

Original Article

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Analysis of the objective and subjective dimensions associated with users' happiness in Eram Pedestrian Street, Qom

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Abstract

The present study aimed to investigate the environmental and perceptual factors associated with users' happiness by analyzing the objective and subjective dimensions of the environment in Eram Pedestrian Street in Qom. In this study, users' happiness was considered an experience associated with the presence and use of Eram Pedestrian Street as a public space, shaped by environmental qualities and users' perceptions of the space. This applied research employed a descriptive-analytical method. Data were collected through a questionnaire and analyzed using structural equation modeling. The model fit indices indicated a good fit of the proposed model to the data. The measurement model results for the objective dimension showed that spatial amenities and comfort and visual characteristics both had the highest association with the objective dimension of users' happiness, with a path coefficient of 0.98. Among these, seating spaces and environmental cleanliness were among the most important indicators. In the subjective dimension, the perceptual component, with a coefficient of 0.77, showed a stronger association with users' happiness than the social life component; in particular, spatial legibility and vitality were among the most important indicators of this dimension. The findings indicate that users' happiness in Eram Pedestrian Street is associated with objective environmental qualities as well as perceptual and social components, and that these dimensions can simultaneously be considered in the assessment and design of urban public spaces.

Keywords

Public spaces
urban pedestrian streets
users' happiness
Eram Pedestrian Street
Qom

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1. Introduction

Happiness in the urban environment is a multidimensional experience that depends not only on the objective characteristics of the built environment, but also on how individuals perceive, evaluate, and are satisfied with their environment. Accordingly, factors such as the quality of public spaces, access to services, green spaces, and walkability, together with perceptions of environmental quality and satisfaction with the space, may be associated with citizens' happiness and well-being. Recent studies have shown that the natural attributes of the built environment and access to urban green spaces may be associated with citizens' life satisfaction, and that this relationship is not necessarily linear (Wu et al., 2024). From this perspective, happiness extends beyond the level of individual experience; it has become an important topic in urban planning and urban design studies, particularly because the urban environment may play a role in shaping citizens' happiness by influencing the quality of everyday experience, social interactions, and subjective well-being (Samavati & Veenhoven, 2024). In this study, happiness is the main construct and a positive subjective experience of users' presence in the urban environment, while well-being and satisfaction are related but distinct concepts from happiness, and vitality is also regarded as one of the spatial and social qualities of the urban environment. In this context, urban public spaces, particularly pedestrian streets, are among the most important settings for citizens' everyday experiences and can contribute to the formation of urban vitality and happiness by providing opportunities for pausing, movement, social interaction, and experiencing environmental qualities. The importance of pedestrian-oriented spaces in shaping cities' social life has also been emphasized in the classic works of Jacobs, Gehl, and Whyte (Jacobs, 1992; Gehl, 2011; Whyte, 1980). Recent studies in urban environments have also shown that social interactions and relationships among individuals in urban communities may be associated with people's experience of happiness (Yang et al., 2024). Systematic reviews of research on happy public spaces further indicate that citizens' happiness in such spaces is associated with a range of physical, ecological, visual, functional, social, and subjective factors; therefore, explaining happiness in public spaces requires simultaneous attention to environmental qualities and how users experience and perceive space (Samavati et al., 2025). In this regard, research on happy public

spaces examines factors such as green spaces, visual quality, opportunities for pausing and seating, functional quality, and opportunities for social interaction. Although global happiness reports provide a broad picture of well-being and life evaluation across countries, these measures do not directly measure citizens' experiences of happiness in urban public spaces. Therefore, examining happiness at the spatial scale and based on users' experiences requires environment-oriented studies. Despite the growing body of research on the urban environment and happiness, there remains a need for empirical investigation into how the objective characteristics of space and users' subjective perceptions interact to shape happiness at the scale of specific public spaces. Recent studies have also emphasized the importance of social relationships in the experience of urban happiness; for example, Yang et al. (2024) showed that happiness in urban communities can also develop through social relationships and interactions with others and can be transmitted among individuals. Within this framework, Eram Pedestrian Street in Qom, with its simultaneous functional, social, and historical roles and its diverse range of activities and users, provides an appropriate setting for examining the relationship between the objective qualities of space, users' subjective perceptions, and the experience of happiness. Although previous studies have identified a range of environmental, social, and perceptual factors associated with happiness, the simultaneous examination of the relative position of these factors and the relationships between objective and subjective dimensions in users' experience of happiness in a pedestrian-oriented public space, particularly in the context of Qom, has received less attention. This issue matters because public spaces in pilgrimage cities, in addition to their everyday urban functions, are influenced by the presence of pilgrims, religious activities, historical and cultural values, and specific patterns of space use. Therefore, findings derived from other urban contexts cannot be generalized to such spaces without empirical investigation. Accordingly, using structural equation modeling¹, the present study examines the relationships between the objective and subjective dimensions of the environment and the structure of users' happiness in Eram Pedestrian Street in Qom. It seeks to explain the relative position of the components constituting these two dimensions within the measurement structure of users' happiness. The study addresses the following two questions:

1. What relationships do the objective dimensions and components of the environment of Eram Pedestrian Street have with the structure of users' happiness in this space, and what is the relative position of the components constituting the objective dimension?
2. What relationships do the subjective dimensions and components associated with Eram Pedestrian Street have with the structure of users' happiness, and what is the relative position of the components constituting the subjective dimension?

2. Theoretical and empirical background

Happiness is a multidimensional concept widely discussed in philosophy, psychology, sociology, and urban studies, and refers to the degree of an individual's satisfaction with life and lived experience (Deleire & Kalil, 2010; Frey & Stutzer, 2012; Hagelskamp et al., 2013). Studies of quality of life indicate that happiness is not based solely on individuals' subjective perceptions; rather, the objective conditions of the living environment also play a determining role in its formation (Lee et al., 2018). Accordingly, researchers generally classify the factors associated with happiness into two categories: objective indicators and subjective indicators. Objective indicators refer to observable characteristics of the built environment, such as urban design quality, physical characteristics, visual quality, accessibility, and safety. Subjective indicators, in contrast, encompass users' perceptions, emotions, and experiences of the environment, including feelings of happiness, vitality, satisfaction, sense of belonging, and social interactions. These two categories

complement each other and can provide a comprehensive picture of urban happiness only through their interaction (Amerigo et al., 2007; Frey & Stutzer, 2012). In this study, happiness is considered a positive and multidimensional experience of being present in the urban environment, in which an individual's evaluation and perception of the environment, sense of satisfaction, and positive emotional experience of being in the space are interconnected. From this perspective, happiness is not regarded as synonymous with concepts such as vitality, environmental satisfaction, and well-being; rather, these concepts are considered dimensions or experiences associated with the formation and perception of happiness in the urban environment. Accordingly, in the present study, "users' happiness in Eram Pedestrian Street" is considered the main, higher-order construct of the conceptual model, in relation to which the objective and subjective dimensions of the environment and their constituent components are examined. In this regard, a comprehensive review of studies related to urban environments indicates that the objective characteristics of the environment, citizens' subjective perceptions of urban characteristics, and their level of satisfaction with these characteristics are three interrelated aspects in explaining happiness in urban environments. Access to green spaces, cultural and recreational facilities, and public spaces have also been reported as the environmental characteristics associated with happiness (Samavati & Veenhoven, 2024).



Figure 1. Concept of happiness (Samavati & Ranjbar, 2019)

To date, a substantial proportion of research on urban happiness, with an emphasis on objective approaches, has focused on quality of life and well-being. In these studies, the environmental, physical, and social characteristics of cities have been evaluated as factors associated with citizens' well-being and satisfaction, and various indicators have been proposed to assess quality of life and well-being (Loo, 2021). However, recent studies indicate that the mere presence of

desirable physical characteristics is not sufficient to enhance happiness; rather, the way citizens perceive and evaluate the built environment also plays a determining role in their experience of happiness and quality of life. In other words, individuals' perceptions of environmental quality, their ability to use spaces, and the extent to which these spaces respond to their everyday needs are associated with their level of life satisfaction and mental health (Mouratidis, 2021). A

systematic review of studies on happy public spaces has also shown that factors associated with citizens' happiness in public spaces can be classified into eight domains: physical, ecological, visual, functional, social, subjective, political, and individual. This finding confirms the multidimensional nature of happiness in urban public spaces (Samavati et al., 2024). In this regard, international studies indicate that the quality of the urban physical environment, through the provision of lively, safe, and human-centered spaces, can contribute to improving citizens' happiness and mental health (Montgomery, 2013; Rapoport, 1977). Recent empirical findings also support this relationship. For example, a study by Khare and Chatterjee in the city of Bhopal showed that characteristics of the built environment, including safety, open space, vegetation, and accessibility, are associated with citizens' happiness, with some of these characteristics constituting important factors in explaining urban happiness (Khare & Chatterjee, 2024). Accordingly, a reciprocal relationship exists between the objective dimensions of the environment and users' subjective perceptions; improvements in physical qualities may enhance individuals' subjective experience of space, while positive perceptions among citizens may, in turn, make the qualities of the environment more meaningful and effective. Several studies have also shown that the physical environment considerably influences human well-being and happiness (Cairns Regional Council, 2018). In this regard, many researchers have emphasized the role of natural elements and green spaces as an integral part of the built environment. Removing such elements may reduce environmental quality and, consequently, its capacity to enhance happiness (van den Bosch & Sang, 2017; Loo, 2021). At the urban scale, Giles et al. identify urban design, appropriate density, access to public transportation, land-use diversity, and environmental desirability as among the most important urban-design components contributing to community health and happiness (Giles et al., 2016, p. 2917). Similarly, Montgomery, emphasizing the concept of the "happy city," identifies social capital and the quality of public spaces as key components of urban happiness. He argues that mixed land uses, walkability, the continuous presence of citizens, cultural events, and the dynamism of urban activities provide a context for the formation of social interactions and increased happiness (Montgomery, 2013, p. 95). A review and analysis of previous studies indicate that although researchers have identified

numerous factors associated with the formation of happiness in urban spaces, these factors can be classified into several main categories. In the physical dimension, components such as urban design quality, visual quality, safety, accessibility, environmental quality, legibility, amenities, and natural elements have received the greatest emphasis in previous studies (Gilderbloom et al., 2015; Lee et al., 2020). In the functional dimension, land-use diversity, activity density, the presence of cultural, commercial, and recreational activities, and the continuous usability of space have been identified as among the most important factors contributing to the vitality and presence of people in public spaces (Carlson et al., 2015; Hirt, 2016, p. 145; Montgomery, 2013). On the other hand, studies in environmental psychology and urban design have emphasized the role of components such as perceived safety, social interactions, inclusiveness, sense of belonging, environmental satisfaction, and perceived environmental quality in the formation of citizens' happiness and subjective well-being (Xu et al., 2018; Yoshii, 2016, p. 609; Auma, 2015; Lu et al., 2019). These studies indicate that the relationship between the urban environment and happiness cannot be limited solely to the presence or absence of physical characteristics. Rather, the built environment characteristics are associated with individuals' experience of happiness by shaping the quality of users' experiences and perceptions, including feelings of safety, legibility, comfort, belonging, and opportunities for social interaction. Accordingly, in the present study, the environment's objective characteristics are considered observable and intervenable qualities of space, while the subjective components reflect users' perceptions and experiences of the environment, with users' happiness regarded as the study's main construct and the outcome of this conceptual structure. This framework provides the theoretical basis for examining the relationships among the objective dimensions, subjective dimensions, and users' happiness within the study's structural equation model.

Based on these theoretical findings, the study components are classified according to the distinction between the objective characteristics of the environment and users' subjective perceptual experience. Objective components represent the physical characteristics of the urban environment that can be designed and subjected to intervention, whereas subjective components reflect users' perceptions, interpretations, and experiences of those

same environmental characteristics. Therefore, objective components, as representations of the physical, functional, and environmental characteristics of urban space, and subjective components, as reflections of users' perceptions, experiences, and evaluations of space, formed the basis for developing the study's conceptual framework. Accordingly, the present study's conceptual framework was developed by integrating these two dimensions. In the objective dimension, six components – inclusiveness, visual characteristics, amenities and spatial comfort, safety and security, land-use diversity and spatial quality, and accessibility – were selected because these components represent the quality of the built environment and have been identified in previous studies as among the most important factors associated with presence, comfort, safety, usability, activity diversity, and the quality of spatial experience in public spaces (Montgomery, 2013; Gilderbloom et al., 2015; Lee et al., 2020; Samavati & Ranjbar, 2019). In the subjective dimension, two components – social life and environmental perception – were selected because these constructs reflect the human and psychological outcomes of environmental quality and encompass concepts such as vitality, social interactions, perceived safety, legibility, sense of belonging, place satisfaction, and feelings of happiness (Xu et al., 2018;

Yoshii, 2016; Auma, 2015; Lu et al., 2019; Mouratidis, 2021). Accordingly, in the present study's theoretical framework, the objective characteristics of the environment are considered observable and intervenable qualities of urban space, while the subjective dimensions are considered reflections of users' experiences and perceptions of the environment. This distinction does not imply an assumed causal or definitive mediating relationship between the two dimensions. Rather, the objective and subjective dimensions are defined as two complementary levels within the conceptual structure of users' happiness. Therefore, the present study does not test an independent causal pathway from "objective environmental characteristics" to "subjective dimensions" and subsequently to "happiness." Instead, it examines the degree of association and the explanatory contribution of the dimensions and components constituting them within the hierarchical structure of the "users' happiness in Eram Pedestrian Street" construct. Users' happiness in Eram Pedestrian Street was considered the main conceptual construct, a hierarchical structure consisting of two dimensions: objective and subjective. In the statistical analysis, the relationships among each of these dimensions and their constituent components were examined within measurement models.

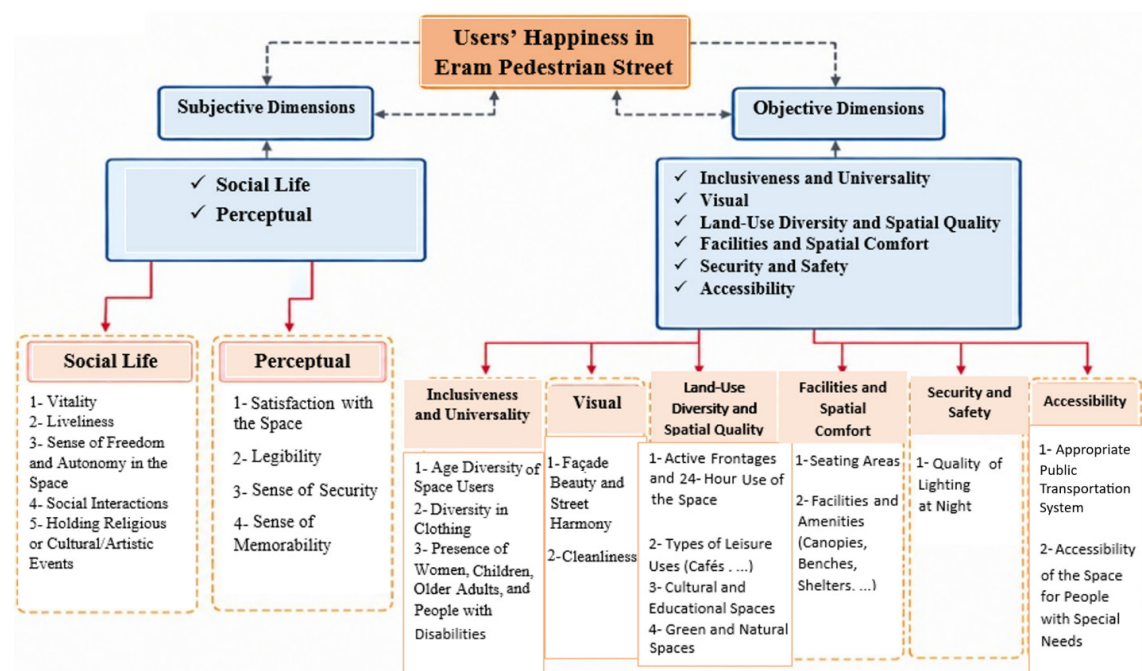


Figure 2. Conceptual framework of the research

To identify and examine studies related to the research topic, a literature search was conducted using the keywords “urban happiness,” “happy public spaces,” “built environment and happiness,” “urban vitality,” “pedestrian street,” and “public-space quality,” along with their English equivalents. Persian- and English-language sources published between 2000 and 2025 were reviewed, and studies addressing the relationship between the physical, functional, social, and perceptual characteristics of urban spaces and citizens’ happiness, well-being, and vitality were selected for the literature review. In international studies, different dimensions of urban happiness and vitality have been examined from various perspectives. Veenhoven (2017) emphasizes the role of satisfaction with urban services, individual characteristics, and life satisfaction in forming citizens’ happiness. Similarly, Mora and Herrmann-Lunecke (2018, p. 8) showed that pedestrian networks and commercial galleries in central Santiago contribute to enhancing urban vitality by increasing activity diversity and spatial permeability. On the other hand, Işiklar (2017, p. 19), drawing on the perspectives of Lynch and Jacobs, identifies components such as social interaction, sense of belonging, safety, functional diversity, aesthetics, and accessibility as among the most important indicators of urban vitality and livability. In their examination of happiness in Italian cities, Bakker et al. (2020, p. 155) identified economic indicators as the most important factor associated with urban vitality and happiness. Similarly, Rauktienė et al. (2018, p. 16), in a comparative study of pedestrian streets in the cities of Vilnius, Kaunas, and Klaipėda, showed that, from citizens’ perspectives, social and environmental criteria are the most important factors associated with the use of pedestrian networks and the enhancement of urban vitality. In addition, Szołtysek and Twaróg (2018), in their study entitled “Meeting places in the urban strategy for creating a happy city,” identified components such as work, education, recreation, health and safety, mobility, neighborhood, acceptance, and gathering spaces (agoras) as key elements of a happy city. Jain (2019) defined the happy city as one grounded in emotional connections, appropriate public infrastructure and transportation, pedestrian orientation, safety, a pollution-free environment, cultural and recreational facilities, and opportunities for intellectual development, and emphasizes the need to develop cities according to these criteria. Furthermore,

Poortinga and Mouratidis (2020), in examining the relationship between the built environment, urban vitality, and social cohesion in Oslo, showed that although neighborhood density and land-use mix increase vitality, they do not necessarily lead to stronger social cohesion. Accordingly, they proposed developing walkability and local social activities to enhance vitality and social cohesion simultaneously. In addition, Tan and Guan (2021), through an analysis of spatial data and Twitter users’ sentiments, found that urban activities and citizens’ sentiments are significantly associated with land-use patterns, housing prices, built-environment quality, amenities, and proximity to urban attractions. In Iran, numerous studies have also examined happiness and vitality in urban spaces. Samavati and Ranjbar (2019) identified four components, physical characteristics, urban-space quality, subjective dimensions, and social characteristics, as the main factors associated with happiness in the central pedestrian streets of Tehran. They considered physical characteristics the most influential factor (Samavati & Ranjbar, 2019). Khaleghi (2018) also showed that the success of pedestrian streets is not limited to removing vehicles; rather, providing multifunctional land uses and continuous activities plays an important role in improving landscape quality and the vitality of historic spaces (Khaleghi, 2018). Similarly, Ghaempanah et al. (2023), in their study of Eram Pedestrian Street in Qom, emphasized the need to improve the quality of urban façades by strengthening order, aesthetics, and visual diversity, organizing façade additions, and diversifying materials to enhance the aesthetic quality and visual identity of the environment (Ghaempanah et al., 2023). Mohammadi Dehcheshmeh (2019) showed that improving the pedestrian route along Ferdowsi Street in Isfahan was associated with increased satisfaction and psychological well-being among citizens and, consequently, with enhanced urban vitality and liveliness (Mohammadi Dehcheshmeh, 2019). In addition, Molavi et al. (2021), in their examination of the city-center pedestrian street in Rasht, confirmed the positive relationship between pedestrian-street quality and urban vitality and showed that social interactions had the greatest association with urban vitality; this finding indicates the reciprocal relationship among pedestrian-street quality, vitality, and social interactions (Molavi et al., 2021).

Table 1. Analysis of previous studies, explanation of the research gap, and position of the present study

Analytical dimension	Findings of previous studies	Existing research gap	Position of the present study
Urban happiness and public space	Previous studies have examined the relationship between happiness, environmental quality, satisfaction, vitality, and the characteristics of public spaces (Montgomery, 2013; Samavati & Ranjbar, 2019).	Despite numerous studies on happiness and the quality of public spaces, empirical investigation of users' happiness in public spaces in Qom, considering the city's specific characteristics, remains limited.	The present study examines users' happiness in a pedestrian-oriented public space in Qom.
Objective and subjective dimensions associated with happiness	Previous studies have demonstrated the importance of physical characteristics, environmental quality, accessibility, safety, social interaction, and environmental perception in the experience of happiness and well-being.	Previous studies addressed the role of objective and subjective factors; the research gap in the present study lies not in identifying these factors, but in examining their relationships and their degree of effect in the study context.	The present study examines the structure of relationships among the objective and subjective dimensions associated with users' happiness in Eram Pedestrian Street using measurement models within the SEM framework.
Pedestrian-oriented spaces	Various studies have examined the role of pedestrian streets in urban vitality, social interactions, environmental quality, and the experience of using space (Herrmann-Lunecke & Mora, 2017; Molavi et al., 2021).	A considerable proportion of these studies have been conducted in urban contexts different from Qom, and the specific characteristics of pedestrian-oriented spaces in pilgrimage-religious cities have received less attention in happiness analysis.	Eram Pedestrian Street in Qom is analyzed as a pedestrian-oriented public space in terms of the effects of environmental and perceptual characteristics on users' happiness.
Pilgrimage-religious context of Qom	Existing studies have mainly examined happiness, vitality, and the quality of public spaces in general urban contexts.	There is a lack of studies examining the mechanism through which the objective and subjective characteristics of a public space affect users' happiness in the pilgrimage-religious context of Qom.	The present study addresses this contextual gap by examining Eram Pedestrian Street, located in the central and pilgrimage-oriented fabric of Qom.
Priority and degree of effect of components	Previous studies have identified a range of factors associated with happiness, vitality, and the quality of space.	In the present study, the main issue is to determine the relative position and degree of association of the identified components within the specific study context, rather than claiming that these components are unknown in the research literature.	The present study uses the path coefficients of the SEM model to determine the measurement relationships and the relative position of the components constituting the objective and subjective dimensions in relation to users' happiness.

3. Study area

To identify the role of public spaces in creating happiness, Eram Pedestrian Street, located in the central fabric and District 7 of the Municipality of Qom, was selected as the study area. Given its rich historical and cultural background, this axis is considered one of the most important public spaces and a vibrant heart of Qom. The presence of some of the city's most prominent historical and religious elements, including the Holy Shrine of Hazrat Masoumeh (SA), the historic Qom Bazaar, the Timcheh-ye Bozorg, Gozarkhan, Khan School, Imam Hassan Askari Mosque, Sheikhan Cemetery, and several cultural, educational, commercial, and service centers, has increased the functional and identity-related

importance of this axis. Before the pedestrianization project, this area was one of the city's busiest traffic corridors. However, removing vehicular traffic and converting it into a pedestrian street provided a safe setting for walking, shopping, leisure activities, and the formation of social interactions among citizens. The selection of Eram Pedestrian Street as the study area was not based solely on its historical and religious importance. Rather, the axis provides a suitable setting for testing the research framework because it simultaneously presents a diverse range of objective and subjective characteristics associated with the experience of happiness in public space. The simultaneous presence of commercial, cultural, religious, and service uses; the diversity of users and

activities; opportunities for walking and pausing; the formation of social interactions; and the presence of historical and identity-related elements have transformed this pedestrian street into a space characterized by continuous presence and activity. On the other hand, its location within the central and religious fabric of Qom and its connection to the city's most important pilgrimage and urban destinations mean that users' experience of the space is influenced

not only by physical characteristics but also by perceptions such as legibility, identity, belonging, tranquility, safety, and vitality. From this perspective, Eram Pedestrian Street provides a suitable case for examining the simultaneous relationships between objective environmental characteristics and users' subjective perceptions and happiness in an urban public space with a religious-pilgrimage context.

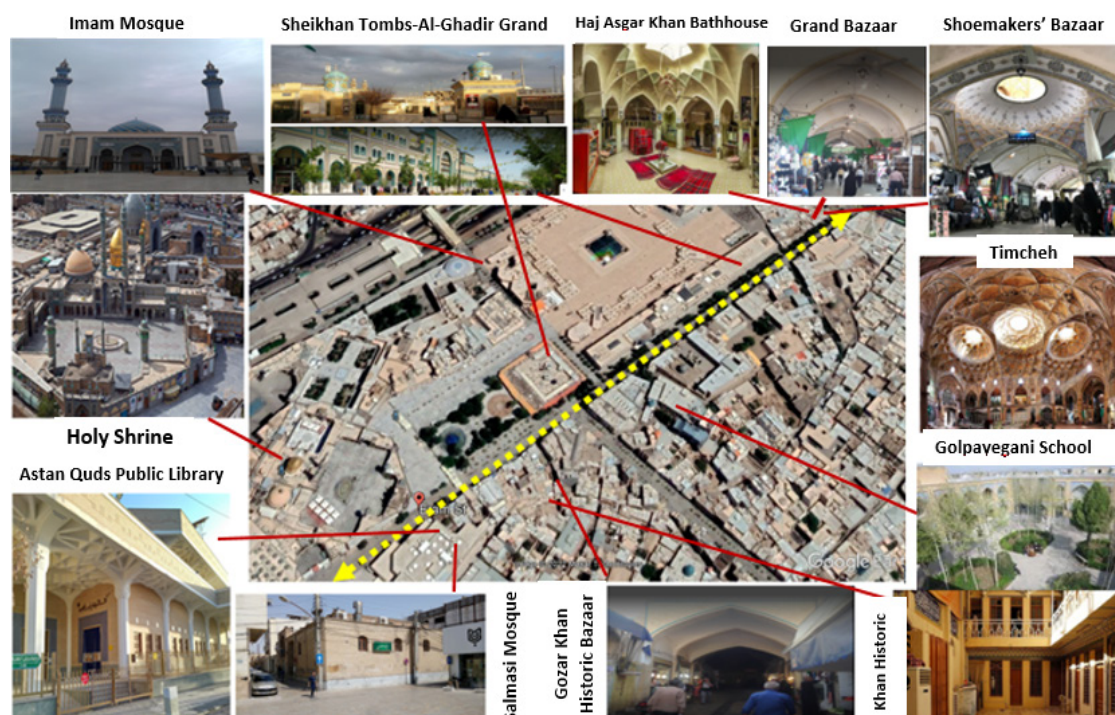


Figure 3. Key elements of the Eram Pedestrian Street study area

4. Methodology

The present study is applied in purpose, quantitative in approach, and explanatory in terms of its analytical method. Data were collected through documentary studies, field observation and visits, and a questionnaire. The researcher-made questionnaire was designed based on the theoretical foundations and findings of previous studies. The items for each component were developed according to the indicators identified in the research literature; after content validity was examined, they were distributed among users of this urban space using a five-point Likert scale. In this study, happiness does not refer to individuals' overall and long-term happiness at the level of life; rather, it refers to happiness associated with users' experience and perception of being present in and using Eram Pedestrian Street. Therefore, the study population consisted of users present in the

pedestrian street, and the assessment of happiness components was also conducted in relation to the environmental characteristics and users' experiences of this public space. Accordingly, the study findings should be interpreted within the framework of happiness associated with the experience of the studied space; they cannot be considered equivalent to the measurement of individuals' overall or long-term happiness. The questionnaire items were developed by extracting the most frequently occurring components and indicators from previous studies and matching them with the characteristics of the studied space. Where an item was not directly adopted from an existing instrument, it was developed as a researcher-made item by integrating the theoretical and research foundations and adapting them to the context of Eram Pedestrian Street. Structural equation modeling was used to examine the relationships

among latent and observed variables and to estimate the relationships among the dimensions and their constituent components (Byrne, 2013). The data were first prepared in SPSS and then analyzed using LISREL. Within the study's conceptual framework, "users' happiness in Eram Pedestrian Street" was considered the main construct, with two objective and subjective dimensions. Each dimension, in turn, consists of a set of first-order latent components, measured by the questionnaire's observed items. In the statistical analysis, the relationships between each dimension and its constituent components were examined within measurement models; therefore, the reported coefficients indicate the degree of association between the components and their respective dimension within the measurement structure and are not interpreted as direct causal effects on happiness. In this study, the term "objective" refers to the theoretical and environmental nature of the components, rather than the way they are measured. Therefore, although the objective components represent the physical, spatial, and functional characteristics of the environment, their quality and desirability were assessed from users' perspective through the questionnaire items. In other words, the present study measures environmental characteristics at the level of users' perceived experience, while the classification into objective and subjective dimensions is based on the theoretical nature of the constructs. The study's statistical population consisted of users of Eram Pedestrian Street in Qom. Given the lack of accurate and reliable statistics on the number of users of this space, the statistical population was considered infinite, and the

sample size was determined as 384 individuals using Cochran's formula for an infinite population, with a 95% confidence level and a 5% margin of error. Field data were collected during Ordibehesht, Khordad, and Tir 1405 [in the Iranian calendar]. To achieve appropriate spatial and temporal coverage, Eram Pedestrian Street was divided spatially into three sections: initial, middle, and final, and questionnaires were distributed at different points within these sections and on both sides of the axis. In addition, questionnaires were distributed on different days of the week so responses would not be limited to a particular section or time of the pedestrian street. Respondents were randomly selected from among the users present in the space. The main data collection instrument was a researcher-made questionnaire consisting of two sections: the first section addressed the demographic characteristics of the respondents, and the second section consisted of 25 items related to the eight main components of the study, which were structured based on a five-point Likert scale (from completely disagree to completely agree). Before final distribution, the questionnaire was approved in terms of face and content validity by the supervisor and several specialists in the field of urban design, and the necessary revisions were made based on their comments. A total of 384 questionnaires were distributed, and all were collected after completion; therefore, the response rate was 100%. All questionnaires were deemed usable by response completeness and were included in the statistical analyses. The demographic characteristics of the respondents are presented in Table 2.

Table 2. Frequency distribution of respondents based on demographic characteristics (Authors, 1405)

Component	Subcomponent of the social component	Frequency	Frequency percentage
Gender	Female	174	45.3
	Male	210	54.7
Age group	18–24	36	9.4
	25–34	94	24.5
	35–44	155	40.4
	45–54	55	14.3
	55–64	40	10.4
	Over 65 years	4	1

To assess the reliability of the research instrument, the questionnaire's reliability was examined using

Cronbach's alpha coefficient. The Cronbach's alpha value was 0.92, indicating very desirable reliability. In

addition, before conducting the structural equation model, data distribution normality was examined. Although the Kolmogorov–Smirnov test was significant for some variables, given the sensitivity of this test to sample size and the nature of data obtained from the Likert scale, the data normality was also assessed using skewness and kurtosis indices. The results showed that the skewness and kurtosis values of all variables were within the acceptable range (Skewness

± 2 and Kurtosis ± 7); therefore, the assumption of approximate normality of the data was satisfied for conducting the structural equation model, and the use of the maximum likelihood estimation method was permissible (Hair et al., 2022). To assess construct validity and the degree of fit between the proposed model and the empirical data, model fit indices were calculated for both the objective and subjective dimensions.

Table 3. Structural equation modeling (SEM) fit indices for the objective and subjective dimensions of the study

Index	Objective dimension	Interpretation	Subjective dimension	Interpretation	Evaluation
Chi-square/degree of freedom	1.431	Less than 2 indicates a very good fit	3.782	Less than 3 is acceptable; less than 5 is permissible	Desirable fit (the objective dimension is very good and the subjective dimension is acceptable)
Root mean square error of approximation (RMSEA)	0.04	Values less than 0.05 indicate excellent and strong model fit	0.06	Less than 0.08 indicates good fit	Desirable fit
Comparative fit index (CFI)	0.91	Completely desirable	0.89	Acceptable	Desirable fit
Tucker–Lewis index (TLI)	0.90	Acceptable	0.86	Justifiable	Appropriate fit
Standardized root mean square residual (SRMR)	0.05	Very good fit	0.08	Acceptable	Desirable fit

As Table 3 shows, the fit indices of both models are within the acceptable range. The χ^2/df value in the objective model was 1.431, indicating a very desirable model fit. This value was 3.782 in the subjective model, which is acceptable. The RMSEA values for the objective and subjective models are 0.04 and 0.06, respectively, both below the 0.08 threshold, indicating an appropriate fit of the measurement models and confirmation of the study's conceptual structure. The CFI, TLI, and SRMR values also indicate an appropriate fit in both the objective and subjective dimensions.

5. Findings

5.1. Analysis of findings in the objective dimension of the study

In measurement models, standardized coefficients indicate the degree of association between each component and the corresponding dimension; therefore, a higher coefficient indicates a greater association between that component and the construct being measured within the framework of the model.

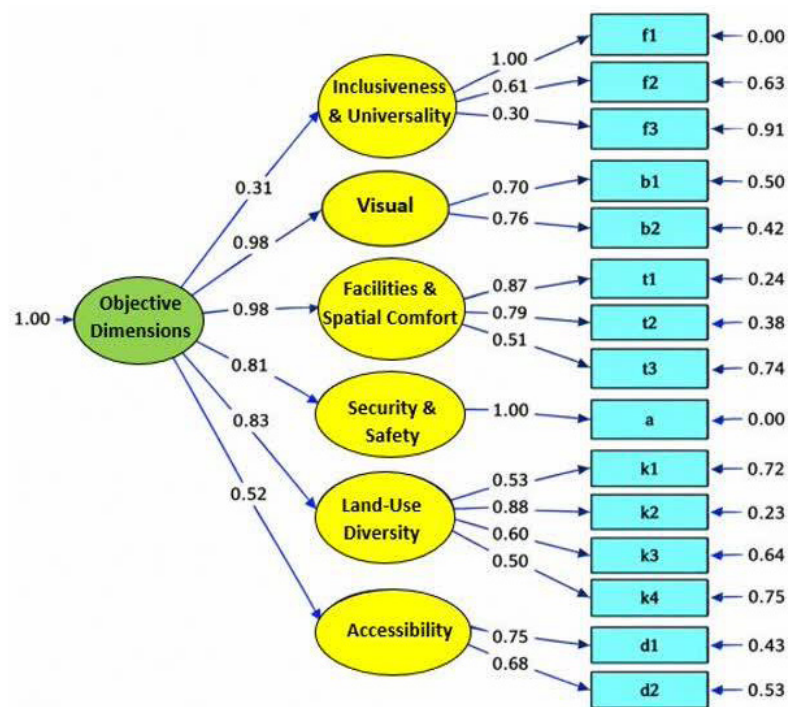


Figure 4. Output of the measurement model of the objective dimension along with standardized coefficients

Table 4. Coefficients of the components constituting the objective dimension

Main dimension (latent variable)	Constituent components (latent variables)	Path coefficient	Rank based on standardized coefficient
Objective dimension	Visual	0.98	1
	Facilities and spatial comfort	0.98	1
	Land-use diversity and spatial quality	0.83	3
	Security	0.81	4
	Accessibility	0.52	5
	Inclusiveness and universality	0.31	6

The dimensions of facilities and spatial comfort showed the highest association with the objective (seating areas, amenities, etc.) and visual characteristics dimension. (beauty and cleanliness), with a coefficient of 0.98,

Table 5. Coefficients of the items of the indicators of the objective dimension

Indicators (latent variables)	Items (observed variables and related codes)	Path coefficient
Inclusiveness and universality	Age diversity of space users (f1)	1.00
	Presence of women, children, elderly people, and people with disabilities (f2)	0.61
	Diversity in people's clothing (f3)	0.30
Visual	Beauty of the façade and street harmony (b1)	0.70
	Cleanliness (b2)	0.76
Facilities and spatial comfort	Seating areas (t1)	0.87

Indicators (latent variables)	Items (observed variables and related codes)	Path coefficient
	Urban facilities and amenities, including the number of shelters, canopies, and street paving (t2)	0.79
	Elements (statues, sculptures) and/or prominent urban symbols and signs (t3)	0.51
Security	Lighting quality (a)	1.00
Land-use diversity and spatial quality	Uses or around-the-clock activities and/or 24-hour availability of the space (k1)	0.53
	Amount of green and open space and natural elements (k2)	0.88
	Types of recreational, leisure, café, restaurant, and retail functions, spaces, and uses (k3)	0.60
	Types of educational and cultural functions, spaces, and uses (k4)	0.50
Accessibility	Appropriate public transportation system (d1)	0.75
	Accessibility of the space for people with special needs (d2)	0.68

Table 5 presents the coefficients of the sub-indicators (sub-indices), broken down by items, in the objective dimension. From the citizens' perspective, the age diversity of space users showed the highest standardized coefficient among the items in this component, in the inclusiveness and universality indicator. Within this component, the cleanliness of Eram Street in the visual indicator showed a higher standardized coefficient. The assessment of seating areas, with a standardized coefficient of 0.87, showed

the highest association with the facilities and spatial comfort component among the items of this component. In the land-use diversity and spatial quality dimension, the amount of green and open space and natural elements had the highest standardized coefficient, while in the accessibility indicator, the public transportation system obtained a higher coefficient. Overall, users' age diversity and lighting quality have the highest coefficients among the observed variables from the citizens' perspective.

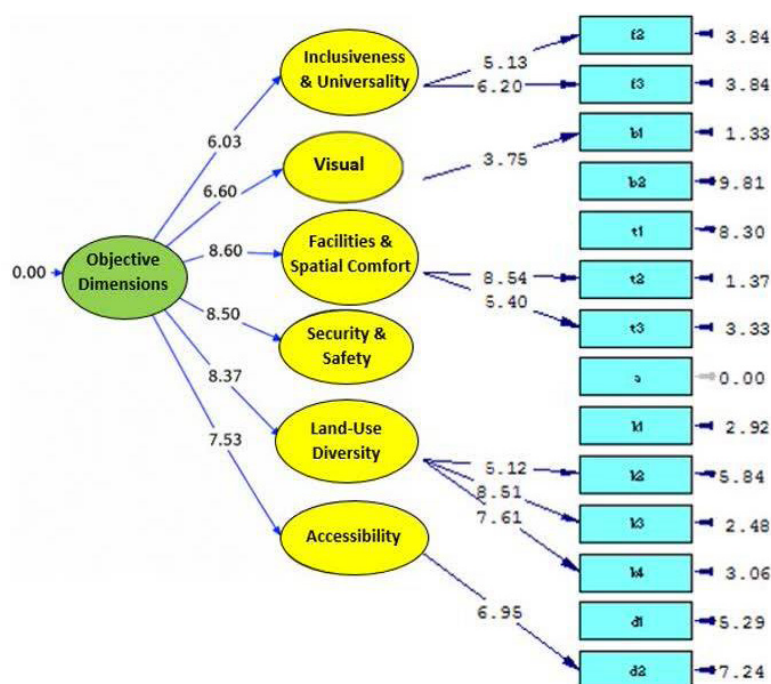


Figure 5. T-value output from structural equation modeling in the objective dimension

Figure 5 shows the measurement relationships among the components and constituent indicators of the

objective dimension along with their significance values. The T-statistic values must be greater than 1.96

to demonstrate statistical significance at the 0.05 level. In the T-Value test, where the variance is fixed, no calculation is performed, and the software systematically assumes by default that these factors are accepted. All T-statistic values in this test are higher than 1.96, indicating the statistical significance of the relationships examined at the 0.05 level. Based on this figure, the facilities and spatial comfort component and visual characteristics show the highest standardized coefficients among the components

constituting the objective dimension.

5.2. Analysis of findings in the subjective dimension of the study

The subjective dimension of the study consists of social and perceptual life, and the relationships among the components and items constituting this dimension were examined using confirmatory factor analysis.

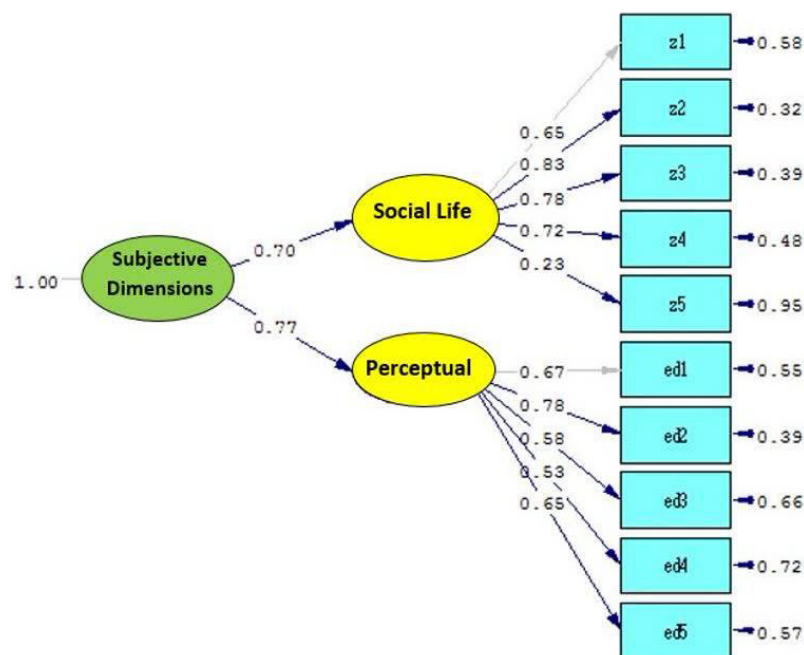


Figure 6. Output of the measurement model of the subjective dimension along with standardized coefficients

These coefficients indicate the degree of association between the constituent components and the subjective dimension within the measurement structure, and the items' coefficients also indicate the

degree of association between each item and its corresponding component. Therefore, these coefficients are not interpreted as causal effects of the components on happiness.

Table 7. Coefficients of the components constituting the subjective dimension

Main dimension (latent variable)	Indicators (latent variables)	Path coefficient	Rank based on standardized coefficient
Subjective dimension	Perceptual	0.77	1
	Social life	0.70	2

Among the components constituting the subjective dimension, the perceptual component, with a standardized coefficient of 0.77, showed a greater association with the subjective dimension compared with social life, with a coefficient of 0.70. This result shows that, within the measurement structure of the subjective dimension, the perceptual component has a greater association with this dimension than social

life. Figure 6 shows the standardized model coefficients in the subjective dimension. The coefficients of the components constituting the subjective dimension do not differ noticeably from one another. However, the perceptual component, with a standardized coefficient of 0.77, shows a greater association with the subjective dimension than social life (coefficient of 0.70).

Table 8. Coefficients of the items of the indicators of the subjective dimension

Indicators (latent variables)	Items (observed variables and related codes)	Path coefficient
Social life	Feeling of vitality (z2)	0.83
	Sense of freedom and autonomy in the space (z3)	0.78
	Social interactions with strangers (z4)	0.72
	Dynamism of the space (z1)	0.67
	Participation in cultural, religious, and/or artistic events (z5)	0.65
Perceptual	Legibility (ed2)	0.78
	Satisfaction with the space (ed1)	0.67
	Sense of identity and place attachment (ed5)	0.65
	Sense of security (ed3)	0.58
	Sense of memorability (ed4)	0.53

In the social life component, the feeling of vitality was identified as the most important indicator for understanding social life in Eram Pedestrian Street, and in the perceptual component, legibility, with a standardized coefficient of 0.78, showed the highest

factor loading among the items of the perceptual component, indicating a greater association of this indicator with the perceptual component within the measurement structure.

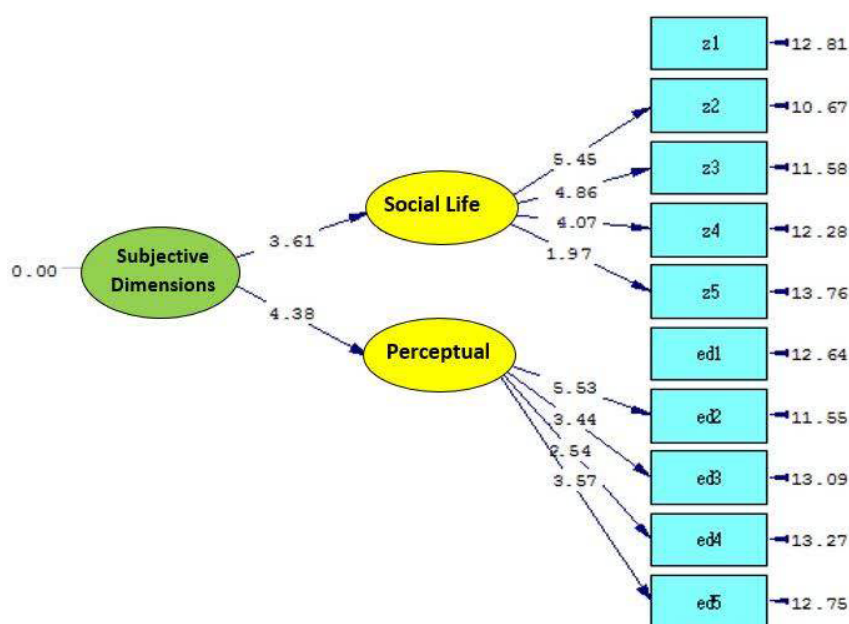


Figure 7. T-value output from structural equation modeling in the subjective dimension

According to the figure above, all scores in this test are also higher than 1.96, indicating the statistical significance of the relationships examined at the 0.05 level. According to this figure, the perceptual component, among the components constituting the subjective dimension, shows a higher standardized coefficient than social life.

6. Discussion and interpretation of findings

In response to the first research question, the relationships between the objective dimension and its constituent components were examined within the measurement model. The objective was to determine the relative position of the objective components associated with users' happiness in Eram Pedestrian

Street and to compare their standardized coefficients within the measurement structure of the objective dimension. Based on the results, the components of facilities and spatial comfort and visual characteristics, both with a standardized coefficient of 0.98, showed the highest association with the objective dimension, followed by land-use diversity and spatial quality with a coefficient of 0.83, security with a coefficient of 0.81, accessibility with a coefficient of 0.52, and inclusiveness and universality with a coefficient of 0.31. In the facilities and spatial comfort component, the highest standardized coefficient among the items of this component was associated with seating and resting areas. This finding shows that, within the measurement structure, spaces associated with pausing, resting, and interaction show a greater association with the facilities and spatial comfort component. From an urban design perspective, attention to these spaces can be considered in the future planning and organization of Eram Pedestrian Street. In the visual characteristics component, cleanliness and environmental neatness, followed by façade aesthetics and the visual harmony of the street, showed higher standardized coefficients. This finding indicates a greater association of these indicators with the visual characteristics component within the measurement structure. From an urban design perspective, attention to environmental quality, visual organization, and improvement of the existing quality of the space can be considered alongside the creation or development of new uses. At the subsequent levels, the components of land-use diversity and spatial quality and security showed standardized coefficients of 0.83 and 0.81,

respectively, and, within the measurement structure of the objective dimension, had greater associations than the accessibility and inclusiveness and universality components. In land-use diversity and spatial quality, the amount of green space, open space, and natural elements showed the highest value among the indicators of this component. This result indicates a greater association of this indicator with the land-use diversity and spatial quality component within the measurement structure and, from an urban design perspective, indicates the need to pay attention to green spaces, open spaces, and natural elements in the organization and design of Eram Pedestrian Street. The inclusiveness and universality component showed lower coefficients compared with the other components of the objective dimension. It appears that the mere presence of diversity among user groups did not show an equal association with the objective dimension within the measurement structure of this study, while other physical and environmental characteristics had higher coefficients. Overall, the standardized coefficients show that, within the measurement structure of the objective dimension, the components of facilities and spatial comfort, visual characteristics, and land-use diversity and spatial quality have greater associations with the objective dimension than the other components examined. Accordingly, attention to pausing and seating spaces, visual quality and environmental cleanliness, as well as green and open elements, can be considered in the future planning and organization of this pedestrian street.

Table 9. Comparison of the findings of the present study in the objective dimensions with previous studies

Explanation of similarity/difference	Comparison with previous studies	Findings of the present study
This similarity can be explained by the importance of physical and visual quality in users' experience of public space. The review study by Samavati et al. also identified physical and visual factors among the main domains affecting happiness in public spaces.	Consistent with Montgomery (2011), Samavati and Ranjbar (2017), and Samavati et al. (2025)	Facilities, spatial comfort, and visual characteristics showed the highest standardized coefficients among the components of the objective dimension.
Both studies were conducted in historical spaces of Qom and emphasized visual quality, order, beauty, and the organization of environmental elements. Therefore, the historical context and users' sensitivity to landscape quality may be one of the reasons for this similarity.	Consistent with Ghaempanah et al. (2023)	Cleanliness, landscape quality, and façade aesthetics were the most important visual indicators.
The similarity of the findings can be explained by the role of natural elements in creating tranquility and enhancing the quality of the environmental experience. In the systematic review by Samavati et al., ecological factors and the presence of green space were also identified as one of the main domains affecting happiness in public spaces.	Consistent with van den Bosch & Sang (2017), Loo (2021), and Samavati et al. (2025)	Green space and natural elements were important factors of happiness.

Explanation of similarity/difference	Comparison with previous studies	Findings of the present study
This difference may be partly related to the contextual characteristics of Eram Pedestrian Street, because users of this space encounter, alongside social characteristics, a historical, religious, and pilgrimage-oriented environment, and the physical and visual quality and environmental tranquility may have received greater weight in their evaluation. This explanation should be considered as a contextual interpretation rather than a definitive causal relationship.	Different from the emphasis of Auma (2015) and Lu et al. (2019) on the importance of social factors and inclusiveness	Inclusiveness and universality had a lower coefficient than the other objective dimensions.

As Table 9 shows, a substantial portion of the present study's findings in the objective dimension is consistent with previous studies, particularly regarding the importance of facilities and spatial comfort, visual characteristics, and natural elements. This similarity can be attributed to the common nature of public space as an environment in which users' experiences are associated with physical, visual, and ecological

characteristics. At the same time, the lower coefficient of inclusiveness and universality in the present study compared with some previous studies can potentially be interpreted in relation to the contextual characteristics of Eram Pedestrian Street, including its historical and religious setting and its particular pattern of use; however, comparative studies in other urban spaces are necessary to confirm this interpretation.



Figure 8. Location of lighting elements, green spaces, and seating areas in Eram Pedestrian Street (along with sample images)



Figure 9. Location of elements and public transportation stops (along with images of each sample)

In response to the second research question, the relationships between the subjective dimension and its constituent components were examined within the measurement model. The results showed that the perceptual component, with a standardized coefficient of 0.77, was more strongly associated with the subjective dimension than social life, with a coefficient of 0.70. Among the items in the perceptual component, legibility of the space, with a coefficient of 0.78, and satisfaction with the space, with a coefficient of 0.67, had higher standardized coefficients. Given the historical and religious context of Qom and the location of Eram Pedestrian Street along the route leading to the Holy Shrine of Hazrat Masoumeh (SA), the greater importance of legibility and satisfaction with the space may be a contextual explanation of the findings, particularly because legibility can support users' wayfinding along such a busy route. The removal of vehicular traffic on this axis may also be a contextual factor associated with users' experience of tranquility and their positive evaluation of the pedestrian street space. However, the present study did not independently test the direct relationship between

the removal of vehicular traffic, tranquility, and happiness, so this interpretation should be considered only a possible explanation of the findings. Although the sense of security, with a coefficient of 0.58, showed a lower standardized coefficient than legibility and other perceptual indicators, it remained within the measurement structure of the subjective dimension and was associated with this dimension. In addition, the sense of identity and place attachment, with a standardized coefficient of 0.65, showed a considerable association with the subjective dimension and may indicate the importance of the identity-related and semantic characteristics of Eram Pedestrian Street in users' experience. Overall, the results of the subjective dimension show that users' perceptions of legibility, satisfaction with the space, identity and place attachment, as well as components related to social life, are associated within the measurement structure of the subjective dimension. Among these, the higher coefficients of legibility and satisfaction emphasize the importance of the quality of users' perceptual experience alongside the physical characteristics of the space.

Table 10. Comparison of the findings of the present study in the subjective dimensions with previous studies

Explanation of similarity/difference	Comparison with previous studies	Findings of the present study
This similarity indicates that the experience of happiness in urban space does not depend solely on the environment's objective characteristics; rather, how users perceive, evaluate, and experience the environment is also important. The systematic review by Samavati et al. also identified subjective and perceptual factors alongside physical and visual factors in the formation of urban happiness.	Consistent with Mouratidis (2021), Amerigo et al. (2007), and Samavati et al. (2025)	The perceptual component showed the highest standardized coefficient among the subjective dimension's components.
Legibility contributes to better understanding and wayfinding in space, while tranquility and satisfaction reflect the quality of the user's direct experience; therefore, the higher values of these indicators can be explained by the importance of users' experience and positive evaluation of the environment.	Consistent with Lynch and Işıklar (2017) and Samavati et al. (2025)	Legibility and satisfaction with the space had higher coefficients.
This similarity can be explained by the role of identity and attachment in forming a positive experience of urban space, particularly because Eram Pedestrian Street is located in a historical and religious context and contains numerous identity-related and semantic elements.	Consistent with Montgomery (2013) and recent studies on happiness and place experience	The sense of identity and place attachment was considerably associated with the subjective dimension.
This difference may result from the specific characteristics of the study context. In Eram Pedestrian Street, the space's historical-religious nature and its role as an access route and place of urban presence may have given greater weight to the quality of perceptual experience, legibility, and tranquility in users' evaluation of happiness than social interactions. However, this explanation requires comparative investigation in other religious and historical spaces.	Different from Xu et al. (2018) and Montgomery (2013)	The social life component showed a lower standardized coefficient in its association with the subjective dimension compared with the perceptual component.

In the subjective dimension, the findings of the present study are also generally consistent with studies that emphasize the role of environmental perception, place attachment, and the quality of users' experience. However, the lower contribution of social interactions compared with the perceptual component differs from some previous studies. This difference can be interpreted in terms of the functional and contextual characteristics of Eram Pedestrian Street and the predominance of certain historical, religious, and through-movement functions along this axis. Therefore, the socio-spatial context can influence the relative position of components associated with users' experience of happiness.

This study, like any field study, faced some limitations. First, the research data were collected based on the perceptions and evaluations of users of Eram Pedestrian Street; therefore, the results may be influenced by individual differences, previous experiences, and the temporal conditions of respondents' presence in the space. Second, the study was conducted in a specific pedestrian street within the central and religious context of the city of Qom; therefore, generalizing the results to other public spaces or urban pedestrian streets, particularly in

cities with different social, cultural, and physical contexts, should be done with caution. Third, the data were collected during a specific period, and this study did not examine temporal changes in users' presence, activities, and perceptions across different hours and periods of the year. In addition, because structural equation modeling was used, the relationships among the research variables were analyzed within the framework of the collected data, and the interpretation of the results should be limited to the variables and indicators defined in this study.

7. Conclusion

The findings of the study showed that, in Eram Pedestrian Street, users' experience of happiness can be explained within a multidimensional framework and in relation to two environmental levels, objective and subjective; at the objective level, the characteristics of the built environment, and at the subjective level, users' perceptions and experiences of the space constitute the dimensions and components associated with this structure. Within the structure of the objective dimension, the components of facilities and spatial comfort and visual characteristics, both with a

coefficient of 0.98, showed the highest association with the objective dimension, followed by land-use diversity and spatial quality (0.83), security (0.81), accessibility (0.52), and inclusiveness and universality (0.31). At the item level, seating areas, with a coefficient of 0.87, in the facilities and spatial comfort component; cleanliness, with a coefficient of 0.76, in the visual component; and the amount of green space, open space, and natural elements, with a coefficient of 0.88, in the land-use diversity and spatial quality component, showed higher standardized coefficients. In contrast, inclusiveness and universality, with a coefficient of 0.31, showed the lowest association among the components of the objective dimension, indicating differences in the relative priority of environmental components in the studied space. In the subjective dimension, the perceptual component (coefficient of 0.77) showed a stronger association with the subjective dimension than social life (coefficient of 0.70). At the item level, legibility of the space (coefficient of 0.78) and satisfaction with the space (coefficient of 0.67) had higher standardized coefficients among the items of the perceptual component. From an urban design perspective, the

findings of the study show that, in the organization of Eram Pedestrian Street, considering the relative position of the components and items examined, improving the quality of pausing and seating spaces, maintaining and improving cleanliness and the visual quality of façades, strengthening natural elements and open spaces, and paying attention to spatial legibility can be prioritized in the design and management interventions for this space. In addition, the location of Eram Pedestrian Street within the central and religious context of Qom and its connection to routes leading to the Holy Shrine of Hazrat Masoumeh (SA) can provide a context for interpreting the relative importance of legibility, identity, and the quality of spatial experience. However, this interpretation was not independently tested in the present study and requires empirical investigation in comparative studies. The main contribution of the present study is to demonstrate differences in the relative position of objective and subjective components within the structure associated with users' happiness in this public space; a finding that emphasizes the need to prioritize design and management interventions in public space based on contextual characteristics and users' perceptions.

Table 11. Practical recommendations based on the findings of the study for enhancing happiness in Eram Pedestrian Street

Implementation recommendation	Research finding	Area of intervention
Increase and appropriately distribute seating and pausing spaces along the pedestrian street, particularly at points with capacity for users' presence and stopping.	Seating areas (coefficient of 0.87) had the highest coefficient in the urban design component.	Facilities and spatial comfort
Strengthen canopies and shelters and improve paving quality in sections of the route that have a greater need to pause and stop.	Urban facilities and amenities, including canopies, shelters, and paving quality, ranked next with a coefficient of 0.79.	Facilities and spatial comfort
Strengthen the environmental maintenance and cleanliness program and organize façades and visual elements to improve the perceived quality of the pedestrian street.	Cleanliness (coefficient 0.76) and façade aesthetics and street harmony (coefficient 0.70) were important indicators of the objective dimension.	Visual quality
Strengthen and develop natural elements and green and open spaces along the pedestrian street, in accordance with the area's physical capacity.	The amount of green space, open space, and natural elements, with a coefficient of 0.88, was the most important indicator of this component.	Land-use diversity and spatial quality
Maintain and strengthen the diversity of leisure, commercial, and service activities along the route to support users' continuous presence and use.	The diversity of recreational and leisure functions, cafés, restaurants, and shops had a coefficient of 0.60.	Land-use diversity and spatial quality
Improve the quality and continuity of lighting along the route and at pausing points, given this indicator's importance in the research findings.	Lighting quality, with a coefficient of 1.00, was the main indicator of the security component.	Security
Strengthen access to the pedestrian street through public transportation and improve accessibility for groups with special needs.	Appropriate public transportation had a coefficient of 0.75, and accessibility for people with special needs had a coefficient of 0.68.	Accessibility

Implementation recommendation	Research finding	Area of intervention
Strengthen route legibility through an integrated system of signs, wayfinding signs, and prominent landmarks, particularly along routes leading to important religious and historical elements.	Legibility, with a coefficient of 0.78, had the highest coefficient in the perceptual component.	Perceptual
Maintain and strengthen the calming quality of the pedestrian street space and reduce environmental disturbances that may reduce users' experience of tranquility and satisfaction.	Satisfaction with the space had a coefficient of 0.67.	Perceptual
Strengthen the existing identity-related and historical elements of the pedestrian street and the way they are narrated and introduced, to maintain users' connection to the place's identity.	Sense of identity and place attachment, with a coefficient of 0.65, was one of the effective indicators of the perceptual dimension.	Identity and attachment

Authors' Contributions

Percentage of authors' contributions: 80%, 15%, 5%

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Conflict of Interest

The authors declared no conflict of interest.

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