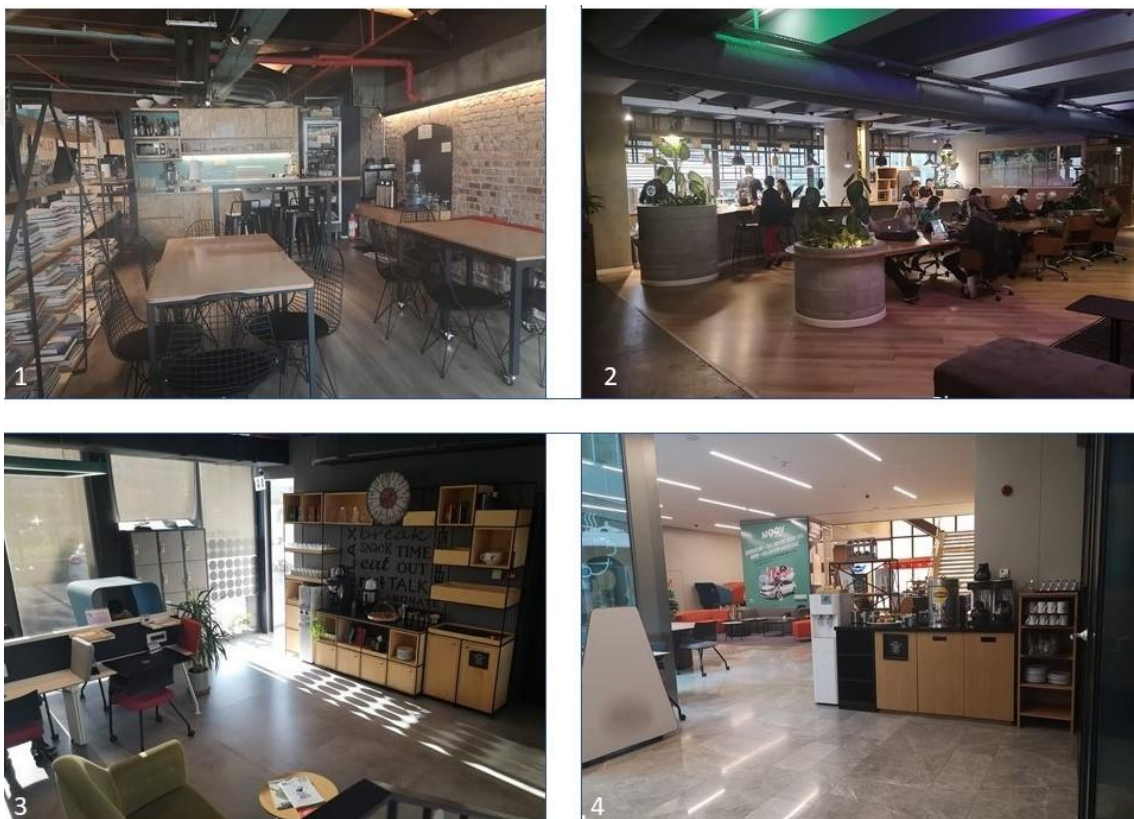


Figure 3. 4: Kitchen areas: jointed with breakout area or lobby (1); on outdoors pathway (2); nested into coworking space (3); centralized (4). Photo by the researcher.

The coworking spaces themselves are the central hub of each coworking space organization where all occupants mingle. Generally, there is an open layout plan full of desks and seats. These areas are the so-called shared spaces. Figures 3.5, 3.7, and 3.8 illustrate coworking spaces with different privacy levels and types of furniture. Coworking spaces provide two types of desks: dedicated desks and hot desks.

Figure 3.6 shows a coworking space sandwiched between private office areas. This configuration is designed to maximize chance encounters. A dedicated desk belongs to one occupant, but a hot desk can be used by many occupants who have membership in the shared space. Furthermore, coworking spaces are open to collaboration, but some coworking spaces have partially private areas or corners; all of them provide a variety of resources such as workspace, Internet access, printers and scanners, power sockets, and furniture.



Figure 3. 5: Coworking space with different levels of privacy. Photo by the researcher.

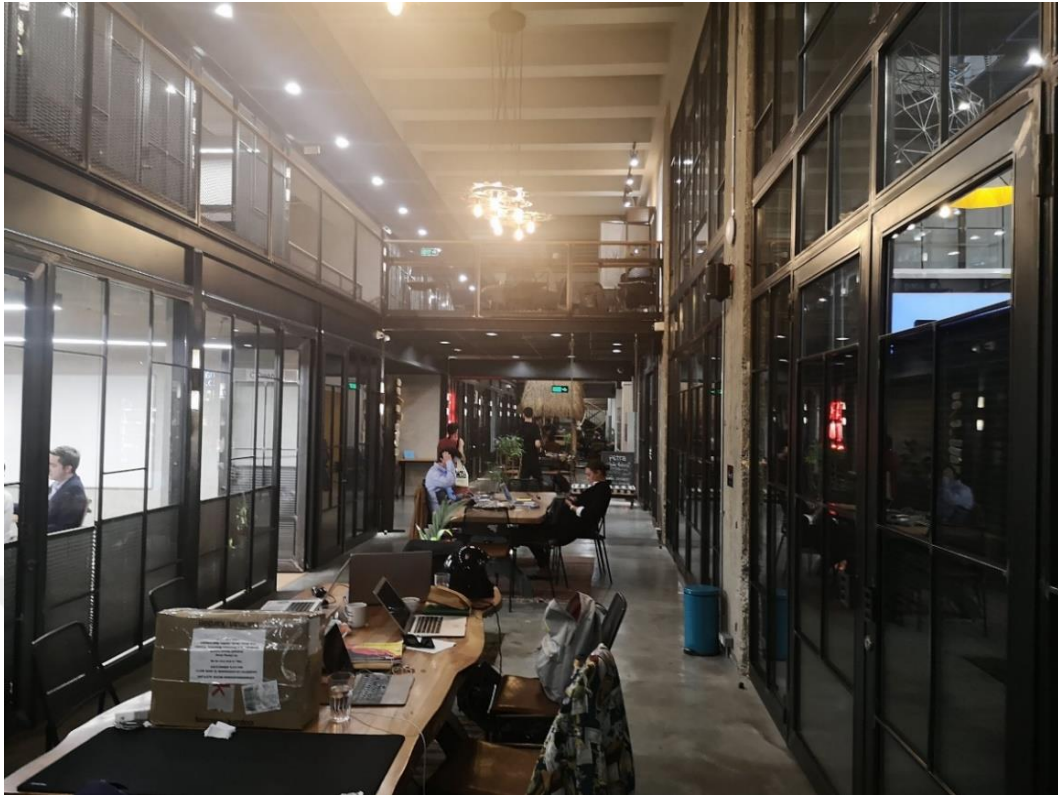


Figure 3. 6: Sandwiched/double-loaded coworking space (with hot desks) between office spaces. Photo by the researcher.



Figure 3. 7: Plain coworking space with hot desks. Photo by the researcher.



Figure 3. 8: Mingle (formality with informality) configured coworking space. Photo by the researcher.

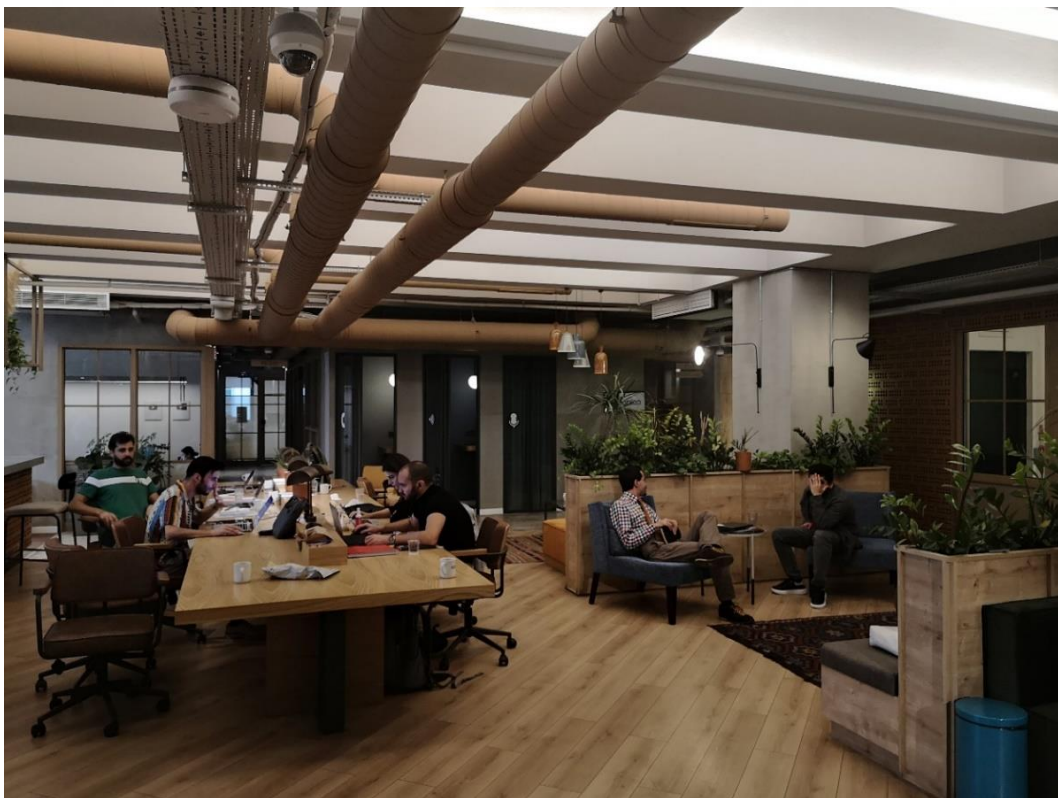


Figure 3. 9: Lobby jointed with coworking space (hot desk). Photo by the researcher.

Lobbies are also informal social spaces for the occupants and may be safely described as one of the preferred areas across the coworking space organizations. Figures 3.9 and 3.10 show lobbies with different arrangements. These spaces are designed for breakout times, but occupants also love to work, socialize, interact, and even conduct their meetings there. These spaces are placed close to the entrance or outdoors, or the kitchenette areas. According to occupants, lobbies and kitchenette areas are more dynamic rather than being mere breakout areas because of the convenient furniture. Lobby areas are easily accessible for collaboration and collective activities and therefore these areas increase the possibility of encounters.

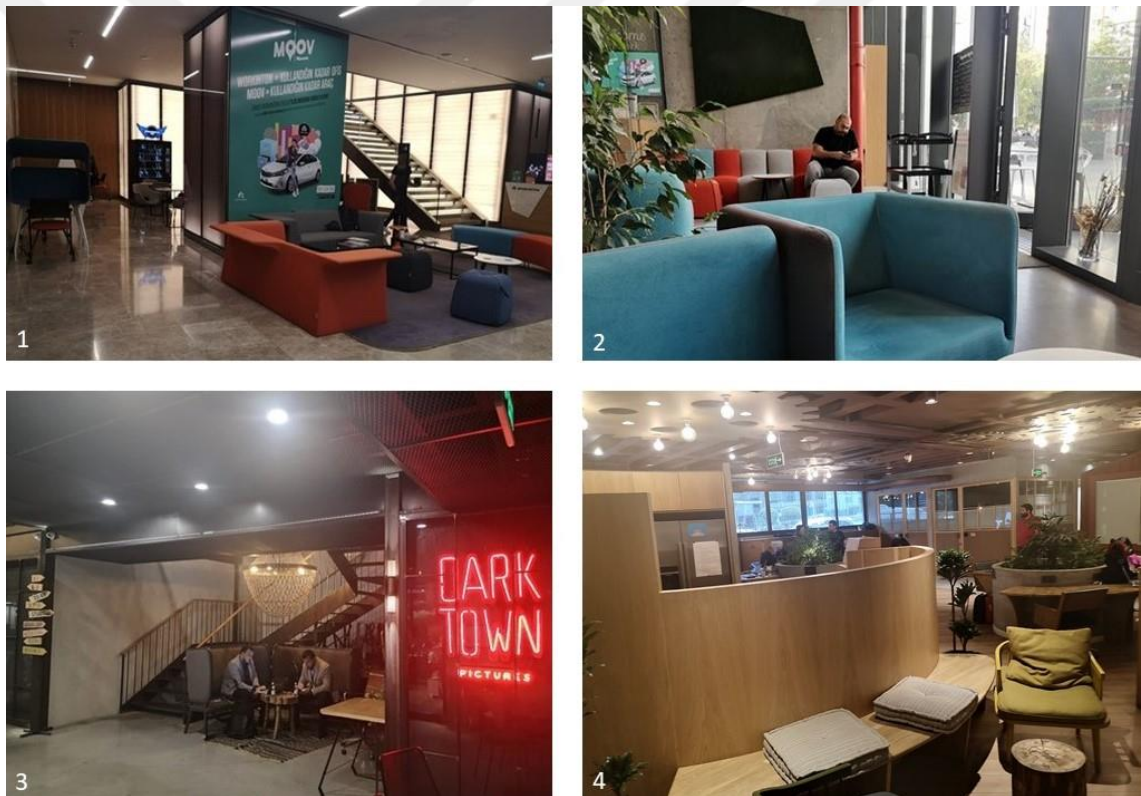


Figure 3. 10: Lobbies at the entrance: (1),(2),(3) and (4). Photo by the researcher.

Outdoor areas such as gardens and terraces are “breathing zone” or a coworking space organization. These spaces save the occupants from developing sick building syndrome. These spaces are also sources of fresh air, daylight, and social interaction. Outdoor areas remove stress and improve the health of the occupants. Figure 3.11 shows that

occupants prefer to drink their coffee on the rooftop terrace rather than indoor breakout areas. Outdoor areas increase social interaction and networking (Figures 3.12 and 3.13).



Figure 3. 11: Rooftop terrace. Photo by the researcher.



Figure 3. 12: Courtyard. Photo by the researcher.



Figure 3. 13: Different settlements of the outdoors. Photo by the researcher.

Breakout zones are similar to lobby areas; the only difference is that in these spaces the occupants are more relaxed and free. Figure 3.14 shows a variety of arrangements for breakout zones. Occupants like to talk with each other and socialize during breakouts. Generally, breakout zones are located close to the kitchenette area, shared spaces, or other centralized points, providing for direct encounters among the occupants and increasing face-to-face interactions and idea-sharing.

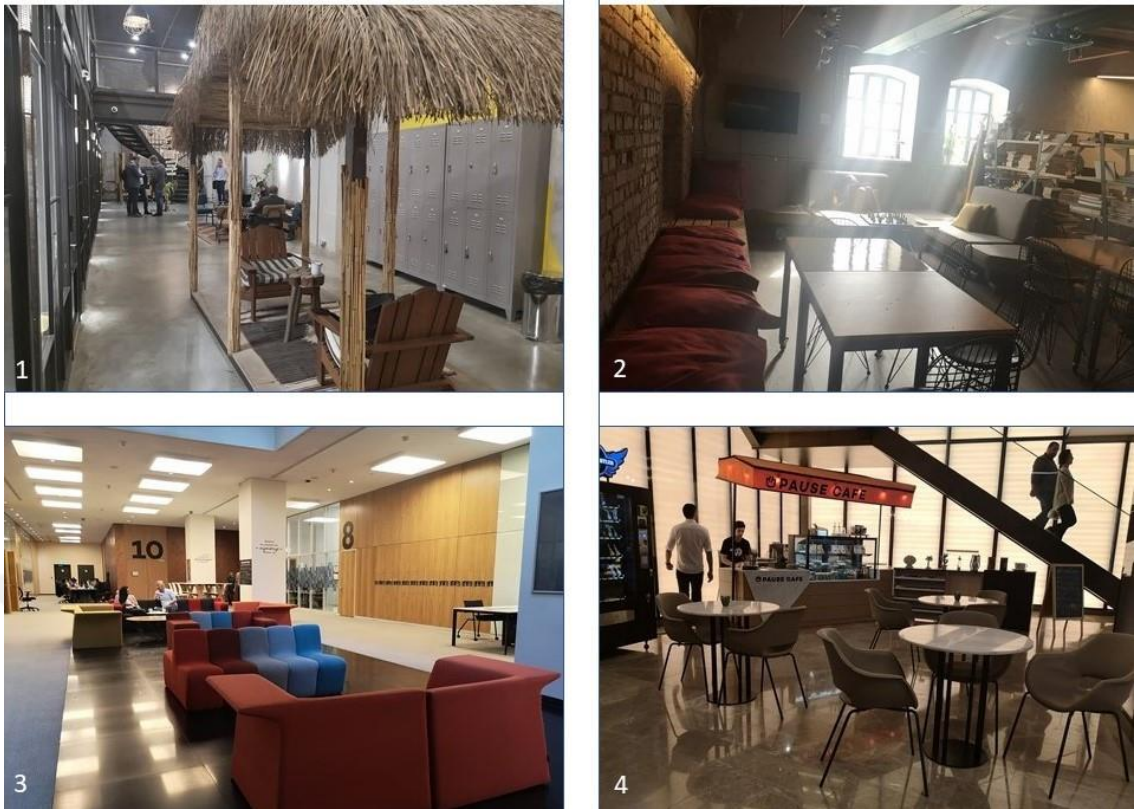


Figure 3.14: Variety of breakout zones: on corridor pathways (1) and (4); jointed to the kitchen area (2), and the centralized (3). Photo by the researcher.

Private spaces are also required by the occupants. Resource allocation is organized differently according to membership. Figure 3.15 shows shared and personal office spaces, respectively.

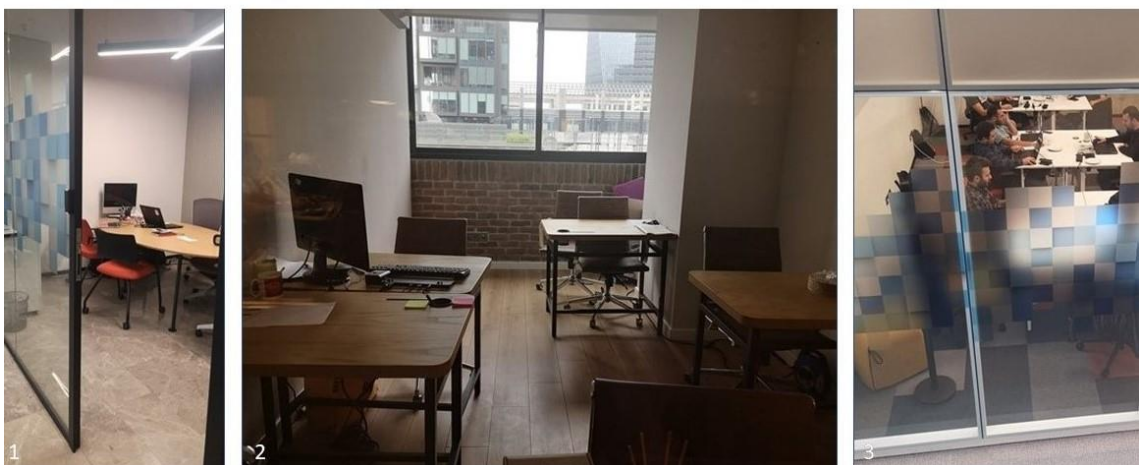


Figure 3.15: Shared (2 and 3), and personal (1) office spaces. Photo by the researcher

Meeting rooms and conference halls are also type of private shared (formal) spaces. Figures 3.4, 3.5, 3.6, 3.12, and 3.13 show that glass is a common material for all coworking spaces because it provides acoustic privacy without fully isolating the occupants; that is why walls in particular are almost always made of glass material. It also allows people to control the environment around them. Figure 3.16 shows a conference room that contains mostly moveable and adjustable furniture. Figure 3.17 presents a coworking space that provides custom-made furniture with a unique surface that reduces paper consumption.



Figure 3. 16: Adjustable meetings room. Black walls slide (moveable) and behind them, another conference hall. Photo by the researcher.



Figure 3. 17: Meeting room facilitates portable desks with a writable surface (upholster). Photo by the researcher.

Almost all coworking organizations have highly isolated spots such as phone booths or Skype rooms for private phone calls. This reduces the noise level in the coworking spaces while also providing privacy to the occupants (Figure 3.18). All phone booths are similar each other. They provide an acoustic and sometimes visual privacy needs of occupants.



Figure 3. 18: Phone booths designs. Photo by the researcher.

Description of the studied coworking spaces provides a deeper understanding of the coworking concept and coworking space design. This also leads to a better interpretation of occupants' experiences which explains their expectations, too. The next chapter comprises the pre-evaluation of the interview transcripts and the content analysis of interview transcripts.



4. ANALYSIS

4.1 CONTENT ANALYSIS OF THE EXPECTATIONS OF OCCUPANTS

For this research, twenty (20) interviews were taken from nine (9) managers and eleven (11) members from five (5) different coworking spaces; for evaluation of twenty (20) interview transcripts was utilized content analysis, which appropriates for the qualitative research methods. The interview transcripts were examined by two independent researchers and grouped according to the emerging themes. This analysis aims to understand the relationship between the occupants and their physical work environment and find out the main themes and relations between them.

In the pre-evaluation part, part of the interviews was translated from Turkish to the English language. Some interpretations might have bias; words from the interview texts are collected and listed according to the frequency of patterns and importance. Then examined patterns grouped and coded according to phenomena, to build the themes. The content analysis helped to understand the main concepts and their connections throughout all collected data. Based on the results of the interview analysis, interview texts revealed complex set of relations, between physical spaces and social environment lie within the coworking spaces studied.

On the other hand, the content analysis revealed the main physical and social qualities that impact on occupants' work performance regarding, spatial components of coworking space environment. Also, occupants' views about supportive spatial qualities and components are presented.

- Physical qualities lead to satisfaction
- Physical qualities lead to motivation
- Physical qualities lead to a sense of belonging
- Physical qualities lead to social interaction

The next chapter reveals the relationship between occupant expectations and physical qualities of coworking space via clearance of the main experiences that impact occupants' satisfaction.

4.1.1 Factors are Impacting Occupants' satisfaction

Physical qualities lead to satisfaction: The physical environment's comfortable components were most frequently mentioned by the occupants. Qualities of the physical environment affect the working processes of the members by ensuring the visual, acoustic, and thermal comfort of the space. Moreover, all ambient environmental features are interrelated with each other, and the occupants of a space perceive all of them as a whole. Table 4.1 shows selected views of the occupants regarding environmental satisfaction. It was frequently mentioned that natural light was vital for them; they therefore preferred desks along windows or glass walls.

In particular, glass walls let them control their surroundings, decrease acoustic distractions, and increase social interaction. Almost all of the visited coworking spaces also incorporated Skype/phone booths for private communications. The occupants mentioned that sometimes they do need space for absolute privacy. On the other hand, visual distractions do not disturb the occupants so much.

Table 4.1 highlights that the occupants mentioned acoustic distractions as one of the main parameters of a physical environment. They do not welcome loud noises. However, they do enjoy appropriate background music. It keeps them from feeling isolated.

Occupants often mentioned the importance of thermal comfort, air quality, and air ventilation. In an open layout plan, indoor air quality is essential for their comfort. Insufficient air ventilation and inappropriate ambient temperature cause distractions and the environment becomes uncomfortable.

Occupants mentioned that access to the outdoors is essential to them. First of all, many occupants are smokers; they need a space for smoking, and going outdoors is the best

option for them. Some occupants also mentioned smoking booths because nonsmokers do not always find sharing the outdoors with smoking people to be pleasant.

A workspace is often where people spend the majority of their time and their primary source of stress. Easy accessibility to the outdoors decreases the stress level and significantly increases job satisfaction. Occupants described the outdoor areas as sources of sunlight, socialization with friends, networking, and idea-sharing.

Another parameter that satisfies occupants is the ease of accessibility and a sense of welcoming. A few members stated that accessibility saves their time, and an attractive entrance creates a welcoming atmosphere.

Many occupants mentioned movable and ergonomic furniture because they sometimes want to arrange their work environment according to their own needs. Furniture, and especially desks with writeable surfaces, can save both time and paper. They want to use furniture that meets their needs. Many young coworking space members mentioned colorful furniture on which they can lie down during breakouts. Table 4.1 provides selected examples of the occupants' views on environmental satisfaction.

Table 4. 1: Selected examples of occupants' views on spatial satisfaction.

Mg10 ¹	<i>Members mostly prefer shared spaces with a dedicated desk. They don't want to be isolated but simultaneously to have space where they belong. They like to feel like an owner of that desk. Window desk and close to outdoors is their favorite spot. They don't like tight spaces away from the community. Background noise sometimes disturbs them; that's why we always put slow music to balance those acoustics. Air ventilation also sometimes creates problems because it comes from the plaza, and it is common. An individual ventilation controller could make members happy.</i>
Mg5	<i>Noise...So many people are in open space. The rest of the ambient factors can change, such as they can change desks where the possibility higher to get more sunlight or enough light or air ventilation system can, indoor air pollution, but noise is a different factor.</i>
Mem8 ²	<i>Ambient around me satisfies me since good ventilation, appropriate lighting, and noise.</i>
Mem1	<i>Quality of indoor air is important ...insufficient air ventilation, too hot and too cold workspace and polluted air causes serious distraction and becomes uncomfortable... plus, direct accessibility to outdoors provides a healthy environment such as sufficient sun-light and fresh air circulation.</i>
Mem3	<i>... Spatial factors are also important for my satisfaction and concentration, ...insufficient lighting, thermal comfort, and loud noise could decrease my work performance, which impacts my motivation negatively.</i>

¹ Mg10- manager number ten (10);

² Mem8-member number eight (8);

Mg8	<i>Ergonomics of spaces and furniture, comfort, and convenience of spaces significantly affect the performance of members.</i>
Mg1	<i>In fact, ambient factors play a considerable role in occupant's satisfaction. Especially noise, indoor air quality, and access to outdoors... Occupants like home atmosphere and their friendships under our roof.</i>
Mg3	<i>Yeah, it is artificial...that's why they don't like it)) Some members are always complaining about sunshine. If it would be a rainy day, it was going to be darker.</i>

Physical qualities lead to motivation: Content analysis results revealed that the occupants mostly choose shared spaces. Table 4.2 provides selected examples of the occupants' experiences of motivation. Coworking spaces represent a mingling of different kinds of space: open, adjustable, shared, semi-private, and private. According to the occupants, shared and semi-private spaces are their favorites. These are spaces that enable individual and group work, increasing creativity and idea-sharing by motivating members to work for a longer time and also providing opportunities for social interaction between members and managers, leading to collaborations.

While examining the results of the interview texts, it can be seen that occupants want more open spaces for informal seating and cozy spaces, game zones for socializing, and areas for networking (Table 4.2). They state that open, flexible, and dynamic spaces increase their motivation. Idea-sharing, learning, and socializing happen naturally when people randomly encounter other occupants or spend their break times together. This facilitates social interactions among them. Occupants stated that bright colors of different materials and textiles in the interior decoration motivate them. Modern workspaces' stylish look and feeling of home their them, as well. Occupants reported that relocation inside coworking space from regular offices, 24/7 accessibility, and flexibility also affect their motivation. They do not feel psychological pressure caused by time and space and therefore they can work faster, better, and longer, which increases their satisfaction.

According to content analysis, bright colors on furniture and decoration and soft colors on walls inspire the occupants. Generally, colors, plants, and artwork are some of the essential parameters for occupants.

Table 4. 2: Selected examples of occupants’ views on motivation.

Mem1	<i>Work morale/ mood doesn't exist at home. Or you have to have a real office corner at home...additionally, my work depends on my motivation... I can't work without motive. When I feel like it, work environment motivates me and increases my performance</i>
Mem5	<i>The fact is that the environment close to nature or reminding of nature is already stimuli for occupants and source of motivation; I think that glass walls around the shared space are giving a feeling of freshness...so it feels nice to be continually receiving sunlight...and nice to have such a beautiful garden...</i>
Mg9	<i>The X coworking space organization prefers ergonomic furniture because members' performance depends on their comfort and space satisfaction. Of course, slow background music is also increasing motivation and satisfaction, which affects members' performance too. Especially colorful furniture and plant are extra motivation for members. In a colorful, dynamic work environment motivates more than the dark and pale-colored background.</i>
Mg6	<i>Surely, community and events. Because they enlarge their connections, make friends, knowing important people for new projects, having fun, and learning from each other. Meanwhile, social activities such as yoga classes relaxing them, good for their body and mind. The feeling of home supports them to work longer, and harmonic space motivates them. 7x24 hour availability of space and kitchenette. And my friends too. For example, if one of the friends works till late, then another friend may keep the company. Inspiration by community, ambiance, self-development activities besides work activities is the reasons ... members are happy here. They like to spend time here</i>
Mg4	<i>The majority of our members belong to the creative class, that's why they value the intimate atmosphere, colors, artworks here. Details are important to them for inspiration. We tried to create a playful environment, and members like to play with it, to transform the space into what they want.</i>

Physical qualities lead to a sense of belonging: Content analysis results showed that occupants often mentioned the expression of personalization, individual commitment to the neighborhood, individual commitment to personal items, integration of satisfaction, shared resources, and having their own territory. Table 4.3 shares selected views of occupants about feeling a sense of belonging. Occupants who have office membership prefer this membership because of the personal space. They prefer to have private space, storage, and individual items in the office, and they are commonly coming to the coworking space five days a week. They spend more time in the coworking space, which leads them to develop an emotional bond. Occupants who own dedicated desks prefer this more semi-private arrangement rather than hot desks, and they do not like sitting at different desks each day. Similarly, feeling an individual commitment to the neighborhood also plays a vital role in space engagement because space can be a facilitator of emotional needs. Occupants often stated that the community was a main

factor for them. They liked being a part of the community; some occupants mentioned that they came to a particular coworking space after their friends joined it.

Table 4. 3: Selected examples of occupants’ views on a sense of belonging

Mg5	<i>Members come here for work and also to be part of our community.</i>
Mg9	<i>Location is important. Ease accessible locations are satisfying, attracting, and engaging members.</i>
Mg2	<i>They like to be in this kind of community or at least to reside in the same space with them because this space gives them a chance to grow friendship and networking besides successful people.</i>
Mem11	<i>Accessibility to many resources increase my satisfaction, space attachment, and performance</i>
Mem5	<i>Initially, I have liked X coworking as space, but after a while, I have built many meaningful friendships and emotional bonds with people too. A community of X coworking also integrated into my social life...recently maybe friendships are more prominent.</i>
Mem1	<i>Moreover, a sense of belonging is essential... You want to be part of one community, know people around, and have a social environment; Belonging to the physical environment is most significant, but the social environment also affects positively.</i>

Physical qualities lead to social interaction: Based on the results of the content analysis, social interaction is one of the repeatedly mentioned experiences that affect performance in coworking. Almost all occupants prefer coworking space because it facilitates social communication. Table 4.4 shares selected occupants’ views about social interaction. Open space environments increase the possibility of random encounters, idea-sharing, and social and collective activities. Arranged events were described as the primary source of networking. Especially for independent entrepreneurs, remote workers, and IT workers, such shared space is very valuable. Shared spaces such as kitchenettes, printing facilities, informal seating, and outdoor areas dramatically increase the social interactions between occupants. While working, people are also developing and learning, which can happen in both formal and informal spaces. Informal spaces are more motivating and engage people with each other while providing space for social interaction. For this state of mind, occupants need less formal work environments as well as free breakout spaces. Based on the results of the interview analysis, working environments should include purposefully built informal social spaces, many possibilities to access outdoor areas, and comfortable seats. The

significance of social interaction lies in its ability to enhance the occupants' motivation and strengthen occupant engagement with the space via the community. Coworking spaces should be flexible in the sense of adaptability to both individual needs and teamwork and there should be a strong emphasis on social interaction and advanced technology (McLaughlin & Faulker, 2012; Kojo, 2014). Informal environments have been referred to in previous works by many different names, such as creative spaces (Jankowska & Atlay, 2008), third-space learning environments (McLaughlin & Faulker, 2012; Kojo, 2014), and coworking spaces (Bilandzic & Foth, 2016, Lumley, 2014; Kojo, 2014).

Table 4. 4: Selected examples of occupants' views on social interaction.

Mem5	<i>Outdoors my source of social interaction and space for rest and relaxing.</i>
Mg9	<i>In my opinion, nowadays modern open plan workspaces are popular because of the possibility to know many people with different professions and social interaction.</i>
Mg10	<i>Outdoors is the most favorite space of members... they relax and have rested there, smoke, drink, and socializing always there.</i>
Mg8	<i>Coworking spaces, shared spaces, breakout spaces, and lobby spaces are more welcomed and favorite of members. When members are bored from work or want to take a short rest they can use these spaces; moreover, collisions with each other face to face create possibilities to know each other and communicate with each other;</i>
Mem11	<i>Moreover, while getting coffee and printing some paper, you have the possibility to interact with other people</i>
Mem1	<i>And coworking space serves not only for work to me I can meet here with my friends also ...pretty informal ambient and intimate atmosphere; Shared resources are empowering social connections and emotional bonds between people and space as well as shared spaces.</i>

4.1.2 Focusing on the Findings that Impact on Satisfaction of Occupants

Based on the content analysis results, daylight is one of the most significant ambient environmental features. Figures 4.1 and 4.2 show that occupants prefer to sit close to windows or glass walls. As Mem1 stated, “Sunlight is important to me...I had a lighting problem in my previous workspace.” Mg6 further stated, “Yes, light is important! People are always looking for a window seat or space on the terrace because of sunlight...or indoor areas [where] they like light which doesn’t disturb them and also doesn’t let them sleep...” Mg3 explained, “Sunshine! There should be more sunshine, I guess, for space... Sometimes they are complaining about the darkness...” Occupants themselves also revealed that they prefer to sit close to windows or glass walls because of sunlight rather than in the middle of the space or away from windows.

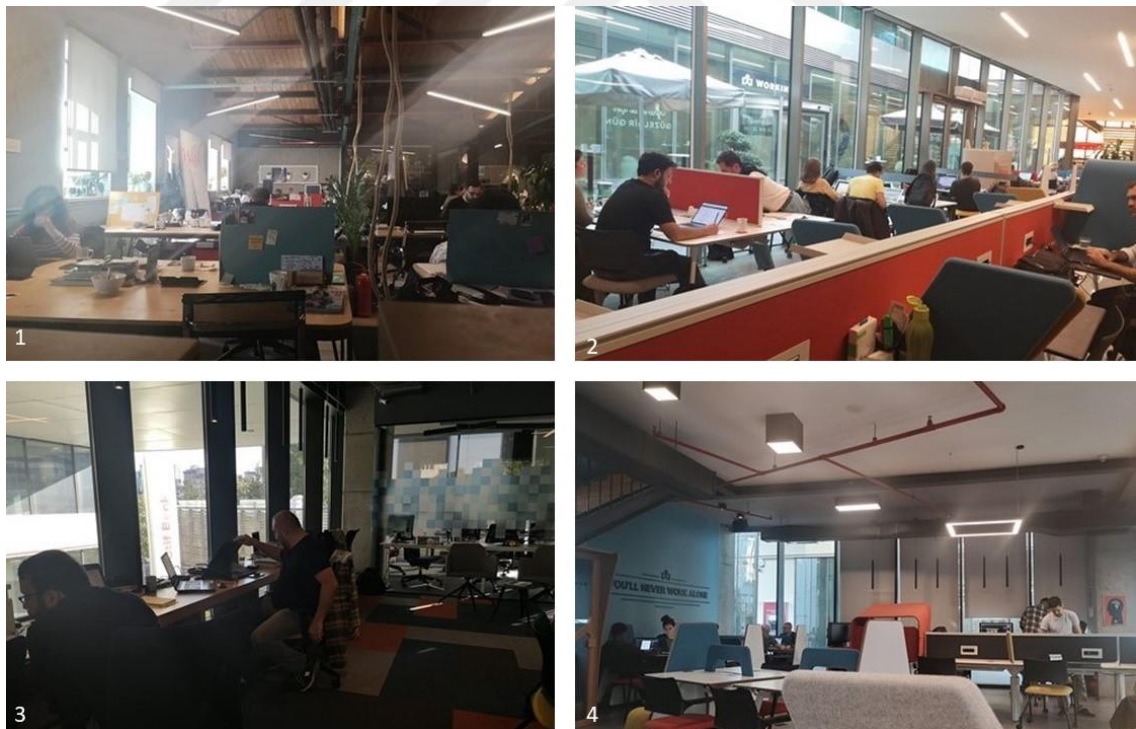


Figure 4. 1: Occupants sit close to windows (1 and 3) and glass walls (2 and 4). Photo by the researcher.

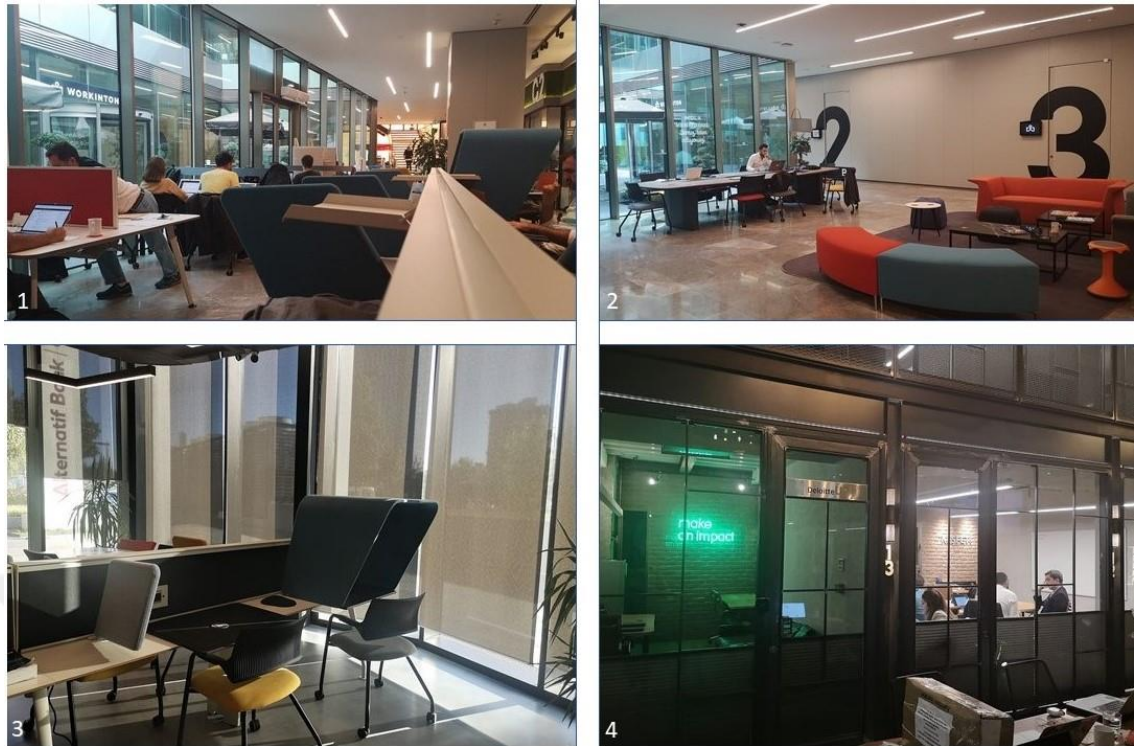


Figure 4. 2: Occupants sit near glass walls: coworking spaces (1,2 and 3); office spaces (4). Photo by the researcher.

According to the content analysis, informal shared spaces such as lobbies, breakout zones, kitchenette areas, and outdoor areas increase face-to-face social interaction between occupants and are positively associated with networking. As Mem5 stated: “Outdoors is my source of social interaction and space for rest and relaxing,” while Mem6 said, “As a shared resource, the first is outdoors; almost all members are using the outdoors for smoking, coffee, interaction, to meet with friends, to get fresh air or a short walk; I’m spending my breaks outdoors ...drinking coffee, getting sunlight, because I work in an underground office... I smoke, network, and communicate with people face to face.” Mg10 further explained, “Outdoors is the most favorite space of the members... they relax and rest there, smoke, drink and socialize, always there...”.

Resource allocation is another one of the critical physical qualities of a space, which could be supported by design. The analysis revealed that occupants are building special emotional bonds with their workspace and their personal items, and with other people close to their territory. Previous studies also showed that resources are provided by work organizations to engage occupants in their workspace (Becker & Steele, 1995;

Kopec, 2006; Wells, 2000). Resource allocation plays an important role and subconsciously manipulate occupants place attachment. This could entail décor, artwork, personal items, a dedicated desk, storage, or even establishing a friendship due to storage (Figure 4.3). On the other hand, resource allocation is interrelated with privacy needs. A member who owns a dedicated desk has more privacy rather than who hasn't one, or the user of a hot desk. As Mem1 stated, "How many times you would change your table at the end of the day, it is a cafe... You want to be part of one community, know the people around and have a social environment; belonging to a physical environment is most significant but the social environment also affects [us] positively." Mem11 additionally stated, "Accessibility to many resources increases my satisfaction, space attachment, and performance," while Mg6 stated, "A feeling of home supports them to work longer and the harmony of space motivates them. The 24/7 availability of the space and the kitchenette. And friends, too. For example, if one of the friends works late, then another friend may keep them company. Inspiration by the community, the ambiance, self-development activities besides work activities are the reasons why members are happy here. They like to spend time here."

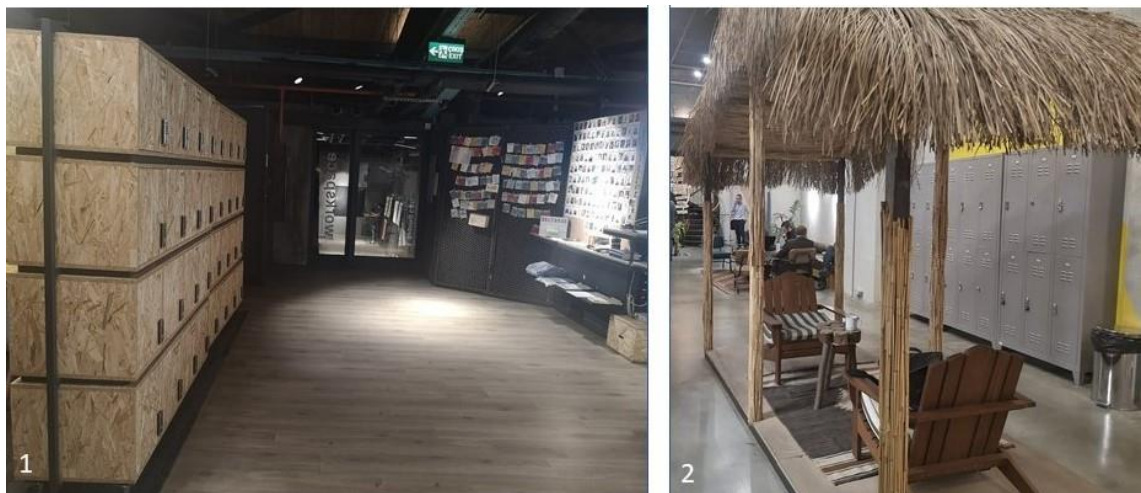


Figure 4. 3: Storages: in front of entrance (1) and in breakout zone (2). Photo by the researcher.

4.1.3 Ensuring the Continuity of the Satisfaction

Based on the content analysis, physical and social spaces are interrelated in coworking space environments; they have a “symbiotic association” similar to that of “tree and mushroom” (Johnson, Graham, & Smith, 1997). At its most basic level, the “mycorrhizal association” or “symbiosis” (Boucher, James, & Keeler, 1982) is a mutually beneficial relationship between two different species. There are also different types of mutualism, including symbiosis and non-symbiotic mutualism. Symbiosis applied to spatial relations occurs when two spaces depend on each other, both receive benefits from the relationship, and at least one of the spaces needs the other to survive. In light of this, the physical and social spaces made available to the community are two spaces that have different natures, but the coworking space environment is associated with them both as one single body-work ecosystem. The four factors explored in this thesis (satisfaction, motivation, sense of belonging, and social interaction) are indicators of this “mycorrhizal association.” Symbiosis provides and supports the sustainability of the coworking space concept. If qualities of the physical environment provide insufficient satisfaction and sense of belonging, then the general status of the community in terms of motivation and social interaction could decrease, which negatively impacts the well-being of occupants and increases stress levels. The opposite, of course, is also possible: satisfaction with the physical space (functional comfort) could increase the motivation and social interaction of occupants. Beneficial relationships can be seen among these findings. By examining the views of the occupants, it can be understood, for example, that daylight, a sense of belonging, and social interaction have some relationship. For example, occupants do not always occupy spaces close to windows; they sometimes prefer to go outdoors to get daylight while simultaneously meeting with colleagues for idea-sharing or conversation. Occupants might also choose a space or desk according to where their best friends sit, which is a type of social interaction that leads to space attachment (a sense of belonging). The many similar views shared by the participants in this study are proof of the reality of the cooperation of design elements and highlighting a sybiosis.

4.1.4 Unexpected Influence of Social Interaction

Based on the results of content analysis, the found spatial factors (motivation, sense of belonging, and social interaction) are clearly authentic and present in both types of studied space (physical and social spaces) and are closely interconnected with each other. Figure 4.4 describes that motivation could be associated positively with a sense of belonging, and a sense of belonging may support social interaction. The supportive relationship between found spatial factors also associate therewith satisfaction.

On the other hand, the results of the content analysis revealed that besides being a mediator variable, social interaction is a confounding variable as well. Motivation, sense of belonging, and social interaction can be regarded as mediator variables that determine an occupant's satisfaction in both of the environments. Given the results of the content analysis, one cannot deny the fact that social interaction also may change (increase) the influence of the other variables (i.e. motivation and a sense of belonging).

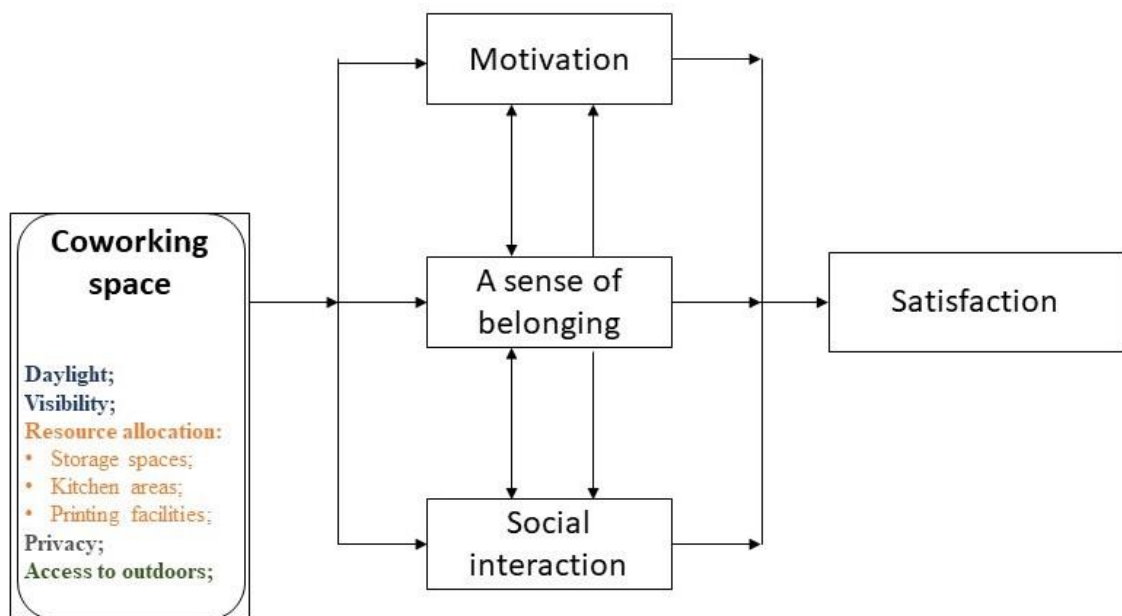


Figure 4. 4: Proposed Conceptual Model.

4.2 DISCUSSION

This qualitative study has explored the main physical qualities of coworking space based on the expectations of the occupants. Many similar studies in the literature have been performed by applying a quantitative research method (Bueno et al., 2018; Ondia et al., 2018).

The findings of the content analysis are threefold. First, it shows the importance of daylight, and then the importance of a sense of belonging and finally social interaction.

Daylight significantly impacts satisfaction, motivation, and feelings of relaxation when the observer is sitting by a window or a glass wall. In the studied workspaces, desks and other spaces that receive enough daylight were always occupied. Moreover, the study shows that occupants' privacy according to the physical components of coworking spaces. For example, perceived having a glass wall on one side appears to contribute to the privacy against spatial invasion, which seems to be a serious problem while working, and glass walls help occupants form attachments to a particular spot.

This study further reveals that a sense of belonging to a coworking space supports attachment to the space, networking (social interaction) possibilities, workspace culture, motivation, and overall satisfaction. Shared and decentralized resources across the coworking space maximize circulation and face-to-face interactions.

Informal spaces are the type of space usually associated with a high level of social interaction; occupants become friends by sharing the use of the outdoor areas that they access every day at the same time, or while getting coffee in the kitchen. Dozens of similar examples demonstrate how spatial configuration, nature, and circulation influence social interactions.

Analysis of the findings shows that design elements with transparency, resource allocation, and informal spaces have significant impacts on occupants' satisfaction. These findings validate previous research claims that occupants' satisfaction is highly associated with the level of daylight, a sense of belonging, and social interaction in the workspace (Boubekri, Hull, & Boyer, 1991; Doulamis, 2013; Galasiu & Veitch, 2006; Suire & Vicente, 2009; Tumen & Zeydanli, 2016). The consistency of the reoccurring

patterns in the content of the interviews concerning coworking space design in the five case studies here reinforces these findings. This study shows that design elements incorporating daylight, a sense of belonging, and social interaction could be applied in a practical way to design the desired work environments for occupants.



5. CONCLUSION

This thesis aimed to assess coworking space environments, focusing specifically on the occupants' experience and expectations. Addressing the significant challenges and opportunities in this field, it is hoped that the research will contribute to the future development of coworking space design. The main goal of this research has been to lay the groundwork for future studies and provide guidance on how to improve coworking environments in Istanbul by analyzing the current situation. Five coworking spaces were selected for the research and the qualitative research methodology was employed. In order to reach a better understanding of the studied phenomena, comprehensive interviews were conducted for each coworking space with the participation of their managers and members.

The coworking spaces have both advantages and disadvantages. The main benefits of coworking spaces are as follows: (1) flexibility, comfort, and functionality; (2) qualified members from various disciplines, who want to engage in social interaction and idea-sharing; (3) foundations, banks, and independent organizations show an interest in coworking space organizations by establishing partnerships or using them as talent pools. All of these advantages offer opportunities for new independent entrepreneurs, freelancers, remote workers, and all sorts of knowledge workers.

On the other hand, acoustic and visual distractions, poor air quality, and inadequate spatial arrangements could interrupt the experience of satisfaction of the occupants. Resource allocation could be a problem for some members (for example, for nomads), and the insufficient arrangement of informal spaces for rest, lack of social events, or maintenance of the continuity of the ecosystem of work could be main challenges for the managers of coworking space organizations. These challenges are found to undermine coworking space organizations' credibility, leading to the prejudiced assumption that a particular organization would not provide enough support for its members. These challenges could prevent coworking space organizations from contributing to the community in the long-term.

According to the findings of this thesis, understanding the importance of ambient environmental qualities is crucial, especially daylight and the strategic use of natural

lighting for the comfort of occupants together with appropriate resource allocation, because it is crucial for occupants' satisfaction (sense of belonging). Accessibility to outdoor areas is also critical; besides increasing motivation, it also maximizes face-to-face interaction and enhances the quality and quantity of social interactions through the configuration of spaces and events. Furthermore, social collaborations and ensuring the continuity of the physical and social environments are crucial factors for coworking space organizations to realize their full potential. Ignoring these critical issues will likely result in a general loss of interest, limiting the effectiveness of occupants' work performance. It is hoped that the present analysis will underscore the importance of having a supportive and dynamic work environment in every step of the work process.

This study has followed the previous literature and has described the impact of the work environment on the performance of its occupants. The findings of this research helped to understand the relationship between the workspace environment and the occupants' satisfaction because all occupants expect a workspace to have physical qualities that positively impact their work performance or move them forward while maximizing chances of encounters that serve to increase social interaction. Exposure to daylight can be increased with use of transparent elements (such as glass walls) or windows, which is also positively associated with space engagement and the influence of the number of resources on the occupant's work process. Indeed, coworking spaces could increase a sense of belonging just by allocating the necessary resources to the occupants.

In addition to satisfaction, motivation, and a sense of belonging, the environmental psychology of a workspace also includes social interaction. Occupants' motivation and achievement are significantly influenced by social interaction, and satisfaction and motivation also impact the sense of belonging among occupants.

Research supports the idea that the value of coworking spaces can be realized by enabling their occupants to perform better. Previous studies have shown that interruptions and distractions are among the biggest threats to occupants' productivity. Cognitive overload, or the inability to accomplish tasks due to excessive information, poses another barrier to performance. People can progress rapidly in business if they are provided distraction-free, protected time in which to accomplish their work.

Innovation, mobility, and economic value in a digital economy originate more and more from “concerned team intelligence” or open sharing, networking, and the building of ideas through collaboration. A collective has more combinations of unique insights than one individual can possess, resulting in innovative and comprehensive solutions and ideas. The research findings have definitively linked environments characterized by visibility, facilitation, and openness to effective collaboration.

Visual contact helps occupants interact frequently and build relationships that in turn help them share information, think creatively, and reach more innovative solutions. Measuring the effectiveness of visual contact is valuable; understanding exactly what impacts the efficiency of a work environment allows designers to fix problems and magnify strengths to design a coworking space that is effective for knowledge workers.

Post-occupancy evaluation could help to designers understand specifically what contributes to the coworking space’s quality so that design solutions can be properly considered. The evaluation of occupants’ expectations and experience in terms of the sufficiency of physical qualities will lead to satisfaction, motivation, a sense of belonging, and social interaction or, on the contrary, will identify the insufficiency of these factors. Daylight was identified as a vital physical quality based on the content analysis of the present study. Overall, in all selected coworking spaces, occupants stated that improvements in physical qualities such as light and air quality, furniture comfort, layout functionality, visual access, and acoustics would increase the satisfaction from their work environment. However, among these physical qualities, daylight was the most commonly mentioned. Sufficient daylight in a workplace makes a difference for workers’ success, as it is associated with the satisfaction, motivation, sense of belonging, and social interaction within a coworking space. That is why top-performing coworking spaces use daylight effectively in interior design to improve their occupants’ satisfaction. The first finding of this research underlines the use of daylight across a coworking space, which could positively impact occupants’ satisfaction.

The engagement of occupants has become increasingly crucial for business success in the knowledge economy; connecting occupants to a workspace creates a sense of belonging and value that supports and benefits occupants. Occupants’ experiences show reported satisfaction and longer tenure among more engaged occupants; also, research-

based analysis reveals that occupants' sense of belonging relates to workplace resources and coworking brands. On the other hand, a sense of belonging builds connections, creates networks, and facilitates information flow and pathways to idea-sharing, which are common values, cultural trends, and missions of all coworking spaces. Moreover, increased levels of engagement are vital of the community. The implications of this emotional commitment are clear in both the present research findings and others; increasing spatial satisfaction, motivation, and sense of belonging are associated with higher performance. Overall, the second research finding shows that a sense of belonging influences on occupants' satisfaction.

In today's knowledge economy, openness means an effective and flexible collaboration of people. It develops pathways to enlarge networks, problem-solving, learning, and adaptation. Social interaction could be considered as an advantage of coworking space for producing new knowledge. This study also shows that the differences between coworking spaces in terms of spatial configurations may stem from differences in the ability to communicate and effectively perform as a social collective. Coworking spaces that develop a reliable and networked social infrastructure are likely to be more successful. This thesis has called attention to the significance of the relational and interactive aspects of work and supporting this concept with design. In view of the fact that, occupants' satisfaction occurs when a social and relational community exists, where work accomplish through informal networks more than organizational hierarchies. Coworking space demonstrates the value of social capital, the connections of occupants in a social network, and the norms of symbiosis and trust. It contributes value by creating knowledge and coworking space resources (physical) that enhance the contributions of the occupants and collaborative action. The design, development, and facilitation of coworking space require careful consideration of the context of the social interaction preferences of occupants. This research has identified multiple spaces in which social interactions take place. Each of these types of spaces have different implications for what, when, how, and where social interactions occur and this suggests the likelihood of variations; the physical environment must support face-to-face interaction. Successful coworking spaces create not just office spaces where occupants work, but entire coworking space organizations that support various needs of diverse

occupants. The third finding of this research thus reveals that social interaction is crucial for the satisfaction of the occupants.

Overall, this research confirms that coworking space can provide a sufficient work environment for occupants based on appropriate ambient environmental features and the social environment. The results of this research may be useful for coworking designers and managers to develop their projects and for innovation in coworking development management. This study was conducted as a preliminary study to support further research on coworking space design preferences and strategies in Turkey. The information gathered in this study demonstrates that design elements involving daylight, a sense of belonging, and social interaction could be incorporated in practical ways as follows:

- The penetration of daylight can be increased with large windows and glass ceilings and/or walls;
- Impromptu social interactions can be achieved through the decentralization of resources such as storage areas, kitchen areas, and printing facilities;
- The flow of information, networking, and idea-sharing can be fostered through easy access to outdoor areas such as terrace and garden.

More research is needed to link these concepts together and provide a solid theoretical framework for advancing coworking concept designs in future studies.

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APPENDIX A

QUESTIONNAIRE FOR MANAGERS

Date/Venue

--Age, gender, education, and experience behind the position--

1. How can you describe coworking space (CS)? What is the coworking space for occupants? And who are the users of CS? And what type of memberships are popular between users? Why?
2. Do you have any rules of distribution of user a particular CS? How do you allocate users to CS?
3. Which spaces are the favorite of occupants? Why? For what? What are the resources mostly required by users in CS? Why?
4. What elements in the design and layout of coworking space most effectively promote social interaction and performance of users? How do ambient factors such as air quality, lighting, noise level, temperature affect users' mood and efficiency? Do you have access to outdoors? For what do occupants use outdoors? How do they behave after the outdoors break or being outdoors?
5. What motivates users to be part of your organization? What do you give occupants they don't find it from the home office or coffee shop environment? Why belonging to your community is important? Or social events or something else? What does help users to spend a longer time in coworking space, and what sometimes distracts them? Do users pay attention to colors, décor, presence of artworks or plants in CS?
6. What about the spots which you would prefer to change or modify in CS? Why? Have users ever been involved in coworking space-related decisions?

APPENDIX B

QUESTIONNAIRE FOR MEMBERS

Date/venue

--Age/gender/education level/profession--

1. What type of membership you have? How did you decide what type of membership you needed? Why?
2. What is CS to you? What are the things you like the experience of using CS? How would you compare this to the home office or working at a coffee shop?
3. What do you think about shared resources? How can they change your mood and behavior? Example?
4. What do you think about CS ambient around you? How do lightning, noise level, air quality, and temperature change your mood and behavior? How? (give an example by yourself Why? What would you like to change here? Why?
5. What do you think about a space arrangement around you? What do you like and what you don't? Why? Where do you prefer to work alone? Why? Where do you like to collaborate with people? Why? Where do you like to relax and spend your daily breaks? Why? Which places don't you use at all? (Give an example by yourself) Why? Do you have access to outdoors? Do you use outdoors? For which reasons? What if you would not have access to outdoors, how would you feel?
6. Does distractions that actual to CS affecting your mood and behavior? What are you doing to minimize it? Or what would you do against it? Do you like this hectic atmosphere, and how do you balance your privacy needs not being isolated?
7. When can you work longer when you can't? Why? Have you ever paid attention to the colors of walls, décor, artworks, and plants around you? What do you think about the existence of them? Do they mean something to you?

8. What does motivate you here? How do you motivate yourself to get things done here? How here that things may be supported by design? If it was home office What would you like to change here? Why?

9. Do you feel like you are part of the community here? What helps you to build meaningful friendships? Do you feel neighborhood as an extension of your CS? Why?



APPENDIX C

ORIGINAL INTERVIEW TRANSCRIPTS OF MANAGERS

10.08.19/ after 14.00 an interview with the founder of CS1³

The founder of CS1 coworking is 29 years old. She is also a manager of CS1. Her first degree is in industrial engineering and a graduate degree in cultural sociology. CS1 coworking was founded one and a half years before. The occupant is coded Mg2⁴

Q1⁵: Thank you for your willingness to participate and consent to be interviewed by me. I have been studying advanced interdisciplinary design. Now I'm interested in the impact of coworking space design on occupant's satisfaction in Istanbul. I want to ask you a little bit of a difficult question. Could you try to describe what CS1 for users is? Why?

Manager2: Networking, Flexibility, and Time- budget balance. Because here they save money, can work when and as long as they want.

Q2: What type of memberships are popular between users? Why?

Manager2: Meeting rooms are popular because of the location. Occupants more request dedicated membership.

Q3: Do you have any rules of distribution of user a particular CS? How do you allocate users to CS?

Manager2: Randomly. They are free of any rules.

Q4: Users mostly use which spaces? Why? What are the resources required mainly by users in CS? Why?

³ CS1: CS-coworking space number one (1);

⁴ Mg2: Mg-manager, 2- a number of the manager;

⁵ Q1: Q- question, 1- a number of the question;

Manager2: Meeting rooms, Sunny areas, kitchenette, and Skype room/phone-box. The majority of occupants require quietness and thermal comfort that's why they prefer private areas. Occupants also pay attention to supportive affinity.

Q5: What elements in the design and layout of coworking space most effectively promote social interaction and performance of users? Does ambient such as air quality, lighting, noise level, temperature affects users' mood and efficiency? How? Do you have access to outdoors? Do you use outdoors? How does it impact users' mood and performance?

Manager2: I should say that many occupants were complaining about background noise, and some of them even left the coworking space because of it. Meanwhile, occupants are using shared/coworking space many times, asking about turning on ventilation and conditioner (according to season). Occupants are frequently asking our glass room because it has a view of the street and gets more sunlight. When they have a friendly and comfortable work environment, then they feel motivated and satisfied. They provide more time at their office and visit their desk or space regularly. Unfortunately, CS1 coworking hasn't accessibility to outdoors. But occupants of our often go out for smoking and breathing fresh air and walk for a short distance close to CS1 coworking. Outdoors is important to occupants. I guess that it is the indispensable interaction spot for smoking people. While smoking outside, they are talking, sharing ideas, and relaxing all together. They look like replenished, fresh and full of energy after a small break outdoors.

Q6: What do motivate users being part of your organization's belongings or social events or something else? What does help users to spend a longer time in CS, and what sometimes distracts them? Do users pay attention to colors, décor, presence of artworks or plants in CS?

Manager2: I think being a part of CS1, having a membership, and sharing this on social media or checking in/pinning gives them subtle feelings such as they feel special being an occupant of CS1 coworking. You know that nowadays all we like it. They want to meet different professionals who have good career, ambitions, workable plans and so on. They want to be in this kind of community or at least to reside in the same space with them because this space gives them a chance to grow friendship and networking with successful people. A majority of freelancers are very good at their job. If someone had managed to launch their own business alone, then he /she would have been a talented one. A comfortable work environment, supportive social environment (managers and other occupants), and connection with workspace provide a long relationship with coworking space. Of course, costs also impact it. Noise distracts them!

Yes, occupants and visitors from first sight expressing how amazing artworks you have on the walls. I put them for decor, but they are also on sale. Of course, these artworks are not for the ordinary public. Occupants so much like our yellow chairs.

Q7: Why do users like the CS environment? What are their favorite areas in CS, respectively, for focusing, collaborating, socializing and learning activities?

Manager2: In my opinion, it is a coworking space. From coworking space, occupants have access to meeting rooms, skype room/ phone-box, and kitchenette. Around kitchenette, occupants like to stand and to chat. For collaborating and learning, they generally choose coworking space. Because of round tables, and easy to go any space in CS1.

Q8: What about the spots which you would prefer to change or modify in CS? Why? Have users ever been involved in CS-related decisions?

Manager2: Actually, I so much like interior design and décor of CS1 coworking but I have witnessed few times that this round and heavy furniture a big issue for replacing from one point to another that's why for the future I'm thinking more about light, portable and adjustable furniture for smooth movement. At the moment, we use curtains as a divider between spaces, but adjustable walls would be more private regarding acoustic distraction. Furthermore, rectangular desks are also preferred more compare with round one.

Yes..., we have settled the skype room after on several requests of occupants. Many times I observed that occupants go out, or they ask for more private space while they are making a business call or skype conference.

15.08.19/11.00 am an interview with

Community coordinator Mg3 about CS4

Manager is coded Mg3. Mg3 is a community coordinator of CS4⁶. She is 28 years old. She did her bachelor's degree in Sociology and a master in the University of Amsterdam on Urban studies then second master's Cultural studies. While being in CS4, the background music relaxed me. It makes ambiance soft and cozy and gives harmony to

⁶ CS4-Coworking space, 4- a number of the case;

the work environment. Furniture was moveable which adjusting according to the needs of the member.

Additionally, you don't need walls for writing pretty good you can use the surface of desks, which allows this. Desk surfaces are from write-erase material. A lot of partitions give a feeling of a variety of spaces in one open space layout, big indoor plants as well.

Q1: Thank you for your willingness to participate and consent to be interviewed by me. I have been studying advanced interdisciplinary design. Now I'm interested in the impact of coworking space design on occupant's satisfaction in Istanbul. I want to ask you a little complicated question. Could you try to describe what CS4 for users is?

Mg3: the Year 2013, when our founders Engin and Kerem were doing their master's degrees in the USA. The idea behind this concept was like Engin was an architect, and Kerem was a business developer, and they realized that every night they are trying to find the proper space to do their projects and finish their jobs and so on.. and they are working collectively, collaborating but there is no space. And the idea of CS4 is coming from there -Community comes first from space. That's why they are saying this.

CS4 is not a standard coworking space like other coworking spaces. Yes, for sure, people are paying rents, and people are taking their tables and working, and they all have coffee corners, and the rest of the procedures are the same, but the idea behind CS4 is the community. We are two companies: the First one is a creative hub which community belongs to them; That's why we don't call them users, we call them members. And then We have the practices their communications, prototyping Lab and we have venue sales- sponsorship. The first place you came to CS4 is the event space. We are renting the space, and we are getting the revenue from there; that's why CS4 can survive.

On the other hand, we have another part-strategic design studio. Here we have a lot of practices such as architectural design, organizational design, service design, business development design and so on. One side we are working like an agency- an advertising agency. We have several brands to work with, and we are trying to choose brands; they are finding us and we are choosing with whom we are gonna work. For example, Canvas is our furniture brand. We are producing it for schools, companies and so on.

Forty-five people are working for CS4 and CS4 is paying them a salary, this is the team of CS4. Meanwhile, every team member is also part of the community. We call them community team members. So if you are working for CS4 you are also a community member, and you also object

to community rules as well. Pls, don't get me wrong when I put the community in the center of the map because we are always saying that the community is in the heart of CS4. First, we believe that the community comes first than space. We are choosing members coming from 4 main fields: technology and engineering, cultural industries, social sciences, and business strategy and development. If you want to apply to the CS4 community, you have to come from these genres of work industry; if you don't, you can't be a member of us. You are referring to the website, and the community coordinator is reading the form then is going to invite you to interview if there is any space for a new member. An interview is a proper interview as a job interview. We are trying to create a talent pool for the projects of the CS4. You see, while I'm choosing people for community, I'm trying to create a talent pool- inner talent pool for CS4.

Q2: So, meanwhile, choosing your members, you are choosing your potential employees?

Mg3: Yes, exactly. There are lots of people in the community -they are working in CS4 projects as a contractual. And we are offering them this- don't pay me for this month and I'm going to work with you on this project, and I'm going to pay you. That's why we are trying to select people very wisely.

There is a perfect algorithm behind this community idea. We have another rule such as the number of females and males should be equal. For instance, last week, an ideal woman visited CS4. She was living in Istanbul, she is a Rockstar of her industry, but we have to say no! Because the number of female members is high than male members. We have to keep this equal. As a community coordinator, I'm defining the next CS4 community member. We have two types of membership: resident and flex. Resident means you come here 30 days in a month- wherever you want; we open 7x24.

Flex means you can come at CS4 max ten days a month. You pay for resident membership 1050 plus taxes; for flex 560 plus taxes as we mentioned community as a talent pool Which we also try to push people to be together. Because for us, physical attraction is the first thing we should care about. If you are trying people to collaborate, firstly, you need to provide acquaintance with members with each other. We need to know each other. I need to you- your face, you need to know mine, you need to know my voice tone if you want to do something for me. That's why we are putting events -social events and professional events. And members also get some points by attending these events as well. And if you are collaborating and participating in these events so on, or hosting an event, you are getting points, and in that way collecting good points, you could get free membership for a per month.

Social events like... as I say, we are trying to push people to collaborate. Social events are the key thing you can do for the members because when people are drinking, they are relaxing.

Professional events- For example, when members enter the community, we are trying to push people to do their 101 class.

Q3: What does it mean?

Mg3: Whenever you feel comfortable in any subject, we are waiting here for you regarding your profession, just give us a class- Regarding your job. To understand you better. Moreover, we have feedback sessions. For example, you want to create a bag brand. You are doing a presentation here (so-called space living room) and you are getting feedback from the community about your project. We have journals,

Q4: can anyone do a presentation on her?

Mg3: If you are a member of the community, of course. We have a journal, too. We are these... We have rooms for team members. We have two meeting rooms so-called Dali and Curie. The online system controls everything. So when a member arrives at CS4 as a community member by third parties which we also work -Nexus. There is a system created for the community for coworking spaces, and I can control the member since he/she connects the internet.

We are always trying to push people to collaborate. These four main genres can do better things while they are collaborating- we believe. We are trying to create cool presents for the community, and we decided to give people as notebooks that remind CS4 then we worked with our community members. They had given us a discount, and we agreed to work together. And in this way, a particular member got plus points, and one day they are going to have a free membership.

Q5: Which are more welcomed spaces by occupants?

Mg3: Resident members are owning own fixed desks which they are always working on. Initially, they choose their desk and continuing to work there while being in CS4. But if you are a flex member, you can change your desk. There is no specific place for specific people if you are a flex member.

Q6: Flex members most of their time sitting on their desk or collecting in different spots, too?

Mg3: Ahh, it depends on... we are really flexible. If she/he wants to study here or wanna sleep here then they can choose where. Every place is their place. We have only one rule regarding space.. if you wanna do phone calls then you need to go phone desks behind the lockers.

Q7: What are the resources most required by members?

Mg3: Printers. We also have a prototyping lab and if there are specific works such industrial designers and fashion designers they are using this space a lot and we are trying to push people. And You do not have to be an industrial designer or architecture you are free to use all spaces in CS4.

Q8: What elements in the design and layout of coworking space most effectively promote social interaction and performance of users? How do ambient factors such as air quality, lighting, noise level, temperature affect users' mood and efficiency? Do you have access to outdoors? For what do occupants use outdoors? How do they behave after the outdoors break or being outdoors?

Mg3: Sunshine!! Sunshine should be more, I guess for space... Sometimes they are complaining about the darkness... There is too dark...

Q9: But you have excellent artificial illumination? Why are they complaining?

Mg3: Yeah, it is artificial...that's why they don't like it)) Some members are always complaining about sunshine. If it would be a rainy day, it was going to be darker.

Q10: What about access to outdoors? Do you have own garden space?

Mg3: No, we don't have. X place (Mentioned name of the complex where coworking environment is) is a public space. If you don't have any money to spend you can still stay there. There is no private space for any companies there. There is no private outdoors for our community members. They are sharing the area with other companies. They have an allowance to use.

Q11: for what members use outdoors?

Mg3: For smoking and make a chat. I realized that in six months... "yes, they are sharing the same space but it also becomes sharing the life at the same time". Because 9 hours to stay here... you are a freelancer and you have another freelancer sitting next to you and that kind of physical... belonging feeling is creating some kind of friendships. They are going out to smoke for coffee, chatty talks and so on.

Q12: What motivates users for being part of your organization? What do you give occupants they don't find it from the home office or coffee shop environment? Why for occupants are important to belong to your community? or social events or something else? What does help users to spend a longer time in CS and what sometimes distracts them?

Mg3: we are so different than other coworking spaces. We are putting in the center collaborations. Other coworking spaces in Istanbul are only renting the space to members and they are stepping one back and seeing what is happening between members. However, we are here trying to create some kind of “organic collaboration”/Sembiosys community” between members and make them successful/wise in their professions. And if you have any problem or questions regarding your profession and if you wanna do more, you can choose CS4. Because we here make you feel better, successful, and so on. Some people already have an idea that CS4’s projects could hire them. Some people know that. In that way, they are renting desks, and they are waiting for projects as well.

Q13: Do users pay attention to colors, décor, presence of artworks, or plants in CS?

Mg3: No, I don’t think so. Plant so sure they are changing the atmosphere of the working space but they are not so much interested in these things. They are most interested in meeting rooms. If they don’t find any proper time to rent the meeting rooms they were starting to complain about this. It is not about the design as well not the taste of space but they are like it pragmatist way, they are looking for functionality I should say rather than aesthetic things.

Q14: What about the spots which you would prefer to change or modify in CS? Why? Have users ever been involved in CS-related decisions?

Mg3: This space for 150 people. We are not gonna go up anyway. If there would be another CS4 maybe, in that case, we can go up. For now, with this algorithm, 150 people are working. Because we believe that if you are here 5 people or 5 projects around you make you “you”. So that’s why we are not planning to go up from 150. Meanwhile, if I had the power to change CS4, I would be changing that phone desks/ booths. Obviously, people don’t know-how have to share these rooms, they are arguing for use of space. Some people are trying to find some privacy. They have no calls but they still work in there because of the privacy need. Sometimes the noise in CS4 is on, and people seek for privacy, they are looking for more silence in space. That’s why they eagerly want to use those spaces which are planned for the use of calling members.

Q15: Does the background noise disturb members?

Mg3: Sometimes. But it is a historical building we are not allowed to modify anything.

15.08.19/interview with a

Venue operation team's member of CS4

Mg4 is a member of the venue operation team of CS4. He is an energy system engineer. He is 24 years old. The manager is coded Mg4.

My notes: CS4 is mostly open plan coworking space- less private corners. Background acoustics very slow and relaxing. Totally coworking space has own authenticity. The nice ambiance-historic building, space settled for the community not for individual use, very inviting and open, integrative and multilayered. Generally, CS4 as a concept is the combination of many layers. In my opinion, acoustic distraction could be the main disturbance of members.

“X” was my instructor in the prototyping lab at that time. Three years ago, I believed-- he arranged my meet with CS4. I just visited one time, then I graduated my first degree and started my MA- Media and Communication systems. Short after starting my MA degree, one of my friends from the university told me CS4 has a vacancy in the venue operations team you must join in. Meanwhile, I was working for a music company as a label manager. I was planning and booking festivals around Turkey. Venue operation things are something similar to festival production things. And after six months of assistance, my team lead gave me more responsibilities and put some targets for me. I like being a part of the CS4 community more than being of the employee of CS4. Meeting with people daily and having a sharable environment around you something pretty hard to find in Turkey. That's why I like community more. CS4 for a member is a shared environment that's a most specific thing. There are various domains- professions such as UX designer, dietitian, architect, photographer and so on. There are lots of different professions via sharing environment provide us with more information and more instructions in different fields because many members come here to interact with each other.

I almost know most of our members because our community is based on numbers. There are many numbers and ratios of genders we have to keep balance.

Summer periods resident members decrease because of holidays, etc; wintertime residents are more than flex members; summer period flex and digital workers are more.

Our members mostly like to attend events which we arrange here. Physical space has some important roles in its because this space is one of the cultural heritages' of Istanbul. We have a high ceiling, sound (background music) surroundings, good air ventilation system and etc we have a comfortable work environment. The members could work at the home office because they have all creative peoples, or in any coffee shop but they prefer to come here to share something; to sit beside the different people each day. Because we have that system...we have an open office system which gives the possibility to share, talk and learn something new from different people each day and share the same space or various parts of the same open space.

Some days we have huge events there like 200-300 people in which companies are renting space for workshops or any occasion. Those days we close the main entrance and give them different entry which is from the fire exit. That is bothersome members a lot. They don't like to use the backdoor from the fire exit. I think it is the most distractive thing then the noise of the people from the event hall. The rest of the time members like to be distracted by appropriate background acoustics such as music or natural sound of open-plan space. If we need private spaces... we have semi-open hubs and a phone booth. Open space gets quite enough sunlight; only our project room for team members doesn't have any windows. Moreover, the quality of lightings which we are using here something very similar to natural light.

As you see, all the furniture is our brand. From the beginning (2015), CS4 started its journey with this furniture because our team started to run an architectural design office here. We needed to have some reliable furniture for workspace, for sharing space and also learning space. Unfortunately, we couldn't find all of them in one. Later we designed our furniture, which fits all types of space requirements, and the Canvas brand appeared. Canvas is mobile, heavy, but easy moveable, and furniture surfaces are writeable- in this way, we decreased the usage of paper. This is something meaningful for the ecosystem. Comfortable work environment as sitting, you are able to describe and discourse something on the working desk, you don't need a board or do a presentation on the desk. Also, those moveable partitions are used by members to create many spaces or separate open spaces or even get semi-private spaces. We can hang boards on it, or we can use magnetic things, etc.

We have the shared outdoors with X place (Mentioned name of the complex where coworking environment is). Members like to go out to breath, leave the work environment for a short time or smoking or talking. Some days we have happy hours you can get free drinks they like to get their drink and talk. Also, we have some summer events in X place (Mentioned name of the complex where coworking environment is) which members so much like to attend free and enlarge friend circles. Because X place (Mentioned name of the complex where coworking environment is) has own culture and CS4 also has own culture and our member like to use this advantage.

The majority of our members are belonging to the creative class that's why they value the inner atmosphere, colors, artworks here. Details are important to them for inspiration. We tried to create a playful environment and members like to play with it, to transform the space into what they want.

During these days we are growing and growing. I feel like sometimes we have domestic pressure on members. CS4's team now enlarged and takes more places in a flexible/shared area... we need to decrease that amount because our members need more space. CS4's team members are occupying more desk day by day. They need more space. Sometimes they can't find any place for working. And seeking more alternatives such as they just working in the living room without any desk. That's why we want to create a special meeting room for team members.

15.08.19/interview with a

Founder of prototyping lab of CS4

Mg5 is the coded name of the manager. Mg5 is 25 years old industrial design engineer and founder of the prototyping lab in CS4. He has been working for almost two years. The occupant is coded M5

“I've positioned myself between two disciplines design and engineering.” If it is too hard to find a design solution, then I'm seeking a solution in different members of CS4. I'm addressing them with my problem, and we are cooperating. I can't solve all issues but, but if I have, then I can find someone from a community who can do it with me.

Q1: What is CS4 for members?

Mg5: I think they find identity in CS4, they might be feeling part of the community

Q2: What kind of membership is popular between members?

Mg5: Resident membership type.

Members are so much interested in the prototyping lab. It is a different environment for them that could exist in the workspace. Almost %20 percent of a community member is using a prototyping lab. There is a fixed period in which they can use lab free charge, but after that limit, we charge them.

Sometimes we are organizing workshops together with our community members. It could be about their hobbies, ideas, and so on.

Initially, we started to arrange workshops only together with our community; then, we began to organize corporate workshops.

Q3: Which spaces are favorite of members?

Mg5: Mostly coworking space.

Q4: What can you say about ambient factors? What do occupants think about them?

Mg5: Noise...So many people are in open space. The rest of the ambient factors can change, such as they can change desks where the possibility to get more sunlight or enough light or air ventilation system can change indoor air pollution, but noise is a different factor.

Q5: For what occupants use outdoors?

Mg5: ...just for smoking.

Q5: What motivates members?

Mg5: to learn new things...Members come here for work and also to be part of our community. All members have possibilities for learning from each other, idea sharing with different people from different fields. It is the most exciting part of CS4- "you can teach, and you can learn." You can meet people from different disciplines. These kinds of interactions lean-to friendship which means for the cooperation they have to know

and trust each other. CS4 does exactly this... Collecting different people from different disciplines providing them to know each other, spend time together, which builds emotional bonds first between space and members, then members with members.

Q6: Do members pay attention to artworks, decoration, or colors?

Mg5: actually, they like more natural materials and natural looks.

Q7: Spots which you would like to change?

Mg5: something like focus room...just a monitor away from any electronic gadgets and limited usage time. Because of too much noise...

Q8: Have your members been involved in decisions related to CS4:

Mg5: We are organizing feedback sessions. There is a cluster like a team member into community...so we make a decision together if we want to change something.

19.08.19/ at 14.40 an interview with

People and culture lead of CS5 Levent

A manager is coded-Mg6, who invited and guided me in Cs5. She is a People and Culture lead. She is 24 years old. She studied Management, marketing, and entrepreneurship in Washington DC.

My notes: CS5 Levent is the second big branch of the CS5 coworking spaces complex. Green is abundant; the shared space is high, inspiring, breathing, airy, open, free and natural. Nearly 200 offices in different forms and sizes, 20 meeting rooms, a peaceful garden, a meditation room, a collective library, a PlayStation room to be added soon and 5th floor, a 100 square meter winter garden, and a large terrace; a location that is good for your heart and for your business. Services are 7x24 open, high-speed internet, unlimited tea, coffee and water, catering services, snacks, and daily cleaning. Ready office-membership is variable and flexible according to the size, including fixtures such as lighting, air conditioning, desk, and chair.

Stationary table- a membership model with a dedicated chair and desk that can be shared with other individuals in a designated office space. Traveler- membership model that can use the common working area at the location it is connected to,

offering spontaneous networking, open to interaction and sharing. Virtual office-membership shows the member's address as CS5, entrust us with mail and cargos, addresses, and secretary service. The CS5 is close to the metro, too.

Q1: Thank you for your willingness to participate and consent to be interviewed by me. I have been studying advanced interdisciplinary design. Now I'm researching the impact of coworking space design on occupant's satisfaction in Istanbul. I want to ask you a little complicated question. Could you try to describe what CS5 for users is?

Mg6: Community, engaging space, and idea-sharing. It is not the only workspace ...it is a variety of collaborative hubs, office spaces, virtual office spaces to lower prices.

Q2: And who are the occupants of CS5? And why?

Mg6: Freelancers, entrepreneurs, startups, IT workers, architects. remote workers, businessmen, engineers and so on. All these people are looking for a space to work flexible or just work but parallelly enlarge their horizons, networks, friendship, support, office services, high-speed internet and coffee and so on. that's why they choose CH.

Q3: What can you say about the membership? Which is more popular between occupants? Why?

Mg6: We have 3 types of membership- office space members, nomads-travelers, and virtual office members. I can say office space type of membership is most popular among the members.

Q4: Do you have any rules of distribution of user a particular CS? how do you allocate users into CS?

Manager6: Randomly. They are placed according to their requirements or wish. Only what we can do for members if they ask...For example, the coming member is an independent entrepreneur and want to sit close IT worker for some needs of himself, then we introduce him with IT worker, but further cooperation only depends on both of them.

Q5: Which spaces are mostly used by members? Why? What are the resources required mainly by users in CS? Why?

Mg6: Office spaces...because of office supplies, acoustic privacy, mostly, they like to possess their desk and storage.

The utmost need of a member are high-speed internet, desk, lockers, meeting rooms, office supplies, and coffee) And I should mention the needs of cleaning and standards of hygiene. Members pay attention to maintaining cleaning standards.

Q5: What elements in the design and layout of coworking space most effectively promote social interaction and performance of users? Does ambient such as air quality, lighting, noise level, temperature affects users' mood and efficiency? How?

Mg6: Community areas are mostly increasing social interaction and give a feeling of rest to working members. That's why they can work longer, and better.

Yes, light is important!! people always looking for a window seat or space in a terrace because of sunlight...or indoor areas they like light which doesn't disturb them also don't let them sleep... Noise is important because of the distraction of concentration. Loud background noise pushes members to go away from that area like the coffee shops, or they are seeking more close spaces or meeting rooms. On the other hand, slow background sound gives a feeling of harmony and subliminally relaxation. The appropriate level of acoustic distraction also useful for members such as they don't feel isolated like the home office, or this acoustic somehow puts them into working mode because all the people around them are working. Fresh air is also most required by members. They use air ventilation while they in the meeting room and go outdoors to breathe in their breaks.

Q6: Do you have access to outdoors? Do you use outdoors? How does it impact users' mood and performance?

Mg6: Yes, we have a huge terrace. Generally, they use outdoors for smoking, socializing and breathing fresh air.

Q7: What do motivate users being part of your organization? belongings or social events or something else? What does help users to spend a longer time in CS and what sometimes distracts them? Do users pay attention to colors, décor, presence of artworks or plants in CS?

Mg6: Surely, community and events. Because they enlarge their connections, make friends, knowing important people for new projects, having fun and learning from each other. Meanwhile, social events such as yoga classes relaxing them, good for their body and mind.

A feeling of home supports them to work longer and the harmony of space motivates them. 7x24 hour availability of space and kitchenette. And friends too. For example, if one of the friends works till late then another friend may keep the companionship. Inspiration by

community, ambiance, self-development activities besides work activities are the reasons ... members are happy here. They like to spend time here.

Most distractive things are noise and technical issues.

Members don't accept or say directly that decoration or presence of artworks motivates them... they come here for work but we observed that they choose unconsciously the spaces where is nice décor or picture behind them or space with soft light- colors. They do it subliminally.

Q8: What about the spots which you would prefer to change or modify in CS? Why? Have users ever been involved in CS-related decisions?

Mg6: It could be more comfortable if the meeting rooms would have more soft seats and cozy ambient as similar to a lounge rather than a standard meeting room with desk and tables. And community rooms could be useful for the development of connections. We always take into account the needs of our members. Before creating or modifying a particular space we send them poll and collect data. For example, all the graffiti alongside upstairs are painted by our members.

21.08.19/ interview with

General sales director of CS2

Mg7 is the code name of the manager. Mg7 is 36 years old and graduated from the faculty of public relations and advertisement, and since 2016 she has been working for CS2.

When members come here, they enter into the working ecosystem. Here includes not only the working desk and chairs... there are many peoples from different disciplines are sitting next to each other, ...such as remote workers, freelancers or independent entrepreneurs are sharing the same space. Sometimes we cooperate with them...making friends, even some people are married here. Therefore, rather than a working environment, they enter into networking here. I think this site more attractive to members.

So, we have four types of services, such as meeting room, coworking spaces, virtual office, and single time member nomand. Corporations mostly use meeting rooms; freelancers primarily use coworking space, researchers newly graduated students or

independent entrepreneurs who don't want to spend more expenditure for personal office, and so on.

At the moment, virtual office membership is popular between members- approximately 1000 members.

So, we have written as well as unwritten rules. For example, we have some special desks-dedicated...we put some indicators on those desk and other members know that those desks are dedicated to someone. Rest is as you see there are desks which members can sit and work, can use the free internet, shared spaces, coffee break spaces and there is the same concept all CS2 branches.

For single-user members, we don't have any contract but if a member wants space for a longer time such as virtual office membership or dedicated member then we are contracting for 6 months or so on.

Location is one of the important reasons for users. Members are choosing membership types regarding their needs. In fact, all members would prefer to have a private office membership but according to price and needs, it changes. As a matter of fact, the meeting room is a different need... I mean it is for group or collective work rather than individual concentration. On the other hand, if someone wants to come and check emails then preference is by coworking space.

At the beginning of the list of shared resources comes the internet then snacks...indeed members are comparing spaces such as: if I go X organization what I can get extra..." We are trying to provide all the needs of our members and any insufficient situation we are trying to produce immediate solutions. But I mentioned before the main needs of members are internet, snacks and unlimited coffee/tea.

The main distraction is noise. However, for decreasing the effect of noise we put the background music which reduces the level of distraction. Actually, initially, we don't promise members "library quietness"... coworking space is the workspace. As you see all people speaking to the phone or doing own job. We haven't gotten any serious complaints about acoustic distraction; only this could be when crowding of members are leaving meeting rooms for breakouts 2-minute acoustic distractions might happen which members are meeting this normal.

Thermal comfort is relative and changing according to individual. Sometimes in summer when we switch on conditioner some members are freezing or some members are complaining when we don't use conditioner.

Outdoors is used for smoking that's why impossible to take fresh air there...

The main factor for motivation is a social environment, many members come here just because of this. There is something like this...regular members already become friends that's why the existence of friends at workspace motivates members. Generally, members prefer a social environment rather than working. In CS2 is served daily snacks 2 times during the breakouts, therefore, members prefer this environment to coffeeshops. Our environment has free internet, snacks, provided network and they can benefit from many different possibilities.

Networking is very beneficial for members but sometimes it also becomes some kind of distraction that's why you have to somehow control your members. For instance: there are some situations in which members put visit-card to other members' desks, from other coworking organizations many members come to us with this complaint. So, we try to manage an environment where nobody disturbs each other. Neither apart desk nor the tight configuration of spaces. We are trying to run a full-set system. We try to support especially startups. Especially providing support to entrepreneurs, trying to enlarge networking.

Sometimes we are arranging meetings with our members to know them meanwhile introduce them to each other. Sometimes we arrange "happy hours".

Actually, we have a free and relax work system. For example, I'm a general sales director, Ceren hanim is a community lead and so on, we are working continuously between members. We don't have any personal offices hence members also know that we are working here. Therefore, they feel free for any kind of interaction.

In fact, we don't get much feedback about decoration. Only sometimes we meet with requests by office space members something like this: "May we hang our artworks or pictures; or change wallpapers?"; of course we can't let them change wallpapers but they can put their own artworks and decorations.

21.08.19/ interview with
the senior sales manager of CS2

Mg8 is a 32 years old senior sales manager in CS2.

Coworking space is a flexible and shared workspace for members. Especially are helpful to startup entrepreneurs in networking. Space is integrating different fields under one roof. Besides, this advantage of CS2 is the location. Members can commute easily and fast. Moreover, if members would like to rent a personal office in this region, it would be expensive for them. That's why here they satisfied.

Members are from the IT field, entrepreneurs, knowledge workers, remote workers and freelancers and so on.

Currently, members are placing absolutely randomly according to their needs. However, for the future, we want to plan a strategic placement of members.

Coworking spaces, shared spaces, breakout spaces, and lobby spaces are more welcomed and favorite of members. When members are bored from work or want to take a short rest they can use these spaces; moreover, collisions with each other face to face create possibilities to know each other and communicate with each other; these short conversations 5- 10 minutes turns on joy and motivate them.

Usage of print and scan machines by members, storage, power sockets, and telephone cabins are popular resources.

Ergonomics of spaces and furniture, comfort and convenience of spaces significantly affect the performance of members. Music is important. Coworking space is a shared space that's why members can hear each-others' noise and background music can reduce the distractive effects of noise. Additionally, music is a source of motivation.

Visual distraction doesn't disturb members so much. Because coworking space is a shared space and logic of this system is to integrate people rather than separate them. Therefore, if someone can't adapt to visual distraction or this system then that person can't work comfortably here.

Lighting is so important. Spaces that get more natural light are occupying by members immediately. Anyway ambient factors are exploring regularly by CS2. For example, how sunlight should light inside so on similar factors...thermal comfort is also regulating; if we get some complaints about temperature or air ventilation then we can set them again.

All members are aware that they are in the work environment that's why it doesn't happen such a loud acoustic mess. But the main source of distraction is noise however coworking space is full of people; Some days when all spaces of coworking space are fully occupied by the member. Obviously acoustic distraction level is increasing the facial expression of members changes, we can see it because we also work into the same spaces between them.

Generally, outdoors is used for smoking.

As a result, members come here for work. They pay for space that's why they try fully use it. Meanwhile, networking also motivates members to come here every day. Our community leads uniting members are creating communities according to their professions or interests.

We are also planning strategies that will benefit us and our members in the future. Which both sides will get profit.

Members can change their workspace to more isolated or partly private areas in coworking space because of acoustic distraction.

Decoration and artwork need change according to the member's age, education and culture. However, members are spending a significant part of their time ate workspace; that's why comfortable, not boring, not chocking, and fresh environment are increasing members' motivation, time of attendance in space, and performance. Different colors also affect the motivation of members

Nobody likes to work in a dark space.

21.08.19/ interview with

Member of the marketing team of CS2 Levent

Mg9 is a 36 years old marketing team member. She has two years of work experience in CS2. I'm providing virtual office services to our members.

Coworking space is an individual workspace for members. Internet services are free; they choose unlimited coffee/tea and snacks, sitting in a desk in coworking space they can work freely. And also, networking providing them new work experiences, knowledge exchanges, idea sharing are increasing their creativity and problem-solving abilities.

CS2 has created for members comfortable workspace, which provides all their requirements; that's why while working, they are relaxed. Moreover, they don't waste precious time and spoil the nerves of their on secondary issues, which decreases their work. For example, here, members don't solve environmental or technical problems, they don't think about safety and cleaning, brewing coffee or tea, or washing after drinking...; they come here only for work.

We have different kinds of members, individuals, and corporates. All are from a variety of disciplines freelancers, remote workers, consultants, independent entrepreneurs, IT workers, and so on.

Meeting rooms are most required 50-55%; then shared spaces, virtual offices, and private offices are following.

Placement depends on the member... according to needs, a member is directed by community leaders.

Members are seeking a private space that can choose semi-private spaces, corners which are partly isolated from shared spaces; members are seeking social interaction, networking and socializing go shared spaces, outdoors, informal seating areas, breakout spaces.

CS2 prefers ergonomic furniture because members' performance depends on their comfort and space satisfaction. Of course, slow background music is also increasing motivation and satisfaction which affects members' performance too.

Lighting is essential; it should be enough, not irritating, and not reduce the productivity of working members; members mostly prefer desks close to windows or the source of

natural lighting. That's actual members like sunlight more than artificial the light, albeit they are illuminating almost the same. Thermal comfort is also an essential factor that could be a serious reason for dissatisfaction. Generally, complains come because of the conventional conditional system. Regulation of individual air ventilation systems could be a solution to this issue.

Outdoors is used for smoking and breathing, but because of smoke members prefer to stay indoor while breakouts.

Members come here for work besides this social interaction between members, networking, socializing, the comfort of working spaces, events are motivating members to come coworking space. Meanwhile, idea sharing, cooperation between members, and ready workspace kind of things or the comfort of members are bonding members more to CS2.

Location is important. Ease accessible locations are satisfying, attracting, and engaging members.

Members work longer in CS2; that's why they are more productive than usual.

As I mentioned, free internet, coffee/tea unlimited; our operation team is providing all needs, support, and help to members from the moment of the enter and the exit...therefore, members can work for a longer time without any distraction and better; these factors also attaching members to our space because they are more productive and satisfied by ambient.

Especially colorful furniture and plant are extra motivation for members. In an eccentric, dynamic work environment, members are motivated more than the dark and pale-colored work environment.

22.08.19/ interview with community

the lead of CS3 Kozyatagi.

The coded name of the manager is Mg10. Mg10 is a community leader in the CS3 Kozyatagi branch; she is 31 years old. She is an economist and working for CS3 more than seven months. I could ask her a few but essential questions. She was busy with

members. Coworking space for users is a flexible workspace, freedom, comfort, and community.

Resources such as the internet, kitchenette, office equipment, open space possibility, and easy access to outdoor and entrance are necessary to members. They don't like to use an elevator or spend more time to commute outdoors, or an entrance via plaza.

Members are choosing own work spots according to their needs.

Members mostly prefer shared spaces because of dedicated desk membership. They don't want to be isolated but simultaneously to have space where they belong. They like to feel like an owner of that desk. Window desk and close to outdoors is their favorite spot. They don't like tight spaces away from the community. Background noise sometimes disturbs them; that's why we always put slow music to balance those acoustics. Air ventilation also sometimes creates problems because it comes from the plaza and it is common. An individual ventilation controller could make members happy.

Outdoors is the most favorite space of members... they relax and have rested there, smoke, drink, and socializing always there.

Social events, being a part of the community, friendships, and support by managers, are motivating them a lot.

APPENDIX D

ORIGINAL INTERVIEW TRANSCRIPTS OF MEMBERS

21.08.19/ CS2⁷-Mem1⁸

Member coded name Mem1;

Mem1 has been using shared space. He is 43 old years co-founder of a company/independent entrepreneur.

Obviously, to have depo in Istanbul and private office into this pretty hard in an urban environment. However, nowadays, technology allows controlling our production and transportation processes remotely. Similar in coworking spaces all work models changed in the worldwide. Since 2018 we have been hiring a logistic company which does all the transportation works we are just controlling the process from coworking space. Therefore, we had a chance to outsource our depo for an outside supplier, and that's why neither we don't need to drive for a long-distance nor to work there. So I decided to find a place close to my home. This location is one of the main spots of Istanbul, which allows me to commute anywhere very easily and comfortably. Many options for accessible public transportation.

⁷ CS2: CS-case,2- a number of the case;

⁸ Mem1: Mem- member, 1- a number of the member;

And coworking space serves not only for work to me. I can meet here with my friends also ...pretty informal ambient and informality together.

Four times a week, I come to CS2. But my work is seasonal. In the winter we design and produce toys but in summer more marketing. Flexible membership so much fits me... as if I would like to rent somewhere a private office, I had to pay all around the year, but here I pay according to my needs.

Reasons why I come here first distance to my home location, easy commuting...to work in the city center or main street of the center, affects me positively, and psychologically motivates me...Price is very appropriate for me.

Sunlight is vital to me...I had a lighting problem in my previous workspace. My partner and I met in my earlier coworking space, and we have started to run the business together. Then after me, he also came here. We could not work at that space after a while ... Can't we realize the reason...why? Then told me because of the insufficiency of lighting...The ambiance was excellent, and lovely interior design; however, at the end of the day, people make the environment attractive rather than interior components...But always there was something wrong...I bored so quickly and couldn't work for a longer time...But then my partner's wife told us that you don't get sufficient sunlight. That's why I can't work longer...Plus sunlight accessibility indoor environment increases the motivation of mine. There was good artificial lighting, but it didn't help me to work and accomplish my task.

I can say that I tried all options, such as home office and coffee shops....

The home office pulls max two months...because it is home...it is impossible to work where you can watch tv in pajamas. Work morale/ mood doesn't exist at home. Or you have to have a real office corner at home...

additionally, my work depends on my motivation... I can't work without motive. On the other hand, when I feel like in a work environment, it motivates me and increases my performance.

Why not coffee shops?... Here one slogan on the wall: If you work in a coffee shop, you could write a report of gossips at the end of the day. Moreover, the sense of belonging is

essential...How many times you would change your table at the end of the day it is a cafe...

You want to be part of one community, know people around, and have a social environment. And without buying coffee, you can't sit there frequently... but here I can drink unlimited coffee and change my workspace regularly how many times I want...Stable, comfortable desk and social environments are must be for excellent performance.! Networking and community must be where you can be part of...!!

Belonging to the physical environment is most significant, but the social environment also affects positively.

Shared resources are empowering social connections and emotional bonds between people and space as well as shared spaces. Until today we had work privacy; people didn't want to be overheard by others...some other disciplines people still don't want to be heard and seen...But our segment doesn't request too much privacy. We are doing regular works such as social media and marketing, and so on, which are dominating the world. They also need to be shared rather than private. Here we have mutual benefit to each other. When someone asks me about my field, it is motivating me. Therefore we don't need privacy. We need to share...and if I need my privacy so much, I will change my workspace to semi-private spaces, secluded spaces, or meeting rooms. Peoples are relaxed and independent, and I don't need to be formally always...Flexible environment.

I so much like coffee, but at the end of the day, if you have your own office, you have to clean coffee machine or control...controlling of the cleaning and kitchenette services impact your concentration and motivation negatively...and I don't talk here about money and time yet...therefore, when everything is ready for you at workspace such as coffee, breakfast, cleaning...even not locking your office when you leave is a motivation in itself. I mean ...I come and start my work process immediately. Besides, this always is prepared coffee, snacks, and breakfast are the details but save time, money, and motivation.

Temperature is crucial; that's why the air ventilation system should settle very carefully. Should be a uniform temperature indoor regarding seasons. Quality of indoor air is vital ...insufficient air ventilation, too hot and too cold workspace and polluted air causes

severe discomfort and becomes uncomfortable. For example, my previous coworking space was multi-storied and significant open spaces...there I had these problems because the workspace was big, but lack of doors and windows, plus they all were small and, therefore, air circulation was poor. In CS2, we have not those problems because the one-storied building, plus direct accessibility to outdoors, provide a healthy environment such as sufficient sunlight and fresh air circulation.

I change my work spots many times. When I stuck in something or can't solve my task, then I prefer to take a drink and to talk or share my problem with someone outdoors or informal shared spaces...It helps me a lot...motivating me, inspire me. Social interaction is helpful in this kind of situation. You sometimes, if we have something unique idea, we go outdoors and talk there...For example, I speak to my partner that I found something new, then he says to me if you found out something useful, let's go outdoors ...This is work, and you work where you are satisfied and productive...

I also use outdoors for my phone calls because I speak very loud, smoking and walking and inhaling fresh air.

Generally, I like a big and open workspace for relocation and replacing, natural light and air circulation and being part of something such as space and community.

Sometimes noise distracting me... if someone speaking to the phone very loud but I have met just a few times like these situations ...majority of people come here for work, and they also know that all people are working ...like minded people and have the same culture that's why nobody makes an intentional noise...on the other hand, coworking space doesn't promise people silence hill... it is a mix shared, casual, and partly informal spaces. But shared spaces are educating occupants and transforming occupants' behavior and manners and bringing them into society and the community.

Coworking space offers services regarding community, but occupants get them according to personal requirements. It doesn't make a real sense to pay for services that you don't need, or you don't use...

Working people is always most motivating in itself rather than a social event, coffee corner, or dining room...to be part of the working community is still a joy.

Artworks shouldn't be boring and choking observers...because here, people need to feel comfort and harmony...too heavy decoration after a while irritating you...I prefer more business-focused spaces...maybe it relates to cultural preferences...

21.08.19/ CS2- Mem2

Member is coded -Mem2

She has shared space membership. She is 30 years old HR and since May working in CS2. She holds a bachelor's degree.

For me, a comfortable workspace is valuable; distance from my home location and networking provider for my work. Indeed, I think CS2 provides all my needs; the dynamic atmosphere and dynamic nature of the social environment attracted me a lot; interior design is also lovely. Because while working, you need motivation and social interaction... for instance, I'm alone here, and the possibility of making friends was for my pleasure.

Shared resources for me significant advantage first of all unlimited coffee and other drinks, I can use everything I need for my work satisfaction, existing here, and I do not lose time...because everything close to me and ready, I only need to focus my work, which is increasing my work morale, motivation and inspiration... such as idea sharing and interaction are always possible...therefore I'm attaching a desk and can work for a longer time...I don't lose my time for side works...coffee shops, for my opinion, not stable and unsafe...there you can leave your stuff alone if you want to do something else during breakouts, etc.

I like work ambient so much comfortable space, and social space motivates me if I have a bad mood because of work issues or some troubles. The positive distraction of the social environment also motivates me ...possibility replacement also increases my performance because I don't like so much lighter then I can use casually lighted spaces that relaxing me and give me feeling of home. Informal and comfortable seatings and areas I want to sit and work.

Air circulation and thermal comfort are also vital for my convenience. When I want to socialize, I use informal shared or formal shared spaces; when I want more privacy, I go narrow and dark spaces because those spaces generally are secluded. Outdoors also one

of the spots where I spend my coffee breaks for socializing and networking...in fact, I met here many people who I can cooperate with. A comfortable work environment and colorful social environment increase my performance and attach my workspace.

Isolation from the working community distracts me more than an acoustic distraction.

I feel like at home here, that's why even after a long working day, I can sit in breakout space couch and feel not bored and motivated.

It would be a great comfort to have extra soft sofas would be a more relaxing spot because all day we are sitting in front of the computer.

21.08.19/ CS2- Mem3

Member coded name is Mem3. She is 31 years old remote worker and uses shared space-dedicated desk. She holds a bachelor's degree in marketing. It has been three years-experience in coworking space.

Initially, I have attracted by the spatial environment. Then get used to being into this community. Networking is also a factor why I continue to come daily to CS2...while breakouts. I can talk to my friends, socialize, and get new ideas for developing my business.

Spatial factors are also crucial for my satisfaction and concentration, ...insufficient lighting, thermal comfort, and loud noise could decrease my work performance, which impacts my motivation negatively. For example, I don't like the frequency of background music...it reduces my spatial comfort...Sometimes we are (my friends from CS2) going to different coworking to change the atmosphere...but realized that we couldn't work there because of lighting...after a while too casual and poor lighting made us sleepy.

Community and members in which I meet daily influence and promoting my work performance positively.

The interior design CS2 very comfortably...open space and quiet transition spaces, glass walls are providing my comfort and possibility of collision with other members. We have a small community that we meet daily and sharing our ideas, socializing.

Shared resources provide comforts such as unlimited coffee, Internet, storages, reachable printer, and scanner provides immediate and convenient work environment. I feel relaxed the same as home...informality and nice work culture let me work for a longer time and better.

I prefer more comfortable furniture where I could sit and lie ...because sometimes a person wants to change the work atmosphere to a more free ambient.

Outdoors I don't use so much because smoke...majority of people are smoking there and smoke smell and dust disturbing me...for example, last year soft pear sofas were put outdoors and it was pleasing to sit there while working....

Decoration and indoor plants give space freshness.

21.08.19/ CS2-Mem4

Member's coded name-Mem4

She has office space membership. She is 21 years old. She holds a bachelor's degree. Assistant of consuler in the education field. As a company, we decided to rent private office space for proper concentration and excellent performance together with my colleagues.

For me, CS2 social work environment. I like that in coworking space possible to meet new people and knowledge sharing. I am motivated by the people around me when they work in the library's mood.

The physical environment could affect positively or negatively my performance, motivation, mood, and behavior. For instance, if my wor space was too cold or too hot, I couldn't focus on my work or too loud acoustics distraction. Meanwhile, not appropriate artificial lighting also irritates my eyes. Furthermore, I'm motivated by working people around me. Space configuration is important for comfort. A workspace should be convenience and clean for high performance. I don't like mass confusion and vivid colors, but harmony and working people in space increase my motivation.

All my breaks during the day I spend outdoors in the center of CS2. Nice space for getting fresh air, smoking, and drinking tea. It is so easy to go from office space to the outdoors. I use almost all CS2 spaces. Factors that affect my focusing positively also

affect my mood and behavior. I like to spend time with people who I know or who are in my neighborhood.

I'm working for a longer time when I have a good motivation, can't be productive in stressful environments. And nice decoration, soft colors, and indoor plants are increasing positive harmony indoor and mood.

Happily working people motivate me. Different soft colors, motivational slogans, and colorful furniture could support the performance of members. More seating places could be useful.

I like to be part of CS2's community. From the team of CS2 to all members are so warm, kind, and helpful. I have met a lot of new people and friends here.

22.08.19/ CS3-Mem5

Member is coded name-Mem5

Mem5 is 41 years old independent entrepreneur; uses spaced spaces and has a dedicated desk membership. She holds a bachelor's degree in management.

I run the company, which offers internet marketplace models. This workspace environment is very comfortable, clean, ready drinks, and "library mood," providing for us a very advantaged workspace. If you would rent a private office somewhere else, you have to solve all issues such as the Internet, cleaning, kitchenette and so on...but here, everything is ready for you...

In coworking space, I have many possibilities to meet with people from different disciplines and enlarge networking, collaborate, and even you can do something together. It worth to be here...

In cafes, circulation is different from each other...But here come very similar people who have a more or less similar business or work but in a coffee shop has a different environment...internet problem could be, and you can't find anyone to solve it instantly, then people are talking loudly there that also disturbs working person, and nobody can't say anything because it is a café environment. As a result, you cannot concentrate work

at home ...there are a lot of things that will distract you...movie, or postponing, and isolation... you can talk nobody when you want some interaction or inspiration...isolation 7x24 really may cause lose motivation ...here you can use the social environment as motivational tool...if you lose your energy or work motivation, you can change the ambiance, take a cup of coffee and socialize with people, or share ideas because the social environment is also new nice here. If a shared environment distracted my work proses, I would choose something different. The Internet is the main shared resource for me.

There were problems with the air conditioning from time to time, but it also depends on the plaza; there are the temperature differences between shared spaces and office spaces, then background music sometimes the source of distraction for some people... tastes are different...; this kind of situation members can use headphones.

I like the "library mood" atmosphere...around you working people and quite enough... pretty inspiring and motivating atmosphere...and I so much like interior design color and color transitions, space transitions, furniture colors, and matching furniture such as puffs and sofas and chairs, used carpets on the floor, and so on...I think that glass walls around the shared space are giving a feeling of freshness...so it feels nice to be constantly receiving sunlight ...and to have such as beautiful garden...

Initially, I had not a dedicated desk membership; I preferred desks near the glass walls at those times. Because I could see outdoors and could take advantage of daylight...I don't like claustrophobic indoor environments and swoop spaces...and also, don't bear white light; that's why more preferred window desks to get extra sunlight.

Outdoors my source of social interaction and space for relaxation.

When I want to focus my work, I change my workspace to more quiet, calm, narrow and tranquil spaces...in a narrow space people don't want to work for longer hours ...that space is not suitable for long hours of work but convenient to focus and work alone for an hour.

I adore interior décor and colors in CS3 interior design. I so much like space the transitions and the separation of spaces by colors, by different materials of walls and floors. I like soft and pastel colors in interior design, yellow light, and more natural

views in space such as alive wall style, more indoor plants, indoor waterfall and so on...The fact is that the environment close to nature or reminding of nature is already stimuli for occupants and a source of motivation.

I feel like that this community has been created for me...I'm so into this space and environment; that's why I have been working since 2016 here.

During coffee breaks, everybody meets each other...as a matter of fact I run my business with my partner, which I met here...here I met someone and started to run business with whom I had never met before in my life. Other than we have many friends here...during breaks, we are sharing our ideas, news, innovations, or if we are going to do something new, then we are discussing a particular topic, supporting each other, and so on...because many software companies are inside...

Initially, I liked CS3 as space, but after a while, I have built many meaningful friendships and emotional bonds with people too. The community of CS3 also integrated into my social life...recently, maybe friendships are more prominent.

22.08.19/CS3-Mem6

Member is coded Mem6

Mem6 has office space membership. She is 24 years old an intern lawyer. She holds a bachelor's degree in Law.

Because of my profession, I need more privacy and less acoustic distraction while working. Also, I like to see the existence of my items, they feel like at home and somehow this place becoming for familiar to them. Meanwhile, I need some space and storage to put my papers, personal items, and office equipment.

CS3 for me flexible space and feels like you are free without any control, which means a stressless work environment. Under the excessive level of control, I can't concentrate properly on my tasks.

Moreover, the environment also provides all services which make members work easy and distresses. The reasons why I prefer coworking space rather than coffee shops are

My customers. I'm looking for space in which I could be part of the community, and as a habit, I could go and work there. I can't sit and work at a coffee shop for a long time; nothing motivates me, plus I can't make stable friendships there. There are so many issues like space layout- interior, Internet, cleaning, nobody cares about your needs there. But here if you would have any problem coworking space and even members can help you.

Additionally, all members come here to work Which also motivates my work performance. A home office is the main distraction for me. You are isolated from the working community which means anything could distract you from work; Absence of work environment acoustic's, community and stable workspace, and so on.

As shared resource outdoors is first, almost all members are using outdoor for smoking, coffee, interaction, to meet with friends, to take fresh air or short walking. Besides all, it would be great if somewhere we could lay or play games, socialize more with other members, the flexibility of shared environment and more power sockets, especially on shared desks. My main problem is the lack of socializing spaces, and sometimes I want to work around people at shared space, but because of the type of membership, it is not allowed.

Noise is the main annoyance of the work environment. Air ventilation is also sometimes not so good because it comes from the plaza and common system it would be appropriate if it could be designed according to desks, or partial. Glass walls give a change to get more sunlight and be informed about the field, and you are also able to control and see surroundings.

As I mentioned, sunlight is important for motivation, and for a longer time working.

Flexibility, independence, freedom, social interaction are crucial factors for my performance.

I would like to see more social events to meet and know many members. More open space for relaxing, having a rest, the kitchen could be useful, more possibility to socialize with people and the possibility of the personalization of space.

I'm spending my breaks outdoors ...drinking coffee, getting sunlight because I work underground office, smoking, networking, and I like talking with people face to face.

I like background music; it helps me to balance the noise of open space. Walls and furniture color motivate me, wanna spend more time here. It could be even more colorful at resting spaces; because after hours of work, you need totally to change ambiance around yourself. It takes all tiredness of work, changes a mood, makes happy, and so on.

Social events are providing to know many members face to face, networking, the possibility of friendship, learning, and feeding your soul.

22.08.19/ CS3-Mem7

Mem7 is a coded name of member.

He is 43 years architect. remote worker of the architectural company. He holds a bachelor's degree. Member uses shared space membership. Mem7 has a dedicated desk. The main reason for to be a shared space is no need for extra resources, cost, home isolation, and to be part of the working community.

CS3 is close to my home; that's why I work here, flexible-I can work here from 8 am to 8 pm, ambiance, the configuration of space, the comfort of interior and ergonomics of furniture and interior, easy accessibility to outdoors satisfy my needs. The coworking space environment offers better working conditions than a coffee shop. As coffee shops can't provide work environment without noise, crowding, many people circulation all time, price, a safety problem, high-speed internet problems, etc. However, here you can get unlimited coffee, tea, breakfast in the morning, cleaning, the community is motivating you, that's why I work fast and better. In coffee shops, you haven't privacy, but here you can find spots to work alone. A home office is giving a feeling of isolation, demotivate and always some distraction, which doesn't let you concentrate fully.

I like the office services such as printing and scanning, internet even if you will have some tech problems they are solving it you don't need to spend a bunch of time, flexibility of work time, home harmony, the possibility to change your work spot. Additionally, nice interior simple and stylish, sunlight everywhere because of the glass walls, the interior is harmonic, your mind not boring, space transition with a different kind of the floor surface. Appropriate, acoustic distraction is increasing my mood and

give me the feeling of unisolated; sunlight somehow keeps me happy; the community is motivating me too.

Here all members come for work, that's why they follow library rules, they keep interacting also, but they don't distract or disturb each other. Exactly this is motivating me.

Density is sometimes a problem. Open planned spaces should have very good air ventilation. Background music is balancing noise level. The collective working mood is motivating me, helps to knot emotional bonds with other people, socialize in breaks, and provides to work a long time and take short breaks rather than long. In this case, accessibility to outdoors is especially important. I didn't have short breaks when I was working in the plaza because the terrace was in a few floors away from my office, but here just 5 meters away from me is outdoors. Here I also like decoration quite simple, but not boring and the ergonomic design of open space.

Face to face conversations with different members outdoors help me to enlarge my networking, social interaction while waiting on line for copy or coffee, or social events help me to build meaningful friendships.

22.08.19/ CS3 -Mem8

Mem8 is the coded name of the member.

She is 44 years old, an independent entrepreneur. She holds a bachelor's degree in design and has an office space membership. As I am a startup entrepreneur, I need the place of registration for my company, which coworking space fully provides everything such as the high-speed Internet, cleaning, unlimited beverages and breakfast, secretary service, cargo/post service, office-equipment, storages, rest area, and strategic location. I chose coworking space because of the appropriate noise level and lighting, storages and shared spaces in any case if they need it. The quality and quantity of air ventilation are very good; however, I am working in the office for a longer time. The existence of regularly cleaning and hygienic, colorful furniture and decoration are the most important reasons for space satisfaction.

Coworking space especially fits the members who have similar needs to mine. I can't work alone at home because isolation is demotivating plus at home, you can find things

which are going to distract you. This space gives motivation. Sense of belongings also moves you forward, face to face interaction with friends attaching you to space.

Ambient around me satisfies me since good ventilation, appropriate lighting, and noise. When I work alone, I prefer shared spaces, but when I work together with a team like more private spaces. Because with the group, you are into some acoustics that you don't want to distract by someone else. Outdoors is my main sunlight source, which I would like to spend time smoke, drink coffee, interact with people face to face, shopping, fresh air inhale, charge myself for the next working session.

Because of my work profile, I like my privacy and less noise. Meaningful conversation and idea-sharing are main things that motivate me to work longer. Decoration indoor plants and colorful furniture are the main factors which I like to see every day before coming to my office. Because being work in a prestigious work environment somehow make you feel important, confident, positive, and encourage me to be part of the community, or being part of the high class the community. The community is the same as a luxurious work environment.

22.08.19/ CS3 -Mem9

Mem9 is coded name of the member. He is an entrepreneur. He holds a bachelor's degree and a user of shared space.

Important factors for me are networking, flexibility, and cost. Meanwhile, the comfort, the configuration of space, day without problems- if you have any issue related workspace, it is being solved by the coworking space team. It is amazing. Unlimited coffee, harmonic work environment, and sunny workspaces are playing a role, too.

Members especially noticed the importance of social interaction and networking. In my opinion, nowadays modern open space workspaces are popular because of the possibility to know many people with different professions and social interaction. Social and professional events so crucial for the development of business.

22.08.19/ CS3 -Mem10

Mem10 is the coded name of the member. He is 28 years artist. He is an art director. Has own company and use the shared space.

Because of the profession –I'm an artist I need for a comfortable, creative, and inspiring work environment; the internet and coffee corner is important for me; in this way I save my time for drawing. In my opinion, ambient factors such as sunlight and appropriate acoustic distraction provide a good work atmosphere and increase mood; air circulation is also important for feeling better while working. Coworking space different from than coffee shop environment because of excessive noise and density of crowds.

Furthermore, in all coffeeshops own guess syndrome- you feel like a guess, nobody cares about you or your problems or interact with you but here many possibilities to make nice friendships.

"Natural light and background music motivate me, easy accessible outdoors let me take many short breaks which don't negatively associate with my performance. I like networking and flexibility. Décor, colors, and convenience of furniture let me feel relaxed and happy. Being part of the community creating a feeling of importance and a source of networking.

22.08.19/ CS3 -Mem11

Member's coded name is Mem11. He is 42 years old independent entrepreneur. He got a bachelor's degree in engineering. Member owns spared space membership as well as office space membership, too. For me important few main factors such as location - close to home, flexibility, networking, interior design, access to outdoors, and the existence of kitchenette."You are out of any obligation, such as you don't spend time to solve technical issues, cleaning, making coffee, the Internet, and so on. For work, I need to take my laptop and come here. I have met many people, found business partners and friends her. They also inspire me to come to CS3; At home, you just isolated from the outer world. After a while you just bore from working plus you have to prepare office space at home otherwise everything is distracting you such as tv, Internet because around you don't exist working people; Coffee shops also more hectic circulation of people, no any stability and possibility for networking, safety issues, poor Internet and most important you are not able to see same people each day."

Shared resources provide my space satisfaction. High-speed internet, unlimited coffee/breakfast, save our times a lot. Moreover, while getting coffee and printing some paper, you can interact with other people. Workspace resources are important

comfortable furniture – provide attachment, office services satisfaction, kitchenette at workspace save you time and money and so on. Accessibility to many resources increases my satisfaction, space attachment, and performance.

Air ventilation and air quality is important to me. I can't stand excessive odors. That's why I often go outdoors to breathe fresh air. Outdoors is my relaxing spot ...I like observing people beyond-it helps me avoid pitfalls while interaction; interacting with them face to face or like chatting with my friends, which I met here, too. Sunlight also helps me feel better. Background noise does not disturb me. Anyway, all members who use coworking space know that all people are working here that's why they are enough quiet and kind. Coworking space is not a silenced space-open space...users know what they will meet here...if they are seeking absolute silence, then they have to use private office rather than shared space. In my case, it matters...I come here due to enlarge my networking, to know many people, and to make friends. More shared space and social events for social interaction would be great because we want to go out of working mood during breaks or weekends.

APPENDIX E

CURRICULUM VITAE

Personal Information

Name Surname: Gunay Mammadrzayeva

Place and Date of Birth: Baku, Azerbaijan/28.12.1986

Education

Undergraduate Education:

Azerbaijan State Oil Academy Bachelor's Degree, Oil-Mechanical Engineering-Tribology and Tribotechnics- 4.23/5 · (2004 - 2008)

Graduate Education:

Kadir Has University Master of Arts - MA, Design-3.50/4 · (2017 – 2019)

Foreign Language Skills :

English (Professional working), Russian (Professional working), Turkish, German (A1), and Azerbaijani (Native).

Work Experience

Name of Employer and Dates of Employment:

Wemsey Display and Showroom Designer February 2019 - February 2019 (1 month)/Istanbul, Turkey

Wemsey Brand Manager October 2018 - December 2018 (3 months)/Istanbul, Turkey

AZERBAIJAN AIRLINES CLOSED JOINT STOCK COMPANY Corporate Flight Attendant April 2011 - December 2017 (6 years 9 months)/Baku, Azerbaijan

Baku Electrical Distribution Grid OJSC IT Department-Communication operator June 2009 - April 2011 (1 year 11 months)/Baku, Azerbaijan

Baku Electrical Distribution Grid OJSC Telecommunications equipment operator
December 2007 - June 2009 (1 year 7 months)/Baku, Azerbaijan

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