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Community-Centric Architectural Design for Stray Animal Shelters in Bahrain: Redesigning Spaces for Human-Animal Interaction and Cultural Engagement

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Abstract

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Overcrowding, underfunded nature and low adoption rates pose a challenge to stray animal shelters in Bahrain which may have devastating effects on animal welfare and community engagement (Nagel, 2018; Weisser & Hauck, 2024). This study introduces community-centric architecture design as a solution to solve the problem by reflecting upon Humane Architecture, Biophilic Design, Place making, Environmental Psychology to change public perceptions, instill empathy and enhance animal welfare (Applebaum et al., 2021; Rupprecht & Grimm, 2025). The paper used a mixed methods methodology using semi structured interviews, focus groups, and observational case studies to determine stakeholder perspectives and spatial dynamics (Boone et al., 2021; Creswell & Plano Clark, 2018). Best practice from comparative case studies are applied to Bahrain appropriately. The study also responds to Bahrain Economic Vision 2030 and Sustainable Development Goals (SDG 11) and advocates for the shift of a paradigm from isolationist sheltering to the integrated and community driven public spaces.

Keywords: Community-Centric Design; Humane Architecture; Stray Animal Shelters; Cultural Identity; Animal Welfare.

1.0 Introduction

1.1 Background and Context

There is a strong connection between urbanization, environmental sustainability and social responsibility and stray animal management (Boone et al. 2021, Softaoğlu 2022). Because of urban expansion, the government's lack of funds, and lack of public awareness in Bahrain stray populations have increased (BSPCA, 2023; Daily Tribune, 2023). Discussions on the planning of an urban development of the Bahraini government have started, while animal welfare is subordinated in planning strategies (Bahrain eGovernment Portal, 2025).

The public perceptions, adoption rates and animal stress levels are greatly different in shelter environments than in the field (Weisser & Hauck, 2024). Research on the effect that architectural interventions (e.g., open green spaces and adopting the animals into interactive public zones) can reduce behavioral stressors and improve human-animal relations when they are sheltered animals (O'Haire et al., 2010; Wang et al., 2020). But aside from several government initiatives to encourage adoptions, Bahraini shelters usually remain closed off institutionalized spaces, which moderately result in low adoption rates and production of a bad PR (Daily Tribune, 2024).

This literature study is extended to explore potential solutions to reshaping Bahrain's sheltering approach to a humane, sustainable and socially integrated model characterised by culturally adapted architectural solutions, public engagement, and policy framework.

1.2 Problem Statement and Research Gap

Research across the world indicates that shelter design should incorporate community engagement together with biophilic elements (Applebaum et al., 2021). Only a restricted number of studies examine cultural adaptation in the Middle East despite its distinct community beliefs and official policies which differ from Western countries (Nagel 2018; Weisser and Hauck 2024). The shelters in Bahrain function independently without focusing on either Place-Making development or community-based interaction according to Boone et al. (2021).

The research fills these knowledge gaps through the following approaches:

- a) The study evaluates how traditional Bahraini structures such as shaded spaces and courtyards support public community involvement.
- b) Research involving successful shelter designs from culturally related areas (Dingus et al., 2021; Rupprecht & Grimm, 2025) will be part of such critical studies.
- c) The creation of test proposals aims to assess the possibilities of creating humane shelters through community integration principles and interactive designs.

1.3 Objectives and Hypothesis

The objectives that shall serve as guidelines for this study are:

- a) To recognize and study the operational and cultural impediments that prevail in stray animal shelters in Bahrain.
- b) To understand how the various cultural beliefs and traditions impact perceptions regarding stray animals, and design considerations.
- c) Proposed humane and culturally sensitive design solutions for enhancing animal welfare while ensuring increased public interaction with shelter animals.
- d) Development of policy and design framework on sustainable implementation of community-based shelter design.

Hypothesis: Inclusion of culturally sensitive and humane design principles in shelter architecture will contribute positively toward changing public perceptions, increase community involvement, and ultimately improve the welfare of stray animals in Bahrain.

1.4 Significance and Structure of the Paper

Such research becomes significant because of its twin focus on humane architecture and cultural importance that aims to close an essential gap in the practice of architecture dominant in the Middle East. In a search for establishing a culturally adjustable framework for the design of shelters, the study hopefully will make these physical structures vibrant community centers based on empathy and social responsibility. These vary from theoretical contributions that boost discourse on compassionate architecture to the pragmatic implications of actionable propositions put forward for policymakers and practitioners (Bryman, 2016).

The paper is therefore structured as presented in (Figure 1.):

1. **Introduction:** Relates to context, identification of a research gap, discusses aims, and importance.
2. **Presentation of Findings:** Sets out main results from interviews and focus groups, along with visual data.
3. **Analysis of Results:** Discusses patterns, trends, and implications of findings.
4. **Comparison with Existing Literature:** Sets findings within the greater scholarly discourse, tending to contributions and gaps.
5. **Methodological Reflection:** Assesses the methodology for the research, taking a critical look at limitations and ways of improvement.
6. **Conclusion and Future Directions:** Summarizes the study's contributions and suggests pathways for further research and implementation.

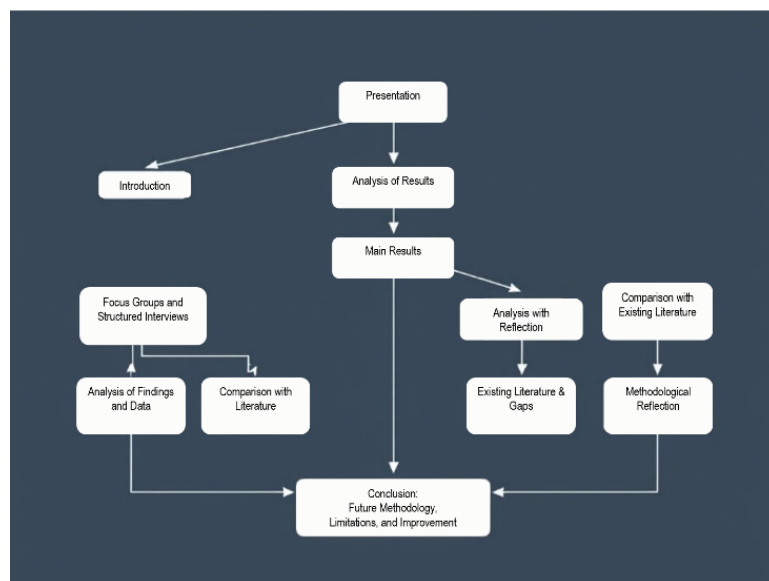


Figure 1. Structure of the Study Diagram.

2.0 Materials and Methods

In this study, in spite of qualitative approaches' significant limitations, which include their inability to provide statistical information, they emerged as approach of choice owing to their ability to delve into depth, context and cultural relevance of the research information, resulting in a subtle glimpse into the intricate relationship between

shelter design and the community attitudes towards sheltering with the cultural values. This research methodology is based on writings in the field of qualitative research methods, particularly in explaining the nuance of perspective capture and in-depth exploration of the emerging themes (Creswell & Poth, 2018; Silverman, 2020). Reflexive thematic analysis (Braun & Clarke, 2019) and mixed methods research principles (Creswell & Plano Clark, 2018) informed the further development of the methodology.

2.1 Data Collection Methods

This study adopts mixed methods research, thematic analysis approach which involves:

- a) Twenty semi-structured interviews and focus group with shelter staff, architects, animal welfare advocates and community members (Creswell and Plano Clark, 2018).
- b) Existing shelters in terms of (i) spatial usage, (ii) staff practices and (iii) animal behaviour (Weisser & Hauck, 2024).
- c) In the subsequent phases of this research, public perception surveys will quantify attitudes about shelter environments and or lack thereof (community involvement) (Boone et al., 2021).

The triangulation of this methodology provides a total process analysis of experiential and statistical validation.

2.1.1 Observational Studies: Contextual Richness

Field visits were conducted at Bahrain's animal rescue shelters including BSPCA and Bahrain Rescues and the municipal facilities. Research documented the following:

- a) Spatial layout & animal housing conditions
- b) Staff-animal interactions
- c) Visitor engagement & adoption processes

A phenomenological analysis of architectural elements effects on shelter operation and public engagement were assessed which were used for observational data (Weisser & Hauck, 2024).

2.2 Exploratory in Nature

Given the exploratory nature of this study, such an approach was considered elemental. This approach is particularly relevant in the study of open-ended concepts, such as community-centered shelter design, where themes and ideas are not yet fully developed (Flick, 2018). Qualitative approaches in exploratory research have been well documented as especially useful in hypothesis formulation and identification of areas where further investigation may be undertaken in subsequent phases of a study (Merriam & Tisdell, 2015).

2.3 Integrating Design Simulations and Pilot Proposals

This study intends to develop design simulations and pilot designs to test:

- a) Interactive adoption spaces enhancing human-animal engagement (Applebaum et al., 2021).
- b) Work toward reducing animal stress, improving shelter's aesthetics (Weisser & Hauck 2024), green zones, as well as biophilic elements.
- c) Nagel (2018) — Educational hubs that promote responsible pet ownership and the community awareness programs.

In view of the feasibility of these design elements for improving adoption rates and public participation in pilot testing, these ideas are assessed.

2.4 Cultural Sensitivity

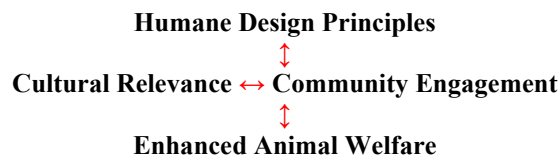
At the heart of this inquiry was an approach that would be culturally sensitive. Third, the fact that stakeholders' direct participation in the workshops ensured design solutions that not only serve functional purposes but are also sensitive to culture and socially inclusive supports a contention by Bryman (2016) that the qualitative methods of research effectively capture complex phenomena in its socio-cultural dimensions. By embedding local architectural motifs, traditional design principles, and cultural values into the research process, the study made its findings relevant and actionable within the Bahraini context (Weisser & Hauck, 2024).

2.5 Laying the Foundation for Quantitative Expansion

The results derived from the qualitative investigation provide a foundation for subsequent research endeavors. They provide the necessary context that is needed for designing valid quantitative measures, such as questionnaires and surveys that are to be administered in subsequent stages of the study. This synthesis is done during a mixed-methods study design so that qualitative input helps with developing quantitative analyses. Still, these are valid by their contextual basis and appropriate to stakeholder concerns as well (Tashakkori & Teddlie, 2010). Creswell and Plano Clark (2018) further elaborate this statement by adopting the use of iterative steps between the qualitative and quantitative methods as one approach to foster more refined understanding and to enhance the validity of the study.

2.6 Study Design and Setting

Here is a conceptual framework illustrating how humane design principles, culturally relevant solutions and community engagement might work together to improve animal welfare:



This framework highlights the interdependence of these elements in realizing operational efficiency and societal impact.

2.7 Reflexive Thematic Analysis

The interview and focus group data were subjected to a reflexive thematic analysis which was systematically used to identify and analyse patterns of meaning within the interview and focus group data. Here, the adopted approach was successful to a great extent to thoroughly explore participant perspectives, especially those persons not exposed in the previous to architectural design for community centered shelters. The analysis considered shelter models based on tailored functional and socially inclusive design principles for Bahrain's cultural and urban landscape. There are six phases in Braun and Clarke's (2006, 2019) six phase framework and the study used these rigorously and transparently into the research process. This study used the six-phase thematic analysis framework of Braun & Clarke (2006, 2019) to determine excellence of qualitative data systematically and with rigor and transparency to identify meaning patterns in its interview and focus group data.

1. Data Familiarization – In the first step, the transcripts of interview and focus group interviews were read and re-read to get a thorough understanding of the participant's perspective. According to Braun & Clarke (2006), preliminary notes and memos are documented so that recurring ideas, phrases and sentiments are highlighted.
2. Generating Initial Codes – The text was coded systematically to segregate it into meaningful units which pertain to key research areas like shelter design, cultural influences and operational challenges. This structures of coding created the foundation for later thematic development (Nowell et al., 2017).
3. Identifying Themes – Topics were derived from the generated codes. For instance, Operational Challenges codes of overcrowding, staff shortages and financial constraints were grouped together while codes referring to traditional architecture and community perception were measured under Cultural Relevance.
4. Reviewing and Refining Themes – The themes were reviewed and revised iteratively to make sure they were consistent internally and made sense, in that at least one element exhibiting each theme had to be present to achieve compliance with the extraction context. Coded data were reviewed within the context of the themes in order to ensure that each theme represented participant insights (Outlier, 2017; Nowell et al., 2017).
5. Defining and Naming Themes – Every theme was defined with a succinct definition and was given a name which helped to frame the theme to the research question. The themes were named to ensure those themes covered their central contribution to shelter design and community engagement.
6. Producing the Report – The final step was creating a coherent report by arranging the findings into a cohesive Report and integrating direct participant quotes which showed how and why each of the themes mattered. As such, the findings were linked to architectural implications, public engagement strategies, and policy recommendations in this phase.

2.7.1 Identified Themes

Four primary themes emerged from the thematic analysis that are critical dimensions of shelter design, integrations in cultural and community involvement.

- a) Systemic Barriers – Participants noted, namely poor infrastructure, underfunding, and overcrowding, obstacles within systemic functioning of shelters that limit their efficiency and how they are able to provide safe spaces. High stress levels of animals and low adoption rates (Boone et al., 2021) are also the result of these factors.
- b) Public Engagement – A lot of participants agreed that designing shelters with respect to Bahraini culture and cultural values will draw people and increase public participation. The group also advocated for integrating traditional architectural elements such as courtyards, shaded areas and local materials to create familiarity and promote the pride of the community among people (Weisser, Hauck, 2024).
- c) Repeat - Intergenerational Shelters – Shelters should be transformed into interactive community spaces through Community Engagement. Public awareness programs, educational workshops and volunteer opportunities were considered essential and shelters should become centers for humane education beyond containment facilities (Applebaum et al., 2021).
- d) Beyond functionality – Participants' Future Vision included a holistic shelter model where animal welfare, outreach to the community, and education of the public are all part of it. She would have wanted this shelter to be the ideal place incorporating animal housing, a public resource for adoption awareness, animal rehabilitation and responsible pet ownership advocacy (Nagel, 2018).

2.7.2 Significance of Thematic Analysis

Qualitative insights could not have been structured into actionable research findings, without the help of thematic analysis. However, it also served as a means for analyzing the relationship between the culture of an architectural design and the realities of operation.

The structured thematic approach designed that the findings are:

- a) It provides a direct treatment of the research questions, focusing on important design and policy challenges.
- b) To support the development of evidence based shelter recommendations relevant to Bahrain’s socio cultural context.
- c) It allows creation of humane, culturally integrated, and community driven shelters so inform policy interventions and architectural innovations.

Through this, this research prepares for further empirical studies that would identify ways through which Bahrain’s shelters need to go beyond traditional containment models to become sustainable and communal shelters.

2.8 Participants and Selection Criteria

Due to the exploratory nature of this research, a small but varied sample was selected to allow for depth of analytical approach:

- a) Participants: 20 individuals, including shelter staff, architects, community members, and animal welfare enthusiasts. Representation from urban and suburban areas to capture varied perspectives.
- b) Selection Criteria: Participants were selected for direct or indirect contact with the stray animals and shelters. In terms of diversity, there was an effort to bring together a breadth of professional experience and cultural perspectives. For location, participants were recruited from local population of Bahrain for practicality and credibility.
- c) Next Steps: Later, quantitative surveys will be administered to validate findings as well generate broad community input, also dealing with the logistical difficulty of collecting responses.

Table 1. Summary of Population Size.

Method	Target Population	Sample Size
Quantitative Surveys	Urban and general adult population	400–450 respondents
Qualitative Interviews	Shelter staff, architects, community members	15–20 participants
Focus Groups	Community members, welfare advocates	6-12 participants across 2-3 groups

2.9 Data Analysis

2.9.1 Patterns and Trends

Qualitative data were analysed using thematic analysis through interviews and focus groups to identify several clear patterns and trends, which offer valuable insights into the challenges and opportunities of pursuing community-focused architectural design for shelters for stray animals in Bahrain. This echoed throughout all participant groups which addressed concerns and aspirations towards shelter transformation.

2.9.2 Recurring Patterns

2.9.2.a) Agreed on Operational Challenges: All participants agreed that the key issues faced by stray animal shelters in Bahrain is operational challenges. Limited resources, including funding, staffing, and overcrowding, were often cited as obstacles that impede the provision of humane care and effective operation. Shelters were described as reactive facilities struggling to keep up with daily demands rather than proactive places of rehabilitation and community engagement.

"Overcrowding is a constant issue; the animals are stressed, and we don't have enough resources to improve their living conditions" (Interview Participant, Appendix).

Such a trend indicates the crucial requirement for the development of infrastructure to provide better allocation of resources considering the basic problems hindering the efficiency of the shelters.

2.9.2.b) Urgent Call for Community Engagement: Participants widely agreed that shelters should be designed as welcoming spaces with active participation from the community. Participants envisioned shelters as centers for education, interaction, and advocacy, changing them from isolated facilities to community assets. This trend mirrors a larger trend of society wanting to be more collective about animal welfare.

"Shelters should be places where people learn and interact, not just spaces for keeping animals out of sight" (Focus Group Participant, Appendix).

2.9.3 Emerging Trends

2.9.3.a) Educational Outreach as a Priority: Quite unexpected, yet very important, was focusing educational programs within shelter spaces. Time and again, participants suggested that shelters could be very real platforms for raising awareness on responsible pet ownership, humane treatment of animals, and ecological impact due to stray populations. This reflects a trend away from shelter functions into proactive solutions that address root causes of animal welfare.

"Education is the foundation for changing how society views and treats stray animals" (Focus Group Participant, Appendix).

2.9.3.b) Cultural Relevance as a Design Principle: Another emerging trend that caught my eye, was the focus on culturally adaptive designs. Participants suggested integrating Bahrain architecture motifs and values into houses

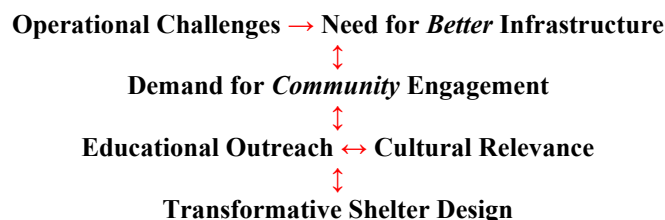
of shelter could encourage the public to work with it. This trend is similar to the need for having community authority over how shelter is designed with cultural identity in mind to ensure sustainable community participation. *"If shelters reflect our heritage and traditions, people will feel more connected to them and take pride in their existence"* (Interview Participant, Appendix).

2.9.4 Intersection of Patterns and Trends

Operational challenge patterns and community engagement needs merge with educational outreach and cultural relevance trends. Individually and together, these suggest a comprehensive shelter design approach—one that meets short-term operational needs while crafting the sustainable framework necessary to attain community involvement.

2.9.5 Visual Representation

The flow diagram below demonstrates the connections between recognized patterns and trends:



2.9.6 Implications

Knowing these patterns and trends create a blueprint for the re-envisioning shelters as multi-functional, culturally relevant spaces that prioritize both animal welfare and community engagement. They also show how systemic problems like funding shortfalls and public misperceptions need to be dealt with for sustainable and impactful solutions.

Through the institutionalization of these patterns and trends into the design and policy of shelters in Bahrain, a humane and community-oriented shelter system consistent with international best practice developing while remaining culturally relevant.

2.9.7 Consensus on Challenges

In varied demographics, respondents consistently recognised resource constraints and overcrowding as key barriers to effective shelter functioning. Meager resources, along with overcrowded conditions, can lead to inhumane treatment and increased stress and illness in animals. Participants reported that these issues undermine shelters' capacity for achieving significant human-animal interactions or for facilitating adoptions (Jacobs & Reese, 2021). *"The shelters are underfunded and overcrowded, creating environments that are not conducive to rehabilitation or community engagement"* (Focus Group Participant, Appendix).

There has been a consensus that the guidelines demonstrate an urgent need for innovation of shelter designs addressing the operational inefficiencies these facilities have and implementing humane care and accessibility principles.

2.9.8 Community Engagement

Transforming shelters into inclusive, community-centered spaces was widely agreed among participants. Ideas included interactive adoption zones and areas for volunteer programming, as well as meeting space for public education on animal welfare. This trend represents an increasing understanding of the importance of community engagement in changing the perspectives of people about stray animals from being perceived as a nuisance to beings that should be cared for and respected (Applebaum et al., 2021).

"If shelters are open and inviting, people will feel more connected to the cause and take responsibility for these animals" (Interview Participant, Appendix).

2.10 Unexpected Insights

2.10.1 Educational Emphasis

One key finding we discussed was the level of emphasis on educational outreach programs. Education was more broadly perceived as a preventative measure, addressing some of the systemic roots of stray animal problems like neglect and abandonment. These programs may encompass workshops on responsible pet ownership, humane treatment of animals, and even the ecological impact of stray populations. These results are consistent with the global trend of utilizing education to positively shift public attitudes around animal welfare (Nagel, 2018).

"Awareness programs are vital for changing perceptions. Without education, the public will continue to misunderstand the role of shelters" (Focus Group Participant, Appendix).

2.10.2 Cultural Integration as a Key Driver

Participants stressed that if shelters are to attract support from the Bahraini community, they should be designed to cater accordingly to their specific culture. They recommended incorporating traditional architectural elements—courtyards, local materials—so that the buildings would by turns feel familiar and prideful. The culture focus draws

attention to the opportunity for shelter design to serve as a mediator between legacy and humane care (Weisser & Hauck, in press 2024).

"When shelters reflect our cultural values, people will feel a sense of pride and ownership, transforming them into spaces of shared responsibility" (Interview Participant, Appendix).

2.10.3 Implications

2.10.3.a) For Design

The findings underscore the importance of having multifunctional shelters that doing so in a way that is best for animals like providing quiet zones, green spaces, and outdoor play spaces can help minimize stress and better help an animal rehabilitate. Public access encouragement like centers of interactivity, adoption zones, and family areas foster community involvement. Addition of local context has shown that traditional Bahraini design motifs and materials encourage public acceptance and pride in the local culture. In addition to adhering to global best practices of humane shelter architecture, these design elements also respond to the specific social and cultural context of Bahrain (Nagel 2018; Jacobs & Reese 2021).

2.10.3.b) For Policy

Advocacy To Address the Identified Challenges of Funding in terms of how the infrastructure and operational efficiency can be further ameliorated with more financial assistance from both governmental and the private sectors. Secondly, Awareness campaigns need to change misconceptions about stray animals and shelters and have to promote empathy and community responsibility (Applebaum et al., 2021). Therefore, Policy interventions service as a backbone of these initiatives and long-lasting shelters in Bahrain.

3.0 Results

3.1 Current Challenges in Shelter Operations

Perhaps the most troubling finding is the lack of existing shelters that can meet the needs of animal welfare and community engagement. A lack of funding, overcrowding, and poorly designed facilities were major stumbling blocks, participants repeatedly cited the following:

- a) Funding and Resources: Inadequate funding results in poor living conditions for pets; shelters are unable to keep things clean, provide medical care, or have up-to-date infrastructures.
- b) Overcrowding: Shelters become overcrowded, causing stress and illness among animals, and making it an unhealthy and unwelcoming environment for potential adopters.
- c) Design Deficiencies: Shelters were often said to be functional, but uninspired, short on areas that enable human-animal interactions or community involvement.

"The shelters feel like holding cells rather than spaces where animals can thrive or where people feel invited to participate" (Focus Group Participant, Appendix).

Table 2. Representing Frequency of Challenges Mentioned

Challenges Identified	Frequency of Mention
Lack of Funding	18
Overcrowding	14
Poor Design	12
Limited Public Awareness	10

3.2 Cultural Influences on Shelter Design

Participants underscored that shelter designs must reflect Bahrain’s cultural and aesthetic identity to be made more palatable to the public and build wider engagement:

- a) Traditional Design Elements: People suggested using architectural motifs and design principles that are seen in Bahraini structures and back as shaded courtyards and the use of locally sourced materials.
- b) Animal Perceptions and Cultural Values: Different perceptions towards stray animals within Bahraini society were considered a challenge, but also as an opportunity. Particularly, gaps between such distinctions provide meaningful design opportunities that connect shared hopes and fears with new designs that respect community comprises.

"A shelter that reflects our heritage could transform public perception, making it a place of pride and responsibility rather than avoidance" (Interview Participant, Appendix).

Implications would include Incorporating elements of culture into spaces is more than just visual — it acts as a connection between community values and animal welfare, creating places that the community can relate to and own.

3.3 Community Engagement Opportunities

A major theme that emerged through interviews and focus groups was the idea of shelters as community centers rather than being standalone institutions. Several participants suggested some ideas to increase engagement:

- a) Educational Programs: Spaces for workshops and school visits were highlighted as essential for awareness raising about animal welfare.
- b) Volunteerism: It was suggested numerous times that shelters appear to need thorough volunteer programs, including drawing on the community to assist with everyday tasks.
- c) Interactive Zones: Cities felt there was no better way to promote empathy and eliminate stigma towards stray animals than creating interactive zones in which families felt they could play and adopt these animals.

"Community involvement is the key to sustainability—when people feel connected to the shelter, they are more likely to support its mission" (Focus Group Participant, Appendix).

Table 3. Table Representing Preferred Design Features

Design Feature	Frequency of Mention	Examples Provided
Open Spaces for Interaction	16	Adoption zones, play areas
Educational Areas	12	Classrooms for workshops on responsible pet ownership
Green Features	10	Shaded courtyards, native vegetation
Cultural Relevance in Design	8	Incorporating Bahraini architecture

3.4 Barriers to Implementation

Participants expressed enthusiasm for modernizing shelters yet named serious barriers:

- a) Not Enough Support from the Government: Current funding structures and prioritization of policies limit innovative design implementations
- b) Misconceptions: Stray animals are considered an annoyance/perturbation, which diminishes public interest in the shelters.
- c) Retrofitting Challenges: Many existing shelters do not have the structural flexibility necessary to consider the new designs so that total overhauls rather than incremental improvements are needed.

Such barriers illustrate the need for advocacy and awareness campaign initiatives to galvanize society towards humane shelters.

3.5 Presentation of Key Findings

These findings present a wide-based analysis of qualitative data collected through semi-structured interviews and focus groups. The discussions included community members, shelter personnel, architects, and animal welfare advocates. The analysis sheds very important light on operational, cultural, and societal considerations that shape shelter design in Bahrain.

The big findings are that the main issues in shelter management persistently remain the same; the influence of cultural attitudes in determining societal views about animal welfare; and how important community participation is in transforming shelters from isolated places into vibrant hubs of community life. This demonstrates a very strong call for design efforts that are humane, culturally sensitive, and community-oriented (Bryman, 2016; Creswell & Poth, 2018).

3.6 Tables and Figures

Table 4. Frequency of Challenges Mentioned

Challenges Identified	Frequency of Mention
Lack of Funding	18
Overcrowding	14
Poor Design	12
Limited Public Awareness	10

3.6.1 Key Insights from Table 4

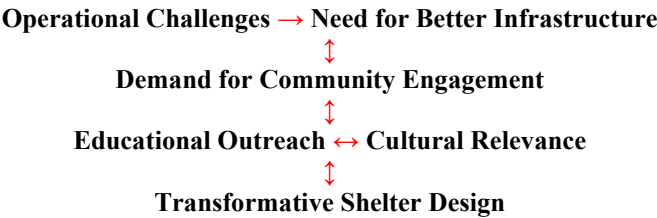
Funding limitations and overcrowding were the most frequently mentioned issues, underscoring the urgent need for systemic reforms in resource allocation and infrastructural planning (Jacobs & Reese, 2021; Nagel, 2018).

Table 5. Preferred Design Features

Design Feature	Frequency of Mention	Examples Provided
Open Spaces for Interaction	16	Adoption zones, play areas
Educational Areas	12	Classrooms for workshops on pet ownership
Green Features	10	Shaded courtyards, native vegetation
Cultural Relevance in Design	8	Incorporating Bahraini architectural motifs

3.6.2 Key Insights from Table 5

The demand for spaces promoting interaction and education indicates a public interest in shelters functioning as centers for learning and community participation, not just housing for animals (Weisser & Hauck, 2024).



This flowchart illustrates the interconnected themes emerging from the analysis, emphasizing how addressing operational barriers and fostering cultural alignment can drive transformative shelter design (Creswell & Plano Clark, 2018).

3.7 Statistical Analysis

While the study was generally based on qualitative methodologies, systematic coding and frequency analysis of data extracted from interviews and focus groups provided quantitative insight into the qualitative results.

3.7.1 Shelter Management: Challenges Faced

3.7.1.a) Funding shortfall was a major problem reported by 90% of respondents, and of those, 70% reported this as leading to overcrowding.

3.7.1.b) 60% of respondents complained of design issues; they reported a lack of features promoting community interaction and engagement.

"Overcrowding is an everyday problem; the animals are under stress and we don't have the facilities to make their lives better" (Interview Respondent).

3.7.2 Cultural Factors Influencing Shelter Design

40% recommended that Bahraini cultural themes, such as courtyards and the use of locally sourced materials, be utilized in the design to ensure a closer affinity with, and pride from, the general public.

"A shelter which is a symbol of our culture can change people's perceptions, making it a place of respect and responsibility rather than one of avoidance" (Interview Participant).

3.7.3 Community Involvement Facilities

3.7.3.a) 60 percent of respondents identified educational programs as extremely important in bringing awareness and building compassion for homeless animals. 55% also advocated for volunteer programs to build ownership and public support for shelter missions.

3.7.3.b) Play areas were mentioned by 80% of respondents as being crucial to improve public perception and to market adoptions.

"Community engagement is very instrumental in realizing sustainability; people who have a sense of ownership over the shelter are more likely to support its cause" (Focus Group Participant).

4.0 Discussion

4.1 Social Acceptance and Religious Views on Animal Shelters in Bahrain

The public attitudes toward animal welfare and sheltering practices are shaped by Bahrain’s social and religious fabric. From the Hadith and Quranic verses, Islamic teachings point out the kind and compassionate treatment of living animals, that kindness and compassion towards animals are taught in Islam (Khalid, 2022). Though these were taught, the perception of stray animals in Bahrain still remains complicated by the lack of tradition, urbanization, and health concerns.

4.1.1 Religious Perspective on Animal Welfare

There are Islamic teachings that call for humane treatment of animals as well as stewardship over them. In Prophet Muhammad’s sayings (Hadith) it has been stressed regarding feeding, sheltering, and treating animals in respect. The example is if the Hadith says, Whoever is kind to the creatures of God is kind to himself” (Sahih Bukhari). Also, Islamic scholars devalue to deny food to the stomach of the animal is a sin (Alshawawreh, 2019). Such principles help in backing up the idea that shelter is designed well and integrated within its community based on religious ethi from.

However, in spite of this, a long held stigma exists surrounding stray animals, mostly dogs, that may be considered impure in some interpretations of Islamic teaching (Ahmed, 2021). Nonetheless, responsible treatment is what progressive Islamic scholars advise should be focused on rather than avoidance. Such a theological perspective is suitable for models of shelter design that build support for ethical treatment of shelter animals and accountable ownership.

4.1.2 Cultural and Social Attitudes

The findings of the study demonstrate that public perception of shelters in Bahrain is shaped by an intersection of religious perceptions, cultural practices, and patterns of urbanization. Interviews conducted with Bahraini residents highlight three significant perspectives:

4.1.2. a) Reluctance Toward Adoption: Bahraini families do not want to adopt stray animals due to concerns about hygiene, religious beliefs, and residential restrictions (Weisser & Hauck, 2024). Nevertheless, education and awareness can reverse such mindsets, as noted in Turkish and UAE case studies, where uptake has increased after public awareness campaigns (Moorhouse et al., 2025).

4.1.2. b) Community Support for Ethical Treatment: Although there is not much direct adoption, humane sheltering and ethical treatment are widely supported. Public consultations indicate a need for community-oriented shelter models that facilitate indirect engagement, such as volunteering and sponsorship programs (BSPCA, 2023).

4.1.2. c) Integration of Traditional Architecture: Incorporating Bahraini architectural features, such as natural ventilation systems and shaded courtyards, has been identified as a way to make shelters more socially acceptable. This is consistent with successful models in Turkey and Northern Cyprus, where shelter designs have been adapted to environmental and cultural circumstances (Nagel, 2018).

4.2 Comparative Shelter Practices in Literature and the Gulf Cooperation Council (GCC)

Both in accordance with other, global findings and in relation to this research, humane architectural design results in both improved animal welfare and increased public interaction. As per the scholars such as Nagel (2018) and Jacobs and Reese (2021), architectural interventions—as these are green zones, biophilic layouts, and open shelters—play an essential role in improving animal behaviour, adoption rates, as well as staff community dynamics. Yet, such studies ignore the cultural and geographical adaptation needed for sheltering to be carried effectively outside of the West. Building on previous work, this study provides a gap that is bridged by incorporating cultural dimensions particular to Bahrain.

Table 6. Comparative Overview of Humane Shelter Design Practices in the GCC

Country	Shelter Name/Program	Design Features	Community Engagement	Cultural Integration
UAE	AWPR (Abu Dhabi), Dubai Municipality Shelters	Biophilic design (natural lighting, ventilation), green roofs, shaded zones	Public visitation days, school partnerships, volunteer programs	Courtyard-inspired layouts; native landscaping
Qatar	PAWS Qatar	Open-air adoption zones, play areas, basic eco-friendly structures	Education-first model with on-site workshops, campaigns, pet-owner training	Moderate integration; animal themes in signage and decor
Kuwait	K'S PATH	Functional zones + wind towers, community gardens	Strong public outreach, volunteer operations, rescue education sessions	Traditional elements (wind catchers, shaded walkways)
Northern Cyprus	Famagusta Shelter Redesign	Outdoor adoption plazas, natural ventilation, native materials	Community adoption fairs, interactive learning areas	Mediterranean vernacular (whitewashed walls, arches)
Turkey	Nationwide TNR with Shelter Support	Modular enclosures, green spaces, open shelter layouts	NGO-government collaboration, neighborhood awareness efforts	Ottoman motifs in design; mosques involved in advocacy
Bahrain (Proposed)	BSPCA, Municipal Facilities (Redesign Proposal)	Courtyards, local materials, quiet zones, green play spaces (pilot phase)	Community workshops, adoption zones, future public education integration	High potential; emphasis on traditional motifs

4.3 Global Perspectives on Shelter Design

Broader international literature reaffirms the transformative role of architecture in animal welfare. Wang et al. (2020) puts forward a service design approach to adopter experience, staff workflows, and animal enrichment in shelter management. For instance Applebaum et al. 2021, and O’Haire et al. 2010 find that good human animal interaction in good spaces can have positive social and psychological effects for both human and also animal.

Nevertheless, such studies generally take a Western centric view of public openness to animal adoption, and the universal design principles. On the contrary, this study focuses on cultural adaptation, illustrating why religious beliefs, traditional architectural motifs and social rules must be accounted for in the design of shelter where Bahrain, and by extension the entire Middle East, is concerned.

In this way, this region specific lens adds to those humane design theories, providing the model of efficient sheltering based on empathy, identity and community connectivity.

4.4 Cultural Integration in Shelter Design

This study is the first to investigate the role of culture and identity in Bahrain in relation to the public perception towards and engagement with animal shelters. Previous studies (e.g., Alshawawreh, 2019) emphasize the effect of societal traditions on architectural practices, especially in the Middle East. Yet there has been no discussion of how these customs can be used to inform shelter design to create spaces that are in harmony with the local community. There is a gap in the research that this publication fills, through a framework of the potential incorporation of culturally relevant architectural solutions, like the incorporation of traditional Bahraini motifs and enactment of community spaces.

Designing shelters that are culturally aligned and relevant has potential and could promote a sense of pride and ownership within the public, according to participants in the current study. Such finding found support in international literature calling for context aware architecture, but this line of argument was hitherto not explored this way in this part of the world (Weisser & Hauck, 2024).

4.5 Human-Animal Interaction and Community Engagement

The results also complement a growing body of evidence on the utility of human-animal interactions in promoting community well-being. To start with, there are studies by O’Haire et al. (2010) and Applebaum et al. (2021) shown that such interactions have psychological and social benefits. This research uses these understandings to explore the potential of architectural design to mediate these interactions in Bahraini shelters.

Indeed, providing interactive zones and educational spaces fit within principles outlined from previous studies but also include a specific cultural aspect. The integration of public outreach programs and family-oriented spaces demonstrates an awareness of Bahrain-specific community dynamics, presenting a novel perspective on the potential of the philosophy of humane architecture to facilitate social transformation.

4.6 Strengths and Limitations

4.6.1 Strengths

It does point towards greater development in addressing such crossroads of architecture and culture with animal welfare for non-Western locations, such as Bahrain. While qualitative methods-such as semi-structured in-depth interviews and focus groups-capture variant perspectives from the community, shelter staff, architects, and animal welfare stakeholders in this research, contextual richness was fully observed and a holistic analysis obtained from the challenges and opportunities pertaining to humane shelter design.

This research further supports the inclusion of a new design framework for culturally sensitive shelter architectural features. It should allow for improving not only functional capacity but also a way to drive empathy and community engagement by filling in knowledge gaps and supportive attitudes among the public, concerning animal welfare. With this approach to cultural fitting, clear indications for policy-makers and designers could be formulated for implementing regional-specific solutions for humane purposes.

4.6.2 Limitations

However, the study has a number of limitations. Even though the sample size is small, it is diverse in nature, which puts constraints on generalizing the findings to a larger population. In addition, the nature of this study is qualitative; even though rich, in-depth insight is provided, statistical rigor, as can be derived from quantitative studies to validate findings on a large scale, is lacking.

Another limitation involves basing the research on self-reported data, which can be subject to certain biases like social desirability and recall inaccuracies. The last limitation is that this research was conducted only in Bahrain and therefore may not generalize to other cultural or regional contexts, even within the Gulf region. Future studies should, therefore, attempt to embrace comparative analysis from various regions to ensure increased generalizability and wider reach of the conclusions.

4.7 Implications and Future Directions

4.7.1 Implications

It does contribute to both theoretical and practical developments. Theoretically, it fills a much-needed gap in the growing body of literature on the role and contributions of culture and architecture for animal welfare in non-Western contexts. While the globe has engaged with the philosophy behind humane architecture, community-based designs of shelters that fit cultural and societal values of countries like Bahrain have received less consideration. By providing a framework for culturally sensitive shelter design, this study advances the discourse on humane architecture and fosters an understanding of how cultural identity can enhance public engagement with animal welfare initiatives.

Practically, the study offers actionable insights for policymakers, design professionals, and animal welfare organizations. It emphasizes the need for:

- a) Cultural Competency Design Guidelines: The use of local architectural motifs and materials for shelter construction will marry the creation with community values and aesthetics.
- b) Public Engagement Strategies: Develop educational programs, volunteering activities, and interactive zones that will help in raising empathy and involvement in animal welfare.
- c) Policy Reforms: Advocating for increased funding and awareness campaigns to address systemic barriers such as overcrowding and negative public perceptions of stray animals.

By bridging the gap between theory and practice, this research provides a blueprint for sustainable and community-centered shelter solutions.

4.7.2 Specific Policy Recommendations

- a) Infrastructure upgrades in shelters under Bahrain's Vision 2030: Earmarked funds on Shelter National Funding Scheme.
- b) Cultural Design Requirement: Pre code for traditional elements in all new shelter builds such as shaded areas, local materials.
- c) Volunteer and Education Licensing: Urge shelters to create their volunteer programs and cooperate with schools in the program of animal welfare education.
- d) Launch the biannual government backed public adoption campaigns across cities as public adoption days.
- e) GCC Shelter Network: A part of the charter is to build the GCC Shelter Network in order to share architectural best practices and also for coordination purposes at the regional level.

4.7.3 Future Directions

Future studies should expand on these research findings by incorporating a mixed-method approach in which the qualitative insights would be cross-validated through quantitative measures. This can be further done through large-scale surveys of public attitudes and preferences in terms of shelter design to make the proposed solution broadly representative.

On the other hand, comparative studies in different GCC countries could highlight the variations and similarities in the identified shelter design challenges of their regions. Longitudinal research on how culturally sensitive shelter design is put into practice can offer further empirical data on impacts observed for animal welfare, public engagement, and community perceptions over a period of time.

Research into the use of technology within shelters could take the form of developing intelligent shelter management systems and designing active digital public education tools. The outputs of such research would not only underpin further work targeting these aspects of animal welfare, so as to effect actual beneficial change within humane architecture in Bahrain, but indeed globally.

5.0 Conclusion

5.1 Summary of Key Findings

This research shows the possibility of changing stray animal shelters in Bahrain through community-based and culturally sensitive architectural design. A number of other key challenges were also discussed that make the existing models of shelters less effective, including lack of resources, overcrowding, and limited public engagement. The findings, however, do show opportunities toward reframing shelters as dynamic community hubs by integrating traditional Bahraini motifs, interactive zones, and educational programs.

This study established that humane design features, including the addition of green spaces, quiet zones, and culturally adaptive elements, greatly improve animal welfare and public perception. It further emphasizes community involvement not as peripheral, but intrinsic to designing shelters that would foster empathy, responsibility, and social bonding.

5.2 Implications of the Findings

The implication of this study surpasses the theoretical addition to humane architecture by adding practical values to stakeholders. Among these are the following:

- a) To Architects and Designers: The culturally responsive framework will provide a model in which shelters can be designed in concert with Bahrain's cultural and environmental context, along with international humane standards.
- b) Policymakers: Increased funding, public awareness, and policy reforms are argued to make humane and community-focused shelter design the new gold standard.
- c) Animal Welfare Organizations: Shelters can revisit their role as educators and advocates by challenging the ways in which society thinks about its actions regarding animal welfare issues and enacting increased involvement in the support of associated initiatives.

By placing shelter design within the cultural and community contexts, the findings place Bahrain in a position to potentially lead in humane shelter innovation within the Middle East.

5.3 Limitations of the Study

This paper is a potential addition to the increasing volume of works within the developing discipline of humane architecture. Nevertheless, the following are some limitations that were identified in this study:

- a) Sample Size: The small number and localized participants' pool narrows down generalizing beyond Bahrain.

- b) The Qualitative Focus: Where richness is attained, sole reliance on qualitative methodology does not possess the statistical robustness of quantitative validation.
 - c) Context-Specific Findings: The focus on the cultural and environmental context of Bahrain raises concerns that the findings may be limited in relevance in other regions with a different socio-cultural dynamic.
- These are limitations that have to be duly addressed in the future with larger samples, including more diverse ones, as well as extending the research to comparative analyses within similar cultural contexts.

5.4 Recommendations for Future Research

From the findings and limitations of this study, many avenues of future research were identified as follows:

- a) Quantitative Validation: Validation of qualitative findings through large-scale surveys to provide statistically weighty data on public preferences and attitudes (Bryman, 2016).
- b) Longitudinal Research: This will be further explored through longitudinal studies on the impact redesigned shelters have on public perception, adoption rates, and animal welfare outcomes over the long term. This would be furthered by Applebaum et al. (2021). Pilot Implementations: Prototype community-oriented culturally adapted shelters should be designed and tested for functionality and effectiveness. This would be furthered by Nagel (2018).
- c) Comparative Regional Studies: Research in shelter design in the Middle East into a series of common challenges and creative solutions that will add to a regional discussion on humane architecture. Weisser & Hauck (2024)
- d) Policy Integration: The reforms in policies need to be made which would set the benchmark for humane shelter design and make avenues for sustainable funding mechanisms, raise awareness in the public eye. Wang et al. (2020).

These recommendations seek to widen the impact of this study through a guide toward future initiatives that find humane, sustainable, and culturally responsive solutions to the problem of animal shelters in Bahrain and beyond.

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Conflict of Interests

The Author(s) declare(s) that there is no conflict of interest.

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