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A Systematic Literature Review of Cross-Cultural Studies on Interior Perception

İç Mekan Algısına İlişkin Kültürlerarası Çalışmaların Sistematik İncelemesi

Türkan Sultan YAŞAR İSMAİL [1]
[1]Studies of Interior Architecture, College of Built Environment, Universiti Teknologi MARA Selangor Branch, Malaysia

Ayşen ÖZKAN [2]
[2]Department of Interior Architecture and Environmental Design, Faculty of Fine Arts, Hacettepe University, Ankara, Türkiye

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Corresponding author / Sorumlu Yazar: Türkan Sultan YAŞAR İSMAİL

E-mail: turkan@uitm.edu.my

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ABSTRACT

Individuals, as the fundamental building blocks of societies, engage in a continuous and evolving relationship with their environments, fostering unique cognitive patterns within their cultures. Factors like geography, climate, historical events, and social dispositions can lead to differences in cultural perceptions across different regions. On the other hand, spaces reflect ways of life and cultural values. Individuals' perceptions and behaviours within their surroundings may differ depending on the cultures they belong to. Environmental studies within cultural contexts have been of interest in the architecture and psychology fields. There has been a notable increase in research interest in cross-cultural spatial perception. However, the studies mostly focus on the scale of architecture or landscape design. Interior spaces can be seen as one of the main surroundings for people, especially in the context of the current century urban context we live in. Therefore, it is essential to understand the differences in cultural perceptions of space to promote inclusivity within the global cultural context. This study aims to examine the similarities and differences between interior perception studies from a cross-cultural perspective. The systematic literature mapping method with inclusion and exclusion criteria was used within the Scopus database, and in total, 26 relevant perception studies focusing on cultural variation were selected and analysed according to different interior typologies and countries. The findings indicate that individuals from diverse cultural backgrounds respond differently to various spatial typologies and interior spaces, with these differences linked to factors such as space programming, color choices, and levels of privacy.

Keywords: Cross-cultural, Perception, Preference, Interior Space, Comparative Studies

ÖZ

Toplumların temel yapı taşları olan bireyler, çevreleriyle sürekli ve gelişen bir ilişki içinde olup, kültürlerinde benzersiz bilişsel kalıpları teşvik ederler. Coğrafya, iklim, tarihi olaylar ve sosyal eğilimler gibi faktörler de farklı bölgeler arasında kültürel algılarda farklılıklara yol açabilmektedir. Mekanlar ise yaşam biçimlerini ve kültürel değerlerini yansıtmaktadır. Bireylerin çevrelerine yönelik algıları ve davranışları da ait oldukları kültürlere göre farklılık gösterebilmektedir. Bu anlamda, kültürel bağlamlardaki çevre çalışmaları mimarlık ve psikoloji alanlarında ilgi odağı olmaktadır. Bu bağlamda, kültürlerarası mekansal algıya yönelik araştırmalarda kayda değer bir artış olduğu; ancak çalışmaların çoğunlukla mimari ya da peyzaj tasarımı ölçeğine odaklandığı görülmektedir. İç mekanlar ise özellikle içinde bulunduğumuz yüzyılın kentsel bağlamı kapsamında, insanlar için ana çevrelerden biri olarak görülmektedir. Bu nedenle, küresel kültür bağlamında kapsayıcılığı teşvik etmek için mekana ilişkin kültürel algılardaki farklılıkları anlamak önemlidir. Bu doğrultuda çalışma, iç mekan algısı çalışmaları arasındaki benzerlik ve farklılıkları kültürlerarası bir bakış açısıyla incelemeyi amaçlamaktadır. Araştırmada, Scopus veri tabanında dahil etme ve hariç tutma kriterlerini içeren sistematik literatür haritalama yöntemi kullanılmış ve toplamda kültürel çeşitliliği odağına alan 26 ilgili algı çalışması farklı iç mekan tipolojilerine ve ülkelere göre seçilip analiz edilmiştir. Bulgular, farklı kültürel kökenden gelen bireylerin çeşitli mekansal tipolojilere ve iç mekanlara farklı tepkiler verdiğini ve bu farklılıkların mekan programlaması, renk seçimleri ve mahremiyet düzeyleri gibi faktörlerle bağlantılı olduğunu göstermektedir.

Anahtar Kelimeler: Kültürlerarası, Algı, Tercih, İç Mekan, Karşılaştırmalı Çalışmalar

Introduction

Environment is described as conditions that have an impact on how someone behaves or develops, or the surroundings that something or someone exists in according to the Oxford Dictionary (URL-1). Individuals' behavior and perception styles are closely related to their surroundings. Geography and climate are the determining factors in the formation of the physical characteristics of the built environment. Likewise, social dynamics, perception and behavioral patterns are also related to habitat (Kaplan, 1995; Berg et al., 2003; Ross, 2004; Al-Hammadi, 2023: Smalley et al., 2023; Yilmaz et al., 2023).

Environmental psychology is a discipline that examines the relationship between individuals and their built and natural environments (Berg et al., 2003). The aim of the architectural psychologist is to describe and express the psychic effects that the situation of building space can evoke through its own tools. The effect we perceive from the built environment is called impression. This impression can also be said as the expression of the object (Wölfflin, 1946). People's perception, attachment, belonging, and appreciation levels towards various environments may differ along with the culture they belong to (Adams and Osgood, 1973; Altman & Chemers, 1980; Rapoport 2005). Since the culture is diverse, the environment is also diversified and schematized to respond to various needs definitions and priorities; environment is shaped by culture (Rapoport, 1981, 2005). The spatial perception of the members of society is also shaped under the influence of their environment. Perception is a wide concept in academia however this research focuses on cross-cultural examples.

Culture and Environment

By looking at the different perspectives and definitions, Rapoport (1981) defines the term of *culture* in three different ways: as a way of life which is typical of a group; as a system of symbols, meanings, and cognitive schemata transmitted down through symbolic codes; and as a collection of adaptive survival tactics associated with habitat and resources. The built environments of certain cultures serve as settings for the kind of individuals that the group views as typical as well as the particular way of life that is distinctive and characteristic of the group. Such settings and ways of life reflect an order, give shape to a set of cognitive schemata, symbols, and a vision of an ideal, however imperfectly; both the way of life and the symbolic system may therefore be a component of the group's adaptive tactics within their ecological environment. In the sense that they reflect human judgements and choices and alter the natural world in some deliberate way, all settings created by humans are planned (Rapoport, 1981; Memmott & Davidson, 2008).

The effects of culture can be seen in different scales of place, such as planning, and design may be viewed as the organization of space for various reasons. In accordance with various principles that reflect the objectives, beliefs, and activities of the people or organizations performing the organizing at all sizes, from regions to furniture groupings (Rapoport, 1981).

Cross-Cultural Perception Studies in Built Environment

As each culture encompasses all environmental factors that may affect human behavior, cross-cultural studies are vital for the comprehensive advancement of environmental research theories. The empirical study of individuals from different cultural groups has undergone identifiable experiences that have resulted in behavior variations that are both predictable and substantial. In the vast majority of these studies, the groups had various linguistic and political affiliations as well as different geographic locations (Brislin, 1980). This research aims to answer the question of how cultures and settings are related to each other within different spatial qualities.

Interior is described as resting, taking place, or functioning inside the restrictive boundaries (URL-2). Since the beginning of human history, people have been trying to create or occupy a void to survive and thrive on Earth. While creating other environments, the main purpose for people starts with a place to live covered by shelter which can be on an architectural or urban scale according to research by Diffey (2011), people spend around 90% of their times interiors every day. There are various studies regarding space and human relationships in interior scale (Cupchik et al., 2003; Akalin et al., 2010; Hidayetoglu et al., 2010; Yildirim et al., 2011). However, cross-cultural comparisons used to mainly focus on different scale of environment such as urban studies (Datta, 2003; Bonaiuto etal.,2015), landscape architecture (Eyang and Kaplan, 1990; Yang and Brown, 1992; Herzog & Shier, 2000; Lim et al., 1015), architecture (Espe, 1981; Kong Lee, 1991; Erdogan, 2013; Tekel et al., 2016). Different qualities of urban, landscape, façade and interiors were the elements of built environment were considered as medium in cross-cultural studies frequently. In cross-cultural studies, natural or designed landscapes have been used as research medium for a long time (Eyang & Kaplan, 1990; Herzog et al., 2000; Lim et al., 2015). Some methods developed for the perception of landscape landscapes were later adapted to indoor perception studies (Scott, 1993). Moreover, there are also cross-cultural studies on visual culture perceptiveness (Chu, 2003).

This study aims to focus on the spatial perception of cross-cultural comparison on interior studies conducted in literature. In order achieve this aim, using the Prisma checklist, a systematic literature review on Scopus database is conducted. The purpose of this study is to shed light on the existing literature on cross-cultural interior perception studies in order to;

- Identify cultural comparisons on steal values in the field of interior design and architecture,
- Determining which cultures or countries were studied together for comparaison,
- To see how interior spaces are perceived by people with different cultural backgrounds where if there is any particular trait that can be pointed to perceiving spaces and related elements when it comes to cultural diversity.

Material and Methods

To determine the selected research within the field mentioned above, a systematic literature review method based on PRISMA (Page et al., 2021) system was chosen. For containing vast and trusted resources in the field of environmental psychology, the Scopus database was used for systematic literature review. The research was conducted on 10–13 September 2024. For finding an adequate amount and variety of research papers, the research strategy was managed in ten connecting steps (Figure 1). As the first step of the investigation, the search was made within Abstract Title, Abstract, and Keywords. For selecting the studies, culture OR cross-cultural AND perception OR preference AND interior OR space OR room OR architecture OR design terms were used. In furtherance of more accurate results, several inclusion and exclusion criteria were applied. The year scale was restricted between 1980 and 2024. The subject areas were limited to Arts and Humanities, Social

Science, and Multidisciplinary. Only journal articles were chosen as the document type. Only the publications in the English language and final stage were considered. In the first step, 3916 documents were found, and 3907 ones are in articles in English. As the second step, certain keywords related to ethnology, education, linguistics, health practice and clinical studies, medical studies, business, organization, and management were excluded, and 2621 documents remain in the research. Later on, for the purpose of eliminating the environmental studies other than those related to interior spaces, keywords related to landscape design and urban scale were excluded, which resulted in 2250 documents (Figure 1).

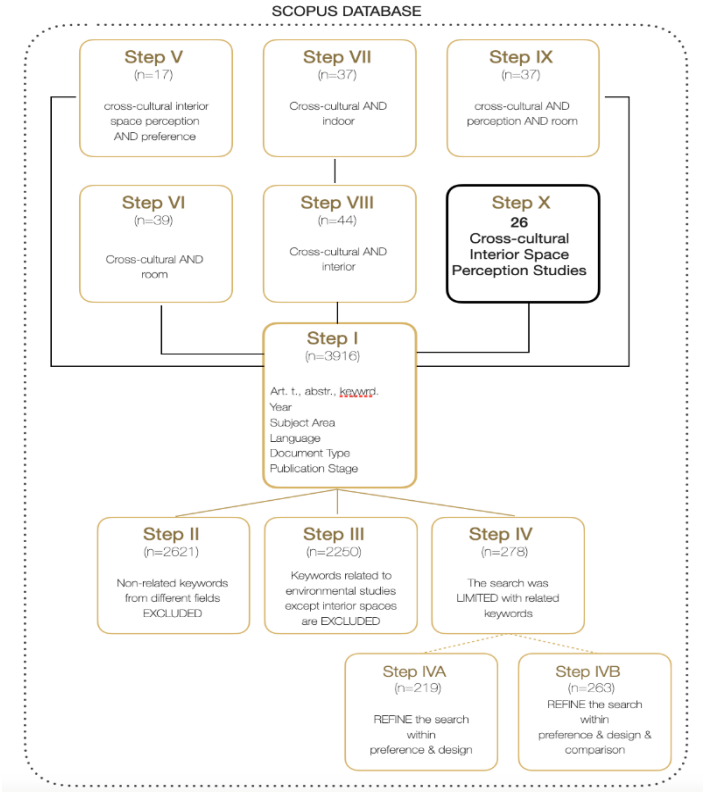


Figure 1. Systematic Literature Research Method in Accordance with PRISMA

As the fourth step, keywords limited to culture, perception, design, architecture, perception(s), cultural difference, space, culture, perception, identity, creativity, material culture, public space, cross-cultural, cultural difference(s), cross-cultural study, cross-cultural communication, visual culture, sacred space, urban culture, cultural values, cultural influence, cultural history, cultural geography, cultural anthropology, cross-cultural comparisons, and architectural design resulted in 278 documents. As the next step, the search results refined with the words preference and design, which followed with 219 documents. From this step on, all the articles 'abstracts that appeared in the system were read for finding research related to cross-cultural interior space perception studies. Later, this refinement stage repeated one more time with another step by organizing another refinement with the word's preference, design, and comparison, where 263 documents remained and were read one by one. Afterwards, the exclusion criteria were determined as the studies that do not match the inclusion criteria, duplicated studies, and lastly, the research which does not have spatial relevance where 2 related documents were found. The examination continued with five more steps, based on the first step research criteria but using different sets of words, which were searched on Abstract Title, Abstract, and Keywords. As the fifth step, a search within culture AND preference AND interior AND design was conducted, and 17 documents were listed among them; 6 related documents were found. Also, during the abstract analyzing process, two documents were recommended by the SCOPUS system that are related to this study but did not appear on the initial list. As the sixth step, 39 documents were listed. Among those, there were related documents found. The seventh step used the keywords cross-cultural AND indoor with 27 listed documents, of which 3 were included in this study. When the search was repeated with cross-cultural AND interior, 44 documents were registered and 6 related new documents were found; also, one recommended study was added as well. As the last step, search within, Article Title, Abstract, Keywords with the terms cross-cultural AND perception AND room made, and 25 documents were listed where 2 new additions were made to the research. Finally, the total of 26 remaining empirical studies were read thoroughly and chosen as the content for this paper (Figure 1).

Synthesis Methods of Data Items:

The final selection of 26 studies were chosen by analyzing the content of the study via;

- identifying the comparison made within two or more than 2 cultures that can be from different countries and in some cases, different cultures from the same countries,
- Studies subjected to interior spaces form various building typologies
- Comparison made on the different variables of the elements related to interior space.

The studies which fit the criteria above were tabulated according to the publication year, research focus, subjected participant profile, typer of interior space studied and countries involved during the application process of research where the cross-cultural relation formulated (Table 1). This tabulation system served as a pragmatic way of organizing the findings for later analysis.

Results

In total, 26 studies were selected from Scopus Database which are related to various interior spaces. The studies were tabulated according to their research focus, user/participant profile, spatial typology and compared different cultural background (Table 1).

Table 1. Cross-Cultural Environment and Interior Perception Studies Organized According to Scope and Countries Involved

	WRITER(S)	YEAR	JOURNAL NAME	RESEARCH FOCUS	USER / PARTICIPANT PROFILE	TYPE OF INTERIOR	COMPARED COUNTRIES / CULTURES
1	Hasanzade, M.P., & van Oel, C.J.	2022	Architectural Engineering and Design Management	Design appearance preference Material finishes	Airport Passengers	Airport Terminal Interiors	Iran, Netherlands
2	O'Rourke, T., Nash, D., Haynes, M., Burgess, M., & Memmott, P.	2022	Environment and Behavior	Cultural Design preference	Indigenous People	Healthcare Waiting Rooms	Indigenous People in Regional Australia
3	Cho J.Y., Lee, J., & Yoo, J.	2018	Creativity Research Journal	Design appearance preference	General Public	Restaurant, Lobby	United States, South Korea
4	Petiot, J. F., Salvo, C., Hossoy, I., Papalambros, P. Y., & Gonzalez, R.	2009	International Journal of Product Development	Design appearance preference	General Public	Vehicle Interior	United States, France
5	Ham, T.Y. & Guerin, D.A.	2004	Journal of Interior Design	Design appearance preference	General Public	Living Space	United States, China
6	Munoz, C.L., Wood, N.T. & Solomon, M.R.	2006	Journal of Consumer Behavior	Cultural Design preference	General Public	Irish Pub	Australia, Ireland, and United States
7	Serra, J., Gouaich Y. & Manav B.	2021	Color Research & Application	Color Studies	General Public	Bedroom (Le Corbusier Palette)	Spain, Türkiye, Algeria
8	Park, Y. & Guerin, D.A.	2002	Journal of Interior Design	Color Studies	General Public	Interior Color Palette from residential living room pictures	United States, United Kingdom, Japan, South Korea
9	Andrade, C.C., Devlin, A.S., Pereira, C.R., & Lima, M.L.	2017	Journal of Environ. Psychology	Design appearance, stress level, positive distraction	Warded Patients	Hospital Rooms	United States, Portugal
10	Devlin, A.S., Andrade, C.C., Carvalho, D.	2016	Health Environment Research & Design Journal	Patient satisfaction, natural light effect	Warded Patients	Hospital Rooms	United States, Portugal
11	Devlin, A.S., Nasar, J.L., & Cubukcu, E.	2014	Environment and Behavior	Design appearance, Comfort level impression	University Students	psychotherapists' offices (semiprivate)	United States Türkiye, Vietnam
12	Izmir Tunahan, G., Altamirano, H., Teji, J.U., & Ticleanu, C.	2022	Frontiers in Psychology	Daylight Perception	University Students	Library	White, Asian, and other Ethnicities
13	Park, N.K. & Farr, C.A.	2007	Journal of Interior Design	Lighting	General Public	Experimental setting of retail	United States, South Korea
14	Park, N.K., Pae, J.Y. & Meneely, J.	2010	Journal of Interior Design	Lighting	General Public	Hotel Guestroom	United States, South Korea
15	Veitch, J.A., Charles, K.E., Farley, K.M.J., & Newsham, G.R.	2007	Journal of Environment Psychology	Privacy/Acoustics, Lighting, and Ventilation / Temperature	Open Office White-collar workers	Open Office Plans	United States, Canada
16	Küller, R., Ballal, S., Laike, T., Mikellides, B., & Tonello, G.	2006	Ergonomics	Artificial Light, Daylight, window position and Color	Participants from Indoor Work Environments	Real Indoor Work Environments (Offices, schools, industrial p.	Argentina, Saudi Arabia, Sweden, United Kingdom
17	Mohamed M.A.E. & Dokmeci Yorukoglu P.N.	2020	Building Acoustics	Noise toleration	Residents Public	House	Turkish and Arabs in Türkiye

Table 1. Cross-Cultural Environment and Interior Perception Studies Organized According to Scope and Countries Involved (continued)

	WRITER(S)	YEAR	JOURNAL NAME	RESEARCH FOCUS	USER / PARTICIPANT PROFILE	TYPE OF INTERIOR	COMPARED COUNTRIES / CULTURES
18	Kaya, N., & Weber, M.J.	2003	Journal of Environment Psychology	Crowding and Privacy	University Students	Residence Hall Rooms (dorms)	United States, Türkiye
19	Tsuchiya-Ito, R., Iwarsson, S., & Slaug, B.	2019	The Journal of Cross-Cultural Gerontology	Spatial Organization, Spatial Accidents	Elderly people from care houses	Elderly Housing Compartments	Japan, Sweden
20	Hong, T., Chen C., Wang Z., & Xu, X.	2020	Building and Environment	Indoor Temperature, Human Building Interaction	University Building Occupants	University Office Buildings	Brazil, Italy, Poland, Switzerland, the United States, and China
21	Abdelwahab, S., Kent, M.G. & Mayhoub, M.	2023	Building and Environment	Spatial Organisation, Privacy, Thermal Comfort, Daylight	Window orientation, Preferences on using window shading	Office and House	Arabs and non-Arabs
22	Garip, E., & Ünlü, A.	2012	A|Z ITU Journal of the Faculty of Architecture	Design Appearance Preferences, Spatial Organisation	General Public	Retail	United Sates and Türkiye
23	Köseoğlu, E., Erinsel Önder, D., & Bilen, Ö.	2012	International Journal of Architectural Research	Design Appearance Preferences, Privacy, Spatial Organization	Tourists	Hotel Lobbies	Asian, European
24	Huber, A., & Bailey, R.	2024	Health Environments Research & Design Journal	Spatial Organisation, Design Appearance, Color, Positive Distraction	General Public	Hospital waiting rooms	United States: Black, Hispanic/Latina, and White cultural groups
25	Sauer, V., Mertens, A., Groß, S., Heitland, J., & Nitsch, V	2022	Ergonomics in Design	Design Appeal Preferences, Interior Ambiance	Experts in the field	Automated Vehicle Interior	China, Germany, United States
26	Richardson, M., Jicol, C., Taulo, G., Park, J., Kim, H.K., Proulx, M.J., & de Sousa, A.A.	2023	Frontiers in Psychology	Spatial Organisation, Personal Space Perception, Window View from Interior	General Public	Office Spaces	United Kingdom, South Korea

Discussion

In total, 24 countries were chosen as the origin of the participants for the cross-cultural interior perception studies (Figure 2). However, some studies only indicated the ethnic groups from different regions as the different criteria (Abdelwahab et al., 2023; Ismir Tunahan et al., 2022; Koseoglu et al., 2012). On the other hand, while Huber and Bailey (2024) studies different four ethnic roots in United States, O'Rourke et al. (2022) looked the perceptional differences among Indigenous people in Australia from two different settlements one being far, other located closer to cities. According to the data obtained from the selected works, the country which was studied the most in cross-cultural comparisons was the United States of America. Following this, South Korea, Türkiye China and Japan were also frequently compared second parties (Table 2). It is observed that the origin of the researchers influences the selection of the country (Table 1).

Cross-cultural comparison studies often formulated considering the geographical location being Western and Eastern, especially considering majority of studies conducted in the USA (Park & Guerin, 2002; Kaya & Weber, 2003; Ham et al., 2004; Garip & Ünlü, 2012).

The Eastern part of the comparisons with Western countries, often made with Far East region such as China, South Korea and Japan (Richardson et al., 2023; Cho et al., 2018; Park & Farr, 2007; Park et al., 2010; Ham et al., 2004). The studies which are conducted on more than three continents focus on Europe, Asia and America (Park & Guerin, 2002; Devlin et al., 2014). Munoz et al. (2006) studied the sense of familiarity and originality of cultural spatial traits of Irish descendants in three countries form different continents as Australia, Ireland and United States of America. On the other hand, there are some studies that were conducted in one country but identifying perceptional varieties in multiple cultures such as United States of America and Australia (O'Rourke et al., 2022; Huber & Bailey, 2024). Izmir Tunahan et al. (2022), Abdelwahab et al. (2023) and Koseoglu et al. (2012) conducted their studies without a prominent country but determining ethnical / racial differences in demographics. According to the findings of this research, Africa continent was subjected only once in cross-cultural interior perception studies by Serra et al. (2021).

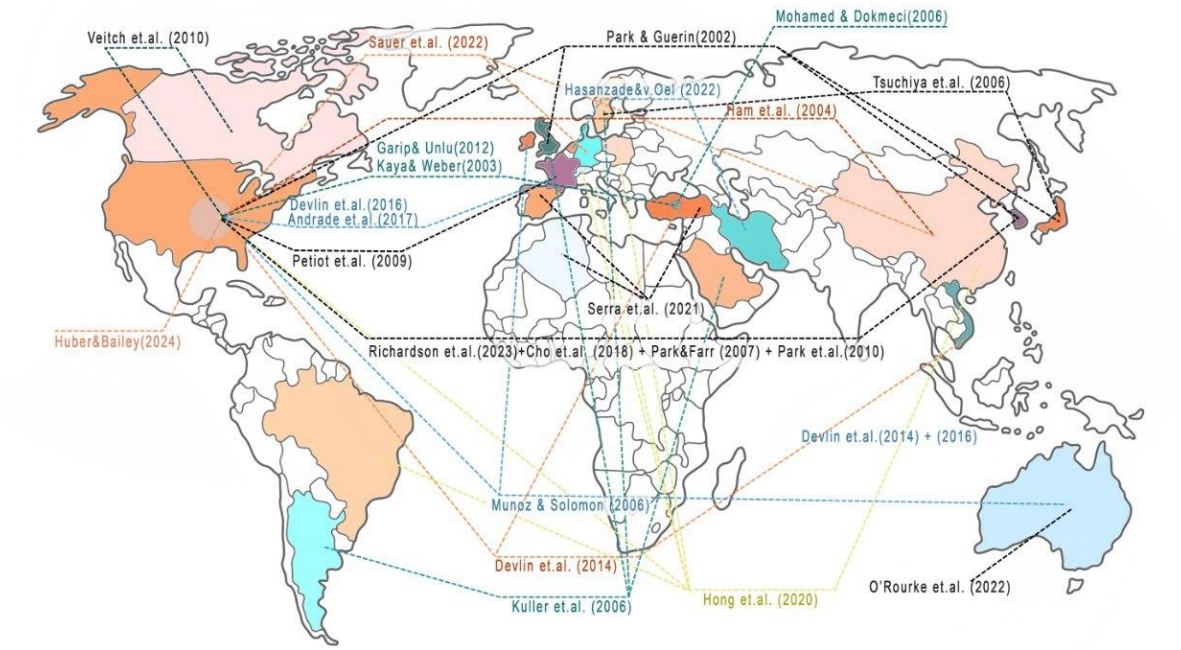
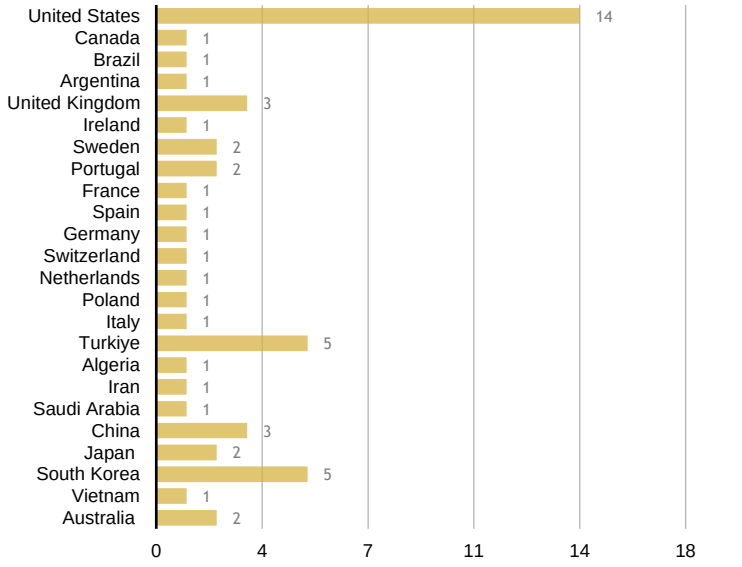


Figure 2. The Location of the Countries on the Map where Cross-Cultural Interior Perception Studies were Carried Out

Table 2. Cross-Cultural Interior Perception Studies Organized According to Scope and Countries Involved.



Although there are various cross-cultural studies from 1980 and upwards in environmental perception / preference, the particular ones which had interior spaces as study object were found to be started from year 2002 by Park and Guerin according to Scopus Database. This founding shows that interior space studies have been becoming a research focus on the last two decades.

Categorization of Interior Space Typologies

According to the systematic literature search conducted on the Scopus Database within the criteria mentioned above, the interior spaces examined in previous studies were found to be mainly from institutional, commercial, and residential (Figure 3). Among the three main building typologies, both private and public spaces were studied. The private spaces chosen are mainly bedrooms, hotel rooms, hospital rooms, and university dorms. Airport terminal interior (Hasanzade & van Oel, 2022), educational spaces like residence hall rooms (Kaya & Weber, 2003), libraries (Izmir Tunahan et al., 2022), spaces related to food and beverage such as restaurants (Cho et al., 2018) or pubs (Munoz et al., 2006), or buildings related to medical facilities like hospitals (O'Rourke et al., 2022; Andrade et al., 2017; Devlin et al., 2016) are the spaces that can be categorized under institutional buildings. On the commercial side, office interiors are often studied (Abdelwahab et al., 2023; Richardson et al., 2023; Veitch et al., 2007; Kuller et al., 2006). Hong et al. (2020) designed a cross-cultural perception study on university office buildings which measures the occupants 'reactions towards indoor temperature in six different countries. Private and public spaces of hotels, such as room and lobby design preferences, are chosen as mediums as well (Koseoglu et al., 2012; Park et al., 2010).

Residential spaces and buildings, including spatial organization, design preference, and outdoor noise effects are the focus points (Mohamed & Dokmeci Yorukoglu, 2020; Tsuchiya-Ito et al., 2019; Ham & Guerin, 2004; Park and Guerin, 2002). Moreover, cross-cultural studies related to vehicle interiors were also included in this review (Sauer et al., 2022; Petiot et al., 2009). The research by Sauer et al. (2022), which focusses on automated car interior design preference and functionality, is a notable study since car users are more passive in the driving role but more active in observing the interior atmosphere.

The spaces were presented to participants in different ways during the survey or interview stage. While some research was conducted in real life spaces with the actual occupants (Izmir Tunahan et al., 2022; Hong et al., 2020; Mohamed & Dokmeci Yorukoglu, 2020; Andrade et al., 2017; Vetch et al., 2007; Kuller et al., 2006; Tsuchiya-Ito et al., 2006), other studies use the photograph or 3d generated images of interior spaces (Hasanzade & van Oel, 2022; O'Rourke et al., 2022; Ham & Guerin, 2002). On the other hand, Park and Farr (2007) created a retail environment with different hues of lighting in a lab setting. The American and South Korean participants of this study visited this lab crated

environment.

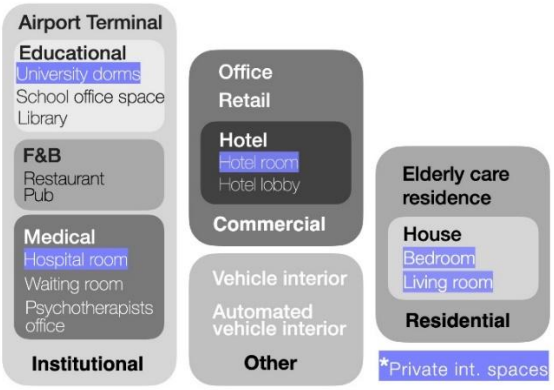


Figure 3. The Interior Space Typologies Used in Perception Cross-Cultural Studies in Literature.

Interior Space Research Focuses

Among the findings, it can be said that mostly studied spatial focus topics are related to design appraisal and human building interaction (Table 1). Main research emphasis can be categorized under Interior Space Finishing elements, daylight and artificial light impact, design appearance appraisal, building comfort, human building interaction and spatial planning (Figure 4). Design appraisals focus sonrxins design preference (Hasanzade & van Oel, 2022; O'Rourke et al., 2022; Cho et al., 2018 Petiot et al., 2009; Ham & Guerin, 2004; Munoz et al., 2006). For some studies, data collection processes last around a yearlong to see the effect of the light interiors throughout the different seasons (Abdelwahab et al., 2023; Kuller et al., 2006). Kuller et al. indicates that the participants from countries closer to the North had mood changes related to the amount of daylight present in the workspace unlike the countries nearer to the equator line.

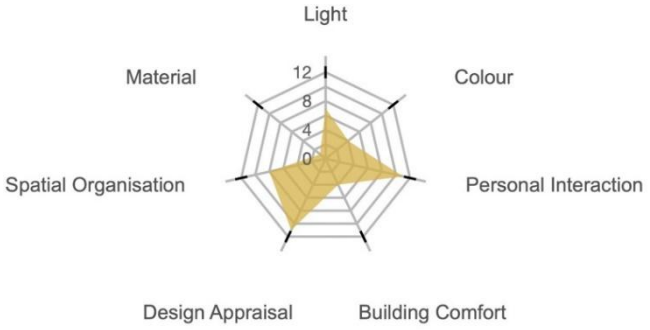


Figure 4. Main Research Focus for Interior Space Cross-Cultural Background Studies According to Literature Found in the Scopus Database.

The comparisons in space perception studies aiming to reveal the perspectives of Far East and Western cultures, were focused on determining the preferences of interior design, use of color, and lighting (Park & Guerin, 2002; Ham & Guerin, 2004; Park & Farr, 2007; Park et al., 2010). Asians choose high daytime illumination levels and are more at ease with high glare levels of brightness contrast to White participants (Izmir Tunahan et al., 2022). In their study, Ham and Guerin (2004) showed American and Chinese participants various interior visuals and represented that the Chinese preferred the spaces with more complexity than the Americans. The distinctions between Chinese and Americans also indicated that a design for Chinese populations should take cultural values and sensitivities into account. Comparatively to American inhabitants, Chinese populations preferred indoor settings that had a higher feeling of order and coherence. In another study, Park and Farr (2007) revealed that Americans generally showed a positive attitude towards all variables in store interior lighting, and this situation was different for South Koreans. In another study of the same author on hotel room lighting in 2010, it was observed that South Koreans preferred brighter setups compared to Americans. In addition to the perceptual differences identified in the studies, it has also been determined that in some cases, both cultures have common preferences. For restaurant and lobby design creativity preferences which was determined by an expert group, Americans rated interior spaces more creative than Koreans according to Cho's research (Cho et al., 2018).

There are various studies comparing more than two different cultures (Park & Guerin, 2002; Park et al., 2010; Lim et al., 2015; Hong et al., 2020). Park and Guerin's (2002) analyzed the preferences of interior color palettes in the cultures of America, England, Japan and South Korea, and it was found that the meaning and preference of interior color palettes vary according to culture. To illustrate, the color palette which has natural hues and light value was the most preferred option by Japanese while being the least preferred one English. On the other hand, the warm hues and low value contrast color pallet was preferred the most by Americans but least chosen by Koreans. On the other hand, while not being selected as one of the studies for the color focus in this study because of not directly linked with interior space, Jonauskaite et al. (2019) conducted a study about how yellow color was associated with feelings such as joy by asking 6625 participants from 55 countries. They analyzed the data according to variables geography, climatology and seasons. According to the findings, people who are living further away from the equator and in countries which have rainy seasons are associate yellow with joy in comparison to other locations. The detailed breakdown of the research focuses according to the clusters shown in Figure 5 below.

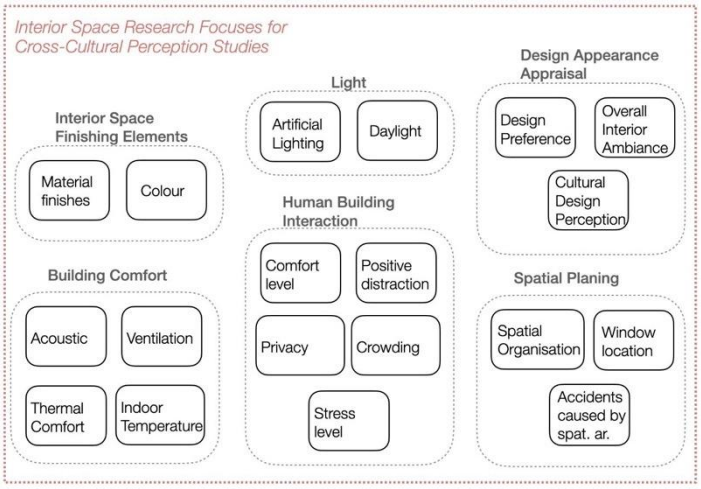


Figure 5. Research Clusters According to the Identified Literature

As an additional mention which was not included in the final selection due to published as thesis, Daher (2018) aimed to measure the privacy perception of the participants from Egypt, Türkiye, Germany and China with a 360-degree view of a cafe plan layout. Moreover, the studies in which two similar cultures in the same continent are compared, or the differences in the perception of space of different cultures in a single country are revealed (Kong Lee, 1991).

There are numerous studies on cross-cultural color perception that are not within interior scope. Two studies related to interior space scope were involved in final selection, while others were excluded for not having the relation within spatial boundaries. Two studies related to vehicle interiors were included in the final selection because of their content related to interior ergonomic comfort, ambiance, and spatial design preferences, which can be associated with the main objective of this review (Sauer et al., 2022; Petiot et al., 2009). Hasanzade and van'Oel (2022) conducted the cross-cultural study during different timelines regarding Persian and Dutch public. The study was conducted in an airport in Iran, but the findings were compared by a previous similar study conducted by the researchers to see the comparisons on material finishes and design preferences.

Hong et al. (2020) conducted a study related to shared office spaces and their relation regarding personality traits in the matter of indoor temperature preference. On the other hand, Abdelwahab et al. (2023) looked at the comparison of preferences on window location and shading design among Arabs and non-Arabs, where the findings linked privacy, amount of daylight preference indoors, and thermal comfort by taking the window element as the connection point with outdoor. The research showed evidence that thermal comfort and privacy factors were prioritized by the Arab participants.

Conclusion and Recommendations

Going through the notion of global culture in the 21st century, it can be seen that the advanced methods of communication via social media are making newer generations alike regardless of where they are from. Technological refinements are slowly dispatching unique ways of cultures, resulting in identical types of built environments all around the world. In order to deliver better habitats, the parties involved in decision-making for the built environment should consider cultural points of view. According to the research examined above, it is perceptible that people can have divergent feelings and perceptions towards the environments they observe.

This research aims to unravel the existing condition in cross-cultural perceptional studies related to interior spaces. With the systematic literature conducted, a general picture was drawn within the findings. From the literature review made within the scope of this study, it can be said that cross-cultural perceptional divergence can be caused by geographical location (Richardson et al., 2023; Kuller et al., 2006), climate factor (Hong et al., 2020; Mohamed & Dokmeci Yorukoglu, 2020), customs and values (O'Rourke et al., 2022; Devlin et al., 2014; Ham & Guerin, 2004). In some cases, the founding and research focus are the intersection of more than one perceptional difference reason (Abdelwahab et al., 2023; Veitch et al., 2007).

It can be seen that there is a research gap in terms of different building typologies and study focus to be studied in cross-cultural contexts such as government, religious, and historical. Moreover, while the previous studies included certain countries multiple times, some of the specific regions are not studied as the location of participants, such as North or Southeast Asia. The reason for certain countries being the main locations can be related to the origin of the research. It is hoped that more cross-cultural perceptional studies related to interior spaces will be conducted in academia.

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