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PSYCHOLOGICAL PERCEPTIONS OF ARCHITECTURAL SPACES IN TOURISM AND SERVICE INDUSTRIES

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Abstract

The architectural space within tourism and service industries is a dynamic space that influences the perception, feeling, movement, memory and assessment of place-based experiences. This review discusses the psychological perception of architectural spaces in terms of emotions, sensations, cognition, culture, social, and technology. It talks about the impact of the design element like lighting, colour, materiality, scale, layout, texture, sound, smell, openness, enclosure, ventilation, and the spatial rhythm on the comfort, stress, attention, perception of safety, privacy, attachment, satisfaction, and behavioural intention. The review takes into account tourism environments, such as hotels, resorts, museums, heritage buildings, religious sites, cultural districts, culinary spaces, historic streets, and urban landmark, service settings, such as restaurants, cafes, retail stores, wellness centres, transport terminals, libraries, universities, offices and institutional buildings. It underscores the applicability of the environmental psychology, servicescape theory, place attachment, biophilic design, heritage conservation, adaptive reuse, and human-centred design in defining the implications of the built environment on user experience. The review also discusses the increasing role of digital culture, artificial intelligence, virtual reality, augmented reality, immersive interface and smart system in changing the perception of architecture by being interactive in interpretation, personalised and delivering services by use of technology to support service delivery. Meanwhile, it focuses on the necessity of ethical and inclusive strategies that protect privacy, access, cultural integrity, sustainability and human dignity. The review concludes that architectural spaces are to be perceived and planned as purposeful human environments, that promote the wellbeing, cultural identity, emotional comfort, responsible innovation and inclusive participation.

Keywords: *Architectural perception; Tourism spaces; Service environments; Human-centred design; Digital culture.*

1. Introduction

Architectural spaces are not simply a physical location where people stay, move around or utilize; they are psychological, cultural, social and sensory spaces which shape the way people look, feel, recollect, act, and relate. This role is important in the tourism and service sectors since the built environment is the initial interaction of users and place. Atmosphere, character, sensory features, symbolic meanings and functions are experienced in hotels, resorts, restaurants, museums, centres, heritage structures, terminals, retail spaces and in urban open spaces. Therefore, the satisfaction of the visitors, assessment, cultural involvement, comfort, memory creation, and wellbeing are conditioned by the architectural spaces. An interdisciplinary background in architecture, psychology, neuroscience, tourism studies, design, cultural studies and human-centred values is needed in the study of psychological perceptions of architectural spaces.

The connection between architecture and perception of man has been addressed. Environmental built structures are dynamic and change the way people affect emotional and behavioural reactions and not passive settings. Vartanian et al. (2015) also proved that ceiling height and perceived enclosure influence the perception of beauty and approach-avoidance. This observation demonstrates that individuals judge spaces psychologically as they determine whether they like it, are comfortable in it, restricted in it, engaged in it, or experienced alienation. Tourism and service environments have made such reactions the core as visitors and customers base their judgments of a destination, hotel, restaurant, museum or facility based on first impressions.

The Psychological power of architecture form is justified by Shemesh et al. (2017), who tested the affective reactions to the spaces that have various geometrical constructions. According to their work, emotional responses can be triggered by the work of spatial geometry, which proves that the design of architecture does have psychological implications. Geometry, proportion, openness, enclosure, and rhythm may contribute to the difference between a space that feels friendly, serene, lavish, sanctuary, intimate, stressful or chaotic, in tourism and service industries. These responses can influence motion, permanence, contentment and intention to come back. Therefore, psychological perception of architecture does not only apply to aesthetic

perception; but also to behavioural orientation and service experience.

Neuroarchitecture has enhanced the knowledge of architectural experience. Coburn et al. (2017) claimed that one could study buildings, beauty, and the brain in terms of a neuroscience-based approach, with the linkage of architectural form and cognitive-emotional processing. The review of neuroarchitecture also highlighted the importance of cognitive-emotional design of architectural space, as pointed out by Higuera-Trujillo et al. (2021). These works demonstrate that the perception of architecture can be studied on the basis of psychological, neurological and design models. This applies since tourism and service setting is structured to create memorable, comfortable and positive experiences.

Architecture embodies human experience that is dynamic. Individuals not only see spaces, they move in them, react to the shapes, and create impressions in sensory and mental activity. The study of Banaei et al. (2017) focused on the effect of interior forms on the dynamics of the brain when walking in architectural spaces where it was found out that the spatial experience is connected with the movement and perception. This is major in the tourism and service settings where the users are transported in lobbies, corridors, galleries, restaurants, streets, terminals and in the open spaces. These spaces may be organised in a way that impacts orientation, comfort, curiosity, stress, exploration, waiting and interaction.

A major role of psychological and cultural perception is an architectural fashion. Choo et al. (2017) demonstrated that the brain reaction to architectural styles includes other cognitive processes other than visual recognition. In tourism and service, the architectural style can convey the sense of identity, continuity, authenticity, luxury, modernity, spirituality or institutional value. As well, Coburn et al. (2019) have discovered that natural trends in architecture can generate psychological responses, which can be used to advocate biophilic and nature-based design. These results apply to the resorts, wellness centres, hotels, cafes and leisure settings, where comfort, relaxation, restoring and wellbeing are important. Environmental psychology forms a basis to study the relationship between individuals and the physical environments. McCunn and Kim (2020) emphasized its applicability related to perception, behaviour, and wellbeing. This is the point of view that explains how layout, privacy, lighting, atmosphere, crowding, visibility, accessibility and

materiality impact human responses. Alitajer and Nojoumi (2016) demonstrated the effect of spatial configuration on privacy and behaviour patterns, and their implication to the hotel, restaurant, lounge, wellness centre and service based environments. Piga and Morello (2015) highlighted perception and simulation of the urban design and demonstrated how streets, plazas, waterfronts, zones and landmarks influence movement, memory, belonging, and identity.

This review seeks to review the psychological perceptions of the architectural space in tourism and service industries by evaluating the role played by the built environments in emotion, cognitive, sensory experience, behaviour, comfort, privacy, memory, cultural identity, service satisfaction, and wellbeing. It emphasizes the need to create functional, meaningful, supportive, inclusive and human-centred tourism and service environments.

2. Conceptual Foundations of Architectural Perception

The term, architectural perception is defined as how people perceive, interpret, judge and react emotionally to constructed environments. It does not presuppose the visual appreciation of the buildings, but it is the emotional, sensual, cognitive, social, cultural and environmental processes. This notion is of great importance in the tourism and service sectors since users do not just experience hotels, resorts, restaurants, museums, wellness centres, retail space, airports and cultural locations as functional spaces, but they are also offered significant meanings. These spaces have an impact on comfort, satisfaction, behaviour, engagement, memory and emotional connection.

A large theoretical basis on the perception of architecture is based on environmental psychology. It details the impact of spatial conditions of temperature, lighting, greenery, ventilation, layout, sound, materials and openness on human feelings and behaviour. Hami et al. (2019) indicated that green spaces are beneficial in enhancing thermal comfort and quality of the environment. This is significant in the tourism and service contexts since comfort is a key determinant of the overall experience of the user. Positive psychological response can be achieved by designing a resort garden, hotel courtyard, restaurant terrace, museum landscape or spa space by ensuring that the elements of nature and climatic comfort are carefully woven into the design.

Another aspect of biophilic design is in the perception of architecture. It is grounded on the premise that, human beings are naturally related to nature, and the built environments can enhance wellbeing in case they contain natural elements. Yin et al. (2018) revealed that biophilic indoor environment may have a beneficial effect on physiological and cognitive functioning. On the same note, Zhong et al. (2022) believed that biophilic design achieves health and wellbeing as well as sustainability in buildings. These studies indicate that natural lighting, plants, organic shapes, water, natural materials, and nature views have the potential to enhance attention, relaxation, comfort, and restoring emotions. Such design characteristics are particularly useful in tourism and service sectors as visitors usually want to find areas that will allow them to relax, enjoy, and get a psychological refresh.

Another indispensable concept on the architectural perception is the human-space interaction. The spaces are not just occupied by people but they are engaged as they move, touch, see, hear, smell, socialize and interpret emotions. Entrance, corridor, seating, waiting, pathways, service counters, and gathering space designs affect the user movement, behavior and even emotions. These spatial interactions influence the wayfinding, waiting behaviour, privacy, exploration, social engagement, and return intention in tourism and service environments. A clean and tidy environment can create a comfortable and confident mood and a disorganised or cluttered environment can create stress and discontent.

The servicescape theory also blames the physical environment to determine how customer behaviour can be affected by the physical environment in service settings. Mari and Poggesi (2013) found out that servicescape cues which include layout, design, colour, music, scent, lighting, temperature, furnitures, cleanliness and signs were important in customer responses. These elements are incorporated in the service experience in a hotel, restaurant, airport, museum or retail space. The quality, trust, professionalism and satisfaction is often evaluated by customers using the surrounding environment before they actually evaluate the service.

The social servicescape is as well significant. Line and Hanks (2019) reported that full-service hotel social factors have an impact on customer experience. This implies that the perception of architecture is influenced by the physical construction besides the presence, behaviour and interaction of other individuals. The perceived

space is influenced by the behaviour of the staff, whether they are crowding or not, how they interact with the guests, the seating arrangement and the privacy. Even the visually appealing space can give a poor impression in case it is socially awkward and not well-organized.

Place is also imbued with emotional and symbolic meaning. Rosenbaum et al. (2017) considered place as a dynamic resource in value generation as opposed to a passive environment. Architectural spaces are able to convey authenticity, identity, prestige, relaxation, belonging, and cultural meaning in the tourism and service industries. Another study conducted by Amer and Rakha (2022) demonstrated that servicescape might promote the customer engagement by creating place attachment and it may be more relevant in non-Western environments. This implies that individuals get closer to spaces that bear cultural identity, locality, and familiarity to emotions.

3. Psychological Dimensions of Architectural Spaces

The psychological experiences of users in the spaces of architecture are influenced by the use of emotion, perception, memory, comfort, attachment, and behaviour. In tourism and service sectors, spaces are not passive backgrounds, but rather active experiential environments where visitors and customers have a sense of quality, identity, safety, satisfaction and value. The lighting, colour, material, size, texture, sound, smell, layout, openness, enclosure, ventilation and spatial rhythm are some of the elements that form sensory and emotional impressions that make people feel, move, interact, remember and react in a location.

The architectural design, in terms of how it affects psychology relates closely to the identity formation and visual communication. According

to Foroudi and Foroudi (2021), design helps in the corporate brand identity by carving out the recognition, perception, and emotional association. This implies that in tourism and service settings the hotels, restaurants and resorts, banks, wellness centres and cultural spaces are able to convey their personalities not just by naming or logos but through spatial organization, interiors, materials, colour, light, furniture and ambience. A well thought out space can result in a sense of trust, comfort, elegance, cultural richness, professionalism, exclusiveness or relaxation. On the other hand, environments that are ill-arranged or have weak aesthetic or visual consistency can cause confusion, uneasiness, poor sense of identity or bad emotional reaction.

Servicescape researches also reveal the impacts of physical environments on customer psychology and behaviour. Wakefield and Blodgett (2016) emphasise the role of servicescapes in the leisure service environment where the surrounding influences the satisfaction, emotional response, and behavioural intention. This is particularly true in the context of tourism and hospitality since when users come to these areas they do so with the intent to enjoy, escape, relax and have a memorable experience. The layout, flow, neatness, visibility, light, music, perfume, decorative nature and comfort of the place can determine the length of stay, extent of interaction and recommendation or re-visitation of a place. In this way, architectural design is a psychological provocation which affects the present experience and future behavioural decisions. Table 1 reveals that psychological aspects of architectural space perception during tourism and service sectors are determined by sensory-emotional stimulation, design identity, servicescape behaviour, digital service-scapes, healthscape wellbeing, cultural attachment and destination loyalty impacts.

Table 1. Psychological Dimensions of Architectural Space Perception in Tourism and Service Industries

| Component | Key Focus | User Experience Role | References |
|--------------------------|-------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------|
| Architectural stimuli | Lighting, colour, materiality, layout, sound, smell, ventilation, scale | Creates sensory and spatial impressions | Foroudi & Foroudi (2021); Wakefield & Blodgett (2016) |
| Psychological processing | Emotion, cognition, memory, attention, comfort, safety | Explains how users interpret and respond to space | Wakefield & Blodgett (2016); Suess & Mody (2017) |
| Design identity | Interiors, furniture, materials, brand cues | Builds trust, recognition, professionalism, and meaning | Foroudi & Foroudi (2021) |
| Servicescape behaviour | Seating, circulation, cleanliness, visibility, music, scent | Shapes satisfaction, engagement, and revisit intention | Wakefield & Blodgett (2016) |

| | | | |
|-----------------------|----------------------------------------------------------------|--------------------------------------------------------|------------------------|
| Digital servicescape | Websites, apps, virtual tours, smart systems | Influences expectations, trust, and service continuity | Andriani et al. (2021) |
| Healthscape wellbeing | Natural light, privacy, ventilation, acoustic comfort | Supports relaxation, safety, and wellbeing | Suess & Mody (2017) |
| Cultural attachment | Museums, heritage sites, religious spaces, traditional streets | Enhances cultural engagement and emotional connection | Chen & Rahman (2018) |
| Behavioural outcomes | Recommendation, destination image, revisit intention, loyalty | Reflects long-term response to spatial experience | Kim (2018) |

Psychological aspect of space can be observed in digital service environment as well. Andriani et al. (2021) investigated e-servicescape in digital Islamic banking and demonstrated that digital environmental cues can affect customer reactions. Though this study is about online banking, it aids the generic concept that users psychologically react to designed spaces be it physical or cyber space. Spatial perception that is pre-physical, initiated by websites, booking platforms, mobile applications, virtual tours, and smart service systems, is starting to play a growing role in modern tourism and service industries. The connection between digital atmosphere and physical architecture should be coherent to enhance trust, expectation, satisfaction, and continuity of experience.

Another valuable angle to architectural psychology is health related hospitality spaces. Suess and Mody (2017) examined healthscapes in hospitals and demonstrated that hospital rooms simulating a hotel influence patient reactions. Their results indicate that the design elements related to comfort, privacy, hospitality, and relaxation may enhance psychological wellbeing even in stressful medical situations. This observation can be applied greatly in the wellness centres, spas, hotels, rehabilitation centres and the spaces related to healthcare services. Stress can be minimized using natural light, gentle materials, relaxing colours, ventilation, privacy, acoustic comfort and clear layouts which can help to feel safe and provide a more restful experience.

Memory, cultural involvement, and emotional attachment in tourism are also determined by the architectural spaces. Chen and Rahman (2018) discovered that engagement, cultural contact, memorable experience, and destination loyalty influence cultural tourism experiences. This shows that tourists do not just remember the destinations based on the activities but also the space and the cultural setting where such activities take place. Psychological impressions generated by museums, heritage buildings, religious sites, cultural centres,

traditional streets and public spaces include atmosphere, symbolism, spatial sequence, and cultural meaning. These impressions have the capability of enhancing visitor interaction and emotional attachment to place.

On the same note, Kim (2018) established that the tourism experiences that are memorable affect loyalty behaviour by destination image and satisfaction. Architectural spaces are directly involved in this process since they assist in the formation of destination image and the emotional memory about visit. A unique hotel reception, museum that is culturally expressive, scenic resort, traditional restaurant, or an elegant public square can be made a lasting experience during the tourism experience. Thus, the architectural perception also influences not only the short-term comfort and satisfaction, but also the long-term memory, attachment, recommendation, and the intention of returning.

4. Architectural Spaces in Tourism Industries

Architectural spaces are key to tourism since they define the perceptions, meanings, recollections and emotional responses to a destination. Tourism is a traveling experience; it is an experience that involves visiting sites which convey culture, history, identity, hospitality and social meaning. Hotels, resorts, museums, heritage buildings, archaeological sites, religious spaces, cultural centres, historic streets, and public plazas, as well as culinary spaces, urban landmarks and cultural landscapes all play a role in shaping perceptions of a destination by tourists. Architecture provides contribution to destination image, cultural interpretation, emotional engagement, visitor learning, authenticity, satisfaction and post visit behavioural intentions through design, atmosphere, materiality, scale, spatial sequence, and symbolic value.

Architecture can serve especially in the development of memorable tourism experiences as most tourism memories are related to the physical and sensory attributes of place. In their study on

food, drink, and culinary tourism experiences, Stone et al. (2018) demonstrated that place, atmosphere, cultural meaning, social interaction, and sensory engagement are some of the elements that form memorable experiences. The discovery applies very well to the architectural spaces though their target is culinary tourism since restaurants, cafes, food streets, markets, wineries and food heritage sites heavily rely on spatial setting. The atmosphere in which tourists experience the food culture is created by lighting,

layout, seating, texture, sound, smell, local design and visual identity. In this way architecture is incorporated in the emotional and cultural memory of tourism. As revealed in Figure 1, the architectural tourism spaces affect visitor perception and psychological experience, which is based on spatial-cultural qualities and experience drivers (design, atmosphere, materiality, spatial sequence, and symbolic meaning).

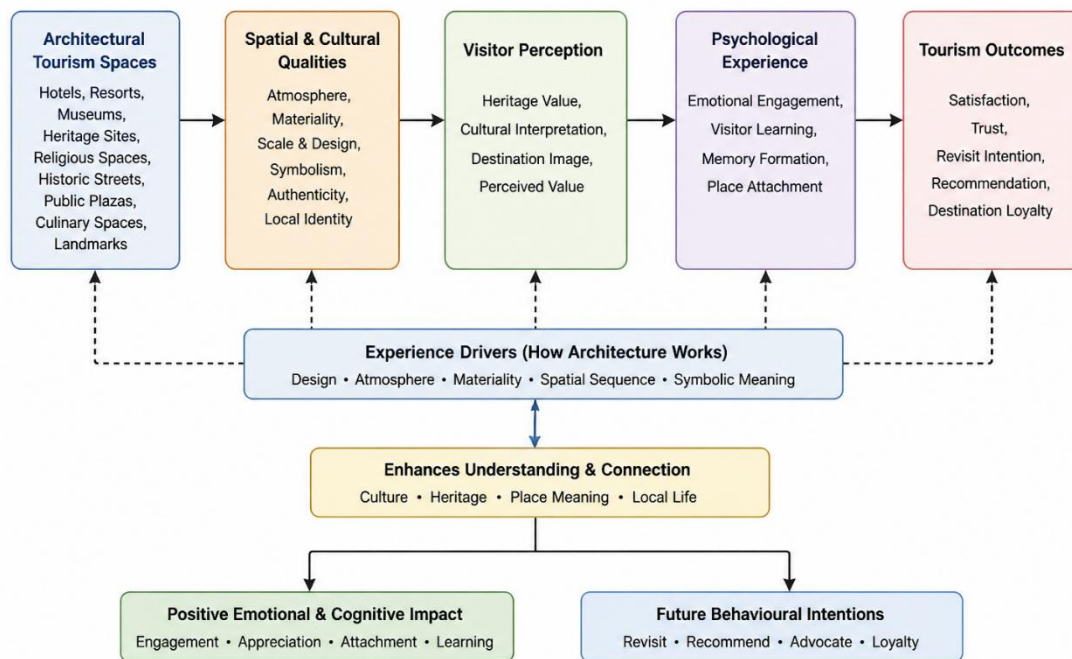


Figure 1. Architectural Tourism Spaces and Visitor Experience

The satisfaction of tourists, trust, and loyalty towards the destination is also heavily affected by heritage architecture. In their research of a world heritage site in China, Su et al. (2017) discovered that the relationship perception of the tourists influences destination loyalty via general destination satisfaction and trust. This implies that visitors are more likely to have better relationships with the heritage destinations when they feel that the destination is significant, trustworthy and emotionally fulfilling. The heritage buildings, monuments, temples, museums, archaeological remains and historic landscapes thus serve not only as an attractionist but also serve as a supportive environment to facilitate cultural attachment and destination identification. When these spaces are taken care of, interpreted and managed in a good manner, these spaces may enhance the emotional attachment of the tourists to a place.

Another critical aspect of tourism experience is the perceived value of architectural heritage. Chen (2023) demonstrated that the perceived value of architectural heritage by the visitors is related closely to the satisfaction. This indicates that heritage spaces are considered by the tourists in various dimensions such as aesthetic value, historical value, educational value, cultural identity, and emotional experience. A heritage building is thus not appreciated based on the age or physical construction but also in the messages that it conveys. Heritage sites can enable tourists to experience the collective memory, craftsmanship, tradition and cultural continuity through architectural form, ornamentation, spatial organisation, materials and historical context. Recent findings also indicate that architectural heritage also affects the feelings and intentions of behaviour among tourists. Through an eye-tracking method, Li et al. (2025) established that

there is an influence of architectural heritage and positive emotions of the tourists on behavioural intentions. This result is significant as it demonstrates that tourism architecture is directly related to visual attention and emotional response. Details of a facade, space ratios, decorations, materials, colours, or symbolism can draw tourists and these visual impressions can create a sense of curiosity, pleasure, admiration, attachment, and a desire to visit again or refer their friends. Architecture thus not only influences what the tourist sees but also the way the tourist feels as well as what he/she decides to do upon visiting the place.

The social and cultural context of architecture in tourism is also reflected in historic districts and cultural landscapes. Jiang and Liu (2024) contrasted the perception of cultural landscape in historic districts by tourists and residents and found that these spaces are perceived in terms of cultural, spatial and emotional significance. To tourists, the historic streets, traditional buildings, markets, and public squares, and cultural sites can provide a rich experience of local identity and day-to-day heritage. The same spaces can be their belonging, their memory, continuity, and life in the community to residents. This disparity underscores the importance of tourism architecture to reconcile the expectations of the visitors to the local cultural meanings in order to ensure the heritage spaces do not turn into mere commercialised sites.

The other impact of urban landmark landscapes is on identity formation and destination image. The team of Zhang et al. (2024) discovered that urban landmark landscapes have an impact on the place identity of the residents and the length of residence in urban areas affects this relationship. Despite conducting a study on the residents, their finding applies to tourism since landmarks tend to assume a symbolic status whereby tourists identify and remember cities. The visual identity is created by towers, bridges, museums, monuments, religious buildings, public plazas, waterfronts, and cultural centres which contribute to communicating civic pride, historical continuity, modern aspirations and cultural differentiation. These landmarks can

be a major focus in destination branding and tourist recollection.

5. Architectural Spaces in Service Industries

Service industries have a strong influence of customer perception, behaviour, satisfaction, and loyalty which are all influenced by architectural space. Service based settings like restaurants, cafes, retail outlets, wellness centres, museums, cultural markets, transport stations, libraries, university, offices and institutional buildings are not inert settings in which service happens. They also act as experiential environments that drive user perceptions of the quality of service, trust, comfort, professionalism, accessibility, emotional value and overall satisfaction. The user movement, waiting, interaction, consumption, recalling, and evaluation of a service environment are determined by spatial design, circulation, visibility, atmosphere, digital interaction and cultural meaning.

Service space configuration is the main focus of the user perception as it is the way the population accesses, navigates and emotionally perceives a place. Bazazzadeh et al. (2020) demonstrated that to enhance sustainable development of cultural assets, especially in industrial heritage setting, the configuration of spaces can help in enhancing the perception of users. Even though their research is about heritage sites, the implications can be applied to the broader service spaces. Clarity of paths, visual connectivity, choreographed circulation, accessibility of areas and significant spatial sequences can enhance comfort, orientation, and participation. Poor spatial configuration in restaurants, museums, markets, and at airports, in healthcare facilities and within institutional buildings can lead to confusion, congestion, stress, or discontent, whereas carefully designed layouts can facilitate confidence, trust, and positive service appraisals. Table 2 displays the impacts of service spaces on user experience as spatial configuration, place image, servicescape needs, digital service interaction, and virtual presence, which determine trust, comfort, satisfaction, engagement, behavioural intention and loyalty.

Table 2. Service Space Design and User Experience Outcomes

| Theme | Key Focus | User Experience Outcome | References |
|---------------------|----------------------------------------------------------------------------|---------------------------------------|---------------------------------------------|
| Service environment | Restaurants, cafés, retail, wellness centres, museums, transport terminals | Trust, comfort, satisfaction, loyalty | Bazazzadeh et al. (2020); Liu et al. (2025) |

| | | | |
|----------------------------|--------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------|
| Space configuration | Pathways, circulation, visibility, accessibility | Orientation, comfort, engagement, positive evaluation | Bazazzadeh et al. (2020) |
| Place image | Atmosphere, visual identity, social media visibility | Memorable impressions and perceived quality | Jia et al. (2025) |
| Servicescape needs | Comfort, accessibility, interaction, cultural learning | Emotional comfort, belonging, meaningful experience | Liu et al. (2025) |
| Digital service experience | VR, AR, storytelling, wayfinding, virtual previews | Engagement, interpretation, satisfaction | Trunfio et al. (2022); Yung & Khoo-Lattimore (2019) |
| Virtual presence | Virtual tours and immersive simulations | Trust, expectations, behavioural intention | Tussyadiah et al. (2018) |

The image and identity of a place is also based on the service environments. In their research on Nanxun Ancient Town, Jia et al. (2025) proved a strong connection between the space perception of tourists, and the tourism image through social media data visualisation. This is applicable to service industries since customers tend to create perceptions of quality of the services based on spatial impressions. The cafe, market, hotel lobby, cultural centre, museum or retail space can become memorable due to its ambience, design identity, visual character and sentimentality. These impressions are frequently shared in the digital age in the form of photographs, reviews and posts on social media and can continue to influence architecture even after the visit.

Servicescape is one such concept that can be applied to service industries when it comes to the architectural spaces. In a Suzhou Shuangta Market, Liu et al. (2025) applied a ServicescapeERGRIPA model to determine user experience, taking into consideration each resident and tourist perspective. Their research demonstrates that the service spaces need to address various requirements such as comfort and accessibility, social interaction and sense of belonging, cultural learning and meaningful experience. It applies to restaurants, markets, museums, wellness centres, libraries, and education facilities, in which users desire both practical service and emotional comfort and social interaction.

The digital and immersive technologies are becoming more and more influential in architectural spaces of service industries. Trunfio et al. (2022) demonstrated that the cultural heritage museum service model could be innovated with the help of virtual reality and augmented reality and enhance visitor experience and satisfaction. Likewise, Yung, and Khoo-Lattimore (2019) demonstrated that VR/AR are transforming the way users interact with destinations and service experiences. The technologies have the potential to

serve virtual previews, digital storytelling, direction, interactive interpretation, and personalised interaction.

Tussyadiah et al. (2018) also showed that a feeling of presence can be achieved by means of virtual reality and can affect tourist attitudes. This sense of presence can be effective in service industries in increasing emotional engagement, trust, expectation and behavioural intention. Altogether, service industry architectural spaces can be viewed as physical, social, emotional and digital space. Their design influences the flow of movement, waiting experience, comfort, interaction, cultural experience, perceived quality and satisfaction. Good service spaces thus need to be considered in terms of access, ambience, circulation, cultural meaning, technological innovation, emotional comfort and human experience.

6. Cultural, Ethical, and Human-Centred Perspectives

The architectural perception in tourism and service sectors should be perceived within the context of cultural, ethics and human orientation. Not only are architectural spaces created with the purpose of use, movement or aesthetics, they also convey identity, tradition, memory, spirituality, modernity, social belonging, and cultural value. Architecture is used in museums, heritage sites, religious spaces, hotels, cultural centres, public plazas and smart tourism spaces as a way of people to interpret culture and create emotional ties to place. As such, culturally responsible architecture can and must safeguard authenticity, facilitate inclusive access, address local identity, and promote the human wellbeing.

The cultural role of the architectural spaces has been extended by the digital and immersive technologies. Bec et al. (2021) talked about virtual reality and mixed reality as means of second chance tourism and demonstrated that online

space could open up access to places that could be fragile, distant, damaged, or restricted, among other factors that could make it difficult to see. This is very ethically relevant to heritage conservation since virtual experiences do not need to exert pressure on the fragile cultural sites and can still enable users to experience the historical and architectural value of a site. Technology in this respect can be facilitative in maintaining accessibility as well as preservation when wielded in a responsible way.

Another use of augmented reality in cultural interpretation in heritage sites is that of cultural interpretation. The research performed by Jung (2017) discussed the worth of augmented reality through the lens of stakeholders and demonstrated how AR can be used to complement the experience

of a cultural site with additional interpretive, educational, and interactive features. This is significant since most architecture and archaeology sites have meanings that are not evident to the visitors. AR has the potential to uncover historical accounts, ruined buildings, cultural symbolism, and cultural practices to enable tourists to see architecture as the living memory and identity of a place and not an artifact. The meaning of culture, access to digital heritage, experience in museums, human-centred interaction, ethical responsibility, and smart resilient spaces influence architectural perception in tourism and service industries as indicated in Table 3, and contribute to inclusive, accessible, sustainable, and culturally responsible design.

Table 3. Cultural and Human-Centred Dimensions of Architectural Perception

| Theme | Key Focus | Design Implication | References |
|----------------------------|-------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------|
| Cultural meaning | Identity, tradition, memory, spirituality, belonging | Design should communicate local identity and cultural value | Bec et al. (2021); Jung (2017) |
| Digital heritage access | VR, MR, AR, second-chance tourism | Supports access to fragile, distant, or restricted heritage places | Bec et al. (2021); Jung (2017) |
| Museum experience | Immersive learning, interpretation, engagement | Enhances visitor learning, emotional connection, and accessibility | Jung et al. (2016); Wei (2019) |
| Human-centred interaction | Real-time service, personalisation, responsive environments | Improves comfort, navigation, participation, and satisfaction | Buhalis & Sinarta (2019); Buhalis (2020) |
| Ethical responsibility | Privacy, surveillance, data use, unequal access | Requires responsible innovation, dignity, and inclusive access | Buhalis & Sinarta (2019); Gretzel et al. (2020) |
| Smart and resilient spaces | Safety, adaptability, sustainability, ambient intelligence | Supports resilient, inclusive, and future-ready tourism environments | Gretzel et al. (2020); Buhalis (2020) |

The human-centred architectural experience is of great significance in museums. Jung et al. (2016) demonstrated that virtual reality and augmented reality would be able to affect visitor experience in a museum. These technologies have the potential to aid learning, interaction, emotional involvement, and accessibility, particularly in the case of a visitor that might require different methods to access cultural content. Ready to be used in combination with considerate spatial design, VR and AR can transform museums into more inclusive, interactive, and educational. Nevertheless, these technologies cannot substitute the authenticity of the cultural space, on the contrary, it ought to enhance the process of interpretation and enable meaningful interaction.

The increasing research in the field of tourism and hospitality also proves the significance of VR and AR in reinventing the cultural and service experiences. Reviewing the literature on virtual and augmented reality in tourism and hospitality, Wei (2019) emphasized their growing functions in designing experiences, engaging in destinations, and innovating services. Such technologies can assist visitors to preview destinations, navigate complicated spaces, comprehend cultural meanings, and be engaged in immersive storytelling. Human-centred viewpoint, their worth is that they enhance access, interpretation, comfort and participation and make sure that technology is supportive and not domineering. Real-time interaction and co-created experience is also connected with human-centred architectural

perception. A concept of real-time co-creation and the so-called *nowness* service in tourism and hospitality, presented by Buhalis and Sinarta (2019), demonstrated that the users are more and more demanding immediate, personalised and context-related experiences. This translates to design in architecture and service spaces to support responsive environments, interactive information, easy navigation and customised visitor support. These emerging technologies have the potential to enhance comfort and satisfaction, yet they bring ethical issues of privacy, surveillance, usage of data, and unequal access to technology.

The COVID-19 era also emphasized the importance of thinking radically in digital tourism. Gretzel *et al.* (2020) urged e-tourism studies outside of COVID-19 that reimagines technology, sustainability, and resilience. This view can be applied to the architectural space since tourism and service space needs to react to safety, health, crowd control, digital connectivity, and emotional reassurance. Human centred design must thus incorporate beauty and functionality as well as dignity, safety, flexibility and nurture.

According to Buhalis (2020), the trend is to shift information communication technologies and eTourism towards smart tourism and ambient intelligence tourism. This trend is an indication that the future spaces of architectural buildings will become more and more integrated between physical architecture and intelligent design, real-time information and personalised services. Such development should be ethical and guard human values, cultural authenticity, accessibility and social inclusion.

7. Digital Culture, AI, and Technological Innovation in Architectural Perception

Architectural space is changing in terms of perception, access, interpretation and recollection in tourism and service sectors due to digital culture and technological advancement. The physical movement has ceased being direct to the architectural perception of the environment of hotels, museums, heritage buildings, cultural centres, resorts, public spaces or service environments. It is getting influenced by virtual

reality, artificial intelligence, immersive human-computer interaction, digital storytelling, smart tourism systems, adaptive reuse and responsive environmental technologies. The tools enable users to preview destinations, recreate heritage, experience cultural stories, get personalised interpretation and experience spaces before, during and after actual visitation.

As a marketing tool and experience in tourism and architecture, virtual reality has gained significance. The framework suggested by Huang *et al.* (2016) as a tool to comprehend the implications of VR technology in tourism marketing revealed that it could affect the destination imagination, emotional involvement, and travel decision-making. Architectural perception enables a potential visitor to visit hotels, museums, resorts, heritage buildings, urban spaces and cultural landscapes through VR, before visiting them in person. These online previews have the potential to build expectations, alleviate uncertainty, generate familiarity through emotion and build destination desire.

Museums and space of cultural heritage are also increasing their functions due to the artificial intelligence. Suiçmez *et al.* (2025) presented the AI applications to make museums more like cultural heritage and learning experiences. The AI will be able to facilitate customised interpretation, adaptive learning experiences, visitor guidance, behavioural analytics, multilingual support, and storytelling. Artificial intelligence (AI) can be used in museums, galleries, cultural centres and heritage sites to assist visitors to perceive spatial stories, artefact connections, historicities, and symbolism. Instead of architectural architecture portraying a fixed backdrop, AI-assisted systems have the potential to transform built environments into of architecture as illustrated in the Figure 2, by using immersive technologies, interpreting architecture using AI, and creating smart sustainable places, bringing about improved architectural experience, cultural knowledge, access, interaction, and responsible innovation. responsive, pedagogical, and participatory ones. Digital transformation changes the perception

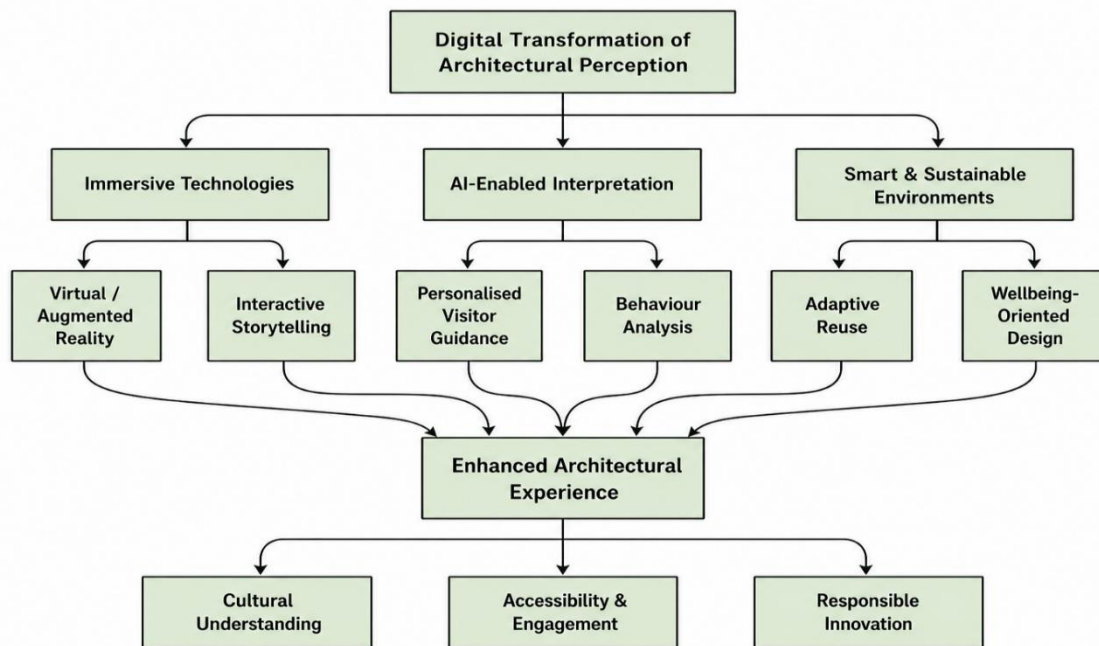


Figure 2. Digital Transformation in Architectural Perception

The importance of immersive technologies is particularly relevant in the case of intangible cultural heritage where the cultural value is not necessarily a part of a physical building. Xu et al. (2025) emphasized the significance of immersive human-computer interaction in designing and testing the experience of intangible cultural heritage in the tourism setting. Visitors can participate in rituals, crafts, performances, oral traditions, festivals, music, and cultural practices in architectural, or tourism, environments through immersive interfaces. But these technologies should not spectacle culture. Design Conscientious immersive design must observe respect to authenticity, ownership by the community, cultural sensitivity and education.

Sustainability and heritage conservation is also associated with technological innovation. Foster (2020) underlined the idea of using the cultural heritage buildings as adaptive reuse to diminish the environmental impact through the use of circular economy. Equally, Bullen and Love (2011) pointed out adaptive reuse as one of the approaches of prolonging the life of heritage buildings. Adaptive reuse is more economical by saving on demolition wastes, embodied energy, and promotes cultural continuity, and maintains architectural identity. Historically reused buildings can be used in tourism and service industries as a hotel, museum, restaurant, cultural centre, library or community space and still have historical significance.

Another facet that is significant is the connection between architecture, technology, and wellbeing. Angelucci and Radogna (2024) defined psycho-physical wellbeing as a technological-environmental designing issue, meaning that the architectural practice should address both, environmental quality and human experience. When informed by human-centred principles, smart buildings, manipulative lighting, ventilation, acoustic, thermal, and responsive interior can enhance comfort. Chan et al. (2025) also demonstrated that neuro-informed practices and immersive technologies have the potential to enhance the comprehension of attention, emotion, stress, comfort, preference, and behavioural response in the built environments.

Simultaneously, digital architectural perception brings up the ethical consideration. The use of AI systems, VR systems, spatial tracking, emotion recognition, smart sensors, and the use of personalised technologies can be associated with privacy, surveillance, misuse of data, algorithmic bias, cultural distortion, and unequal access. Responsible innovation involves openness, consent, access and inclusion, cultural sensitivity and human dignity.

8. Conclusion

The architectural space in tourism and service sector forms dynamic spaces, which influence the perceptions, emotions, behaviour, memories and satisfaction. This review indicates that built environments are not necessarily physical

structures but psychological, cultural, social, sensory and technological environments. Lighting, colour, material, layout, scale, openness, enclosure, ventilation, spatial rhythm and interaction on the computer, are elements that affect the comfort, stress, attention, movement, privacy, safety perception, attachment and overall experience. Architectural spaces used in tourism like hotels, resorts, museums, heritage sites, religious spaces, cultural districts, culinary environments, historic streets and urban landmarks are added to destination image, cultural interpretation, authenticity, emotional involvement, visitor learning, and experience. In the service sector, restaurants, retail stores, wellness centres, transport terminal, libraries, universities, offices, and institutional buildings affect the quality of service, customer confidence, waiting time, socialisation, perceived professionalism, customer loyalty in the service

and service rating. The review also reveals that the architectural perception is directly related to the following aspects: environmental psychology, servicescape theory, place attachment, biophilic design, heritage conservation, adaptive reuse, and human-centred design. The use of emerging technologies like artificial intelligence, virtual reality, augmented reality, immersive interfaces, and intelligent systems is widening the ways of access, interpretation, and experience of architectural spaces by users. Nonetheless, these innovations have to be informed by ethical issues, such as privacy, accessibility, inclusivity, cultural sensitivity, data accountability, and human dignity. The areas of future research include cross cultural perception, experience of digital heritage, neuro-informed design, AI supported spatial analysis and socially sensitive architecture.

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