

Determining Local User Preferences in the Adaptive Reuse of Historical Buildings as Social and Cultural Spaces: The Case of the Erzurum Protestant Boys' School

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Received: 30 April 2025, Accepted: 30 July 2025, Published online: 15 August 2025

Abstract

One of the reasons for the disappearance of architectural heritage, which constitutes the collective memory of societies, is the gradual loss of functionality over time. Historical buildings that lack function and are closed off to users are inevitably condemned to deteriorate and fall into ruin, ultimately disappearing along with all traces of the past. The adaptive reuse of buildings with historical value is a comprehensive process aimed at preserving their significance while adapting them for contemporary use and transmitting them to future generations. Choosing the most appropriate function from among the alternatives proposed for the reuse of historical buildings requires considering multiple factors. In adaptive reuse, which is regarded as a conservation approach, architectural characteristics, social and cultural values, environmental factors, and user opinions should all be considered when assigning new functions to historical structures. Although these factors are generally considered in adaptive reuse projects, user opinions often remain in the background. Therefore, adopting a participatory approach that integrates user perspectives into the reuse process would be a more accurate and effective strategy. In this study, the aim is to determine local user opinions and preferences within the adaptive reuse process of historical buildings, with a specific focus on the Protestant Boys' School located in Erzurum. As a method, a five-point Likert scale questionnaire was administered to 100 local users. Based on the survey results, a new social and cultural function is proposed for the Protestant Boys' School, which considers the desires and preferences of the local community.

Keywords

adaptive reuse, user-centered design, historical architecture, architectural restoration, education buildings

1 Introduction

Since the beginning of human history, numerous structures have been built in response to various needs. These buildings convey the cultural values, economic conditions, and social levels of societies from the past to the present, serving as a bridge between the past and the future (Biber and İslamoğlu, 2023). The preservation of cultural heritage structures aids in transmitting historical legacies to future generations and fosters a sense of historical consciousness within society, thereby contributing to the creation of a city's identity (Murzyn-Kupisz and Działek, 2013). However, structures that were originally constructed for different functions and constitute an essential part of the cultural memory of society gradually

lose their functionality over time because of natural and human-induced factors (Kartal and Dinçer, 2023).

There are various conservation approaches aimed at preserving cultural heritage structures that have lost their original function over time and transmitting them to future generations (Nocca, 2017; Plevoets and Van Cleempoel, 2011). One such approach, known as adaptive reuse, can be defined as the process of assigning new functions to buildings in accordance with user needs and spatial requirements while preserving and sustaining the historical value of the structures (Baiz and Atakara, 2025; Büyüköztürk and Oral, 2020).

When a vacant structure with cultural value is adaptively reused, several factors must be considered in

determining its new function, including architectural features, social and cultural values, environmental factors, and user opinions (Fusco Girard and Vecco, 2021). To achieve an effective design, user needs must be accurately identified and understood (Büyüköztürk, 2024). Additionally, user opinions directly influence the frequency of space utilization (Liu and Xiao, 2021). In the case of historical buildings that bear traces of the past, user continuity – and thus user perspectives – plays a crucial role in ensuring their sustained existence.

The continued existence of adaptively reused buildings is also a prominent issue in terms of sustainability, which has gained importance alongside urban development and environmental pollution (Bianchini and Parkinson, 1993). When the environmental, economic, and social contributions of historical buildings are considered, their impact on sustainability becomes more clearly understood (Othman and Elsaay, 2018).

The concept of sustainability emerged as a development movement during the second half of the 20th century (Sipahi and Sipahi, 2024). While sustainability represents a large-scale initiative at the level of intergovernmental development, it also concerns societies and all societal actors on a smaller scale (Sipahi and Kulözü-Uzunboy, 2021). Therefore, the contribution of public and local communities to sustainability is critically important (Landa-Mata et al., 2023). In this context, involving local populations and the public as participants in the adaptive reuse of historical buildings will also contribute to the sustainability of these structures.

Other key issues where the participation of the local population and the public becomes prominent in the adaptive reuse of buildings include social transformation and collective memory. Closely linked to cultural heritage, collective memory plays a significant role in embedding the elements symbolized by the historical environment into societal consciousness (Apaydin, 2020). Therefore, the adaptive reuse of historical buildings may be received either positively or negatively by communities, depending on the role these structures occupy in collective memory and the shifting meanings attributed to them over time (Sowińska-Heim, 2020).

Adaptive reuse is a frequently encountered approach in historic cities. One such city is Erzurum, which is located in Turkey. As the largest city in Eastern Anatolia, Erzurum has hosted numerous civilizations and diverse cultures throughout its history (Cengiz and Akkuş, 2012). Today, many structures in cities with different cultural heritages

are being adaptively reused and brought back into use (Sipahi and Yalçın, 2022; Uludüz and Sipahi, 2024).

One of the various communities that historically lived in Erzurum was the Armenians. Although Armenians were referred to as the "Millet-i Sadıka" (Loyal Nation) during the Ottoman Empire (Aykun, 2019), during World War I, they engaged in various activities aimed at establishing an independent Armenian state – including the Erzurum region – with the support of France, Russia, and England (Yüksel, 2012). Missionary activities were among the efforts they carried out toward this goal. Armenians who sought independence prioritized education; they opened free educational institutions, particularly in Armenian-populated areas, and translated the Bible into Armenian and Turkish to be taught in these schools and distributed among the Armenian community (İnan, 2023).

One of these educational structures is the Protestant Boys' School. The school is one of the educational institutions established by the American Board, a Protestant missionary organization, with the aim of missionary work (Gürbüz and Şenyurt, 2023). An examination of the American Board's archival records reveals a general site plan dated to 1911, indicating that Armenian missionary activities were concentrated in the area where the building is located (Fig. 1). On one side of Nene Hatun Street, where the Protestant Boys' School was situated, there were other structures serving missionary purposes, including a girls' school, a hospital, an upper mission house, and a stable.

In Fig. 2, images of the Protestant Boys' School from its period of use and its current state are presented. An analysis of the data obtained from these images reveals that the building is two stories high, with entrances provided by two separate doors accessed via staircases. The triangular projections at the entrance create a sense of dynamism in the building's façade. The ground floor housed classrooms, a play area, and an independent bathroom facility, whereas the second floor contained dormitory and orphanage sections.

Given the historical significance of the Protestant Boys' School, its adaptive reuse today is a particularly sensitive issue. In this context, community participation and support become crucial for any adaptive reuse project.

A review of the literature reveals that adaptive reuse has become a popular topic in the field of architecture in recent years (Augustiniok et al., 2025; Baiz and Atakara, 2025). There are also studies focusing on the determination of user preferences in the context of adaptive reuse (Chen et al., 2018; Gravagnuolo et al., 2024). However, the literature review indicates that no research has been conducted

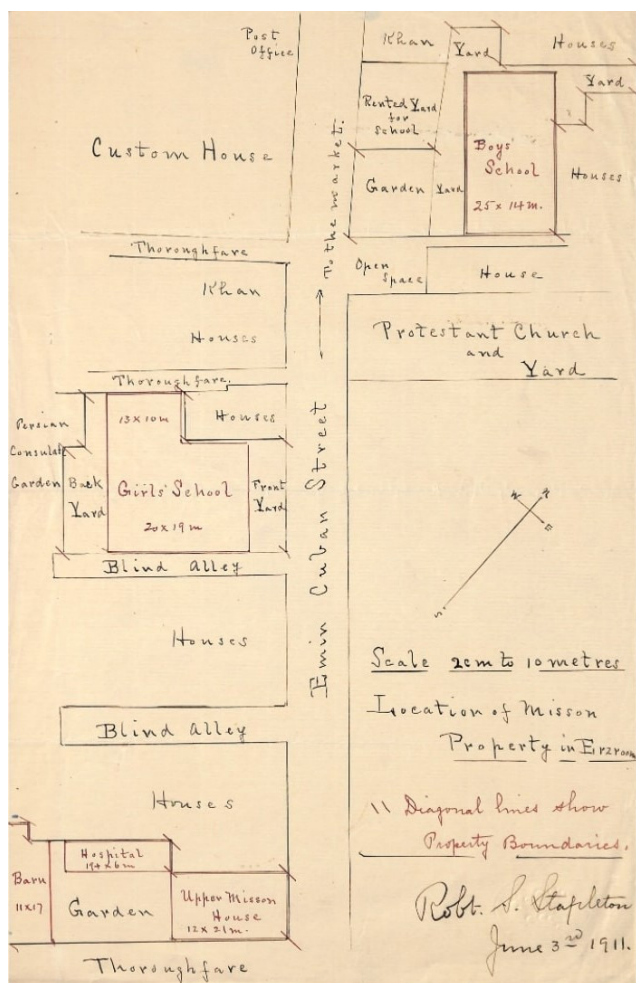


Fig. 1 Sketch of the Protestant Boys' School dated 1911

in Turkey that specifically addresses user preferences in adaptive reuse projects. In this respect, the present study constitutes the first study in Turkey examining participatory preferences concerning the functional transformation of historical buildings.

2 Materials and methods

2.1 Material

The material of this study consists of the Protestant Boys' School in Erzurum. The sample group for the study, which was conducted through a survey, is composed of residents of the city of Erzurum (Fig. 3). The sample size was determined via the formula provided by Özdamar (2003 cited in Sipahi, 2023:p.45). According to the calculation, for the study conducted in the central district of Erzurum, the population size (N) was 749,993, corresponding to the city's central population (Türkiye İstatistik Kurumu, 2025), with a margin of error (d) set at 0.1. On this basis, the sample size was calculated to be 96 participants.

The sociodemographic information of the survey participants, who constitute the study's sample group, is presented in Table 1. With respect to the age distribution of the participants, the highest participation rate was among those aged 18–25 (39%), whereas the lowest was among those aged 56 and over (1%). Participants aged 25–35 years accounted for 36%, those aged 36–45 years accounted for 16%, and those aged 46–55 years accounted for 8% of the sample.

Female participants (57%) outnumbered male participants (43%). An analysis of the participants' educational levels revealed that the majority were university graduates (68%), whereas the least represented group consisted of primary school graduates (2%). Individuals with post-graduate or doctoral education made up 20% of the participants, and no participants were identified as secondary school graduates.

Considering the data obtained, the highest participation rate was among those who had resided in Erzurum for more than 20 years (58%), followed by those who had been



(a)



(b)

Fig. 2 The Protestant Boys' School during its period of use and today

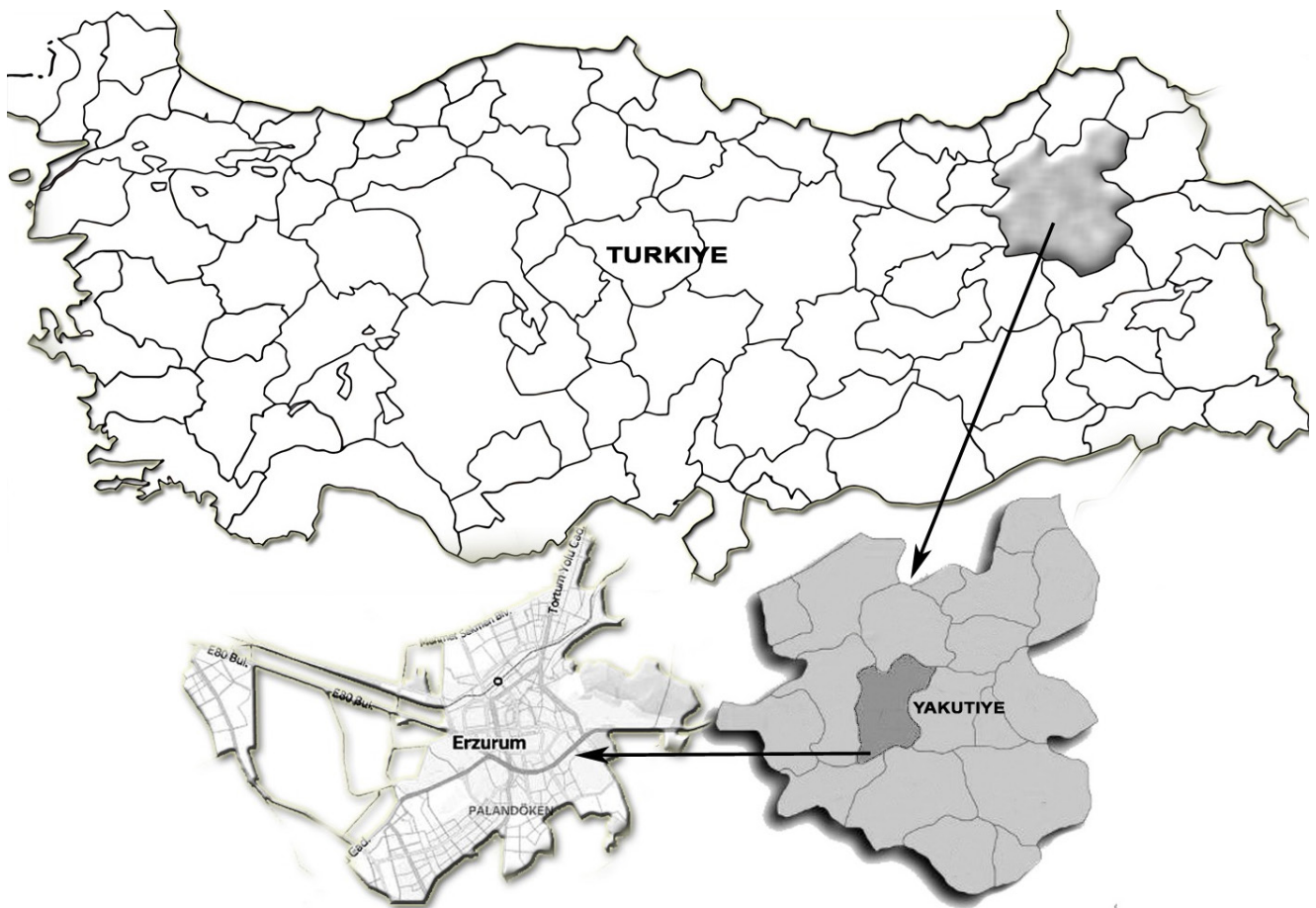


Fig. 3 Location of the study material

living in the city for 11–20 years (26%). Participants who either did not reside in Erzurum or had been living there for 0–5 years constituted the lowest participation rate at 4%.

2.2 Method

The study consists of four stages. In the first stage, through a comprehensive literature review, key topics were identified to formulate questions to be directed to the local community regarding the adaptive reuse of the structure.

In the second stage, survey questions related to these identified topics were prepared and administered. The survey, conducted face-to-face with participants, was designed using a five-point Likert scale and comprised a total of 26 questions.

In the third stage, the data obtained were analysed via SPSS software (IBM, 2025). The survey was administered to 100 individuals from the local user base. The collected data were transferred to SPSS, where detailed analyses, including reliability, normality, descriptive statistics, t tests, ANOVA, and correlation tests, were performed.

The reliability analysis indicated that the questionnaire had a reliability coefficient of 88%, demonstrating a high level of internal consistency and reliability (Table 2).

In the final stage of the study, the analyses were discussed, and the study's results were identified. On the basis of the findings obtained, recommendations were developed. The steps of the study are illustrated in Fig. 4.

3 Findings

The descriptive analysis data related to the survey conducted within the scope of the study are presented in Table 3. According to the table, participants largely believe that the school holds historical and cultural value (4.09). They also strongly agree that the existing structure should be preserved and passed on to future generations (4.28). However, the number of participants who considered the school's location suitable for social and cultural activities appeared to be somewhat lower (3.60).

The survey participants viewed the adaptive reuse of the building favourably (4.00). During the adaptive reuse

Table 1 Demographic information of the participants

1 - Participant age		
Age	Number	%
18–25	39	39%
26–35	36	36%
36–45	16	16%
46–55	8	8%
56 and over	1	1%
2 - Participant gender		
Gender	Number	%
Female	57	57%
Male	43	43%
3 - Participant education level		
Education level	Number	%
Primary school	2	2%
Middle school	0	0%
High school	10	10%
University	68	68%
Postgraduate/Doctorate	20	20%
4 - Participant residence duration		
Residence duration	Number	%
Not residing	4	4%
0–5 years	4	4%
6–10 years	8	8%
11–20 years	26	26%
More than 20 years	58	58%

Table 2 Survey reliability analysis

Cronbach's alpha	N of items
0.883	26

**Fig. 4** Steps of the study

process, participants predominantly preferred the new function to be that of a cultural center, such as a museum, exhibition space, or workshop (4.14). It was determined that participants' first choice for the Protestant Boys' School, when reorganized as a cultural center, was to function as a museum (4.00).

Other preferences for its adaptive reuse as a cultural center were, in order of priority, use as an exhibition

space (3.91), a workshop for arts (3.64), a library (3.61), an educational center (3.51), and, finally, a language school (3.40).

For the adaptive reuse of the Protestant Boys' School, organizing the building as a venue for social and cultural events emerged as the second most preferred option (3.77). However, it was observed that tourism-related options were not highly favoured by the participants. The idea of repurposing the Protestant Boys' School as an information center (2.89) received more support than the proposal to adapt it into a boutique hotel (2.66).

Although the idea of reusing the building as a social gathering space – such as a café, rest area, or book café – ranked lower overall, redesigning it specifically as a book café (3.27) appeared to be more appealing to survey participants than the tourism-oriented adaptive reuse proposals. Additionally, the ideas of repurposing the building as a rest area (2.86) or a café (2.85) were also found to be more attractive options than the boutique hotel proposal (2.66).

In addition to their adaptive reuse preferences, survey participants believe that the building holds potential in terms of education, culture, and tourism (4.05). In this regard, it is known that participants believe that an adaptive reuse project would contribute to the development of young people (3.92). Moreover, it was generally observed that participants agreed that the use of the building as a venue for social and cultural events for the local community would add value to the region (3.74).

The idea of organizing the building as a cultural and historical attraction was generally well received by survey participants, who believed it would contribute to tourism (3.84). Additionally, it was observed that utilizing the building as a venue for social events aimed at the local community would enhance interaction between the structure and the public (3.81).

The relationships between the survey questions were analysed via the Pearson correlation test. The analysis results obtained through the correlation test are presented in Fig. 5. A positive and strong correlation was found between the belief that the Protestant Boys' School has historical and cultural value and the belief that preserving the existing structure for future generations is important (0.634), as well as between the belief that the building has potential in education, culture, and tourism and the support for its reuse as a cultural center (0.508). Conversely, a negative correlation (−0.300) was observed between the belief in the building's historical and cultural value and the support for its reuse as a boutique hotel.

Table 3 The descriptive analysis related to the survey conducted within the scope of the study

No	Questions	N	Min	Max	Mean	Std. Devi.
1	I believe the Protestant Boys' School holds historical and cultural value.	100	2.00	5.00	4.09	0.911
2	The location of the Protestant Boys' School is suitable for social and cultural activities.	100	1.00	5.00	3.60	1.06
3	I believe it is important to preserve the existing structure and pass it on to future generations.	100	1.00	5.00	4.28	0.865
4	I support the use of the Protestant Boys' School as a cultural center (museum, exhibition space, etc.).	100	1.00	5.00	4.14	0.910
5	I support the adaptive reuse of the Protestant Boys' School as a museum.	100	1.00	5.00	4.00	1.00
6	I support the adaptive reuse of the Protestant Boys' School as an exhibition space.	100	1.00	5.00	3.91	0.964
7	I support the use of the Protestant Boys' School as an educational center.	100	1.00	5.00	3.51	1.23
8	I support the adaptive reuse of the Protestant Boys' School as a language school.	100	1.00	5.00	3.40	1.13
9	I support the adaptive reuse of the Protestant Boys' School as an art workshop.	100	1.00	5.00	3.64	1.04
10	I support the adaptive reuse of the Protestant Boys' School as a library.	100	1.00	5.00	3.61	1.10
11	I support the adaptive reuse of the Protestant Boys' School as a social gathering space (cafe, book cafe, rest area, etc.).	100	1.00	5.00	3.22	1.31
12	I support the adaptive reuse of the Protestant Boys' School as a cafe.	100	1.00	5.00	2.85	1.30
13	I support the adaptive reuse of the Protestant Boys' School as a book cafe.	100	1.00	5.00	3.27	1.22
14	I support the adaptive reuse of the Protestant Boys' School as a rest area.	100	1.00	5.00	2.86	1.27
15	I support the reuse of the Protestant Boys' School as a structure oriented toward tourism.	100	1.00	5.00	3.77	1.10
16	I support the adaptive reuse of the Protestant Boys' School as a boutique hotel.	100	1.00	5.00	2.66	1.32
17	I support the adaptive reuse of the Protestant Boys' School as a tourism information center.	100	1.00	5.00	2.89	1.32
18	I believe that using the building as a venue for social and cultural events for the local community would add value to the region.	100	1.00	5.00	3.74	1.06
19	I believe the building has potential in terms of education, culture, and tourism.	100	1.00	5.00	4.05	0.868
20	I believe that using the building as a center for youth would contribute to the development of young people in the region.	100	1.00	5.00	3.92	0.971
21	I believe that organizing the building as a cultural and historical attraction would contribute to tourism.	100	1.00	5.00	3.84	0.981
22	I believe that using the building as a venue for social events for the local community would increase social interaction.	100	1.00	5.00	3.81	0.991

A strong positive correlation was also detected between support for using the Protestant Boys' School as a cultural center and support for its adaptive reuse as a museum (0.740) and as an exhibition space (0.681). Additionally, a strong positive relationship was identified between support for the building's reuse as a museum and as an exhibition space (0.750). Furthermore, a strong positive correlation was found between the proposal for using the building as an educational center and the proposal for its reuse as a library (0.538).

Finally, strong positive correlations were observed between the proposal for repurposing the building as a social gathering space and the proposals for its reuse as a café (0.814), a book café (0.843), and a remaining area (0.707).

A positive and strong correlation (0.634) was observed between the proposal to repurpose the Protestant Boys' School as a tourism-oriented structure and the belief that organizing the building as a cultural and historical attraction would contribute to tourism.

Similarly, a positive and strong relationship was identified between the belief that using the building as a venue for social events would enhance community interaction and that organizing social and cultural activities for the local community would add value to the region (0.539) and that using the building as a center for youth would contribute to the development of young people in the area (0.603).

Furthermore, a positive and strong correlation (0.625) was found between the belief that organizing the building as a cultural and historical attraction would contribute to tourism and the view that the building holds potential in terms of education, culture, and tourism.

Finally, a positive and strong relationship (0.520) was observed between the view that the building holds potential for education, culture, and tourism and the belief that using it as a venue for social and cultural events for the local community would add value to the region (Fig. 5).

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
I believe the Protestant Boys' School holds historical and cultural value.		.361**	.634**	.508**	.353**	.342**	.084	.092	.150	.095	.051	-.099	-.067	-.146	.261**	-.300*	-.100	.255*	.556**	.294**	.366**	.287**		
The location of the Protestant Boys' School is suitable for social and cultural activities.			.326**	.225*	.378**	.348**	.318**	.008	.232*	.072	.201*	.116	.107	.242*	0,05	-.004	.069		.346*	.317**	.252*	.170	.329**	
I believe it is important to preserve the existing structure and pass it on to future generations.				.591**	.534**	.442**	.262**	.203*	.223*	.157	.158	.020	.138	-.001	.341**	-.268*	-.052		.212*	.545**	.387**	.350**	.404**	
I support the use of the Protestant Boys' School as a cultural center (museum, exhibition space, etc.).					.740**	.681**	.044	.248*	.413**	.205*	.252*	.137	.211*	.096	.463**	-.144	.021		.237*	.451**	.310**	.455**	.276**	
I support the adaptive reuse of the Protestant Boys' School as a museum.						.750**	.220*	.247*	.488**	.326**	.290**	.169	.313**	.229*	.408**	-.045	.152		.313*	.393**	.279**	.430**	.355**	
I support the adaptive reuse of the Protestant Boys' School as an exhibition space.							.175	.208*	.516**	.344**	.350**	.262**	.286**	.270**	.405**	.094	.221*		.332*	.439**	.262**	.475**	.404**	
I support the use of the Protestant Boys' School as an educational center.								.465**	.315**	.538**	.303**	.299**	.316**	.342**	0,109	.273*	.405**		.241*	.240*	.287**	.226*	.336**	
I support the adaptive reuse of the Protestant Boys' School as a language school.									.477**	.493**	.265**	.354**	.278**	.221*	.338**	.292*	.284**		.163	.266**	.386**	.429**	.337**	
I support the adaptive reuse of the Protestant Boys' School as an art workshop.										.546**	.380**	.329**	.344**	.363**	.327**	.259*	.327**		.233*	.275**	.437**	.453**	.419**	
I support the adaptive reuse of the Protestant Boys' School as a library.											.392**	.385**	.481**	.376**	.386**	.355*	.349**		.205*	0,178	.393**	.350**	.299**	
I support the adaptive reuse of the Protestant Boys' School as a social gathering space (cafe, book cafe, rest area, etc.).												.814**	.843**	.707**	.305**	.425*	.489**		.281*	.247*	.267**	.348**	.435**	
I support the adaptive reuse of the Protestant Boys' School as a cafe.													.767**	.657**	.262**	.547*	.469**		.285*	.194	.182	.217*	.391**	
I support the adaptive reuse of the Protestant Boys' School as a book cafe.														.694**	.367**	.456*	.493**		.343*	.139	.376**	.340**	.435**	
I support the adaptive reuse of the Protestant Boys' School as a rest area.															.206*	.570*	.638**		.362*	.098	.244*	.217*	.435**	
I support the reuse of the Protestant Boys' School as a structure oriented toward tourism.																	.221*		.285**	.310*	.494**	.320**	.634**	.309**
I support the adaptive reuse of the Protestant Boys' School as a boutique hotel.																		.685**	.281*	-.020	.143	.221*	.219*	
I support the adaptive reuse of the Protestant Boys' School as a tourism information center.																			.303*	.110	.174	.351**	.338**	
I believe that using the building as a venue for social and cultural events for the local community would add value to the region.																				.431**	.421**	.377**	.539**	
I believe the building has potential in terms of education, culture, and tourism.																					.520**	.625**	.550**	
I believe that using the building as a center for youth would contribute to the development of young people in the region.																						.590**	.603**	
I believe that organizing the building as a cultural and historical attraction would contribute to tourism.																							.497**	
I believe that using the building as a venue for social events for the local community would increase social interaction																								

Fig. 5 Results of the Pearson correlation test

4 Discussion

In the study conducted on the adaptive reuse of historical buildings through the case of the Erzurum Protestant Boys' School, it was observed that participants appreciate the value of the historical structure and recognize its significance. While participants believe that the building

should be preserved and passed on to future generations, they also view adaptive reuse as a favourable option. This finding indicates that users support the idea of making the building usable in daily life through a change in function.

With respect to the adaptive reuse of buildings, transforming a structure into a cultural facility is the top

priority for city residents. Among the proposed cultural uses, conversion into a museum stands as the first choice for survey participants, followed closely by its reuse as an exhibition space, which has a similar function.

Proposals to adapt the building for educational purposes – such as an art workshop, library, educational center, or language school – appear to be of secondary importance for the residents. This suggests that participants prefer the building to serve the general public as a cultural center rather than cater to a specific segment of society with an educational focus.

Furthermore, the participants' more favourable attitudes toward the idea of transforming the building into a center for social and cultural events, compared with educational alternatives such as art workshops, libraries, educational centers, and language schools, support this interpretation.

While the adaptive reuse of the building as a social gathering space was viewed positively by survey participants, the lower level of support for transforming it into a café, book café, or rest area compared with cultural facility proposals suggests that participants prefer a building that retains the characteristics of a cultural facility while also serving as a social gathering space.

The correlation analysis further supports this preference for a building that embodies both cultural and social gathering functions. In this context, it would be appropriate to consider the museum – the building type most strongly supported by participants – as serving both cultural and social functions.

Additionally, designing the museum not only as a cultural center but also as a venue for social events could further strengthen the interaction between the local community and the building.

Although the building holds cultural and tourism potential, it appears that participants do not strongly favour repurposing it primarily for tourism. Nevertheless, the correlation analysis revealed a direct relationship between the building's historical and cultural value and its tourism potential.

Therefore, it can be concluded that participants prefer to sustain the building's tourism potential through its function as a cultural facility. Establishing a museum would allow the tourism potential of the building to be realized within the framework of a cultural function.

5 Conclusion

The adaptive reuse of historical buildings is a significant method that ensures their preservation through active

use. The success rate of this method is directly proportional to the increase in utilization. In this context, considering user preferences during adaptive reuse processes directly impacts the success of reuse initiatives. Through a case study of the Erzurum Protestant Boys' School, this research has practically discussed the determination of user preferences in adaptive reuse projects.

On the basis of the descriptive and correlation analyses conducted within the scope of the study, participants preferred the building to be repurposed into a cultural facility that also offers opportunities for gathering and socialization. Accordingly, survey participants favoured the adaptive reuse of the Erzurum Protestant Boys' School as a museum or exhibition space. Therefore, it would be appropriate to transform the building into a museum or exhibition center that also incorporates social spaces. The study further demonstrated that such a transformation would also be suitable for enhancing a building's tourism potential. The repurposing of spaces for the utilization of tourism potential is likely to bring about changes in the sociocultural structure, particularly among the local population (Çorbacı et al., 2022).

As part of this study, the most prominent adaptive reuse function proposals were presented to the survey participants. In future studies, it would be appropriate to prepare and implement a more comprehensive adaptive reuse questionnaire involving a broader range of participants. In this sense, the current study serves as a reference for future research. In conclusion, taking user preferences into account – starting with the Erzurum Protestant Boys' School – emerges crucial considerations in the adaptive reuse of historical buildings. In urban transformations and developments, involving all stakeholders of the city plays a significant role in ensuring that changes and transformations are embraced by the public and that the most appropriate decisions are made.

Through such participatory efforts, selecting the right new functions for adaptively reused structures will contribute to the preservation and continuation of historical heritage. The responsibility for the successful adaptive reuse of historical buildings must be shared among city administrators, property owners, and urban users. Their collaboration is essential for identifying the appropriate functions for reuse. The transmission and preservation of cultural heritage for future generations can be achieved only if all city stakeholders fulfil their responsibilities.

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