

Digitalization, Culture and Urban Space Interaction : A Design Fiction Approach

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Abstract

The relationship between urban spaces, cultural structures and social interactions are being thoroughly transformed by the digital age. Social processes and new forms of interaction are restructuring urban space within the framework of different developments and paving the way for the emergence of a new society that produces cultural practices outside the conventional realities. These changes have transcended the traditional physical use of urban space, shifting our activities to digital environments and reshaping urban life through digital platforms. Therefore, this study aims to analyse the impact of digital technologies on the reconfiguration of urban and public spaces as well as cultural practices. It examines the hybridization of physical and digital environments in shaping urban dynamics and evaluates their potential to address future urban challenges. The research uses a “design fiction scenario-based survey” technique to model the potential impacts of digitalization on urban spaces.

Keywords: Digitalization, Urban Space, Culture, Virtual/Hybrid Space, Scenario-Based Research

1. Introduction

The dichotomy between ‘reality’ and ‘virtual reality’ dates back to ancient times in human history. The distinction between reality and virtuality has affected social norms in different historical periods. For example, in medieval society, where religion and art were at the forefront, the ‘virtual’ was at the forefront, while in the industrial age, the ‘material’ and ‘tangible’ came to the fore (Floridi, 2014; Levin & Mamlok, 2021). With the introduction of digital environments into our lives, the perception of the duality of real and virtual began to change, the relationship between humans and the artificial products provided by digital integration blurred and a process of transition from information scarcity to information abundance began (Batty, 1997; Floridi, 2015).

Digitalization has had a transformative impact on individuals and their relationships with their environment, adding a new dimension to the dialectical relationship between space, time and social structure. In this context, it has become increasingly important to understand the potential of social processes to shape space, as well as the potential of space and time to transform social habits. The transformations caused by digitalization in many areas of life have radically affected urban living practices and the ways of using urban space (Matsuda, 2010). The relationship established with space has transcended the physical dimension and has become reconstructed in the virtual dimension.

In this process, traditional forms of urban use are being transcended; many activities that take place in the physical environment are being transferred to digital platforms, creating new forms of urban life. Thanks to the rapid development of technology, the increasing prevalence of telecommunication systems affects the relationships between people’s work, socialization, entertainment and all other activities and changes the character of their activities (Moss & Townsend, 2000). The fact that new technologies give us access to a new “place” raises the issue of how humans relate to space and place in relation to territorial life (Graham, 1998). It is thought that especially developed capitalist societies will be liberated from spatial, temporal and distance constraints and that these elements will cease to be a constraint on social, economic and cultural life (Graham, 1998; Graham & Marvin, 2002).

Urban space use culture is a dynamic structure that includes behavioural patterns, social norms and cultural practices related to how individuals use public and semi-public spaces in the city. This structure is transforming with the impact of digitalization; individuals' preferences for physical, virtual and hybrid spaces are being re-shaped. How this change is shaped according to socio-demographic characteristics remains important. In this context, examining the effects of virtual spaces and digital forms of interaction on the future culture of urban space use is critical for the transformation of today's cities and the re-functionalization of urban spaces.

Therefore, with a scenario-based approach, this study provides a comprehensive framework on how urban life will be reshaped in the process of digitalization by examining space preferences in future fictions together with socio-demographic characteristics and seeks answers to the following research questions:

1- With the development of digital technologies, how will individuals' preferences between physical, virtual and hybrid spaces change in the next 20 years in the context of their different needs?

2- How do demographic factors influence individuals' preferences for physical, virtual, and hybrid environments?

2. Interaction of Digitalization, Social Structure and Urban Space

Although the development of digital technologies was initially considered only as a tool for scientific advances and innovative approaches, it has led to radical transformations in social, cultural and economic structures over time (Batty, 1997). The foundations of digitalization were laid with the binary coding system developed by Leibniz in 1689, followed by Shannon's work on digital logic in 1938, and digital technologies became a concrete part of life with the production of the first computer in 1946 (Shannon, 1938; Castells, 2000; Jandrić, 2019). The establishment of computer-to-computer networks marked an important stage in the evolution of digital communication; today, this process has been intensively integrated into all aspects of life in areas such as big data, social media and artificial intelligence (Ilie et al., 2017).

One of the most critical turning points in the digitalization process was the creation of the World Wide Web (WWW) infrastructure. This technological development, combined with the widespread use of portable devices, paved the way for the elimination of spatial and temporal limitations; internet access became possible at any time and under any circumstances. This digital transformation, with its increasingly globalized structure, has led to the blurring of the boundaries between the real and the virtual and to radical changes in the perceptions of individuals. In this process, the concept of distance, which forms the basis of the idea of "community", has lost its importance and the forms of interaction between city dwellers have been redefined (Webber, 2013; Kellerman, 2014; Mahajan et al., 2024).

The new social structure conceptualized as information society, network society or post-industrial society, regardless of its name, is characterized by a new era in cultural structure (Bell, 1976; Castells, 2000; Webster, 1995; Uzelac, 2008). Digital technologies, which permeate almost every aspect of our lives, have led to changes not only in the use of new tools but also in our daily life practices, ways of thinking, social relations, production and consumption patterns. Therefore, digitalization should be considered not only as the development of technology but also as transformations in social and cultural structures (Hand, 2016).

Webber (2013) believes that society will eventually break away from physical proximity and integrate into social communities. In opposition to this view, Nie and Erbrig (2002) argue that online networks further strengthen communication between individuals who are part of a community, while Tayebi (2013) argues that communities still exist based on physical space, but with the advances in information and communication technologies, this has become more widespread. Floridi (2015) argues that the development and widespread use of digital tools has

had a significant impact on people and society and even argues that technology should not only be considered as digital tools but also as environmental forces that have become part of our lives.

The nature of digital technologies is changing people's habits with a disruptive effect while providing opportunities (Levin and Mamlok, 2021). Innovations in the way people experience their environment and daily activities are part of the cultural changes in the digital age. The new "networked" consciousness of society creates a new reality that we can call digital culture and all these changes deeply affect the value system and life practices of society. This change has led to a significant dissolution of the traditional social structure, which was more closely tied to physical space; the connection between place and people has weakened, while virtual communities have become more visible (Goodspeed, 2017). However, this is not only a rupture, but also the construction of a new form of spatial consciousness (Goodspeed, 2017). While digitalization weakens the relationship between place and community, it actually creates a new form of individual belonging to many places. While commuting to work, school, or home, people can check traffic updates on their phones, socialize through apps like Facebook and Instagram, order food or shop online. These services provided by digital tools are transforming urban life by disconnecting our daily life activities from physical space (Goodspeed, 2017).

The new social norms created by digital technologies have profoundly affected the way individuals use space and the effects of information and communication technologies on urban space have long been a topic of debate. The subject has paved the way for the emergence of different views. Webber (1968) argues that even when technological developments are not yet very active, physical space can be substituted and the city centre will lose its importance, Marvin (1988) argues that space will lose its value as time constraints are overcome and Pawley (1995), with his "cities without space" approach, states that developing technologies will create a need for high-capacity digital tools instead of a place for people to spend time.

Hall (1998) states that during the transition from the industrial age to the information age, skyscrapers rising in urban centres caused the urban fabric to change. Moss (1987), on the other hand, sees telecommunications itself, rather than a part of society such as white-collar workers, as influencing the growth or decline of future cities. Although Castells (2000) thinks that the telecommuting culture, which has entered our lives with the development of digital technologies, may lead to the spread of urban centres to the suburbs and consequently to decentralization and urban decentralization, Nilles (1998) and Huws et al. (1990) argue the opposite and think that the impact of the telecommuting model on urban space cannot reach advanced levels. Gottmann (1983) argues that the economic, social and cultural integration of digitalization in cities does not substitute the function of urban space but rather enables new ways of doing things in urban space that were done before digitalization. Abler (1995) supports Gottmann's (1983) view and argues that virtual spaces, which emerged as an alternative to physical space with digitalization, cannot be a substitute for real space. Virtuality would only enrich the reality of physical space and make it more layered. At this point, the idea emerges that physical spaces will be supported by digital tools and transformed into hybrid spaces.

In general, these studies address the effects of digitalization on urban space and social structure from different points of view and reveal its importance in shaping both spatial and social relations of the future. Social processes and new forms of interaction restructure urban space within the framework of different developments.

3. Case Study: The Effects of Digitalization on Urban Use Culture

In this study, an online survey method was used to understand the interaction between digitalization, urban use culture and urban space. The questionnaire was designed to test the relationship between socio-demographic characteristics and space preference and was statistically tested with the Multiple Correspondence Analysis (MCA) method.

3.1. Scenario Based Approach

In rapidly changing and transforming cities, the inadequacy of traditional planning methods to produce solutions to urban problems has encouraged researchers to use different tools. Scenario-based practices are one of them. Scenarios, which consist of stories about the future, encourage new ways of thinking among planners and participants, questioning the future effects of current policies and revealing alternative future visions and expectations for urban spaces (Chakraborty and McMillan, 2015).

According to Schwartz (1997), the concept of scenario is a way of thinking about what tomorrow might be like, discovering the changing aspects of our current lives and creating stories about the future so that we can adapt to this change. In this context, "scenario" can be defined as "A tool for organizing one's perceptions of alternative future environments" (Schwartz, 1997, p. 4). Godet (2000) mentions 5 benefits of these strategic forward-looking approaches that we can characterize as scenarios. These are: Reducing inconsistencies, stimulating imagination, creating a common language, creating a collective way of thinking and ensuring its adoption by decision makers (Godet, 2000:8). Scenarios are a way of thinking and can help people make better decisions (Schwartz, 1997). The future thinking endeavour, also defined as "la prospective", aims to create a hypothetical idea of the future by basing decisions as far into the future as possible and to find the important trends of society (Godet and Roubelat, 1996, p. 2).

Scenario-based studies can be divided into qualitative and quantitative. However, the approach coming from recent international scenario studies is that we do not need to choose between qualitative and quantitative scenarios. On the contrary, the combination of qualitative and quantitative studies gives more reliable results in analysing scenario outputs (Alcamo, 2008). The scenarios created within the scope of this study were also prepared with a qualitative approach using a storyline and presented to the participants. However, the analysis of the scenario outputs allowed the future expectations that emerged as a result of the participants' directing the scenario to be analysed with analytical methods. The prominent feature of this method is that it obtains more realistic results by blending normative information with analytical information (Goodspeed, 2017).

The scenario was created with a design fiction approach. Design fiction generates data that is used to assess the impact on lifestyles of services that do not yet exist but have the potential to exist or that exist but are not widespread (Harwood et al., 2020). The functionality of possible future technologies is explored when creating new and alternative future scenarios (Tanenbaum, 2014). By presenting possibilities that can affect society while shaping the future, the approach enables the participant to activate their imagination, suspend negative attitudes and imagine the future by blurring the boundary between fiction and reality (Bleecker, 2022).

The transformation of cities at an uncontrollable pace and the emergence of new types of spaces with the development of technology have paved the way for the use of the scenario technique as a tool in developing assumptions about the future of urban and public space (Blythe, 2014). This process helps us generate ideas that will shape the future and analyse the social impacts of current technologies. This study presents virtual and hybrid spaces that exist today, that do not yet exist, or that exist but have not yet become widespread, to the participants' preference, taking into account the developments in information and communication technologies with a scenario-based design fiction approach. In order to analyse the participants' approaches to their future physical, virtual and hybrid space preferences, 3 different scenarios were created for their lifestyles after 20 years. The scenarios were structured in three different categories for the spatial preferences of working individuals, students and non-working/retired individuals. Participants participated in the evaluation by choosing the most appropriate scenario for themselves. The scenario includes a set of activities related to daily life within the context of a story and the participants indicate the spaces (physical-virtual-hybrid) through which they would like to perform each of the activities they are asked in between the stories. These activities are grocery shopping, sports activities, travel organization, language course, museum visit, dinner and socializing.

3.2. Sample Selection

Purposive (monographic) sampling method and snowball sampling method, which are among the qualitative research sampling methods, were used to determine the participants to represent the research population.

The population of the research consists of individuals across Turkey. However, due to the practical limitations of the application such as time, resources and accessibility, a subset that is considered to have sufficient representation in terms of technology and urban space use was selected. Therefore, in order to ensure the validity and reliability of the study, the top 5 cities with the highest population in Turkey (Istanbul, Ankara, Izmir, Bursa and Antalya) were selected as the sample group in line with a structure that has high demographic and socio-economic diversity, has sufficient representation in terms of digital access and technology use, and includes sectoral differences.

The survey started with one person from each city accessing the survey link and being asked to forward it to individuals aged 18 and over in their city of residence. It was emphasized that the survey should be delivered to individuals with different demographics. In addition, the survey was also shared on social media platforms. In this respect, it can be said that convenience sampling method was also used in sample selection.

3.3. Sample Size

The confidence level in sample determination can be 99% or 95%, and the acceptable margin of error can vary between 1% and 5%. In this study, 95% confidence level and 5% margin of error assumptions are accepted. On March 15-2025, the population of Istanbul, Ankara, Izmir, Bursa and Antalya for the year 2024, which is the most recent data, was accessed through TurkStat (Turkish Statistical Institute) and only the group aged 18 and over was included in the population. The population of the 5 cities for the year 2024 aged 18 years and over is Istanbul 11.986.847, Ankara 4.531.181, Izmir 3.562.064, Bursa 2.453.932 and Antalya 2.078.804, totalling 24.612.828 people selected according to the criteria (URL-1). In order to calculate the sample size, the sampling equation in which the number of individuals in the population is known and the frequencies of discontinuous data can be measured was applied:

$$n = \frac{N \cdot Z^2 \cdot p(1 - p)}{(N - 1) \cdot e^2 + Z^2 \cdot p(1 - p)}$$

n: Number of samples required

N: Population size

Z: Z value corresponding to the confidence level (95%)

p: Variance ratio (0.5)

e: Margin of error (5% / 0.05)

When the required data are added to the formula, a sample size of approximately 384 people is determined with a 95% confidence level and a 5% margin of error. In the study, a sample size of 391 people was reached.

3.4. Socio-Demographic Structure of Participants

The data on the demographic characteristics of the participants obtained through the survey applied within the scope of this research play a critical role in analysing the preferences of different demographic characteristics regarding digitalization and the use of urban space. In the study, demographic data were collected and evaluated in 4 groups: gender, age, education level and employment status.

When gender distribution was analysed, 69.1% of the participants were female and 30.9% were male. The distribution according to age groups was grouped into 5 categories and 44.25% were between the ages of 18-27, 29.41% between 28-37, 15.09% between 38-47, 7.42% between 48-57 and 3.84% between 58-65. When the educational status of the participants is examined, there are no illiterate and only literate participants; 1% have primary education, 1% have secondary education, 12% have high school, 7.2% have associate's degree, 60.9% have bachelor's degree and 17.9% have graduate or doctorate level education. The majority of the participants are employed with a rate of 62.66%, 19.18% are students, 13.8% are not working and 4.35% are retired (Table 1).

Table 1: Socio-demographic structure of participants.

Demographic Characteristics		Category	Number of Participants	Distribution (%)
Gender		Female	270	69.1
		Male	121	30.9
		Total	391	100
Age		18-27	173	44.25
		28-37	115	29.41
		38-47	59	15.09
		48-57	29	7.42
		58-65	15	3.84
		Total	391	100
Educational Status		Illiterate	0	0
		Literate	0	0
		Primary Education	4	1
		Secondary Education	4	1
		High School	47	12
		Associate degree	28	7.2
		Bachelor's Degree	238	60.9
		Graduate/Doctoral Degree	70	17.9
		Total	391	100
Employment Status		Unemployed	54	13.8
		Student	75	19.18
		Retired	17	4.35
		Employed	245	62.66
		Total	391	100

3.5. Multiple Correspondence Analysis (MCA)

Multiple Correspondence Analysis (MCA) was conducted to determine the demographic characteristics of the participants. As a first step in determining demographic characteristics, the responses obtained from 391 participants were evaluated as raw data. Data on "gender", "age", "education level" and "employment status" were used to identify prominent socio-demographic groups (Table 2).

According to the results obtained, 4 basic socio-demographic profiles emerge. Student, female, respondents aged 18-27 with a bachelor's degree (Group A); working, male, respondents aged 28-37 or 38-47 with a graduate/doctoral degree (Group B); respondents with primary and secondary education (Group C); and non-working respondents aged 48-57 with a high school or associate's degree (Group D). Most of the retired participants are aged 58 and over (Figure 1.)

Table 2: Multiple correspondence analysis model summary.

Dimension	Cronbach's Alpha	Variance Accounted For		
		Total (Eigenvalue)	Inertia	% of Variance
1	.625	1.881	.470	47.026
2	.490	1.581	.395	39.525
Total		3.462	.866	
Mean	.563^a	1.731	.433	43.275
a. Mean Cronbach's Alpha is based on the mean Eigenvalue				

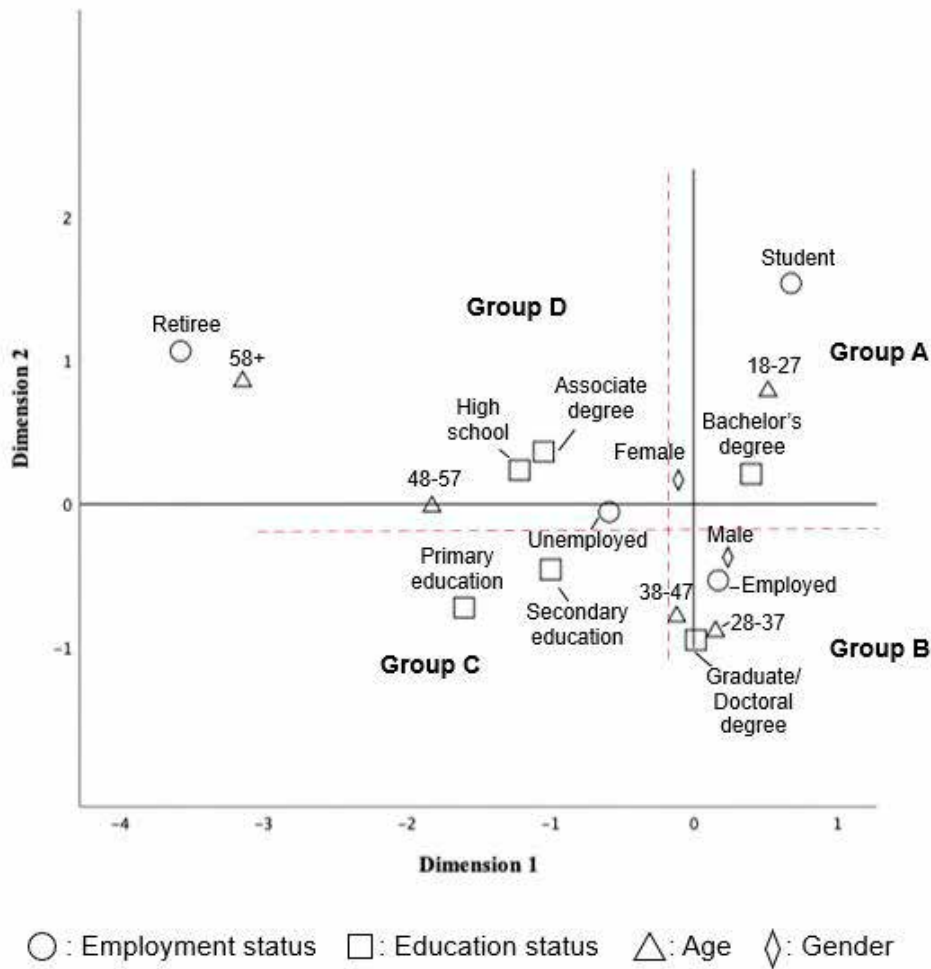


Figure 1: Socio-demographic profiles of participants.

After defining 4 socio-demographic profiles, the groups' preferences for virtual space, hybrid space and physical space in different activities related to daily life were investigated in the scenario-based survey section based on the design fiction. At this stage, "gender", "age", "educational status" and "employment status" were considered as independent variables, while the preference for virtual, hybrid or physical space according to different activity types was determined as the dependent variable.

In Figure 2, survey participants' preferences for virtual, hybrid or physical locations for grocery shopping are analysed together with socio-demographic groups. Respondents belonging to group A are highly represented by the option "Using a mobile application without leaving home". It is seen that hybrid space preference is predominant in this group. Participants belonging to group B are represented by the options "Connecting to the virtual market with VR glasses without leaving home" and "Physically going to the market but using augmented reality technology". In this group, it is seen that the preference for virtual space and hybrid space is predominant. This situation reveals that working male participants with a high level of education, between the ages of 28-47, want to experience digital technologies as well as experiencing the space and shows that they are individuals who are open to innovation and interested in digital systems. For the participants belonging to group C, there was no specific clustering feature on the choice of place for grocery shopping. Participants belonging to group D prefer the option of "physically going to the market". It is seen that participants aged 48-57, with high school or associ-

ate degree education level and not working are distant from virtual and hybrid spaces in shopping activities and prefer to shop physically.

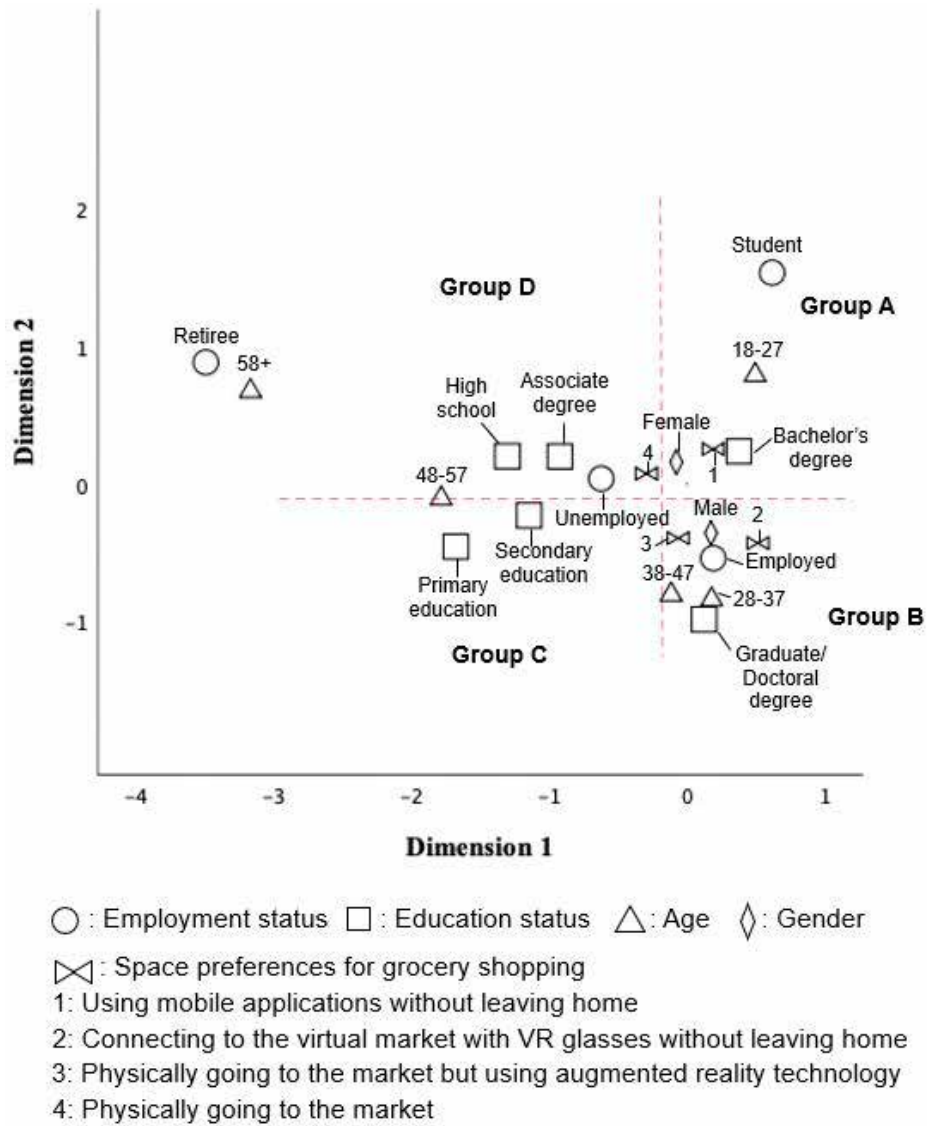


Figure 2: Socio-demographic characteristics of survey participants based on space preferences (Grocery shopping).

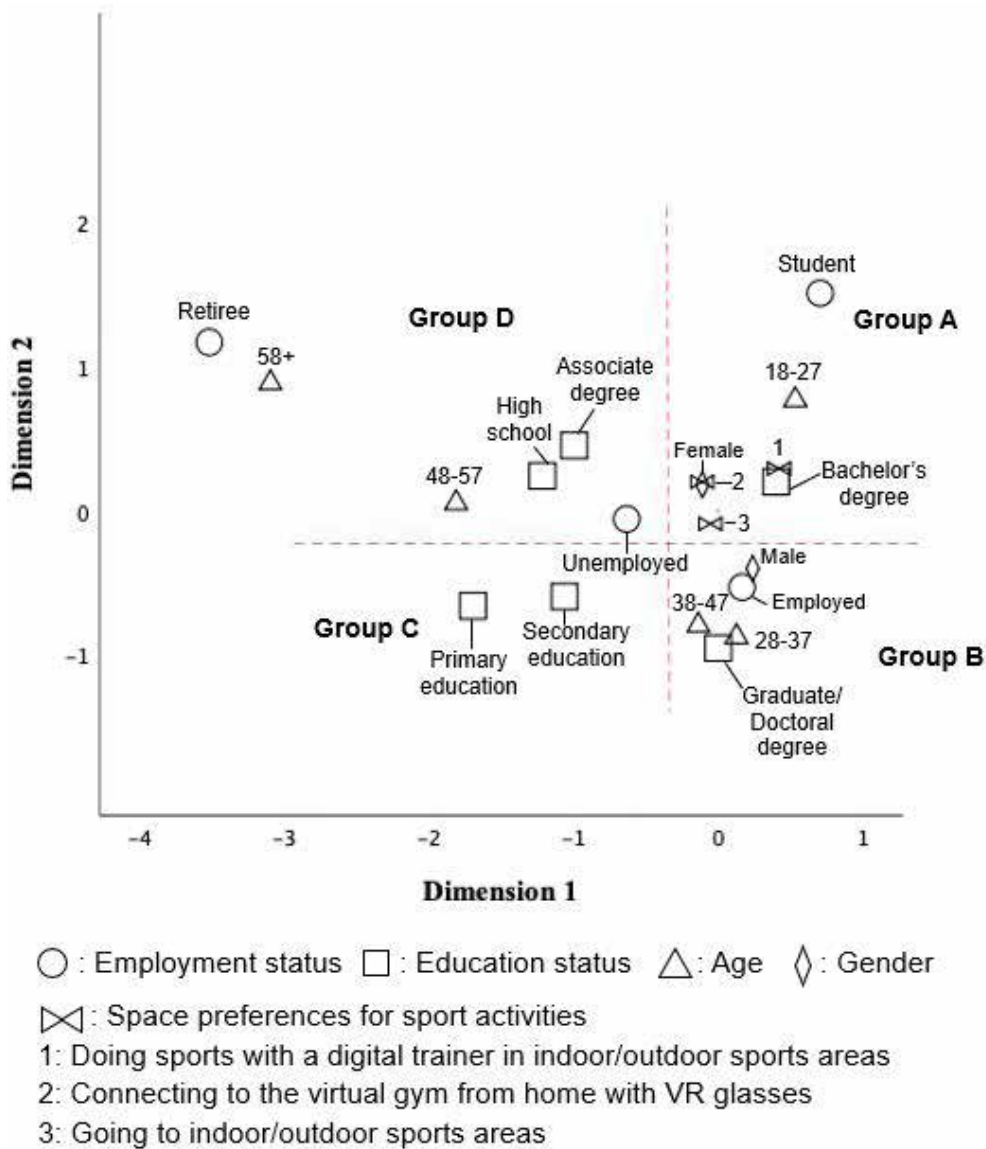


Figure 3: Socio-demographic characteristics of survey participants based on space preferences (Sports activities).

In Figure 3, survey participants' preferences for virtual, hybrid and physical spaces for sports activities are analysed together with socio-demographic groups. Participants belonging to groups B, C and D did not show any clustering in the choice of spaces for sports activities. Participants in group A are represented by all 3 space preferences: virtual, hybrid and physical. However, there is intense clustering between certain demographic characteristics and space preferences. For example, while individuals with a bachelor's degree are mostly represented by the option of "doing sports with a digital trainer in indoor/outdoor sports areas", almost all of the female participants prefer the option of "connecting to the virtual gym from home with VR glasses". This situation reveals that the participants at the undergraduate education level want to explore this space through digital tools as well as physically experiencing the space in sports activities. While female participants do not prefer outdoor spaces for sports activities, they want to experience digital tools at home and realize their activities through virtual spaces.

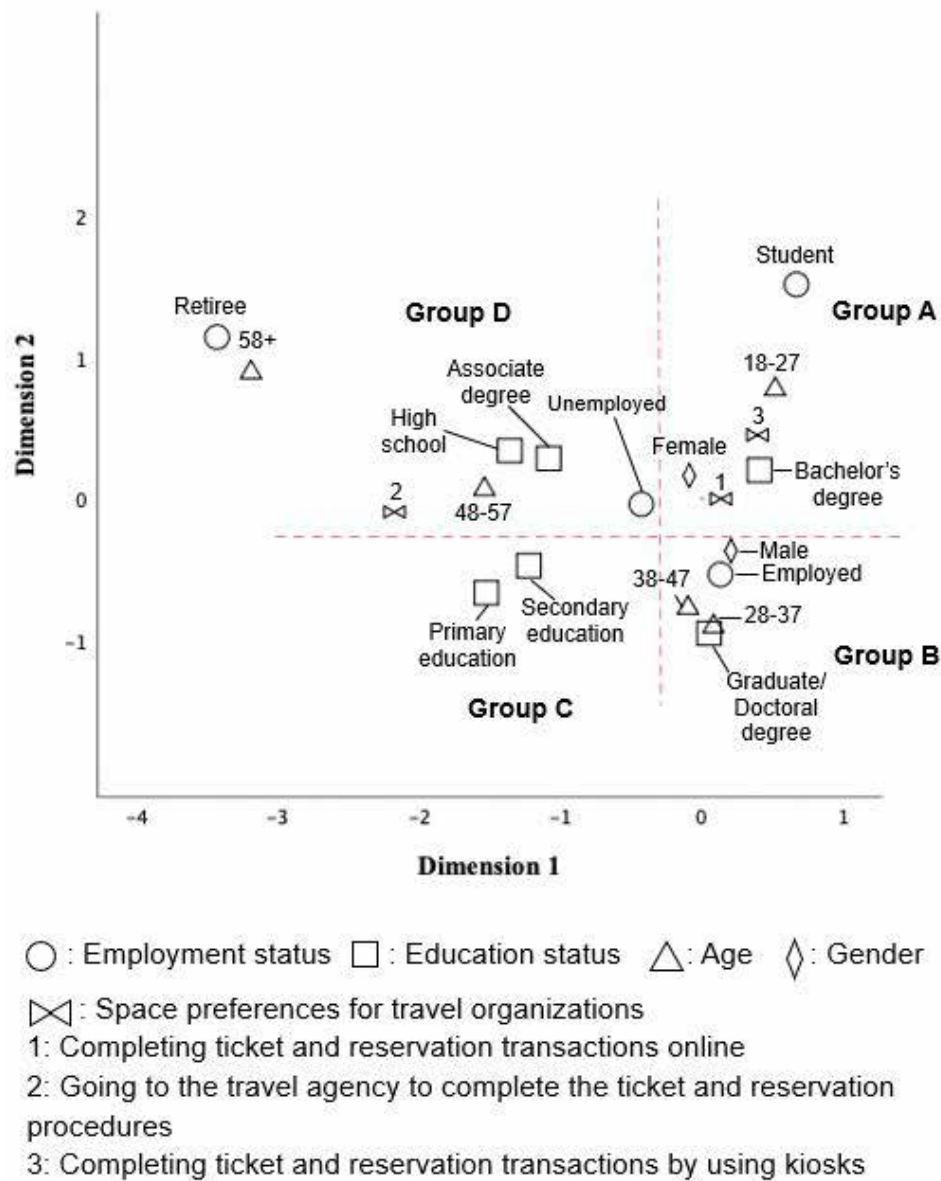


Figure 4: Socio-demographic characteristics of survey participants based on space preferences (Travel organization).

In Figure 4, survey participants' preferences for virtual space, hybrid space and physical space for travel organization are examined together with demographic groups. The answers "Completing ticket and reservation transactions online" and "Completing ticket and reservation transactions by using kiosks" stand out among the respondents belonging to group A. While it is seen that student participants at the young age group tend to prefer virtual and hybrid spaces for travel organizations, it also reveals the predisposition of this group to digital technologies. Although the answer "completing ticket and reservation transactions online" was prominent among the participants in group B, no clustering was found to characterize this group. No clustering feature was observed in the location preferences of the participants belonging to group C for travel organizations. The prominence of the answer "Going to the travel agency to complete the ticket and reservation procedures" among the participants belonging to group D reveals that the participants exhibit a tendency towards physical space preference. It is seen that the participants who belong to the middle-upper age group, have high school or associate's degree education and are not employed are distant from virtual and hybrid spaces for travel organizations

and want to complete their transactions physically.

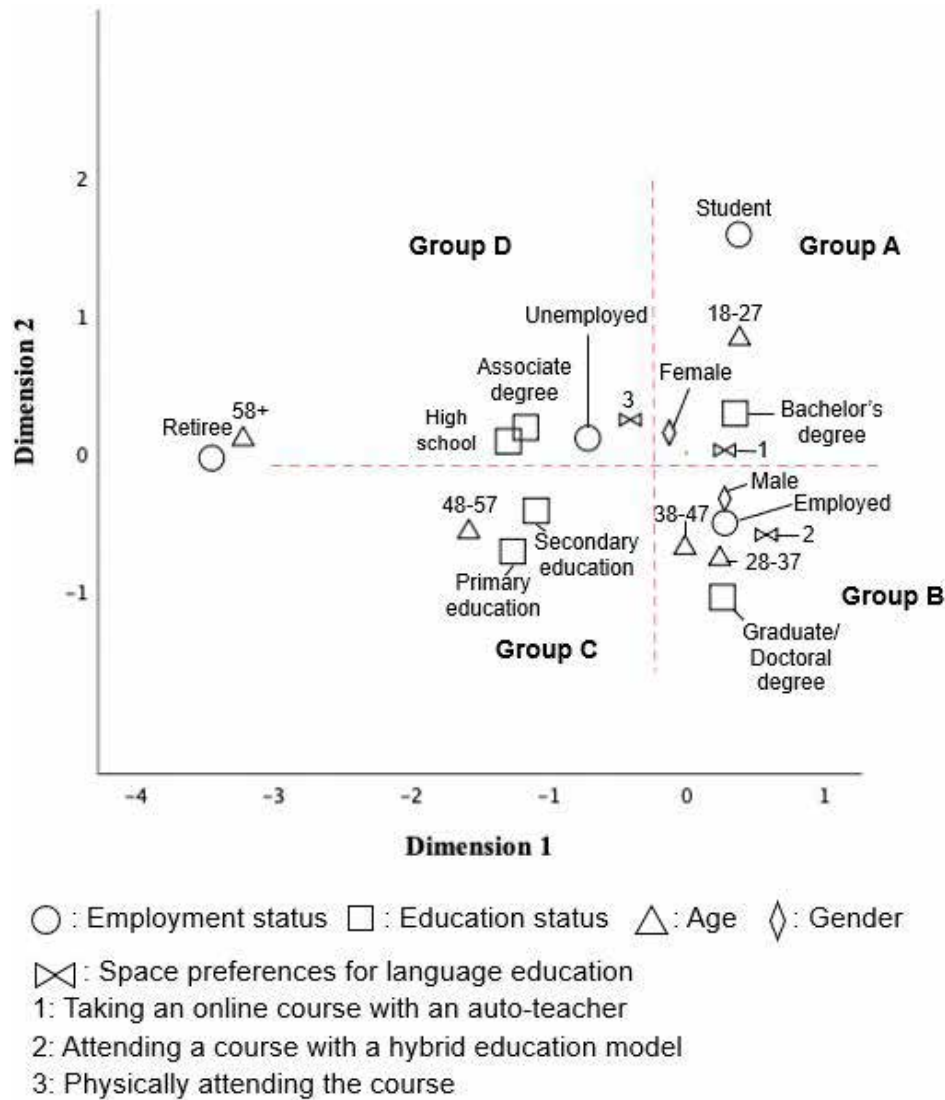


Figure 5: Socio-demographic characteristics of survey participants based on space preferences (Language education).

In Figure 5, survey participants' preferences for virtual, hybrid and physical spaces for language education are analysed together with socio-demographic groups. The answer "Taking an online course with an auto-teacher" stands out among the respondents belonging to group A. The fact that educated and student women prefer virtual spaces in the field of education is open to be associated with the fact that they have online education experiences with the effect of the Covid-19 pandemic due to their age group. Not being dependent on a place offered by online courses instead of physically going to a course for education provides a preferable environment for this group. Participants in group B show a clustering feature with the answer "Attending a course with a hybrid education model". Participants between the ages of 28-47, consisting of educated and working men, prefer an educational environment where they can both participate virtually and physically go whenever they want. When this situation is interpreted from the perspective of the working age group of these participants, it shows that a flexible understanding of space is important. Group A participants showed a tendency towards virtual space

preference and Group B participants showed a tendency towards hybrid space preference. Participants belonging to group C did not exhibit any clustering feature for the preference of location in language education. For the participants belonging to group D, the answer “physically attending the course” stands out. As a similar result with the previous questions on location preference, it is revealed that participants with high school and associate’s degree education and who are not working prefer physical locations for education and want to experience the location directly without interacting with digital tools.

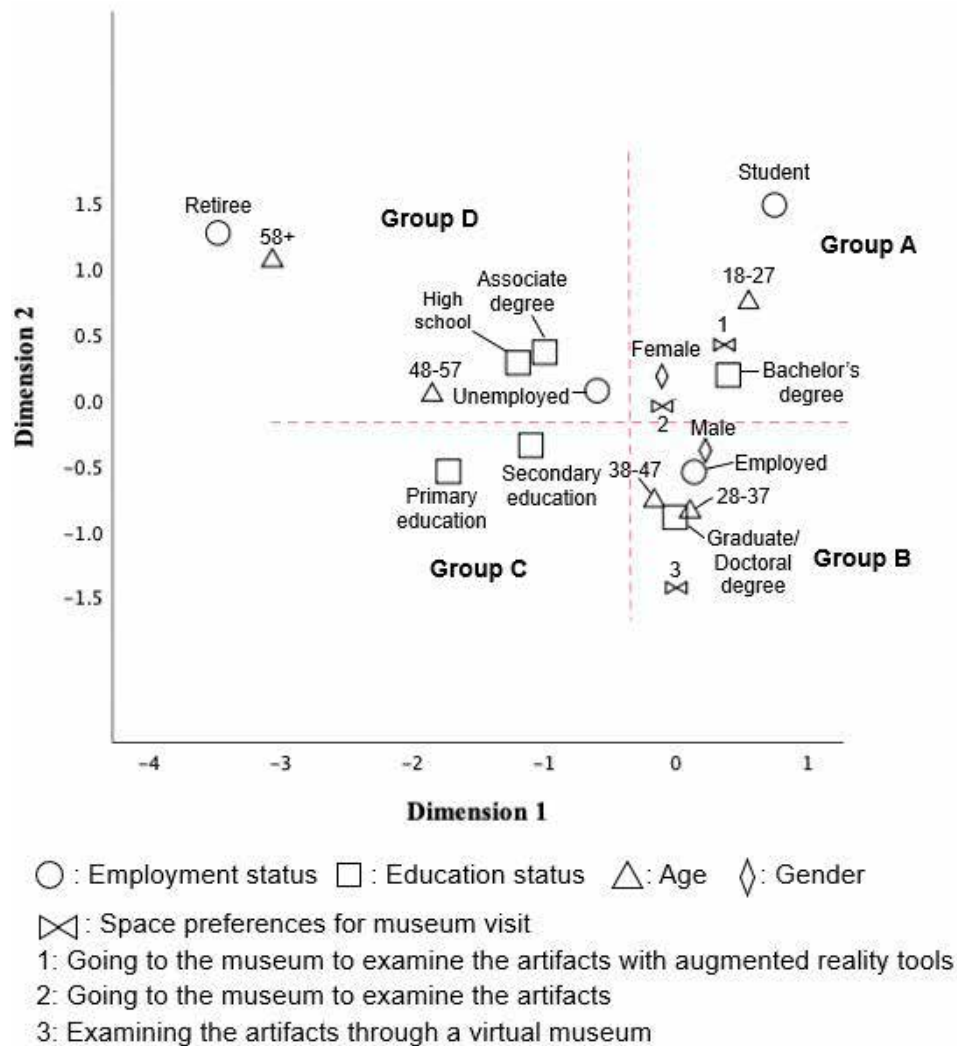


Figure 6: Socio-demographic characteristics of survey participants based on space preferences (Museum visit).

In Figure 6, the virtual space, hybrid space and physical space preferences of the survey participants for museum visits are analysed together with socio-demographic groups. The responses “Going to the museum to examine the artifacts with augmented reality tools” and “Going to the museum to examine the artifacts” show a clustering feature, especially among the participants of group A. It is noteworthy that participants between the ages of 18-27, with undergraduate education level and students attach importance to being physically present in the place in question for museum visits. However, while some of this group of participants would like to experience the artifacts in the physical space with digital tools, some of them do not prefer this. Participants in group B are represented by the response “Examining the artifacts through a virtual museum.”. This reveals that 28-47 years old, educated and working men are a group of participants who are open to experiencing digital systems and innovations, as in the previous questions, and they want to realize their museum visits through virtual museum visits without the need for a physical space.

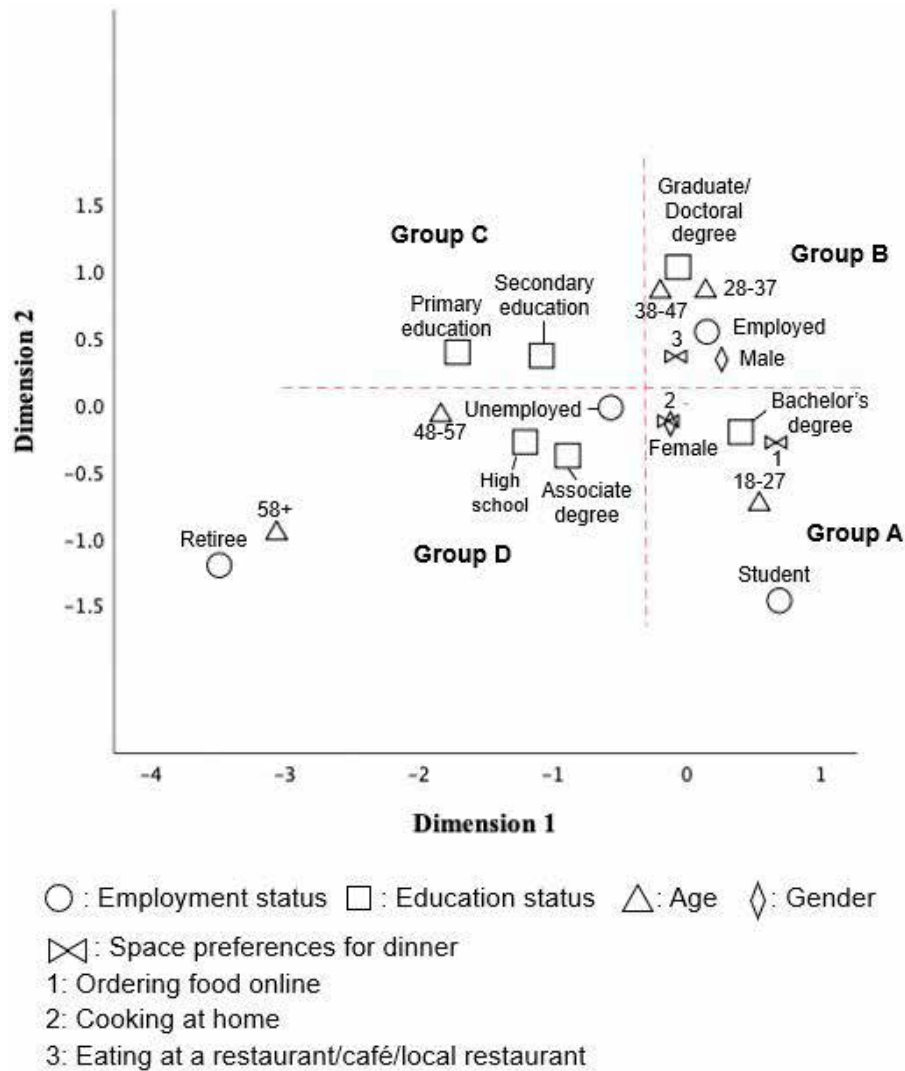


Figure 7: Socio-demographic characteristics of survey participants based on space preferences (Dinner).

In Figure 7, survey participants' preferences for virtual and physical spaces for dinner are analysed together with socio-demographic groups. The options "Ordering food online" and "Cooking at home" tend to cluster for respondents in group A. However, there is a strong correlation between certain demographic characteristics and space preferences. For example, almost all of the female respondents in group A prefer to cook at home, while the majority of respondents with a bachelor's degree prefer to order food online. Participants in group B, on the other hand, tend to cluster with the option of "Eating at a restaurant/café/local restaurant" for dinner. In this case, it can be said that 28-47 years old, educated and working male participants prefer out-of-home space for dinner. Participants with socio-demographic characteristics representing groups C and D did not show any clustering in their dinner preferences.

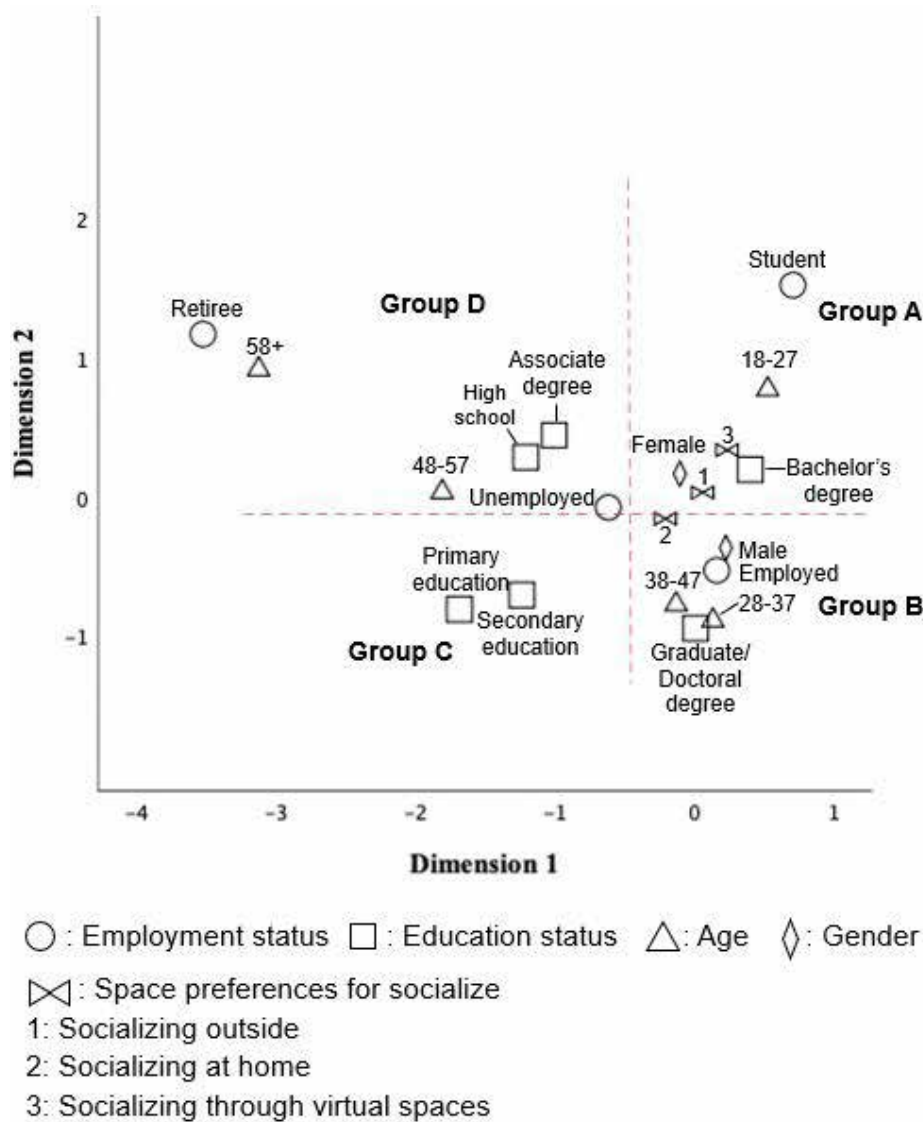


Figure 8: Socio-demographic characteristics of survey participants based on space preferences (To socialize).

In Figure 8, survey participants' preferences for virtual and physical spaces for socializing are examined together with socio-demographic groups. While the answers "Socializing through virtual spaces" and "Socializing outside" stand out among the participants in group A, the answer "Socializing at home" stands out among the participants in group B. Participants in group A preferred virtual spaces and physical spaces outside the home for socializing, while female participants generally preferred socializing outside and participants with a bachelor's degree preferred socializing through virtual spaces. Participants in groups C and D did not show any tendency characteristics in the options offered for socializing.

4. Conclusion and Discussion

This study aims to explore trends in the intersection of physical and virtual space in the future through a speculative approach while examining the impact of digital technologies on cultural dynamics and their potential to reconfigure urban space.

The scenario created with a design fiction approach was analysed in the context of its relationship with the future spatial preferences of the participants in line with their socio-demographic characteristics. The participants

were asked about their spatial preferences for several activities in daily life such as grocery shopping, sports activities, travel organization, language education, museum visits, dinner and socializing preferences. Multiple Correspondence Analysis was used to discover whether the socio-demographic characteristics of the participants showed a clustering feature. As a result of the test, 4 main groups emerged. These are: Female participants between the ages of 18-27, with a bachelor's degree, who are students; male participants between the ages of 28-47, with a graduate/doctorate degree, who are working; participants with primary or secondary education; and finally, participants between the ages of 48-57, with a high school or associate's degree, who are not working. Different socio-demographic groups showed certain variations in their preferences for spaces for different activities.

Student participants between the ages of 18-27, with a bachelor's degree, prefer virtual or hybrid spaces in almost all activities. This socio-demographic group prefers mobile applications for grocery shopping, digital coaches and virtual gym for sports activities, online booking or kiosks for travel organizations, auto-teachers for language education, augmented reality technologies and physical participation for museum visits, online ordering or home cooking for dinner and virtual spaces or out-of-home environments for socializing. Considering the space preference tendencies of this socio-demographic group in general, they can be called "digital natives" as defined by Marc Prensky (Prensky, 2001). As Souza e Silva (2006) points out, this group, due to the age range it represents, was born into the digital age or has been interacting with digital tools for a very long period of its life. For this reason, they prefer to perform many of their daily activities through virtual or hybrid spaces rather than interactively experiencing physical space.

Another socio-demographic group that shows clustering characteristics is the 28-47 years old, working, male participants with a graduate/doctoral degree. This group prefers to do grocery shopping through VR glasses or by using augmented reality technologies in the market, to visit artifacts through virtual museums and to use hybrid space for language education, while they prefer to go to outdoor environments such as cafes or restaurants for dinner and to be at home for socializing. When the virtual space preferences of this participant group are analysed, it is seen that they are interested in technologies that are not yet widely used but are expected to become widespread in the future and they want to experience the space together with technology. These characteristics, which Lengsfeld defines as "digital enthusiast", are represented by an intense interest in new digital technologies and an active participation in digital transformation (URL-2).

Another socio-demographic group that shows a prominent tendency in terms of location preference in the context of different activities is the participants between the ages of 48-57, with a high school or associate's degree and not working. This group prefers to go to the market for shopping, organize their travels through agencies and physically attend a course for education. Participants who prefer to experience the urban space firsthand in their daily life activities attach importance to face-to-face interaction even in the types of activities where technological applications are widely used today. It is seen that the behavioural norms brought by the digital age, which can be considered among the basic elements of cultural values, do not cause dramatic changes in the participants with the socio-demographic characteristics in question. This behaviour pattern, which tends to preserve the habits of the past, uses the Internet as a second option to access information, and which Marc Prensky calls "digital immigrants", would be an accurate approach to define the participant group in question (Prensky, 2001).

As the last noteworthy finding of the study, the expectations of different socio-demographic groups regarding their preferences for the use of urban space in the context of urban life in 20 years show different characteristics. Basically, 3 different approaches emerge: those who embrace the adopted urban use values, those who continue this tradition by being born into an already existing digital world and those who are open to the idea of experiencing urban space with digital tools. The results show that digitalization brings along various approaches in

the culture of urban space use in the context of different socio-demographic groups, thus creating the need to rethink the future of urban space.

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