



THE ROLE OF MOSQUES IN SOCIAL SUSTAINABILITY: EVALUATION AND FRAMEWORK DEVELOPMENT

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ABSTRACT

This research aims to examine the role of mosques in the concept of social sustainability. Mosques are one of the important elements that shape the social structure of society. However, from a sustainable development perspective, the role of mosques in social sustainability and how they can be evaluated in this context have not been adequately addressed. This study aims to develop a social sustainability measurement framework comprising three main components: compliance with societal needs, protection of cultural heritage, and social interaction, by examining studies on ensuring and measuring social sustainability. Additionally, as part of this study, a survey is being conducted to understand how mosques can be evaluated for social sustainability. This survey aims to reach a wide range of participants, including mosque users and surrounding residents. The data obtained are analyzed using SPSS. This data will provide an important resource for understanding the current status of mosques in terms of social sustainability and potential areas for improvement.

Keywords:

Social sustainability; cultural heritage; mosque

1. INTRODUCTION

1.1. SUSTAINABILITY AND THE SOCIAL DIMENSION

Sustainability encompasses not only economic growth and environmental protection but also social justice and human welfare. Global challenges such as climate change, environmental pollution, and resource depletion underscore the urgency of adopting renewable energy, recycled materials, and environmentally friendly products to secure a habitable planet, healthy ecosystems, and sufficient resources for future generations. Addressing these challenges further requires raising public awareness of consumption patterns and reducing waste and pollution stemming from construction and resource use, concerns that increasingly influence design disciplines [1].

Historically, the social dimension of sustainability has been underemphasized, while economic and environmental factors have received greater attention. Recent scholarship highlights its growing importance, calling for development policies and practices that are more comprehensive and human-centered [2]. Although frequently associated with sociology, social sustainability is also closely linked to architecture. It involves equitable access to essential resources, a strong connection to living spaces, and the promotion of social justice. By addressing challenges such as dense urbanization and structural differentiation, socially sustainable architecture can strengthen social cohesion, shape design processes, and foster healthy relationships between people and their environment.

Measuring and implementing social sustainability in urban areas is therefore crucial. Assessment systems should evaluate how buildings and neighborhoods relate to their surroundings, adapt to changing social dynamics, and facilitate interaction among diverse communities. Stender and Walter [3] emphasize that social sustainability criteria should encompass not only physical design but also policies supporting community participation and social integration [3].

In the built environment, social sustainability seeks to enhance quality of life through accessible, high-quality spaces. Public areas foster social interaction and ties, while pedestrian-friendly settlements encourage mobility and healthier lifestyles. A human-centered design approach creates environments responsive to human needs. Involving residents in planning helps ensure that design serves the community's shared interests, thereby increasing satisfaction and a sense of belonging.

1.2. MOSQUES AND THEIR SOCIAL ROLE

Mosques, embodying Islamic culture, are significant not only as places of worship but also as social intersections that reflect material and spiritual integrity. In the Islamic world, they stand out for their symbolic meaning as well as their architectural richness [4]. They promote understanding and tolerance among Muslims and between different cultures and beliefs, functioning as social gathering places [5].

Many mosques include educational spaces, libraries, and seminar venues, making them centers of knowledge and learning within the community. By fostering the core principles of Islam and strengthening unity, they offer a rich expression of religion and culture [6]. Beyond their social and public roles, mosques also possess semiotic and historical value, revealing by whom and for whom they were built and the eras they represent [7]. Traditional mosque architecture often features large, single-volume spaces with intensive use and short visits, whereas modern mosques increasingly address sustainability issues in their design [8].

Preserving cultural heritage carries both tangible and intangible traces of the past into the future. Such traces can be creatively reinterpreted and integrated into contemporary contexts, transforming them into new variations of cultural heritage [9]. Safeguarding the social and cultural characteristics of historic environments is therefore vital for sustaining humanity's identity and collective memory [10]. From this perspective, the social sustainability of mosques acts as a carrier of deep historical imprints. Mosques should be understood as places of social interaction, cultural exchange, and spiritual exploration; ensuring their social sustainability preserves and transmits collective consciousness to future generations.

Environmental strategies in historic Islamic architecture also offer valuable lessons supporting both structural durability and social sustainability. For example, the Sheikh Lotfollah Mosque's natural ventilation, balanced daylight, and use of local materials have enabled community use for centuries [11]. Such design choices not only preserve the physical fabric but also promote social interaction, safeguard cultural identity, and meet societal needs over the long term.

1.3. AIM AND RESEARCH GAP

This historical example shows that spatial qualities that ensure social sustainability in mosque architecture should draw on both modern criteria and past experience. Mosque sustainability in urban contexts goes beyond physical preservation, encompassing their evolving role as public spaces addressing ritual and non-ritual community needs. Spatial flexibility, such as transforming sacred areas into profane spaces before and after prayer, allows mosques to adapt to changing functions. Social sustainability in mosque architecture should therefore harmonize traditional knowledge with contemporary participatory practices, strengthening cultural resilience across generations [12].

2. METHODS

This article derives from the master's thesis *"Examining the Concept of Social Sustainability Through Mosques,"* prepared at Istanbul Beykent University, Institute of Educational Sciences. In this study, we extended the original thesis by collecting new data from a larger sample of 200 participants to provide more robust, generalizable insights into social sustainability indicators. Our analysis builds on and expands the thesis findings while ensuring that the data adequately represent diverse mosque users.

Mosques form part of the urban fabric. As platforms for diverse social activities, they strengthen community structures and thus belong at the center of sustainability discussions. They are not only places of worship but also host educational, cultural, social assistance, and solidarity functions. These activities enrich the social fabric of cities and support urban integration by bringing together different groups. Their architectural form and surrounding arrangements also occupy a prominent place in the urban landscape, encouraging people to spend time in public spaces. Accordingly, this study investigates the environmental and social dimensions of sustainability in mosques. It examines how more sustainable approaches can strengthen social activities and community relations, preserve cultural values, and promote equality and participation. The goal is to understand and discuss the relationship between cultural-heritage mosques and social sustainability in the built environment.

The research adopts a mixed-method design combining qualitative and quantitative approaches. The qualitative component uses grounded theory to explore mosque communities' perceptions, experiences, and

meanings regarding social sustainability. A questionnaire survey complements this by identifying general trends. This integration enables a comprehensive perspective on the social impact of mosques.

We assessed the contribution of mosques to urban life as a step toward improving social well-being and cohesion. A structured survey tested the proposed measurement framework. The questionnaire targeted individuals aged 18 and over who attend or observe mosques in Istanbul, Turkey. Using simple random sampling, 200 participants were selected, ensuring each individual had an equal chance of inclusion [13]. Analyses of representativeness confirmed that the sample adequately reflects the population. To enhance reliability and validity, survey questions were first piloted with 10 people before full administration. The methodological process was organized in four steps, as shown in Figure 1.

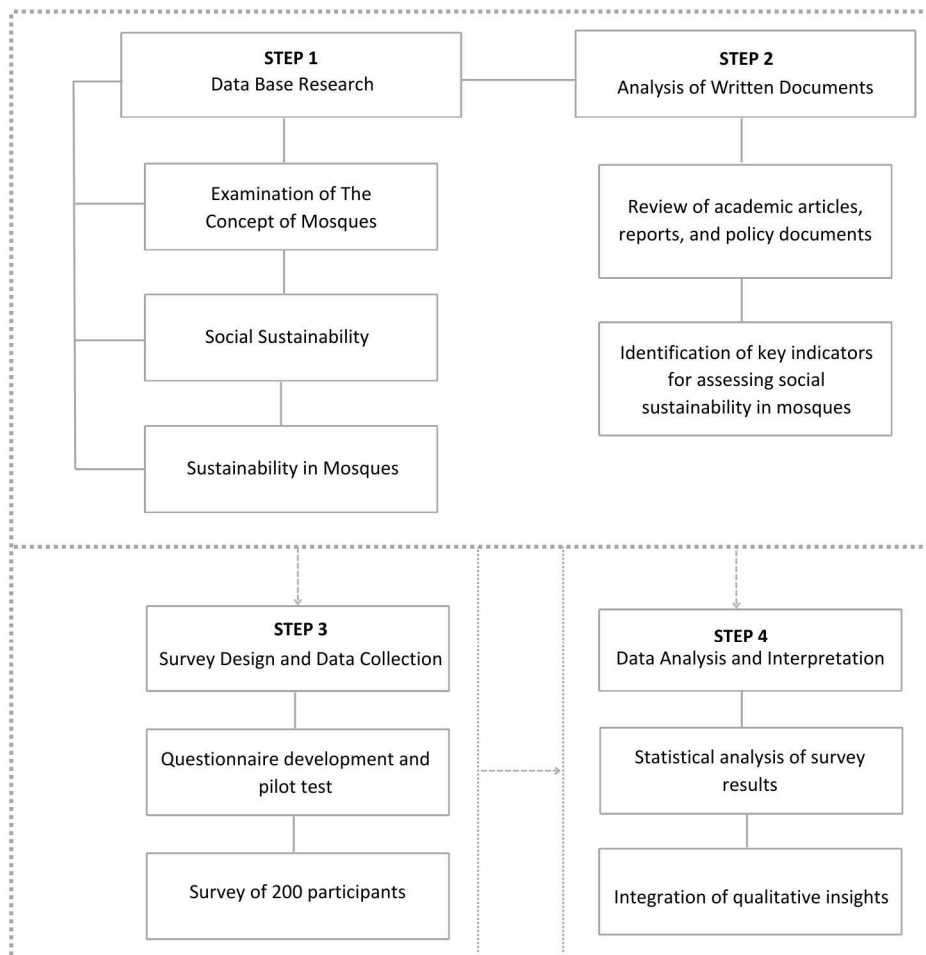


Figure 1. Steps of the research methodology.

Exploratory Factor Analysis (EFA) assessed the construct validity and factor structure of the scale, using principal components with direct oblique rotation. Kaiser–Meyer–Olkin (KMO) values generally range from 0.50 to 1.00, indicating suitability for factor analysis [13]. The analysis yielded a KMO of 0.900, classified as “excellent” [14]. The lowest KMO value for individual items was 0.845, confirming the adequacy of the scale. Bartlett’s Test also indicated suitability, $\chi^2(190) = 2833.018$, $p < 0.01$, demonstrating that inter-item correlations supported factor analysis (Table 1).

Table 1. KMO and Bartlett Test Results

| | |
|----------------------------------|----------|
| KMO Measure of Sampling Adequacy | 0,900 |
| Bartlett's Test of Sphericity | |
| Approx. Chi-Square | 2833,018 |
| Df | 190 |
| Sig. | 0,000 |

As a result of the exploratory factor analysis, the 20-item questionnaire comprised three sub-dimensions (factors), which together accounted for 65.37% of the total variance. In multi-factor designs, an explained variance of 40–60% is generally considered adequate [12]; therefore, the scale used in this study can be deemed valid. Specifically, the first factor explained 45.49% of the variance, the second 14.50%, and the third 5.36% (Table 2).

Table 2. Factor Explanation Levels

| Factor | Initial Eigenvalues | Extraction Sums of Squared Loadings | | | | |
|--------|---------------------|-------------------------------------|--------------|-------|---------------|--------------|
| | | % of variance | Cumulative % | | % of Variance | Cumulative % |
| 1 | 9,100 | 45,499 | 45,499 | 9,100 | 45,499 | 45,499 |
| 2 | 2,901 | 14,503 | 60,002 | 2,901 | 14,503 | 60,002 |
| 3 | 1,074 | 5,368 | 65,370 | 1,074 | 5,368 | 65,370 |

Subsequently, Cronbach's alpha analysis was performed to assess the reliability of the scale. The reliability coefficient was $\alpha = 0.933$ (Table 3), indicating high internal consistency. A Cronbach's alpha value of 0.70 or higher is generally regarded as sufficient to demonstrate the reliability of a measurement instrument [15].

Table 3. Reliability Analysis

| | |
|--|------|
| Cronbach's Alpha | ,933 |
| Cronbach's Alpha Based on Standardized Items | ,932 |
| N of Items | 20 |

3. RESULT AND DISCUSSION

3.1 RESULT

The study examined mosque attendance in relation to gender, age, education level, and frequency of visits. The sample comprised 200 participants, equally divided between men and women (Figure 2). Nearly half (48.5%) were aged 25–35; 56% held a university degree, and a further 26% had postgraduate qualifications. In terms of attendance, 37.5% visited mosques once or twice a year, while 29% attended weekly or more often.

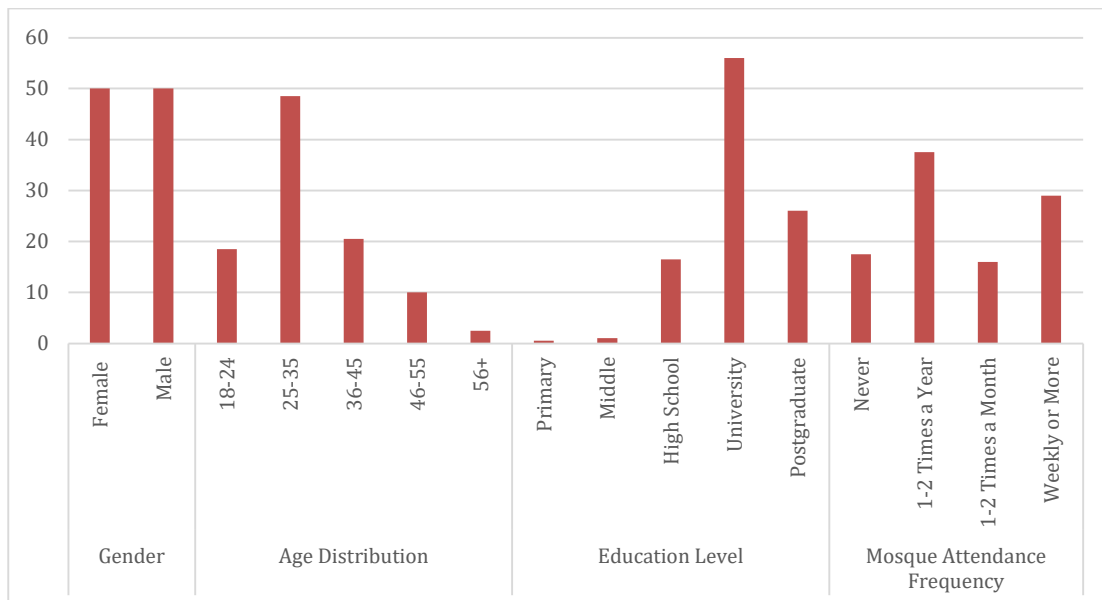


Figure 2. Demographic Characteristics of Participants.

As shown in Figure 3, the primary reasons for visiting were worship (69.5%), historical interest (45%), funerals (45.5%), and architectural design (29.5%), indicating that mosques serve not only religious but also cultural and social functions.

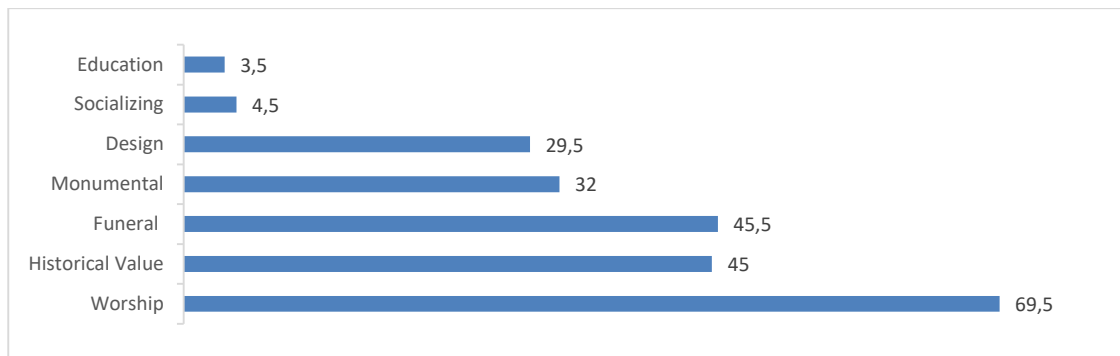


Figure 3. Reasons for Visiting Mosques.

To assess the influence of demographic variables on survey responses, an independent-samples t-test was used for two-group comparisons, and a one-way ANOVA was used for comparisons involving more than two groups. The results of the t-test based on gender are presented in Table 4. The assumption of equal variances was tested, and since the p-value was 0.817 ($p > 0.05$), equal variances were assumed. In both cases (whether equal variances were assumed or not), the p-value was 0.965. Because this value exceeds 0.05, it indicates that there is no statistically significant difference between genders. Therefore, gender does not exert a meaningful effect on the evaluated criteria.

Table 4. Independent Sample T-test According to the Gender Variable

| Variable | | N | Mean | F | Sig. | t | df | Sig. (2-tailed) |
|----------|--------|-----|-------|------|------|------|---------|-----------------|
| Gender | Female | 100 | 64,55 | ,053 | ,817 | ,043 | 198 | ,965 |
| | Male | 100 | 64,45 | | | ,043 | 197,778 | ,965 |

Social sustainability levels were analyzed using a one-way ANOVA across age groups (Table 5). First, data homogeneity was tested, and the Levene test indicated no significant differences between groups ($p = 0.169$; $p > 0.05$). According to the ANOVA results ($F = 1.565$, $p = 0.185$), there was no statistically significant difference between age groups. Thus, age does not significantly influence the evaluated criterion.

Table 5. One-Way ANOVA Test According to the Age Variable

| Variable | | N | Mean | Levene Statistic Sig. | F | Sig. |
|----------|-------|----|-------|-----------------------|-------|------|
| Age | 18-24 | 37 | 65,11 | ,169 | 1,565 | ,185 |
| | 25-35 | 97 | 62,49 | | | |
| | 36-45 | 41 | 68,05 | | | |
| | 46-55 | 20 | 62,95 | | | |
| | 56+ | 5 | 76,00 | | | |

The results of the one-way ANOVA according to mosque attendance frequency are shown in Table 6. Homogeneity was again confirmed by the Levene test ($p = 0.062$, $p > 0.05$). However, the ANOVA result ($F = 4.733$, $p = 0.017$) revealed a statistically significant difference between groups.

Table 6. One-Way ANOVA Test According to the Frequency of Going to Mosques

| Variable | | N | Mean | Levene Statistic Sig. | F | Sig. |
|--------------------------------|-------------------|----|-------|-----------------------|-------|------|
| frequency of mosque attendance | Never | 35 | 52,98 | 0,062 | 4,733 | ,017 |
| | 1-2 times a year | 75 | 67,43 | | | |
| | 1-2 Times a Month | 32 | 67,67 | | | |
| | Weekly or More | 58 | 65,69 | | | |

The frequency of mosque attendance significantly affects the evaluated criteria, particularly social sustainability. Individuals who never attend mosques score markedly lower on social sustainability than those attending once or twice a year, suggesting that even limited participation strengthens perceptions of social

sustainability and social bonds. By contrast, attending once or twice a month or more frequently does not yield additional improvements compared to never attending. This indicates that while a minimum level of participation produces a clear benefit, increased attendance beyond that point offers no further gains. Within the social sustainability assessment framework, three main aspects emerge: preservation of cultural and historical heritage, alignment with contemporary societal needs, and promotion of social interaction. This framework emphasizes safeguarding heritage while ensuring its relevance to modern communities and its capacity to foster social ties. The criteria underlying this measurement approach were drawn from established research (Table 7).

Table 7. Aggregation of Cultural Heritage Social Sustainability Measures Used by Researchers

| Category | Subcategory | [16] | [17] | [18] | [19] | [20] | [21] | [22] | [23] |
|---------------------------------------|---|------|------|------|------|------|------|------|------|
| Cultural Heritage Conservation | Urban Landscape | | | • | | | | | |
| | Conservation of Historical Environment and Regional Characteristics | | • | • | | | | • | |
| | Sense of Belonging | • | | | • | • | • | • | |
| | Identity | • | | | | | | • | • |
| | Local Attachment | | • | • | | | | • | • |
| Adaptation to Societal Needs | Conservation of Cultural Features | | • | • | • | • | • | • | |
| | Cultural Diversity | | | | | | • | • | • |
| | Infrastructure Services | | | • | • | | • | • | |
| | Accessibility | • | | • | • | • | • | • | |
| | Employment | • | | • | | | | | |
| Social Interaction | Security | • | | • | | • | • | | |
| | Quality of Life | • | | • | • | | | | |
| | Psychological Health | • | | • | | | | | |
| | Welfare and Happiness | • | | • | | • | | | |
| | Personal Experience and Skills | • | | | | | | • | |
| | Inclusion | | | • | | | • | | |
| | Community Participation | | | | • | | • | • | • |
| | Equality | • | | | • | • | • | | • |
| | Solidarity | | | | | | • | | • |
| | Design Participation | | | • | | | | | |
| Knowledge Sharing | | • | • | | | | • | | |
| Social and Cultural Interaction | | | | | | | • | | |
| Social Capital | • | | | | • | | | • | |
| Sense of Community | | | | | • | | | | |
| Social Cohesion | • | • | | | • | • | | | |

Preserving cultural heritage sustains the values and structures inherited from the past, while alignment with societal needs evaluates how effectively heritage responds to contemporary requirements. Social interaction ensures that heritage functions as a medium for strengthening social bonds. These three dimensions are interrelated and complementary in assessing cultural and historical heritage from a social sustainability perspective. The arithmetic mean scores for the cultural heritage-related social sustainability criteria were calculated based on the survey data (Figure 4).

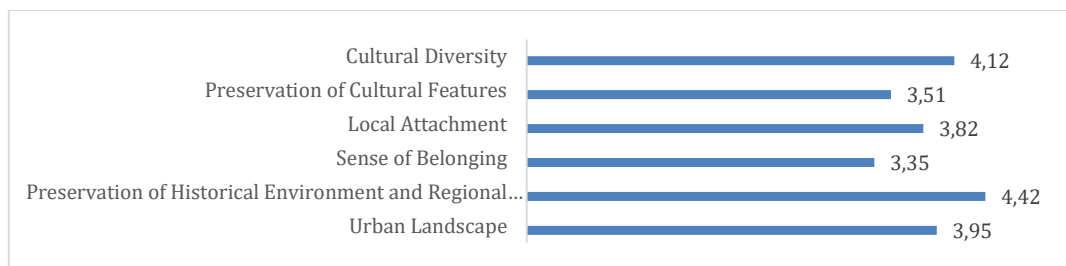


Figure 4. Cultural Heritage Preservation Social Sustainability Criteria Arithmetic Score.

The average score for these six criteria was 3.86 out of 5. This indicates that the overall level of social sustainability is good, although some areas offer potential for further development. The criteria for urban landscape and for the protection of the historical environment and regional characteristics received the highest scores, 3.95 and 4.42 points, respectively. They were evaluated as good and very good. These high scores indicate that effective measures have been taken to preserve the historical texture and regional characteristics of cities. In particular, protecting the historical environment is crucial for the continuity of cultural heritage, while

safeguarding regional characteristics helps maintain local identities and cultural diversity. The criterion of belonging received the lowest score (3.35) and was evaluated in the good category. This result suggests that society’s commitment to cultural heritage and sense of belonging should be strengthened. A weaker sense of belonging may lead to insufficient social participation and support for heritage protection. Therefore, various educational and awareness programs should be implemented to increase social awareness and encourage people to take ownership of their heritage. The criteria of cultural diversity, local commitment, and preservation of cultural characteristics were also evaluated as good, scoring 4.12, 3.82, and 3.51 points, respectively, indicating a certain level of success in these areas.

Six subscales, namely infrastructure services, accessibility, employment, security, psychological health, and personal experience and skills, were identified as the basic elements for ensuring social sustainability in terms of meeting societal needs. Infrastructure services aim to satisfy physical environmental needs, while accessibility facilitates individuals’ engagement with various aspects of life. Employment enhances social participation, security protects physical and emotional well-being, psychological health addresses mental well-being, and personal experience and skills encourage individuals to discover and develop their potential. Based on arithmetic mean calculations, the average scores for the social sustainability criteria related to compliance with societal needs were determined (Figure 5).

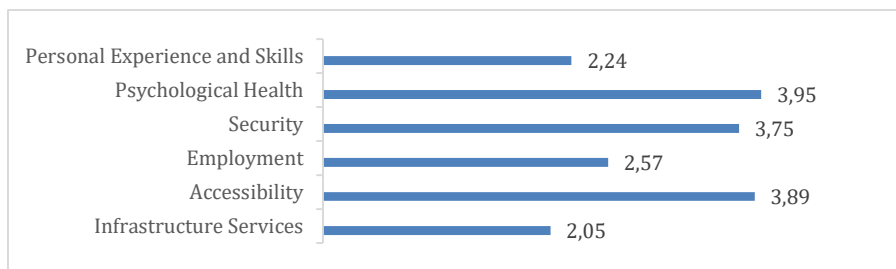


Figure 5. Compliance with the Needs of the Society Social Sustainability Criteria Arithmetic Score

The average score for these six criteria was 3.07 out of 5, indicating a moderate level of success in meeting social needs, but with considerable room for improvement. More effort is needed, especially in fundamental areas such as infrastructure services and employment. According to the graph, infrastructure services and personal experience and skills received the lowest scores (2.05 and 2.24, respectively) and were rated in the poor category. This suggests that infrastructure services are inadequate and that individuals lack sufficient opportunities to develop personal experiences and skills. Infrastructure deficiencies reduce the overall quality of life and negatively affect daily activities. Likewise, enhancing personal experience and skills would enable individuals to participate more effectively in society and increase employment opportunities. Accessibility, security, and psychological health fell within the good category (3.95, 3.89, and 3.75 points, respectively), indicating a certain level of success in these areas. Employment scored 2.57, also in the poor category, showing that employment opportunities are insufficient and unemployment may be high. Increasing employment opportunities is likewise essential for economic sustainability, as unemployment undermines economic independence and social participation. Therefore, creating new jobs and preserving existing ones are critical to building a sustainable society. Meeting social needs is a cornerstone of social sustainability: improvements in infrastructure, employment, and personal experience and skills will increase overall social welfare, while successes in accessibility, security, and psychological health strengthen social integrity and solidarity. For a sustainable society, all these criteria must be addressed and developed in a balanced manner. Six subscales, including social interaction, inclusion, participation in design, equality, sense of community, social cohesion, and solidarity, were identified as key elements in ensuring social sustainability (Figure 6).

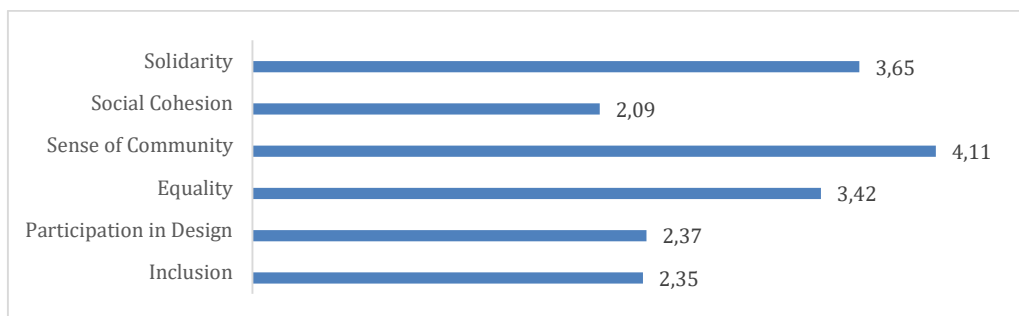


Figure 6. Social Interaction Social Sustainability Criteria Arithmetic Score

The average score for these six criteria was 2.99 out of 5. This shows that social interaction is moderately successful but that there are significant areas for improvement. More effort is needed, particularly in involvement, design participation, and social cohesion. Inclusion and design participation received the lowest scores (2.35 and 2.37, respectively) and were rated in the poor category. These low scores indicate insufficient public participation in decision-making and design processes. Inclusion and design participation are critical for individuals to feel that they belong to society and have a say in its decision-making. These shortcomings reveal a need for more inclusive policies and mechanisms to enhance social participation. Encouraging individuals to take an active role in the design and management of living spaces will strengthen social sustainability. The equality criterion fell into the medium category, with 3.42 points, indicating a certain level of equality but also highlighting areas requiring improvement. Policies and programs should therefore be developed, especially for disadvantaged groups, to ensure equality. The sense of community and solidarity criteria were evaluated in the good category (4.11 and 3.65 points, respectively), indicating that society generally possesses a strong sense of community and solidarity. These achievements suggest that social harmony and solidarity are strengthening. By contrast, the social cohesion criterion scored 2.09 in the poor category, indicating that sufficient cohesion and integration among different societal segments have not been achieved. Social interaction is one of the fundamental elements of a sustainable society. Improvements in inclusion, design participation, and social cohesion will increase social participation and harmony, while continuing and further developing achievements in equality, sense of community, and solidarity will strengthen social sustainability. Comprehensive and inclusive policies aimed at increasing social interaction, therefore, need to be developed and implemented.

3.2 DISCUSSION

3.2.1 Literature and Key Findings

Social sustainability is widely acknowledged as one of the three main pillars of sustainability, alongside environmental and economic dimensions. Although the literature often emphasizes preventing environmental degradation and sustaining economic growth, growing social challenges, such as changing societal structures, increasing poverty, and rising inequalities in quality of life, highlight the equal importance of social sustainability [2][16][17][20][21]. A holistic approach should address all three dimensions simultaneously to enhance well-being, support economic development, and avert environmental decline. In this context, concrete actions are required across equity, accessibility, security, and social participation. Academic studies also show why social sustainability is essential and how it can be implemented [3][10].

Key themes identified in the literature include meeting basic needs, equity and justice, participation and democracy, social interaction, human rights, employment, and diversity [2][20][21]. Placing human beings and their living conditions at the center broadens the scope of the concept of social sustainability. Because the quality of the physical environment directly influences quality of life, disciplines such as urban planning and architecture also engage with this concept [3][9][22][23].

3.2.2 Mosques as Social and Cultural Hubs

Mosques are vital components of the urban fabric. Beyond their religious role, they host educational, social aid, and cultural activities [4][8]. As public spaces, they facilitate interaction among people from diverse socio-economic and demographic backgrounds. Mosque courtyards can serve multiple purposes: gathering, resting, waiting, and participating in socio-cultural activities, thereby strengthening social ties. Evaluating and planning mosques from a social sustainability perspective is therefore crucial to improving urban life [5][6].

In this study, we developed a new framework to assess mosques' social sustainability, as no existing system was available. The framework draws on sub-concepts from the literature and criteria used in certification and rating systems. It is structured around three main components:

- **Social interaction** (participation, equity, solidarity, knowledge sharing)
- **Meeting societal needs** (accessibility, employment, security, quality of life)
- **Cultural heritage preservation** (cultural diversity, urban landscape, historical heritage) [9][11][12]

The scale developed for this study demonstrated high validity and reliability. Exploratory Factor Analysis revealed three sub-dimensions, accounting for 65.37% of the total variance, confirming the survey as a sound instrument for measuring social sustainability [13][15].

Analysis by mosque attendance frequency showed that regular participation strengthens individuals' perceptions of social sustainability and fosters social bonds. In contrast, gender and age had no significant effects, indicating that attendance rather than demographic factors shapes perceptions. Participants emphasized the importance of mosques as centers of historical and cultural values and social activities. Survey results also confirm that mosques play a key role in preserving cultural heritage and meeting community needs [5][6][12].

Many respondents noted that mosques enhance the city's landscape and that preserved historical mosques reflect the architectural characteristics of the past [11]. This highlights their role in cultural heritage conservation. Participants also reported experiencing a sense of history and cultural values in mosques and recognized the contribution of mosque-based cultural activities to the preservation of traditions. However, weaknesses remain, including limited community participation in design and insufficient educational and healthcare services. Addressing these issues would enable mosques to play a stronger role in social sustainability [12].

3.2.3 Comparative Insights from Other Contexts

This section compares our findings with other settings to identify critical insights. Our results show high scores for cultural heritage preservation but relatively low scores for meeting societal needs and social interaction [12]. This contrasts with studies in Cambridge (UK) and Southeast Asia, where inclusive programming and participatory governance strengthened social interaction and community engagement [24][25][26]. In Istanbul, frequent attendance alone cannot substitute for structured activities and inclusive design. Limited community participation in planning, a lack of diverse programming, and underdeveloped governance are likely contributing to lower inclusion scores.

Cross-national studies reveal similar patterns. In Indonesia, mosques offering youth-oriented programs and flexible spaces achieve higher social sustainability scores [12][24]. In Malaysia, accessibility and safety must be coupled with broad programming and community co-production to turn access into inclusion [24][25]. Flagship projects in Europe, such as Cambridge Central Mosque, show that co-located amenities and professional management can enhance inclusion, women's participation, and interfaith engagement without undermining religious identity [26]. By contrast, Iranian cases demonstrate that top-down planning may produce strong architectural identity but weak user participation, mirroring Istanbul's low "participation in design" scores [27]. South African and Nigerian examples also show that even small-scale services, such as libraries and tutoring, can expand mosques' social role and improve perceptions of welfare [28][29].

These comparisons highlight several insights:

- **Attendance vs. Participation:** Structured programming, not just ritual attendance, drives social interaction and stronger community bonds [12][24].
- **From Access to Inclusion:** Physical accessibility must be paired with decision-making opportunities for women, youth, and people with disabilities to achieve genuine inclusion [24][29].
- **Governance and Capacity:** Transparent management, community partnerships, and participatory planning are as crucial as spatial design for social sustainability [25][26].
- **Infrastructure–Employment Nexus:** Even modest educational or vocational services can improve welfare perceptions and support economic sustainability [28].

Overall, the Istanbul case reveals a gap between frequent attendance and effective social sustainability. Integrating participatory governance, diverse programming, and inclusive design could transform mosques into stronger social hubs.

3.2.4 POLICY AND PRACTICAL IMPLICATIONS

Based on these findings and international best practice, several recommendations emerge:

- **Organize diverse cultural and social activities:** Hosting intercultural events can encourage community gatherings and strengthen social bonds [24][26].
- **Provide educational and healthcare services:** Health screenings and educational seminars within or near mosques can address social needs [25][28].
- **Ensure community participation:** Involving local communities in mosque construction or renovation can increase engagement and make mosques more effective social hubs [24][29].
- **Create employment opportunities:** Vocational training courses within or near mosques can help combat unemployment and support economic well-being [28].

These measures should be complemented by clear indicators such as:

- **Institutional Capacity & Governance:** Share of women/youth on boards, published plans, feedback mechanisms [25][26].
- **Inclusive Design Audits:** Gender-responsive and universal design features [29].
- **Program Density Indices:** Number and diversity of non-ritual events per month, youth-led initiatives [12][24].
- **Outcome Metrics:** Volunteer hours, intergroup mixing, service beneficiaries [25].

Implementing these actions can help mosques meet a range of social needs and strengthen the urban social fabric.

4. CONCLUSION

This study provides robust empirical evidence that mosques function as critical nodes of urban social sustainability. Beyond their primary religious role, they operate as inclusive infrastructures that integrate cultural heritage, social interaction, and urban identity. The analysis demonstrates that regular mosque attendance significantly enhances perceptions of social sustainability and strengthens social bonds, while gender and age exert no measurable effect on these perceptions. In accordance with recent international research [12], [24], [29], mosques emerge as distinctive urban assets that simultaneously preserve historic environments, enrich cityscapes, and address diverse community needs.

These findings underscore the need to reconceptualize mosques not merely as places of worship but as multifunctional community institutions embedded in urban policy and planning frameworks. Strategic interventions that diversify cultural programming, embed educational and health services, facilitate community participation in design and management, and create pathways for local employment can substantially increase their contribution to social equity, cohesion, and resilience. Implementing such measures would position mosques as exemplary models of faith-based urban infrastructure, advancing the broader goals of inclusive and sustainable cities.

The validated measurement framework developed in this research constitutes a significant methodological contribution, offering a reliable tool for assessing the social sustainability performance of mosques. By translating abstract principles of social sustainability into measurable criteria, the framework provides policymakers, urban planners, and religious authorities with actionable guidance to unlock the full social and cultural potential of these institutions. In doing so, this study not only illuminates the contemporary role of mosques but also sets a precedent for integrating social sustainability metrics into the governance of religious and cultural heritage spaces.

AUTHORS CONTRIBUTION

Author 1 conducted the writing, analysis, and preparation of the manuscript based on the original thesis work. Author 2 supervised and provided the foundational thesis, guiding the research framework and offering critical insights throughout the process. Both authors discussed the results and contributed to the final version of the manuscript.

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