

Elucidating the Dimensions of the Concept of Dwelling through a Phenomenological Approach in Informal Settlements: A Case Study of Mehr Housing Settlements in Hamadan, Iran

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Detailed abstract

Introduction

Housing is not merely a physical container that protects occupants from climatic conditions; it is the spatial setting through which everyday life, social relations, cultural practices, and individual identities are continuously produced. From an architectural perspective, the quality of housing therefore depends on more than constructional adequacy or the numerical provision of dwelling units. It emerges from the reciprocal relationship between residents and the material, social, environmental, and symbolic characteristics of their living environment. This broader understanding is captured by the concept of dwelling, which shifts attention from housing as an object to inhabitation as a lived process. A dwelling becomes meaningful when its spaces support daily routines, accommodate changing household needs, enable privacy and interaction, respond to climate, and contribute to attachment, belonging, and residential identity.

Large-scale affordable housing programmes frequently privilege speed, quantity, and cost efficiency over these qualitative concerns. Standardized plans, repetitive building forms, peripheral locations, and limited communal infrastructure may satisfy production targets while failing to create environments that residents can appropriate as home. Iran's Mehr Housing Project represents one of the country's most extensive affordable housing interventions. Although the programme has expanded access to residential units, the experiential quality and long-term habitability of many Mehr settlements remain contested, particularly where local climate and socio-cultural patterns affect occupation.

This study addresses residential quality as a multidimensional architectural construct rather than a narrowly technical measure. It investigates four interdependent dimensions: physical-spatial, social, environmental, and perceptual. The principal objective is to identify their relative importance in Mehr Housing settlements in Hamadan from the residents' perspective. By translating the abstract concept of dwelling into measurable indicators, the research also seeks to connect architectural theory with post-

occupancy evidence and to formulate design-oriented guidance for future affordable housing policy and practice.

The analytical framework is grounded in the proposition that dwelling is simultaneously functional, relational, ecological, and experiential. The physical-spatial dimension concerns the capacity of the residential environment to support use. It includes the organization and dimensions of internal spaces, adequacy of dwelling size, flexibility in response to household change, accessibility, construction quality, and the provision of physical infrastructure. These attributes shape the immediate usability of the home and determine whether standardized residential space can accommodate diverse patterns of occupation.

The social dimension extends analysis beyond the individual unit to the collective life of the housing complex and neighbourhood. Opportunities for encounter, the quality of shared and semi-public spaces, perceived security, neighbourly relations, and social cohesion influence whether a settlement operates as an assemblage of isolated buildings or as a viable residential community. The environmental dimension encompasses green space, climatic comfort, access to daylight and ventilation, acoustic conditions, and the mitigation of environmental disturbance. In Hamadan, such criteria have particular architectural relevance because environmental performance directly affects seasonal comfort and the everyday use of indoor and outdoor areas.

The perceptual dimension addresses aesthetic coherence, visual legibility, architectural character, sense of place, and residents' emotional attachment to their surroundings. Although less readily quantified, these qualities mediate the interpretation of space and distinguish merely occupying a unit from experiencing a meaningful home. The four dimensions are analytically separable but experientially intertwined. An integrated framework is consequently necessary to avoid reducing residential quality to a checklist of physical specifications and guides subsequent statistical interpretation.

Materials and Methods

The research adopted a quantitative, descriptive-analytical design focused on the perceptions of residents living in Mehr Housing settlements in Hamadan. Resident evaluation was selected because post-occupancy experience can reveal discrepancies between intended design performance and the ways spaces function in everyday life. A structured questionnaire was developed following an extensive review of literature concerning housing quality, residential satisfaction, environmental psychology, and architectural interpretations of dwelling. The instrument operationalized the conceptual model through 24 indicators grouped under the four principal dimensions of physical-spatial, social, environmental, and perceptual quality.

The questionnaire translated experiential concepts into assessable variables while retaining the multidimensional character of dwelling. Its items addressed functional organization, spatial adequacy

and flexibility, infrastructure, interaction, security, cohesion, landscape, climatic comfort, noise, aesthetics, architectural identity, and sense of place. Expert evaluation established the instrument's content validity by examining the relevance and classification of indicators. Reliability was assessed through established statistical procedures and considered acceptable for subsequent analysis.

Data were processed in SPSS through complementary statistical tests. One-sample t-tests compared the observed mean of each dimension with the theoretical midpoint, establishing whether residents' assessments differed from a neutral reference. The Friedman non-parametric test then examined differences in the relative priority assigned to the four dimensions.

Finally, Exploratory Factor Analysis with factor rotation was used to examine the latent organization of the 24 indicators and to test whether the empirical pattern corresponded with the proposed theoretical framework. Factor loadings provided evidence of the relationship between individual indicators and their underlying constructs. The combined analytical strategy therefore evaluated overall performance, comparative importance, and construct structure, linking residents' judgments with an empirically tested model of dwelling quality.

Findings

The results indicate a generally positive evaluation of the studied Mehr Housing environments. All four dimensions recorded mean values above the theoretical average, and the one-sample t-tests confirmed that these differences were statistically significant at $p < 0.001$. Nevertheless, the scores reveal a clear hierarchy in residents' assessments. The physical-spatial dimension achieved the highest mean value, 4.20, followed closely by the social dimension at 4.17. Environmental quality obtained a mean of 4.08, whereas the perceptual dimension received the lowest, though still above-average, score of 3.75.

The Friedman test demonstrated significant differences among these dimensions and confirmed the same order of priority. Physical-spatial quality ranked first, showing that residents emphasize the practical performance of homes and immediate surroundings. Functional planning, appropriately proportioned space, adaptability to evolving household requirements, and reliable infrastructure constitute the primary basis of judgment in standardized housing, where spatial or constructional limitations recur in daily routines.

Social quality ranked second. Its proximity to the physical-spatial score shows that residents do not evaluate housing as an autonomous private unit. Security, neighbourly interaction, communal facilities, and collective spaces are substantial components of perceived quality. Environmental quality ranked third, confirming the importance of green areas, climatic responsiveness, acoustic control, and general comfort for health and spatial usability.

Perceptual quality ranked fourth. This lower position should not be interpreted as evidence of irrelevance. Rather, it may reflect a hierarchy of need in which functional adequacy, social security, and environmental comfort receive priority before aesthetic distinction and symbolic identification. Visual quality, architectural coherence, and sense of place still influence psychological well-being and long-term attachment. Exploratory Factor Analysis identified four latent factors corresponding to the proposed dimensions. Most items displayed satisfactory factor loadings, supporting internal consistency and construct validity. The factorial pattern thus reinforces the proposition that residential quality is multidimensional while confirming that the four-part framework provides a credible representation of residents' experience.

Discussion and Conclusion

The architectural quality of mass housing cannot be evaluated through unit numbers, floor area, structural completion, or infrastructure provision alone. Residents' emphasis on physical-spatial performance confirms the importance of functional planning and constructional reliability, while social and environmental priorities show that dwelling extends beyond the apartment boundary. Satisfaction is produced across private, semi-private, communal, and neighbourhood spaces that support use, interaction, comfort, and identification.

For design practice, physical-spatial priority implies that future affordable housing should provide adaptable plans, intelligible circulation, appropriate proportions, adequate storage and services, and robust infrastructure. Flexibility is crucial because households change while standardized units often assume static occupation. Social quality calls for articulated thresholds and purposeful shared spaces. Entrances, corridors, courtyards, play areas, and neighbourhood facilities should enable encounter and collective oversight without compromising privacy, thereby strengthening cohesion and safety.

Environmental considerations require climate-responsive orientation, daylighting, natural ventilation, landscape systems, usable outdoor areas, and acoustic protection. In Hamadan, they should inform early planning rather than follow fixed layouts and densities. Perceptual quality also merits attention: variation within coherent architectural rules, legible public realms, human-scaled massing, material quality, and resident appropriation can counteract anonymity and transform standardized developments into identifiable places.

Because the study relies on residents' assessments, its findings should be understood as evidence of perceived rather than measured performance. This distinction does not weaken the relevance of the results: occupancy-based judgments reveal how design decisions are encountered in practice. Future research can combine this framework with observational surveys, environmental measurements, and comparative analysis across Mehr settlements and diverse household groups.

Overall, the research supports an integrated, human-centred approach to affordable housing. The four dimensions should not be treated as independent packages or addressed sequentially according to rank; design decisions commonly affect several dimensions at once. A well-proportioned courtyard, for instance, can improve climatic performance, facilitate interaction, clarify spatial organization, and reinforce place identity. Housing policy should therefore supplement quantitative delivery criteria with multidimensional quality assessment, including systematic post-occupancy evaluation. Applying such evidence to planning, design, and management can improve residents' quality of life, strengthen the social and environmental sustainability of Mehr settlements, and reframe affordable housing as the creation of enduring places for dwelling rather than the repetitive production of residential objects.

Keywords: Dwelling; Concept of Dwelling; Informal Settlements; Mehr Housing; Hamadan; Phenomenology.