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Evaluating the Impact of Spatial Design on Users in Adaptive Reuse Projects: The Case of the Karapınar Grain Warehouse

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Abstract

The preservation and use of historic buildings as immovable cultural heritage are important for the continuity of a building's life. When assigning a new function to buildings beyond their original use, meeting the needs of the city and the public, as well as ensuring socio-cultural and economic sustainability, are important considerations for selecting an appropriate function. When the integration of the new function with the existing building is successful, user satisfaction and the sustainability of the function yield positive outcomes. Based on this, in this study, which investigates the impact of spatial design on users through the adaptive reuse of an immovable cultural asset, the historic grain warehouse located in the center of Konya, Karapınar District, currently serving with a 'book-café' function, was selected as the field study. The aim of the study is to analyze the new function of the warehouse building functionally and physically through spatial analysis criteria and user opinions. In this context, users' experiences were evaluated holistically within the framework of spatial analysis criteria using semi-structured interviews, one of the qualitative research methods. The findings of the study reveal that the adaptively reused building largely meets user expectations in architectural, technical, and environmental terms. It was determined that the building increases its symbolic value in the region, compensates for the lack of social spaces, that interior identity and the feeling the space leaves on individuals are important for users, and that thermal comfort has a direct effect on the duration of users' stay in the space. However, the insufficient perception of the historical identity in the user experience indicates that the historical context should be more effectively integrated into the design in such adaptive reuse projects.

Keywords:
Adaptive reuse, Karapınar Grain Warehouse, Semi-structured interview, Spatial analysis

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INTRODUCTION

Contemporary urbanization has brought about identity-less and unplanned developments along with environmental problems. Nevertheless, historic buildings that continue to exist in cities are among the fundamental elements of urban identity. Over time, these buildings, which lose their functions, often fail to adapt to changing socio-cultural and physical conditions. However, the contemporary conservation approach aims to preserve the architectural, aesthetic, and cultural characteristics of these buildings while transferring their original identities to the future (Yalaz and Yaldız, 2020).

Within the scope of the study, the adaptive reuse process of the historic grain warehouse located in Karapınar was examined, and the spatial effects of the building on users were analysed. The reason for selecting the Karapınar Grain Warehouse is that the Karapınar district has a significant agricultural identity within the Konya Plain and is historically located on the Silk Road route. Grain warehouses are important examples of rural industrial heritage in Anatolia, reflecting production and storage processes in rural contexts. However, in the literature, these structures are generally discussed through large-scale examples in urban settings, while small-scale examples located in rural areas are limited. In this respect, the Karapınar Grain Warehouse adds originality to the study by addressing adaptive reuse and user experience together within a rural context.

A qualitative research method was adopted as the research methodology. In this context, it was aimed to evaluate the Karapınar Grain Warehouse, which was determined as the study material, functionally and physically through spatial analysis criteria and user opinions within the framework of its new function as a book-café. Through the analyses conducted, it is anticipated that user satisfaction increases when the integration of the new function with the building is achieved. As the research design, a case study, which is among qualitative methods, was adopted. This design was considered appropriate to analyse the warehouse building from a user-centered perspective within the context of its new function as a book-café and to evaluate the extent to which the building's place in memory is compatible with its current condition. Within the scope of the study, purposive sampling was preferred to obtain in-depth data. Interviews were conducted with a sample group of 10 participants selected from among book-café users. In this context, both observation and semi-structured interviews were used as data collection tools. Spatial analysis criteria were structured under four main headings: historical, environmental, architectural/spatial, and structural technical factors. The findings obtained through the qualitative data collection process were evaluated using content analysis and were systematically analysed and presented through MAXQDA software.

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LITERATURE REVIEW

The concept of adaptive reuse is important for sustaining and preserving historic buildings that have entered a process of deterioration over time in accordance with contemporary conditions. Such buildings may lose their originality due to reasons such as physical deterioration or the inability to respond to the needs of the era (Erkovan Yılmaz, 2022). Historical buildings are subject to effects such as functional obsolescence, structural wear and tear, and technological advancements over time (Sungur, 2024). For this reason, national and international standards for conservation have been developed to ensure the sustainability of these buildings. Among the most important of these are the 1931 Athens Conference and the 1964 Venice Charter (Erder, 1977).

The concept of adaptive reuse has been associated with several important turning points in international conservation since the Venice Charter up to the present day (Özçakır, 2024). The first of these is the Appleton Charter for the Protection and Enhancement of the Built Environment published in 1983, which emphasizes the importance of assigning an appropriate function to a building with minimal intervention in cases where its original function cannot be sustained. The Charter for the Conservation of Historic Towns and Urban Areas (Washington Charter, 1987) highlight the necessity of respecting the integration of scale and plot size with the existing spatial order during the adaptation of historic buildings. In the Charter on the Built Vernacular Heritage (1999), it is argued that reuse processes should respect the integrity, character, and form of the building while adapting it to contemporary living standards. The ICOMOS–IFLA Principles Concerning Rural Landscapes as Heritage (2017) recommend the development of long-term management strategies for adaptive transformation in rural landscape areas. The ICOMOS Guidance on Fortifications and Military Heritage (2021) provides comprehensive recommendations in terms of accessibility. The most recent document on adaptive reuse, the International ICOMOS Charter for Cultural Heritage Tourism published in 2022, addresses issues of transformation and adaptation within a more comprehensive framework. This charter emphasizes that, through adaptive reuse and cultural heritage tourism, it is possible to enhance the adaptive capacities of communities and contribute to the creation of more resilient and adaptive communities in the face of disasters (Özçakır, 2024). At the national level, the legal framework for the protection of cultural heritage in Türkiye is defined by Law No. 2863 on the Conservation of Cultural and Natural Assets. According to the legislation, it is emphasized that the original qualities of registered buildings should be preserved and that these buildings should be integrated into social life through contemporary uses (Law No. 2863 on the Conservation of Cultural and Natural Assets, 1983). In the Venice Charter, the long-term conservation of monuments is emphasized, while in the ICOMOS Charter on the Built Vernacular

Heritage (1999), principles of integrity in the adaptation of traditional buildings to new functions are highlighted (Ahunbay, 2017).

Adaptive reuse aims not only to preserve a building but also to reintegrate it into society, thereby ensuring its sustainability (Aydın & Yaldız, 2010; Aydın & Okuyucu, 2009). According to Kuban (2000), the process of adaptive reuse differs from traditional interventions, because assigning a new function to a building means incorporating it into a new architectural design process. Therefore, adaptive reuse should also be regarded as a social responsibility (Kılıç, 2015). For this reason, this process requires a multidimensional design approach that is socio-cultural and technical in nature.

In recent years, the scope of architectural heritage has expanded, and industrial buildings have also been considered among the cultural assets that require conservation (Şekerci & Akıner, 2021). Adaptive reuse projects revitalize the historical and cultural values of these structures and provide social benefits (Lewis, 2013). Kuban (2000) emphasizes that historic buildings gain value through transformations over time, highlighting that a building becomes enriched with different cultural layers from different periods.

For a structure to be sustainable, it must be reusable or convertible (Şen, Kaya & Alpaslan, 2018). In an architectural context, sustainability aims to meet spatial needs without disrupting the natural balance (Sev, 2009). In this context, the ecological, economic, social, and cultural dimensions of structures must be considered. Additionally, principles such as energy efficiency should also be evaluated during the design process for historical structures (Çelebi et al., 2008). The principle of sustainability requires that the historical environment be planned in accordance with today's needs while ensuring its active use (Kuban, 2000). Integrating cultural heritage into daily life, ensuring its economic contribution, and passing it on to future generations are also fundamental objectives of this process (Kuşçuoğlu & Taş, 2017). The sustainability approach, based on continuous development, is considered an effective strategy for improving and repurposing historical structures (Bullen, 2011).

In conclusion, the conservation of historic buildings is important for the continuity of cultural heritage. Adaptive reuse contributes to architectural, cultural, social, and economic values by enabling these structures to integrate with contemporary life. When adaptive reuse projects and practices in Türkiye are examined, a rich variety of examples can be found across different cities and periods. Notable examples in Istanbul include the Kasımpaşa Salt Warehouse (DDB Salt Warehouse), the Hasanpaşa Gasworks (Müzegazhane), and the Terkos Pump Station (Istanbul Water Civilizations Museum), which received the National Architecture Award in the Conservation–Sustenance category under the Building Branch. Similarly, in Konya, adaptively reused structures such as the Tantavi Warehouse (Tantavi Culture and Art Center) and the Historic Tekel Building (Depot No. 4), which possess

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railway industrial heritage value, stand out as significant examples that have recently been reintegrated into urban life.

METHODOLOGY AND METHODS

Adaptive reuse projects require a multifaceted examination of aspects such as the building's physical condition, cultural memory, and sustainability. These elements need to be investigated in detail from a user-centered perspective. Therefore, a qualitative research method was preferred within the scope of the study. The qualitative research method helps to gain an in-depth understanding of individuals' evaluations on a particular subject (Creswell, 2013, p. 48). Within the scope of this study, it was aimed to evaluate the spatial analysis criteria of the adaptively reused building and its new function based on user opinions. It was anticipated that ensuring the compatibility of the new function with the building would increase user satisfaction and contribute to socio-cultural sustainability.

In the study, the case study design was used as a qualitative research method. According to Creswell (2013), a case study is the holistic examination of real-life phenomena within a specific context through multiple data sources. Within the scope of the study, the user-centred analysis of the Karapınar Book Café and the place of the building in historical memory were evaluated holistically. The building was analysed within the framework of the research problem based on the participants' perspectives. Below, the research area, sample group, data collection, analysis process, and findings are presented respectively.

Research Site

Karapınar District is a rural settlement located to the east of Konya, standing out with agriculture and animal husbandry. The historical grain warehouse located in the district was constructed by the Turkish Grain Board (TMO) in the 1950s. This structure shares common characteristics with similar buildings constructed throughout Türkiye by the TMO or cooperatives between 1950 and 1980. As one of the important examples of Anatolian rural industrial heritage, the building was formerly used as a grain warehouse in Karapınar. The building is in the centre of Karapınar, on İnönü Street in the Hankapı Neighborhood. In its immediate surroundings, there are important public buildings such as the Karapınar Government House, the City Hall, and the Karapınar District Governorship (Figure 1).

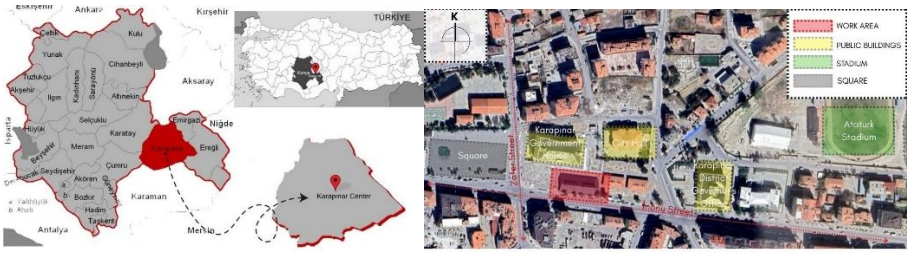

Figure 1. Location and immediate surroundings analysis of the study area (Google maps, edited by the author).

The structure is notable for its traditional load-bearing masonry walls built with local stone, the use of stone-brick combinations, and wooden window and door frames. During the restoration process, later-added concrete elements were removed, revealing the original stone texture. The rectangular, single-story building features a spacious interior and a hipped metal roof, with clerestory windows allowing for natural light and ventilation. The large wooden entrance doors were used for transporting goods (Figure 2).

Figure 2. The Karapınar Grain Warehouse before restoration (Konya Metropolitan Municipality archive).

This historic building, which had gradually lost its function over time, was taken into a restoration process by Konya Metropolitan Municipality in 2020. Within the scope of the restoration, the stone walls were cleaned using pressurized water and chemical treatments. The plaster layers were removed to reveal the original stone texture. Damaged roof elements were renewed using materials like the originals, and the roof lantern was preserved. In the interior, the symmetrical flooring layout was maintained, and the floor was finished with traditional patterned ceramic tiles. Window and door frames were also renewed using wooden materials (Figure 3).

Figure 3. Restoration process of the Karapınar Grain Warehouse (Konya Metropolitan Municipality archive).

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The building, which was opened to the public in 2022 as a "Book Café," has been reintegrated into the Karapınar district with its public space character. The building was designed with an open-plan layout within an enclosed area of 800 square meters (Figure 4).

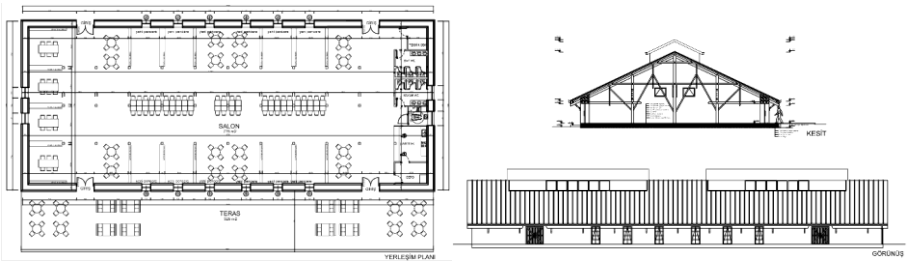

Figure 4. Site plan, section, and elevation drawings of the Karapınar Grain Warehouse (Konya Metropolitan Municipality archive).

With its new function, the building aims to provide an environment where especially young people can study and socialize. The Karapınar Book Café was conceived as a space intended to enhance reading habits and foster a sense of cultural sharing among young people (Figures 5).

Figure 5. The Karapınar Grain Warehouse after the completion of restoration (Personal archive).

Sampling

In qualitative research, data are obtained through appropriate tools from individuals who have directly experienced the subject or the problem (Creswell, 2013, p. 45). In this study, data was gathered from a sample group consisting of Book Café users. Sampling in qualitative studies is often carried out using probability-based or purposive strategies (Yıldırım & Şimşek, 2021). According to Creswell (2014), purposive sampling involves the intentional selection of participants based on specific criteria that allow for a variety of perspectives related to the research problem. Accordingly, purposive sampling was used to allow for in-depth analysis.

Since qualitative research is mostly based on observations and interviews, it does not require large samples, because after a certain point the data begins to repeat (Morse, 2016; Shenton, 2004). Moreover,

this facilitates a more detailed examination of the sample (Baltacı, 2019, p. 373). A pilot study was first conducted with three participants, after which a sample of ten individuals was selected from among Book Café users based on criteria such as educational background, profession, visit frequency, and purpose of visit. The participants' educational and occupational data are presented in Figure 6.

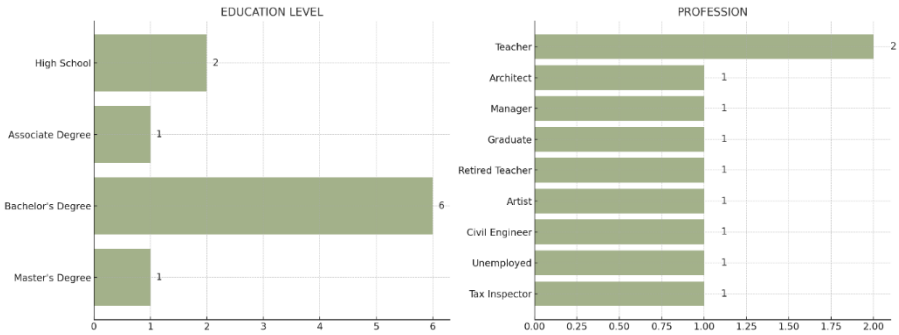

Figure 6. General data of the sample group.

In Figure 6, it is observed that most participants have a higher education level and that there is diversity in terms of occupational groups. Data regarding the participants' reason for visit, duration of visit, and frequency of visit are presented in Figure 7.

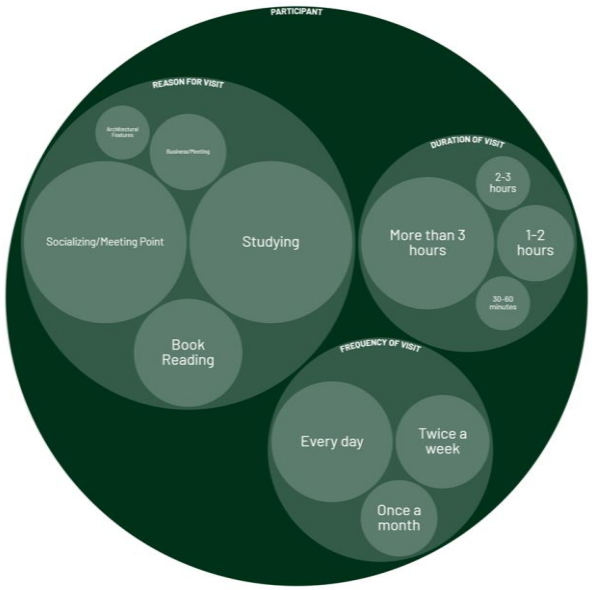

Figure 7. Visit data of the sample group.

According to Figure 7, the most important reason for participants' visits to the building are socializing/meeting, studying, and reading books. These findings indicate that the building functionally responds to a wide range of needs. The fact that participants spend long periods of time in space suggests that the building provides a positive level of comfort. Moreover, the data on the frequency of visits indicates that participants use the building daily.

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Data Collection

In qualitative research, the data collection process develops in stages (Creswell, 2013, p. 146). In this process, methods such as observation, structured and semi-structured interviews, focus group studies, and text analyses are used (Forrester & Sullivan, 2018). Researchers employ multiple methods to increase data validity and reliability (Baltacı, 2019, p. 374). Within the scope of this study, observation and interview techniques were applied together.

Observation is a data collection method used to examine participants' behaviors or to understand the scope of the subject (Baltacı, 2019; Bengtsson, 2016; Merriam & Grenier, 2019; Crabtree & Miller, 1999; Fossey et al., 2002). Types of observation vary as participant, non-participant, and covert. In participant observation, the researcher is involved in the process. In non-participant observation, the researcher observes the process from the outside (Baltacı, 2019; Golafshani, 2003; Morse, 2016; Patton, 1990; Seidman, 2006; Strauss & Corbin, 1990). This type of observation enables an in-depth understanding of behaviors by observing them from within (Yıldırım & Şimşek, 2021, pp. 173–175). Within the scope of this study, the 'participant observation' method was preferred in the book café space.

The other data collection tool used in the study is the interview. The interview method enables access to information that cannot be directly observed, such as individuals' experiences and perceptions (Baltacı, 2019; Bengtsson, 2016; Seidman, 2006). This method allows for understanding participants' inner worlds and revealing their perspectives (Baltacı, 2019, p. 374). In the interview method, there are different techniques such as structured, semi-structured, unstructured, and focus group interviews (Marshall, 1996). Within the scope of the study, a semi-structured interview method consisting of open-ended questions was preferred. In this way, an in-depth examination of the research questions was made possible.

The interview questions used in the study were developed based on similar studies by Aydın & Okuyucu (2009), Kılıç (2015), Onay & Yazıcıoğlu (2015), Müezzinoğlu et al. (2020), Emsen & Örmecioğlu (2020), and Elmalı Şen & Selçuk (2024). The questions were divided into two main groups: general questions and subjective questions related to the research aim. General questions focused on demographic data such as participants' profession, age, education level, frequency of visits, and duration of stay. Subjective questions were structured according to spatial analysis criteria under four main headings: historical, environmental, architectural/spatial, and structural-technical factors. The subcomponents of these criteria were also categorized at a thematic level (Table 1).

Table 1. Spatial analysis criteria, sub-criteria, and sample primary and exploratory questions related to these criteria

Spatial Analysis Criteria	Spatial Analysis Sub-Criteria	Sample Primary and Exploratory Questions
Historical Factors	Historical analysis of the building Interventions made to the building Compatibility of the new function with the building	Primary Question In your opinion, what kind of image does this building have in Karapınar? How do you think people describe this place? Exploratory Questions Do you think it contributes to the promotion of the district? How do you think this place has been represented or embedded in oral culture among people?
Environmental Factors	Deficiencies and needs of the region Transportation and accessibility The building's iconic status within the city	Primary Question How do you evaluate this place in terms of its location? What are your thoughts regarding ease of transportation and accessibility? Exploratory Questions Is it easy to access by public transportation? Is it sufficient in terms of accessibility for people with disabilities?
Architectural and Spatial Factors	Spatial organization Interior identity Flexibility	Primary Question From an architectural perspective, what kind of impression does the interior space and overall design of the building leave on you? Exploratory Questions Do you think the building preserves its historical identity? Which interior details attract your attention?
Structural and Technical Factors	Lighting – visual comfort Heating / ventilation Acoustics – auditory comfort	Primary Question What are your thoughts on the lighting and ventilation comfort of the space? Exploratory Questions Do you find the natural lighting sufficient? Does the interior feel spacious or stuffy?

Semi-structured interview questions were approved ethically by the Ethics Committee of Selçuk University Faculty of Architecture and Design with decision number 04, dated March 17, 2025. The semi-structured interview data was obtained in March 2025 through face-to-face interviews conducted with participants on both weekdays and weekends.

During the interview process, it is important that questions are asked clearly and understandably, and that additional probing questions are used to deepen the topic when necessary (Creswell, 2002; Makatouni, 2002). Therefore, primary descriptive questions were followed by exploration questions to deepen discussion (Table 1). Audio recording is a key tool for data preservation and transcription (Merriam, 2023). Accordingly, with participants' consent, interviews were recorded and the data were coded and included in the analysis in line with validity and reliability principles. Within the scope of the study, three pilot interviews were first conducted to review the questions, followed by detailed interviews with 10 participants. Interview data were coded as "P1, P2… P10" and transcribed into written form.

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Data Analysis

In qualitative research, data are analysed using various methods such as descriptive analysis, content analysis, discourse analysis, and text analysis (Baltacı, 2019). Content analysis reveals the relationships between concepts through an inductive approach and systematically constructs themes, categories, and codes (Baltacı, 2019; Yıldırım & Şimşek, 2021). Within the scope of this research, the content analysis method was preferred.

In content analysis, data are analysed in four stages. These are coding, the determination of code–category–theme, the organization of data, and finally the interpretation of findings (Baltacı, 2019; Eysenbach & Köhler, 2002; Miles & Huberman, 1994). Within the scope of this study, the process was conducted within the framework of these four stages. The data coding and analysis process was carried out using Maxqda software. Maxqda was preferred because it facilitates the organization, visualization, and analysis of qualitative data (Creswell, 2013).

Validity and Reliability

In scientific research, validity and reliability are related to the data collection tools used in the study, the research design, and the analysis process. In quantitative research, there are various measurement methods to ensure validity and reliability. In qualitative research, however, it is not possible to determine validity and reliability in a definitive manner (Guba & Lincoln, 1994; Shenton, 2004). According to Lincoln and Guba, validity and reliability in qualitative research are ensured through the criteria of credibility, transferability, dependability, and confirmability. In addition, coding directly affects these criteria (Baltacı, 2019). In this study, data were obtained through observation, semi-structured interviews, and content analysis using Maxqda software. Thus, the validity and reliability of the research were strengthened. Furthermore, the codes and categories used in the study were developed by drawing on similar studies in the literature. The codes were independently examined through peer review, compared in line with the architectural literature, and subsequently a code set was created. This process strengthened the credibility and confirmability of the research.

FINDINGS AND DISCUSSION

The findings were evaluated using the content analysis method. Within the scope of the study, the data obtained from semi-structured interviews were analysed through themes, categories, and codes based on spatial analysis criteria. The findings were visualized using the MAXQDA qualitative data analysis software. The relationships among codes, categories, and themes were presented graphically. The findings were addressed holistically based on frequency values and qualitative data derived from participants' statements. Accordingly, a total of 4

themes, 12 categories, 37 codes, and 280 frequency values were obtained in the study (Table 2).

Table 2. The table of themes, categories, codes, and frequencies used in the study

Theme	Historical Factors	Environmental Factors	Architectural and Spatial Factors	Structural and Technical Factors
Category	3	3	3	3
Code	5	11	12	9
Frequency	31	70	100	79

According to Table 2, the theme with the highest frequency is Architectural and Spatial Factors. This indicates a strong alignment between architectural design and user expectations. The Structural and Technical Factors theme, which ranks second, reveals that these factors are decisive in terms of user comfort. The Environmental Factors theme, in third place, is evaluated in the context of the building's relationship with its surroundings. The Historical Factors theme, which has the lowest frequency, shows that participants referred less frequently to issues such as historical identity. This suggests that users primarily focus on the current function of space and their experiential engagement with it. All themes are examined in detail below within their respective contexts.

- The *Historical Factors* theme, which addresses how users evaluate the building's relational perceptions of cultural memory and its new function, is presented in the hierarchical code-subcode model in Figure 8.

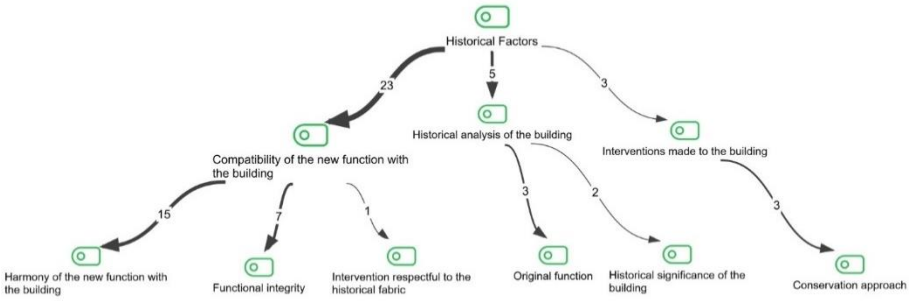

Figure 8. Hierarchical code-subcode model of the Historical Factors theme.

When the code distribution of the Historical Factors theme is examined, the category with the highest frequency is compatibility of the new function with the building. This indicates that participants positively evaluate the compatibility of the book café's new function with the historic structure. In particular, the codes compatibility of the new function with the building and functional integrity support this finding. User comments such as P4's "*The conversion into a book café is very successful*", and P9's "*Although there are similar structures in the area, it is gratifying that this one has been preserved in this way*", support these findings. Similarly, P8 noted, "*This building does not just relate*

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directly to Karapınar's social and cultural structure but elevates and enriches it. Architecturally, it is quite visionary for Karapınar." The relatively low frequency of the code respectful intervention on the historical fabric points to a limited level of sensitivity expressed regarding this aspect. Under the category historical analysis of the building, the codes' original function and historical significance of the building show a moderate level of awareness overall. It can be said that participants perceive the historical context of the building more superficially. Likewise, users appear to have little awareness of the restoration processes and conservation efforts related to the building.

- The *Environmental Factors* theme, which addresses the multifaceted relationship users establish with the building within its social, cultural, and regional context, is shown in the hierarchical code-subcode model in Figure 9.

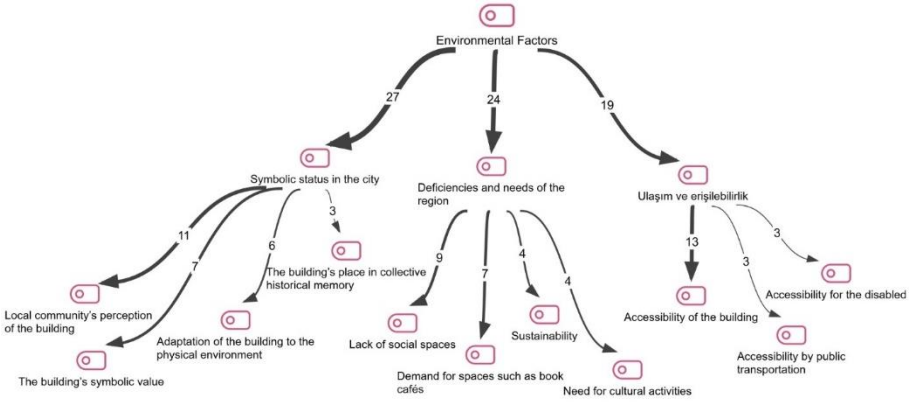

Figure 9. Hierarchical code-subcode model of the Environmental Factors theme.

Analysis of the code distribution within the Environmental Factors theme shows that participants' meaning-making relationships with the building and its surroundings are as strong as their spatial experience. The category with the highest frequency, the building's imaginal status in the city, provides important information in relation to the context of the building's location. Codes such as the meaning attributed to the building by the local community, the building's symbolic value, and its place in historical memory reveal that the building is perceived as an element of collective memory and identity. Statements by users P4 "*It also has a very strong place in oral culture; both students and the public have embraced this place. It also contributes to the promotion of the district because visitors from outside find it different and impressive,*" P5 "*This place has a very positive image among the public. It is defined as an elite library*," and P6 "*This place can be defined as an educational hub in Karapınar*" support these data. These views indicate that the building has become a reference point in urban memory and has been endowed with symbolic meaning by the local community. The codes within the category deficiencies and needs of the region reveal users' demands for social and cultural spaces in the building's surroundings. In particular, the prominence of the codes lack of social spaces and demand for spaces such as a book café indicates that the functional transformation of the

building responds to an environmental need. The statements of users P1 "*Karapınar really needed such a building…*" and P8 "*…Showing that activities independent of technology are also possible is very meaningful for students. This environment increases the sense of social belonging*" support these data. Lower-frequency codes such as need for cultural activities and sustainability indicate that users evaluate the space as a socialization environment. P6 emphasized the importance of this finding by stating, "*I think that the activities and the atmosphere increase the sense of social belonging.*" It is also observed that the codes transportation and accessibility and ease of access to the building have notably high frequencies. As reflected in P5's statement "*Its location is quite central and easy to access…*" the ease of access to the space is considered by most participants as a factor that encourages use.

- The *Architectural and Spatial Factors* theme, which analyses design decisions, spatial organization, and interior experience that directly affect users' relationship with the physical environment in a multidimensional way, is depicted in the hierarchical code-subcode model in Figure 10.

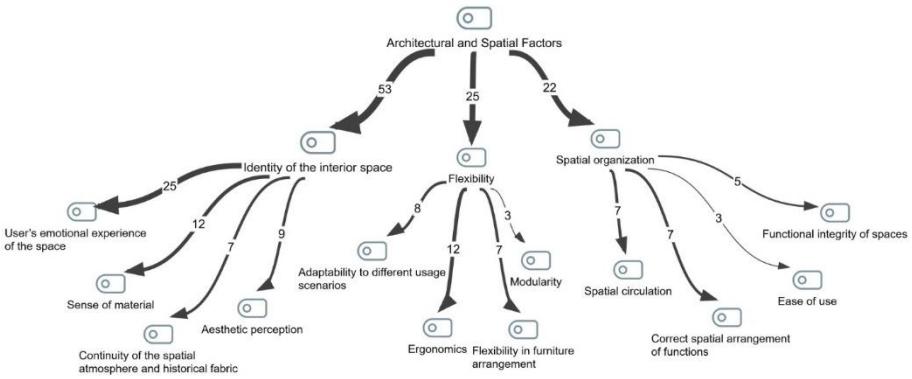

Figure 10. Hierarchical code-subcode model of the Architectural and Spatial Factors theme.

According to the graph, the category with the highest frequency is Interior identity. Codes under this category such as the feeling the space leaves on the user, material sensation, and spatial atmosphere/ continuity of historical fabric show that users form a strong emotional and sensory connection with space. Participants' comments support these strong codes: P2 said, "*The architecture of the book café is quite impressive.*" P3 stated, "*I like the interior. It makes me feel like I am not in Karapınar.*" P5 remarked, "*When entering from outside, I feel like stepping into a peaceful environment.*" Codes such as material perception and aesthetic perception reveal that space possesses perceptual value. The statements of participants P6 "*From an architectural perspective, the building leaves an authentic impression with its stone walls and wooden roof*" and P8 "*The wooden structure of the interior gives a sense of warmth. The column details where stone and wood intersect are striking. It creates a spacious and profound feeling*" indicate that participants evaluate the space as having a strong identity. Under the flexibility category, codes such as ergonomics, adaptability to different usage scenarios, and modularity reflect the space's ability to respond to

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changing needs. The statement by P9 "*The layout encourages social interaction. Thanks to the face-to-face arrangement, users can engage with each other more easily*" demonstrates that the design is flexible and adaptable. The spatial organization category relates to the functional planning and orientation of the space. Codes such as spatial circulation, appropriate placement of functions, and functional integrity of spaces indicate that users evaluate the space in terms of ease of wayfinding and the relationships between different areas.

- The *Structural-Technical Factors* theme, which addresses users' evaluations of the building in relation to the physical environment, is presented in the hierarchical code-subcode model in Figure 11.

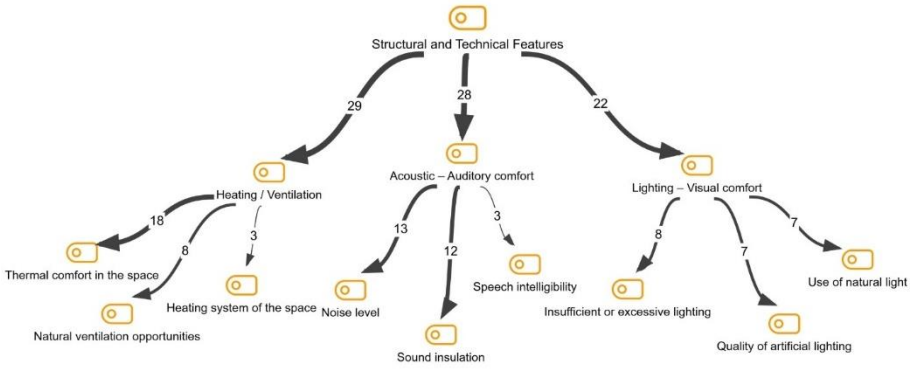

Figure 11. Hierarchical code-subcode model of the Structural and Technical Factors theme.

According to the graph, it is shown that the three categories under this theme have an equal effect on user comfort. In particular, the high frequency of the code thermal comfort in the space indicates that temperature conditions determine the duration of time spent inside the building. The statements P3 "*There were times when I felt cold in winter, and in summer it becomes difficult to stay when it is too hot.*" and P6 "*In summer, it can be difficult to stay here for a long time due to the heat.*" support this. This situation reveals that thermal comfort is important for user satisfaction in working spaces such as book cafés. The category acoustic- auditory comfort, which ranks second, reveals users' expectations regarding sound. The prominence of the codes noise level and sound insulation shows that the quietness of the environment is critical for activities such as reading and concentrating. Statements such as P10 "*Temperature is not impressive, but the noise is disturbing. When it is very noisy, I do not prefer to stay in the space.*" show that users evaluate acoustic comfort. The third category, lighting-visual comfort, was evaluated through light perception. The fact that the codes insufficiency or excess of light, use of natural light, and quality of artificial lighting have close frequencies indicates that users evaluate lighting quality holistically. The statement P1 "*Due to artificial lighting, the space causes a loss of time perception, because natural light comes from a very limited point.*" supports this data. It is observed that lighting arrangements that support users' visual comfort and concentration are important in this space.

In summary, according to the findings, it has been revealed that the spatial analysis criteria indicate that participants perceive a meaningful integrity between the building and its current function. It has been determined that the building strengthens its symbolic image in the region, compensates for the lack of social spaces, and that the interior spatial identity and the feeling the space leaves on individuals are considered important. In addition, it has been identified that thermal comfort within space affects the duration of users' stay. Moreover, the study also presents significant relational findings among the criteria at the levels of themes, categories, and codes in Figure 12.

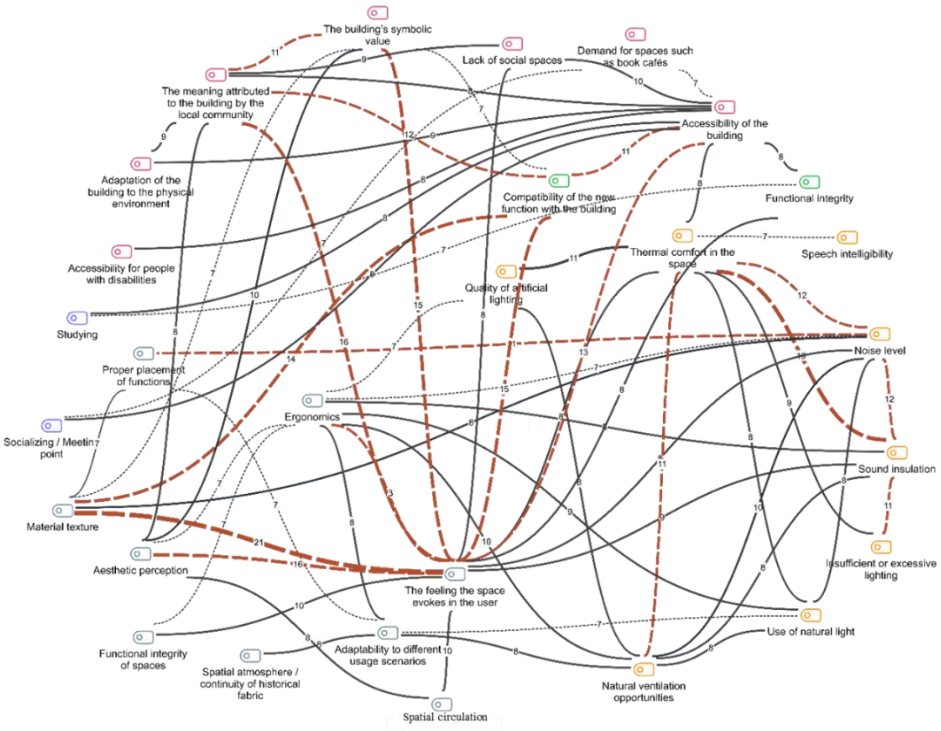

Figure 12. Code co-occurrence (code proximity) model of spatial analysis criteria.

According to the code co-occurrence model, codes analysed within the four spatial criteria interact, overlap, and complement each other. This underscores the importance of a holistic spatial analysis approach across themes. The model shows that the high-frequency code the feeling the space leaves on the user intersects with many structural and sensory codes such as aesthetics, material, thermal comfort, lighting, ergonomics, and acoustics. This indicates that user experience is a central criterion in spatial design. Strong relationships were identified especially between the codes the feeling the space leaves on the user and thermal comfort, aesthetic perception and quality of artificial lighting, as well as ergonomics and sound insulation. These connections reveal that architectural experience is shaped by technical and physical conditions and that user satisfaction is directly linked to visual and auditory comfort. Furthermore, the relationship between functional integrity and functional coherence of spaces and between compatibility of new function with the building and meaning attributed to the building

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by the local community demonstrates the importance of spatial planning in adapting historic buildings to new functions. Similarly, the link between lack of social space and socializing/meeting point codes indicate that environmental expectations align with the design. The connection between ease of access to the building and thermal comfort, and between noise level and user experience shows that considering accessibility and technical comfort together enhances environmental functionality. Although less frequent, the codes functional integrity and spatial circulation provide qualitative insights that should be considered in the adaptive reuse process.

CONCLUSION AND RECOMMENDATION

In this study, the adaptive reuse process of a historic grain warehouse in Karapınar was examined, and its spatial effects on user experience were investigated. Accordingly, the Karapınar Grain Warehouse, selected as the study material, has been evaluated functionally and physically through spatial analysis criteria and user opinions within the framework of its new function as a book café.

Within the scope of the study, under the theme of Historical Factors, users evaluated the building functionally. The integration of the new function with the space is satisfactory from the users' perspective. However, users have limited knowledge about the historical process of the building. This situation emphasizes the importance of conveying historical awareness to users in adaptive reuse studies. For future adaptively reused historic buildings, it is recommended to provide users with information about the historical process of the building. In such studies, the historical identity of the building and the transformations it has undergone can be conveyed through tools such as permanent and temporary exhibitions, informative panels, and archival photographs in interior spaces. In this way, it is considered that a bridge can be established between the new function of the building and its identity in historical memory, thereby creating a sense of historical awareness.

Within the scope of the study, Environmental Factors were interpreted by users through the social and cultural interaction that the space establishes with its surroundings. In particular, the high demand of the local community for social needs indicates that this building is viewed positively in the region. Adaptively reused buildings create an experiential field together with their immediate surroundings. It is observed that the open and enclosed social spaces around the building increase users' social interactions and support collective use. Therefore, in adaptively reused buildings, environmental factors should be evaluated in terms of accessibility, socialization, interaction, and the strengthening of environmental perception.

Under the theme of Architectural and Spatial Factors, users evaluated the space in a multidimensional manner. The importance they attach to interior spatial identity indicates that this building leaves a lasting impression in users' memory. At the same time, users finding the space

flexible and functional shows that the building can respond to contemporary needs. These results indicate that architectural and spatial design decisions in adaptive reuse projects directly affect user experience. In future similar adaptive reuse projects, it is important to develop user-centered and experience-based approaches.

Within the scope of the study, users evaluated Structural and Technical Factors by considering auditory, thermal, and visual comfort elements of space. In this respect, it can be stated that technical solutions that place user needs at the centre are important for spatial sustainability in the adaptive reuse process of buildings.

As a result, it has been determined that in the transformation of the Karapınar grain warehouse into a book café, the new function is largely compatible with the building and that user satisfaction is high. In addition, the high demand for the building by users has indirectly contributed to its economic sustainability at the local level. In this context, this adaptively reused building makes meaningful contributions to the Karapınar district in socio-cultural and socio-economic terms.

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Resume

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