

Gender-sensitive Architecture: Assessing Space Qualities and Perceptions in Housing Design

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Abstract: Housing designs should not only consider aspects of form and function but should also pay attention to gender perspectives. This study aims to examine the influence of gender perspectives on the architectural design of residential housing. Employing a mixed method of a qualitative approach and a questionnaire-based online survey, this research explores user perceptions and preferences in applying gender-sensitive approaches to housing design. The findings reveal that gender-sensitive approaches are highly preferred in housing designs, with a particular emphasis on accommodating the inhabitants' needs. The approach effectively addresses the specific needs of masculine and feminine individuals as inhabitants, which can significantly improve the quality of life within the house. This research emphasizes the urge to incorporate a gender perspective as one of the design considerations to create inclusive houses that are responsive to the needs of individuals of diverse genders.

Keywords: housing design; gender perspective; gender-sensitive design; space function and quality; spatial needs

Abstrak: Desain rumah tinggal tidak hanya harus mempertimbangkan aspek bentuk dan fungsi, namun juga perlu memperhatikan perspektif gender. Penelitian ini bertujuan untuk melihat pengaruh perspektif gender pada desain arsitektur rumah tinggal. Dengan menggunakan metode campuran berupa pendekatan kualitatif dan survei daring berbasis kuesioner, penelitian ini mengeksplorasi persepsi dan preferensi pengguna terhadap penerapan pendekatan sensitif gender dalam desain rumah tinggal. Hasil penelitian menunjukkan bahwa pendekatan sensitif gender dinilai sangat diperlukan dalam desain rumah tinggal, khususnya dalam mengakomodasi kebutuhan penghuninya. Pendekatan ini secara efektif menjawab kebutuhan spesifik individu dengan karakter maskulin maupun feminin, yang dapat secara signifikan meningkatkan kualitas hidup di dalam rumah. Penelitian ini menegaskan pentingnya memasukkan perspektif gender sebagai salah satu pertimbangan dalam desain untuk menciptakan rumah yang inklusif dan responsif terhadap kebutuhan individu dengan keberagaman gender.

Kata Kunci: desain perumahan; perspektif gender; desain yang sensitif terhadap gender; fungsi dan kualitas ruang; kebutuhan ruang

A. Introduction

Architecture is not merely about the physical manifestation of built environments; it also reflects the inhabitants' cultural, social, and symbolic values. As the discipline evolves, architecture increasingly extends its focus beyond structural integrity (*firmitas*), functionality (*utilitas*), and aesthetics (*venustas*), toward more complex social dimensions such as inclusivity, equity, and identity. One of the growing areas of attention is how architecture can be more responsive to diverse gender identities, roles, and preferences, particularly in residential design.

In many cases, housing is designed using a mass-production, “cookie-cutter” approach that standardizes spatial arrangements without consideration of the nuanced needs of different users. This practice often neglects the gendered experiences of space, even though housing plays a significant role in shaping not only physical comfort and security, but also individual well-being and gender-based identity. As a private domain, residential space actively participates in the social construction of gender, influencing how roles, responsibilities, and relationships are expressed and negotiated.

A growing body of literature has explored the relationship between space and gender. Studies such as Aryanti and Isaac have highlighted how domestic spaces often reflect patriarchal values,¹ while more recent works of Terraza et al. and Chadha have advocated for gender-sensitive design that accommodates differences in spatial needs, privacy, and social roles.² However, there remains a lack of empirical research addressing how users perceive, interpret, and respond to gendered spatial arrangements, particularly within the context of private housing in non-Western settings such as Indonesia. Existing studies often rely on

¹ Tutin Aryanti, “Vision and Gendered Space: Making Women Invisible in Yogyakarta Sultanate Palace,” *Space and Culture* 20, no. 3 (2017): 301–14, <https://doi.org/10.1177/1206331216647353>; Janine Isaac, “Home is where the female is: Analysing the Geography of Gender Inequalities and the Home,” *Topophilia*, October 1, 2020, 32–36, <https://doi.org/10.29173/topo25>.

² Horacio Terraza et al., *Handbook for Gender-Inclusive Urban Planning and Design* (Washington D.C.: World Bank Group, 2020), 25–50, <https://openknowledge.worldbank.org/bitstream/handle/10986/33197/145305.pdf>; Trishla Chadha, “Characteristics of Gender Sensitive Architecture,” *Re Thinking the Future*, 2024, <https://www.re-thinkingthefuture.com/designing-for-typologies/a3709-characteristics-of-gender-sensitive-architecture/>.

theoretical or design-based discourse, leaving a gap in understanding diverse users' lived experiences and preferences.

This study offers a novel contribution by approaching housing design through the lens of gender perception and user experience. It does not merely propose prescriptive design interventions based on gender binaries, but instead seeks to explore how individuals of different genders relate to space in daily domestic life—how comfort, privacy, and functionality are subjectively experienced, and how spatial preferences reflect or resist traditional gender roles. This perspective provides a more grounded and contextualized approach to gender-inclusive architectural design.

This study examines the influence of gender perspectives on the architectural design of residential housing. It investigates how men and women—as shaped by their sociocultural backgrounds and daily activities—perceive, experience, and prefer certain spatial qualities in the home. The study seeks to understand how these preferences might inform more inclusive, responsive, and user-centred design strategies in residential architecture through qualitative exploratory methods.

The notion of gendered space, or gendered architecture, first emerged in Western thought during the 17th century and has since significantly influenced architectural discourse.³ It refers to the spatial organization and design practices that reflect and reinforce gender norms shaped by sociocultural values. These norms often dictate separate spatial behaviors and accessibilities for men and women, where certain areas are designated as more "masculine" or "feminine."⁴ This binary classification is embedded in broader societal structures and behaviors, thus influencing how individuals of different genders experience and interact with space.⁵ The emergence of the conception of

³ Zhixin Xu et al., "Interaction between Gender and Space: A Study on the Genealogy of Feminist Architecture," *Buildings* 14, no. 11 (2024): 3658, <https://doi.org/10.3390/buildings14113658>.

⁴ Pablo Navarrete-Hernandez, Arielle Vetro, and Paz Concha, "Building Safer Public Spaces: Exploring Gender Difference in the Perception of Safety in Public Space through Urban Design Interventions," *Landscape and Urban Planning* 214 (2021): 104180, <https://doi.org/10.1016/j.landurbplan.2021.104180>.

⁵ Yeptadian Sari and Nabila Azzura Putri Prasyam, "Kajian Konsep Arsitektur Gender pada Rumah Tinggal Wanita Pasca Bersalin," in *Prosiding Semnastek*, 2021, 1–6, <https://jurnal.umj.ac.id/index.php/semnastek/article/view/11478>.

gendered architecture was a response to the dominant patriarchal thinking in architecture. Maunganidze notes that architecture has historically been a patriarchal domain, marginalizing women by normalizing spatial hierarchies and dichotomies such as the public-private divide. Such divides not only reflect but also perpetuate power imbalances that favour masculine modes of engagement with space.⁶

Design practices frequently privilege male needs and experiences, often unconsciously, through spatial standards derived from male ergonomics and public realm dynamics that overlook women's spatial requirements. It calls for consciously incorporating gender sensitivity in design to promote equity and inclusivity.⁷

Pierre Bourdieu's concept of habitus also illuminates the interplay between gender and space—the system of dispositions shaped through socialization within specific cultural contexts.⁸ These ingrained orientations influence how individuals perceive, use, and value space.⁹ Consequently, spatial design becomes a medium through which gender roles are reproduced and sustained. This lens can be used to understand how social structures are internalized and influence the quality and functionality of the space individuals perceive.¹⁰

Additionally, notions such as *sense of place* and *place attachment* offer valuable frameworks for understanding how women, in particular, respond to and internalize spatial experiences.¹¹ Spaces acquire emotional, social, and

⁶ Langtone Maunganidze, *Representation and Materialization of Architecture and Space in Zimbabwe* (Cham: Springer Nature Switzerland, 2024), 127–36, <https://doi.org/10.1007/978-3-031-47761-4>.

⁷ Md Imran, "Understanding the Gender Implications of Architecture," TBS News, May 28, 2024, <https://www.tbsnews.net/features/habitat/understanding-gender-implications-architecture-862421>.

⁸ Pierre Bourdieu, "The Social Space and the Genesis of Groups," *Social Science Information* 24, no. 2 (1985): 195–220, <https://doi.org/10.1177/053901885024002001>.

⁹ Nurul Fakriah, "Hijab: Konsep Gender Space dalam Arsitektur Vernakular Aceh," *Gender Equality: International Journal of Child and Gender Studies* 6, no. 1 (2020): 109–20, <https://doi.org/10.22373/equality.v6i1.6597>.

¹⁰ Hans Teerds and Tom Avermaete, "The Roles of the Architect: Toward a Theory of Practice," in *Lexicon No. 1: On the Role of the Architect* (Delft: The Berlage Center for Advanced Studies in Architecture and Urban Design, 2015), 7–11.

¹¹ Fakriah, "Hijab: Konsep Gender Space dalam Arsitektur Vernakular Aceh."

cultural meanings that impact how individuals feel connected or alienated. Women's spatial experiences, shaped by social pressures and domestic expectations, reveal a nuanced engagement with space that extends beyond functionality to emotional resonance and identity formation.¹²

Despite its necessity, gender-sensitive design remains difficult to implement due to deeply rooted technical, cultural, and ideological barriers. A primary concern is the issue of safety, especially for women in urban spaces.¹³ The lack of perceived safety limits women's mobility and access to public facilities. Designing environments that promote safety is thus central to fostering inclusive public spaces and aligns with global goals such as the Sustainable Development Goals (SDGs), particularly Goal 5 on gender equality.

Another key challenge lies in cultural norms prevalent in patriarchal societies, where gender roles are reinforced through tradition and religious doctrine. These norms restrict spatial behavior, particularly for women, who are often confined to domestic roles. In Indonesia, where cultural and religious traditions are deeply entrenched, expectations of women's roles are particularly rigid. The notion that women are inherently responsible for domestic tasks such as cooking and cleaning perpetuates stereotypes that influence spatial design, especially in housing.¹⁴ Javanese sayings like '*sumur, dapur, kasur*' (well, kitchen, bed) and '*macak, masak, manak*' (beautify oneself, cook, give birth) exemplify these gendered expectations.¹⁵ Such narratives limit the reimagination of domestic space in more equitable terms.

In contexts where culture and religion heavily inform daily life, introducing gender-sensitive architectural interventions may be perceived as a challenge to tradition. Thus, any shift must balance respect for local customs with advocacy for equity. Rather than erasing tradition, design interventions should negotiate with it to foster inclusivity.¹⁶

¹² Hashem Hashemnezhad et al., "Comparison the Concepts of Sense of Place and Attachment to Place in Architectural Studies," *Australian Journal of Basic and Applied Sciences* 7, no. 1 (2013): 219–27.

¹³ Chadha, "Characteristics of Gender Sensitive Architecture."

¹⁴ Chadha.

¹⁵ Hilal Akbar Faturahman and Retno Dwiyantri, "Fear of Success in Women Working with the Banyumas Cultural Approach," *Sains Humanika* 13, no. 2–3 (2021): 358–64, <https://doi.org/10.11113/sh.v13n2-3.1909>.

¹⁶ Imran, "Understanding the Gender Implications of Architecture."

To address these challenges, participatory design has emerged as a critical strategy. Involving diverse users, particularly women, in the design process ensures that their lived experiences inform architectural outcomes. Community engagement enables designers to understand and translate gendered spatial needs into concrete design programs. Additionally, a gender-sensitive planning approach intersecting with development principles can help establish non-discriminatory policies. It includes implementing spatial features that prioritize accessibility, safety, and flexibility—such as proper lighting, private zones, and multifunctional public spaces.¹⁷

Integrating gender considerations is essential in public and private realms, especially housing design.¹⁸ Housing as a private space plays a crucial role in shaping gender relations, yet remains understudied compared to public space.¹⁹ Research by Odbert et al. has explored gendered experiences in public settings, but less attention has been given to domestic environments where gender roles are most intensely enacted.²⁰

This study contributes to bridging that gap by examining how gender perspectives influence perceptions, preferences, and spatial usage within the home. Recognizing housing as a site of gender expression and negotiation, the research seeks to develop more inclusive and responsive design principles grounded in user experience.

Although theoretical and advocacy-based discussions on gender in architecture are well established, empirical studies capturing user perceptions in housing remain limited.²¹ This research investigates how contemporary residents interpret and experience gendered spatial dynamics and whether these

¹⁷ Chadha, "Characteristics of Gender Sensitive Architecture."

¹⁸ Sunarmi Sunarmi, "Pendekatan Pemecahan Desain Interior Rumah Tinggal," *Ornamen* 10, no. 1 (2013): 41–56.

¹⁹ Farah Widya Utami and Fairuz Mutia, "Keterkaitan Aspek Sense of Place dalam Pembentukan Perilaku Wanita sebagai Pengguna Bangunan," *Sinektika: Jurnal Arsitektur* 20, no. 1 (2023): 82–89, <https://doi.org/10.23917/sinektika.v20i1.20085>.

²⁰ Terraza et al., *Handbook for Gender-Inclusive Urban Planning and Design*, 167–94.

²¹ Terraza et al., 59–165; Gisela Ferrari, Victoria Stanley, and Michelle Morandotti, *Addressing Gender Gaps in Housing Interventions* (Washington D.C: International Bank for Reconstruction and Development / The World Bank, 2021), 14–35; Iain Borden, Barbara Penner, and Jane Rendell, eds., *Gender Space Architecture* (Routledge, 2002), 223–385, <https://doi.org/10.4324/9780203449127>; Amany Hendy, "Gender Differences Necessities in Interior Design," *International Design Journal* 5, no. 3 (2015): 1293–1302, <https://doi.org/10.21608/idj.2015.101786>.

perceptions align with or resist traditional roles. The study focuses on aspects such as daily activities, privacy, and comfort within the domestic environment.

This research aspires to contribute to the broader discourse on inclusive architecture by synthesizing theoretical insights with empirical findings. It challenges normative assumptions and supports the development of gender-equitable strategies that address the diverse needs of all inhabitants. The outcomes are expected to inform architectural practice and policy towards more equitable, inclusive, and meaningful housing environments.

B. Method

This paper employs a qualitative exploratory research method, which focuses on understanding humans in experiencing their life events, comprising behaviors, activities, perceptions, motivations, and actions.²² These aspects manifest in human responses to different events that influence humans' internal aspects.²³ This research employs exploratory qualitative methods to dissect the connection between gender perspectives and home design.

The research started with a literature review to establish the theoretical framework and find existing gaps. It was then followed by selecting houses as case studies by considering diverse typologies and the demographics of the inhabitants. Data collection was conducted through a combination of observations, online open-ended surveys in the form of questionnaires, and visual documentation. The data were processed using thematic analysis to identify themes, patterns, and meanings related to the interaction between gender perspectives and the space design. The results were then triangulated and interpreted to formulate recommendations for a gender-sensitive housing design.

The research employed a non-probability snowball sampling technique, initiated through the researchers' personal and professional networks. Participants were invited to participate in an online open-ended question-

²² Juliet M. Corbin and Anselm Strauss, "Grounded Theory Research: Procedures, Canons, and Evaluative Criteria," *Qualitative Sociology* 13, no. 1 (1990): 3–21, <https://doi.org/10.1007/BF00988593>.

²³ Lexi J. Moleong, *Metodologi Penelitian Kualitatif* (Bandung: Remaja Rosdakarya, 2014), 151–52.

naire distributed via social media platforms and messaging groups. While the sampling was not random, the snowball method allowed for diverse representation regarding gender, age, and marital status. A total of 112 respondents completed the survey, consisting of 64.3% women and 35.7% men, ranging in age from 21 to 55 years. Respondents included unmarried individuals, married with or without children, and widowed. The participant demographic summary is provided in Table 1.

The online questionnaire consisted of both open- and closed-ended questions, designed to elicit qualitative and quantitative data. The open-ended items explored participants' thoughts on the importance of gender in housing design, including their preferences and justifications. Meanwhile, closed-ended items measured levels of agreement on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) regarding gender consideration in spatial design. For this discussion, the data attained are qualitative text-based responses, where respondents were asked to describe their perceptions related to the inclusion of gender perspectives in housing design.

The development of the instrument was informed by previous studies on gender and spatial use,²⁴ with adaptation to suit the Indonesian cultural context. While formal instrument validation was not conducted due to the study's exploratory nature, content validity was ensured through expert review and pre-testing with a small pilot group.

Table 1
Respondent's Gender and Marital Status

Demographic Variable	Category	N	Percentage
Gender	Female	72	64,3
	Male	40	35,7
Marital Status	Unmarried	57	50,9
	Married, no children	10	8,9
	Married with children	44	39,3
	Widowed	1	0,9

Source: Analyzed Databased on online questionnaire

²⁴ Aryanti, "Vision and Gendered Space: Making Women Invisible in Yogyakarta Sultanate Palace"; Chadha, "Characteristics of Gender Sensitive Architecture."

Participation in the study was voluntary, and informed consent was obtained before data submission. All responses were anonymized, and no personal identifiers were collected. Given the nature of the study and the minimal risk involved, formal ethical clearance was not required. However, the research adhered to standard ethical guidelines for human subjects research.

To analyze the qualitative data, a content analysis method was employed on the open-ended responses to evaluate the respondents' levels of agreement with incorporating gender perspectives into housing design. The analysis followed three stages: open, axial, and selective coding.²⁵ In the open coding stage, keywords were identified from the respondents' answers. In the axial coding stage, keywords with similar meanings or characteristics were grouped to form broader categories. The frequency of occurrences for each category was then visualized through distribution analysis Figures. Finally, a hypothesis model was developed in the selective coding stage based on the categories established during the axial coding phase.

C. Results

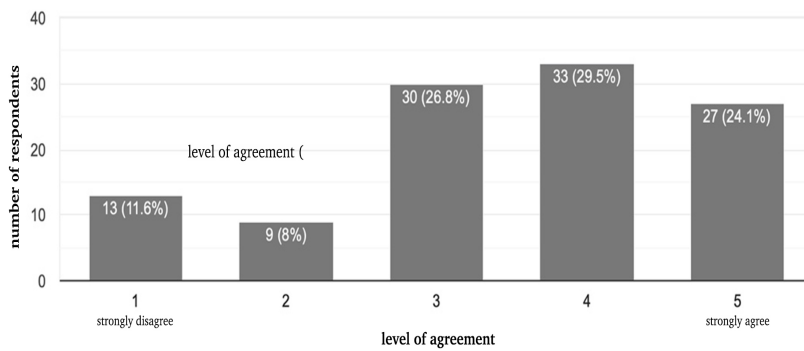
Content Analysis Data

The initial stage of content analysis involved open coding responses regarding gender preferences in housing design. Respondents were asked to rate their agreement on a numerical scale ranging from 1 (strongly disagree) to 5 (strongly agree) for the question, "Do you agree that the design of residential architecture should consider the needs and preferences based on the gender of its occupants?" The agreement levels of 112 respondents are illustrated in Figure 1.

To elaborate on their agreement levels, follow-up questions were posed to explore the reasoning behind their responses. Examples of open coding derived from respondents' explanations about the application of gender perspectives in housing design include the following excerpts:

²⁵ John W. Creswell and Cheryl N. Poth, *Qualitative Inquiry and Research Design: Choosing among Five Approaches* (Thousand Oaks: SAGE Publications Inc., 2013), 181–85.

Figure 1
Histogram of Respondents' Approval Rate for the Application of
Gender Perspective in Housing Design



Source: Data Analysis based on online questionnaire

“Because the needs of husbands and wives will be very different from those of their children, whether they are boys or girls. Girls tend to need more decorative spaces compared to boys, who require storage for toys or collectibles.” (5 - strongly agree, Male, 26 years old, unmarried).

“In my opinion, the primary basis of design should be fulfilling spatial needs. It is not entirely related to gender.” (3 - neutral, Female, 35 years old, married with children).

“Because design cannot be limited by gender. For example, some women prefer masculine aesthetics, so their needs and designs will contradict traditional gender norms. In my opinion, design is more about preference than gender.” (1 - strongly disagree, Female, 25 years old, married without children).

From these responses, several keywords were identified as reasons for the level of agreement with implementing gender perspectives in housing design, including “Occupant Needs,” “Inclusive Design” (architectural planning based on specific genders), and “Activity Variance” (differences in activities among occupants).

Subsequently, axial coding was conducted to group these keywords into broader categories. This process resulted in nine categories representing the reasons for agreement on gender perspective application in housing design. Table 2 provides an example of the categories formed through axial coding.

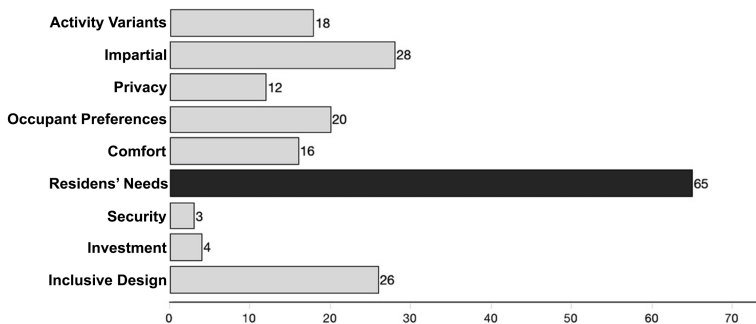
The following analysis stage involved distribution analysis to determine the most and least dominant categories. The findings indicate that the most

predominant reason cited by respondents was “Occupant Needs,” accounting for 65 responses (34%), followed by “Neutral” responses at 28 (15%). Other notable categories included “Inclusive Design” at 26 (13%), “Occupant Preferences” at 20 (10%), “Activity Variance” at 18 (9%), “Comfort” at 16 (8%), and the least cited reasons were “Safety” and “Investment,” with 3 and 4 responses (2%), respectively (Figure 2).

Tabel 2
Example Reasons of Open Coding for Approval of the Application of
Gender Perspective in Housing Design

No.	Category	Keywords
1	Activity Variants	Resident activities Gender-specific activities
2	Residents' Needs	Gender-specific needs Residents' needs Main space requirements Needs change
3	Inclusive Design	Custom space design Architectural design planning

Figure 2
Analysis of the Distribution of Respondents' Consent to the Application of
Gender Perspectives in Housing Design



Source: Data Analysis by JMP Statistical Discovery Application

Gender Perspective Preference Hypothesis Model in Housing Design

The next stage involved selective coding to examine the relationship between the level of agreement and the reasons for agreeing or disagreeing with applying gender preferences in housing design. This analysis employed correspondence and cluster analysis, visualized using a constellation plot. The results are presented as a dendrogram (see Figure 3), with a significance level of $p < 0.0001$.

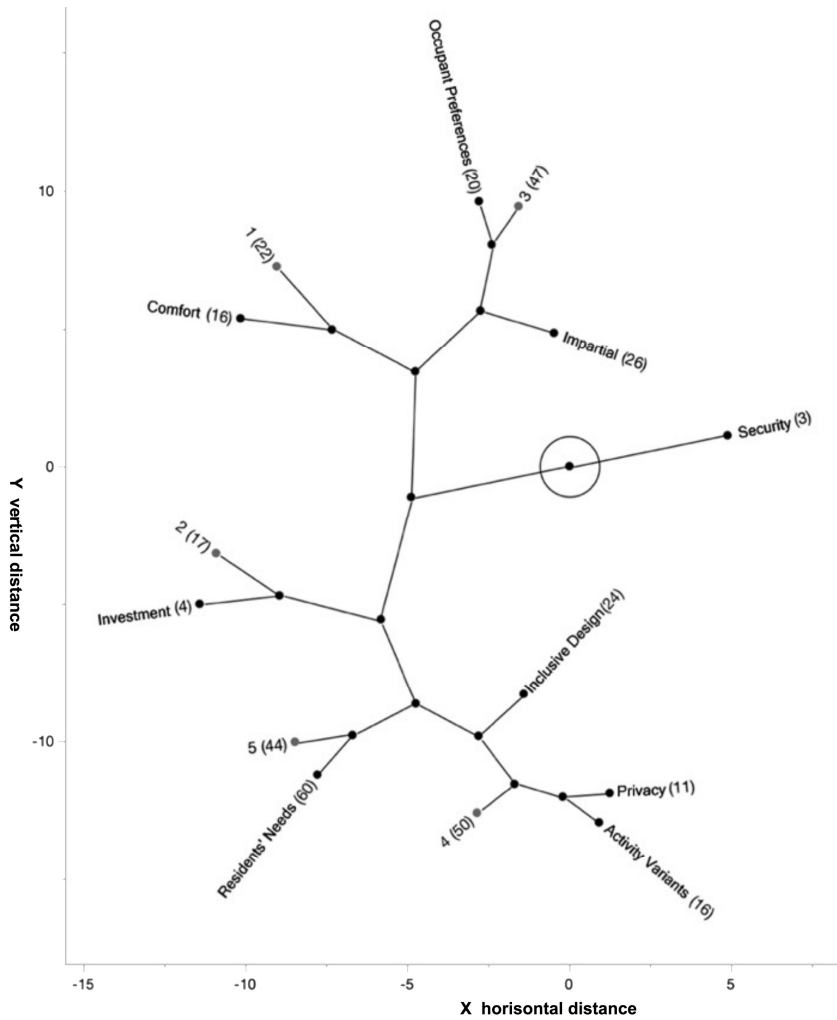
As depicted in the dendrogram, the clustering patterns observed from the correspondence and constellation analysis revealed three gender perspective preferences in housing design. These three groups represent the correspondence between agreement levels and the underlying reasons for applying gender perspectives in design. The groups were identified as follows: those who agreed with gender preferences, those who were neutral toward gender preferences, and those who disagreed. Among these groups, the "agree with gender preferences" group emerged as the most dominant, with a frequency 94. The second largest group was the "neutral toward gender preferences" group, with a frequency of 47. The smallest group, "disagree with gender preferences," had a frequency of 39. These findings highlight the prevalence of positive attitudes toward integrating gender perspectives in housing design and acknowledge the presence of neutral and dissenting views.

The Constellation Plot Figure elucidates the respondents' agreement with applying gender perspectives in housing design and their reasoning. The dendrogram's hierarchical pattern in displaying agreement and corresponding responses displays how various reasons align with specific levels of agreement. Reasons repeatedly mentioned or shared similar meanings are grouped into categories to simplify the interpretation of the respondents' rationale behind their support. These categories provide valuable insights into how gender perspectives influence housing design and highlight the aspects respondents prioritize in inclusive design.

Group in Favor of Gender Preferences

According to Figure 1, respondents who agreed with applying gender perspectives in housing design (scale ratings of 4 and 5) totalled 60 individuals (53.6%). The reasons cited by this group include "*Occupant Needs*," "*Inclusive Design*," "*Activity Variations*," and "*Privacy*" (see Figure 4).

Figure 3
Constellation Plot of Approval for the Application of Gender Perspective in
Housing Design and the Reasons ($p < 0.0001$)



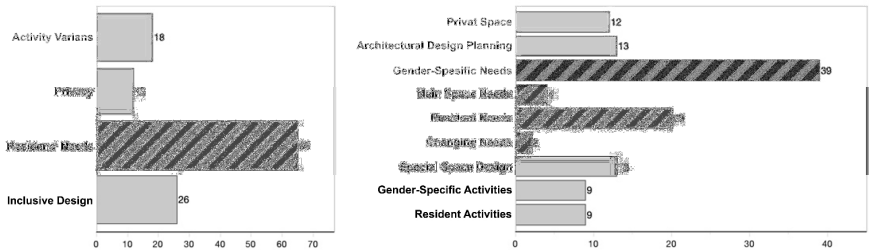
Source: Data Analysis by JMP Statistical Discovery Application

An analysis of responses under the category “Occupant Needs” revealed nine recurring keywords, with the most frequent being “Specific Gender Needs” (f:39), “Occupant Needs” (f:20), “Primary Space Needs” (f:4), and “Changing

Needs” (f:2). Similarly, the category “Inclusive Design” identified two keywords: “Specialized Space Design” (f:13) and “Architectural Design Planning” (f:13). Responses under “Activity Variations” produced two keywords: “Specific Gender Activities” (f:9) and “Occupant Activities” (f:9). Finally, “Privacy” was represented by a single keyword: “Private Spaces” (f:12) (see Figure 4).

Respondents favouring incorporating gender perspectives in housing design argued that this approach could effectively address the specific needs of masculine and feminine individuals as inhabitants. A key benefit highlighted was the provision of private spaces tailored to each gender. Such gender-based design can effectively support diverse activities within the house, including creating spaces that allow individuals of different genders to do their tasks without disruption. This perspective emphasizes space layouts that enhance comfort and privacy for all residents. Respondents believed that accommodating gender-specific needs and preferences can significantly improve the quality of life within the house.

Figure 4
Analysis of Reasons for Respondents to Agree with the Application of
Gender Perspective in Housing Design



Source: Data Analysis by JMP Statistical Discovery Application

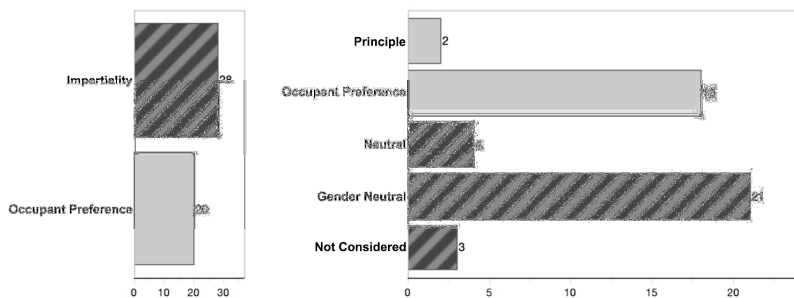
Neutral Group on Gender Preferences

Figure 1 shows respondents who remained neutral regarding applying gender perspectives in housing design (scale rating of 3), numbered 30 individuals (26.8%). The reasons provided by this group were categorized under “Non-Bias” and “Occupant Preferences.” Responses categorized under “Non-Bias” revealed five recurring keywords: “Gender Neutral” (f:21),

“Occupant Preferences” (f:18), “Neutral” (f:4), “Undecided” (f:3), and “Principles” (f:2) (see Figure 5).

Neutral respondents believed that housing design should not favour one gender over another. They advocated a gender-neutral design, emphasizing individual preferences and personal tastes over gender considerations. This approach was viewed as more inclusive and adaptable, allowing inhabitants to adjust and customize their living spaces according to their needs and desires without being constrained by gender stereotypes. Additionally, a gender-neutral design was considered to create a more harmonious and equitable living environment for all occupants, regardless of gender identity.

Figure 5
Analysis of Neutral Respondents' Reasons for the Application of Gender Perspective in Housing Design



Source: Data Analysis by JMP Statistical Discovery Application

Group Against Gender Preferences

According to Figure 1, respondents who disagreed with applying gender perspectives in housing design (scale ratings of 1 and 2) numbered 22 individuals (19.6%). The reasons provided by this group were categorized under “Comfort” and “Investment” (see Figure 6). Responses under “Comfort” identified two key-words: “Occupant Comfort” (f:16) and “Long-Term Investment” (f:4) (see Figure 6).

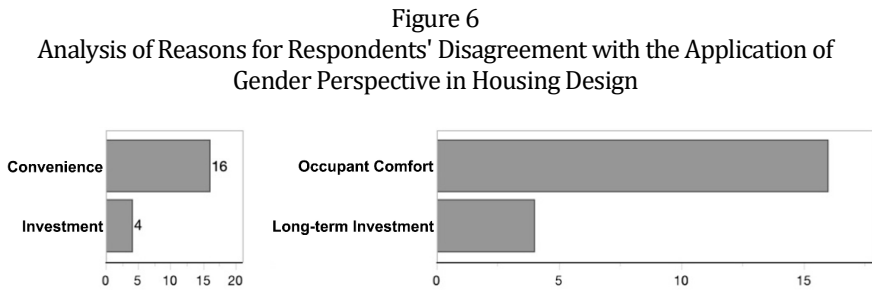
Respondents in this group argued that the primary focus of housing design should be on overall inhabitants’ comfort and the property’s potential as a long-term investment. They believed prioritizing gender-specific needs could

shift attention from essential design elements such as functionality, spatial efficiency, and universal aesthetic appeal. This group advocated for designs emphasizing flexibility and adaptability, which were seen as more economically viable. Consequently, they viewed gender-neutral designs as better equipped to meet the diverse needs of all occupants while ensuring the property’s long-term value and relevance.

The majority support for incorporating gender perspectives in housing architecture highlights that spaces are not merely physical constructs but are also shaped by power relations, social habits, and cultural constructs, as articulated in gender space theory and Bourdieu’s habitus theory. Gender-responsive designs reflect how these needs arise from distinct social experiences of masculine and feminine agencies, encompassing private spaces, safety, and comfort preferences. Within this theoretical framework, housing designs that consider gender perspectives are more likely to create inclusive spaces that promote emotional well-being and productivity while accommodating culturally constructed social roles.

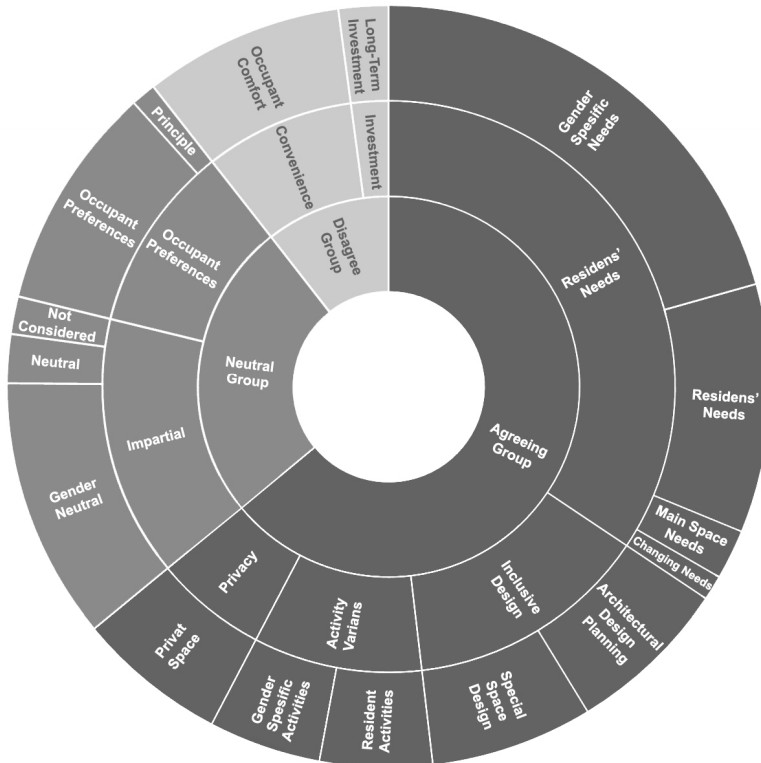
Visual Model

After conducting the correspondence analysis, the following step identifies a clustering between the acceptance of applying gender perspectives in residential architecture and the rationale behind this acceptance. This pattern is illustrated in a visual hypothetical model, the Gender Perspective Perception Group Hypothesis Model (see Figure 7).



Source: Data Analysis by JMP Statistical Discovery Application

Figure 7
Gender Perspective Preference Group Hypothesis Model
in Housing Design



Source: Data Analysis based on respondents' responses

D. Discussion

Gender-Sensitive Integration in Architecture

This research underscores that gender-sensitive architecture is expected to cater to the different needs, experiences, and spatial usages of individuals with diverse gender identities in the house. It aligns with the study done by Walker L. and Tutin A., who emphasize the need for architecture to consider

different needs that result from different genders, as this influences how individuals perceive their surroundings.²⁶ The gender-sensitive approach should manifest in the quality and functionality of spaces, as it affects inhabitants' emotional and psychological well-being.

The interview reveals that women may exhibit distinct spatial preferences and needs compared to men. It is shown, for instance, that women often prioritize spaces that ensure safety, privacy, and comfort, while men may emphasize areas that foster social interaction or productivity. Further, different preferences are also shown in how gender affects how individuals perceive their environment, including the preferences on lighting, temperature, and noise levels between men and women, which lead to divergent comfort levels among genders.

Another aspect highlighted as a reason why gender-sensitive architecture is favoured is that this approach can provide a sense of privateness, hence privacy, to the inhabitants of the house. It is conveyed mainly by female respondents, prioritizing privacy and safety over their male counterparts. It aligns with some literature mentioning women being more prone to emotional stress due to their high sensitivity to their immediate surroundings, including privacy and security.²⁷ This specific characteristic emphasizes the need for a conditioned housing design to improve women's psychological conditions.

Further, this study also finds that women's comfort in their surroundings is heavily influenced by proxemic conditions, which means the psychological interactions they form with their surrounding spaces. In this case, women tend to create individual spatial boundaries that assess proximity and the characteristics of surrounding objects.²⁸ They incline to categorize spaces based on activities and social status, mostly subconsciously, to create psychological boundaries that help them navigate within these spaces.

²⁶ Lynne Walker, "Home Making: An Architectural Perspective," *Signs: Journal of Women in Culture and Society* 27, no. 3 (2002): 823–35, <https://doi.org/10.1086/337927>; Aryanti, "Vision and Gendered Space: Making Women Invisible in Yogyakarta Sultanate Palace."

²⁷ Hendy, "Gender Differences Necessities in Interior Design."

²⁸ Hendy.

This study supports the assertion by Walker and Isaac²⁹ that residential spaces serve functional purposes and reinforce or contest gender roles. The emphasis on privacy and gender-specific needs, especially by female respondents, reflects concerns raised in Fakriah's study of spatial gendering in Acehese architecture.³⁰ However, unlike earlier works that viewed these practices as inherently oppressive, this study reveals a nuanced perspective: gender-sensitive space is not necessarily discriminatory if it responds to user-defined needs for autonomy and comfort. Moreover, the neutral and opposing groups highlighted a key tension between inclusive and rigid discourse. Their views resonate with critiques of gender essentialism,³¹ reminding architects that flexibility and user agency are just as important as equity.

Despite being widely known that cultural norms and religious beliefs related to gender are, more often than not, very apparent in sculpting how a house is designed and laid out, particularly for women, the respondents in this research conveyed that a house should be inclusive in accommodating all gender's inhabitants. It is in contrast to the traditional cultural norms that tend to dissect and separate spaces in the house into different segments, each dedicated to individuals of other genders. This separation is under discussion among some feminists in Indonesia, whether this separation represents a gender-sensitive or gender-discriminatory design.

Different to the need to provide gender-specific public toilets that is hitherto seen as crucial to provide safety, particularly for women, the discussion of providing gender-based spaces in different cultural contexts might lead to other arguments and debates. In Indonesia, for instance, Acehese vernacular architecture uses spatial arrangements that follow Islamic values that regulate and restrict social interactions and domestic activities based on religious principles.³² In mosque design in Indonesia, in general, separation for women's prayer area is usually followed by further and smaller entrances for women, usually located in a far corner, compared to the male entrance, which usually uses

²⁹ Walker, "Home Making: An Architectural Perspective"; Isaac, "Home is where the female is: Analysing the Geography of Gender Inequalities and the Home."

³⁰ Fakriah, "Hijab: Konsep Gender Space dalam Arsitektur Vernakular Aceh."

³¹ Imran, "Understanding the Gender Implications of Architecture."

³² Agus Purnomo, "Teori Peran Laki-Laki Dan Perempuan," *Egalita: Jurnal Kesenjangan Dan Keadilan Gender* 1, no. 2 (2006), <https://doi.org/10.18860/egalita.v0i0.1920>.

the main entrance in the centre of the building. In another example of some Javanese architecture, *Kaputren*, in one of the wings of the Mangkunegaran Palace, is dedicated to women only, while other areas in the Palace are open for women but might have some limitations.³³ This fact evokes questions about whether this is a form of gender-sensitive or gender-discriminative design. Creating a space only for women that is separate from other genders might be seen as fulfilling the need for privacy and security for women, but confining them only in this space can be very limiting instead of liberating. The question is, therefore, to what extent is the application of gender-sensitive design considered liberating for women? Is providing women-only spaces part of the gender-inclusivity we strive for? How do we balance inclusivity and exclusivity in providing women privacy and safety in spaces?

Despite the emergence of the conception of gender-neutral spaces, as seen in the result of this study, applying gender-based spatial concepts in housing design is still seen as beneficial, especially in a specific sociocultural context.³⁴ Gender-specific spaces are believed to accommodate different physical and emotional needs shown by individuals of different genders. It is particularly relevant to people who adhere to traditional gender roles or live where this traditional value is widely adopted in the community. In this kind of place, separation becomes liberating for women, not only in private places but also in some public spaces. It is why in Indonesia, a Muslim-majority country, women-only days in public baths or women-only gym areas are quite common in society. This separation provides safety and comfort for women, particularly when they need to reveal body parts that are usually hidden during activities. The absence of individuals of other genders in the place gives women a sense of freedom and autonomy to conduct their activities without concerns and worries. In this case, gender-specific places try to understand the vulnerability experienced by certain genders and provide places that take it away.

These gender-specific spaces are also seen to foster social interaction among individuals with shared gender-related experiences or challenges to

³³ Dhian Lestari Hastuti et al., "Pracimosono as a Place of Intimacy and Spiritual Experience for the Mangkunegaran Princesses in Surakarta, Indonesia," *International Society for the Study of Vernacular Settlements* 10, no. 8 (2023): 15–38, <https://doi.org/10.61275/ISVSej-2023-10-08-02>.

³⁴ Ferrari, Stanley, and Morandotti, *Addressing Gender Gaps in Housing Interventions*.

discuss issues relevant to their gender roles, thus promoting community support and solidarity. Further, these spaces can help maintain cultural identity and traditions important to specific communities. These spaces also allow individuals to personalize their environments according to gender identity, enhancing their sense of belonging and self-expression.

The above discussion reveals that gender discourse is severely complicated and does not have a specific formula, including its relation to architecture. Traditional and recent gender perspectives on women might propose providing spaces for women. What makes the two different is the fitting of the space to the needs of women and the effect of the spaces on women as users. Gender-sensitive design requires architects to be mindful and considerate in providing spaces for women, as the need is not only for the physical space but also for fitting the spaces. Spaces provided for women need to be supporting and liberating, not limiting and confining. The problem is that defining what supports and liberates space is a difficult, if not impossible, task to do, as it depends heavily on the context of places and users in which the spaces are situated. It is almost impossible to develop a prescriptive list of what the space should be like, as doing so means simplifying the underlying complication of gender discourse itself. The absence of unclear explanations makes some people very sceptical about these gender-related ideas in architecture, and some even say that it is a lie, as almost none of the ideas can be explained clearly and thoroughly.³⁵

It is expected that architects, with their creativity, can create environments that respect traditional gender norms while fostering equality and inclusivity in every aspect of housing design by applying gender-sensitive design principles. Architectural designs are expected to improve the current architectural standards for women without completely deconstructing the common norms applied in the area to avoid rejection and antipathy to the movement. It is aligned with the findings of this research that some respondents mentioned the need for gender-sensitive spaces in housing design to reflect societal norms and expectations regarding gender roles and identities. These spaces can reinforce

³⁵ ITS News Admin, "Menelisik Unsur Feminisme Di Dunia Arsitektur," ITS News, March 20, 2018, <https://www.its.ac.id/news/2018/03/20/menelisik-unsur-feminisme-di-dunia-arsitektur>.

traditional gender-based divisions or promote inclusivity depending on their design and function.³⁶ In this case, gender-sensitive design is expected to fit the context while offering a new perspective in enhancing the condition for all genders, particularly women. Application of this gender-sensitive design can reduce existing biases, provide equitable access, and improve comfort and safety for all individuals

Spaces within the house have evolved, adjusting to the changing needs and values of the inhabitants and reflecting gender dynamics in the family and the community. The kitchen, for instance, while traditionally pictured as the space for women and, in some cases, located at the back of the house, even separated from the main house, reflects socially constructed gender roles where women are expected to handle cooking and other household chores. This perspective was challenged and led to a design that underscores functional and efficient layout while promoting inclusivity and accommodating diverse gender roles among the inhabitants. In a similar case, living rooms, which are central to family interactions, used to be designed with a masculine style and decoration, symbolizing male dominance in the public sphere of the house. Recent development challenges this dominance and prioritizes comfort and inclusivity, allowing all inhabitants to share the space equally, regardless of gender. This shift highlights significant social changes in household gender roles, where men and women can enjoy these shared spaces equally. Through these examples, it is evident that housing designs are also contested by the houses' inhabitants and influenced by the development of gender discourse in the community. It serves as a functional space while reflecting social and cultural shifts in household gender roles, which are vital in facilitating social relationships within the house, including gender relations.

While this paper has elaborated on the importance of applying gender-sensitive design in housing design, some of the respondents of this research are not fond of this idea. The main reason is the concern that gender-sensitive design will not be universal enough to accommodate all the needs of the inhabitants of different genders. It is a common concern among people in the community that architects and other designers who are experts in this field

³⁶ Isaac, "Home is where the female is: Analysing the Geography of Gender Inequalities and the Home."

must respond to. It is crucial to emphasize that gender-sensitive design has universal sides, meaning that although some designs are sculpted explicitly for women, the same designs are not exclusive. Although the designs might fully accommodate women and offer complete comfort during their usage, all genders can still use the designs seamlessly. Inclusivity is thus the keyword in this case. Therefore, it is a challenge for designers in this field to overlay both layers of particularity and universality and weave them together under the framework of gender-sensitive designs to ensure this approach will not cause problems for the inhabitants.

Further, it also needs to be delved deeper into whether gender-neutral designs, as preferred by some of the respondents in this research, are really 'neutral'. Suppose gender-neutral designs are defined as designs that do not follow traditional gender norms and stereotype.³⁷ In that case, it is worth discussing what universal rules or standards it will use in the design process. It is crucial to emphasize that there is nothing that is entirely objective in the so-called 'universal' standards.³⁸ For instance, the standard kitchen island height, or the average thermal comfort temperature, is not free from value. In a highly patriarchal world, design standards, more often than not, follow the comfort level of men, despite being labelled as 'universal'. With this suspicion in mind, proposing gender-neutral designs might also raise the question of whether they fit other genders as inhabitants. It is important to discuss this matter with the clients before choosing their approach for their housing design.

Another problem the respondents convey is the potential additional cost that might occur if they apply gender-sensitive designs in their houses. Suppose the initial gender-sensitive designs are responding to the specific needs of women in the house, for instance. In that case, adjustments in the future to make the designs fit all inhabitants when the situation changes will cost them the extra money they are unwilling to spend. It makes the inhabitants reluctant to apply gender-sensitive designs in their houses, especially when they do not find any problems with the existing designs that do not use a gender-sensitive

³⁷ Vrushali Mhatre, "Masculine or Feminine: Designing Gender-Neutral Spaces," ed. Roma Arora, *Design Middle East*, March 8, 2023, <https://design-middleeast.com/masculine-or-feminine-designing-gender-neutral-spaces/>.

³⁸ James Rachels and Stuart Rachels, "The Challenge of Cultural Relativism," in *The Elements of Moral Philosophy* (New York: McGraw-Hill Education, 2018), 15–29.

design approach. Moreover, similar concerns also appear in line with the position of the house as a family investment. Applying a gender-sensitive design approach might lead to an assumption of specific designs tailored for the inhabitants that might not fit another potential buyer when the house is on sale. It makes houses with gender-sensitive designs are not seen as a good investment for some people. Consequently, the conception of gender-neutral design is seen as more appealing and more saleable for people who highlight the importance of a house as an Investment.

Practical Implication

The findings of this study offer significant implications for a range of stakeholders involved in housing design and policy-making. The results highlight the critical need to integrate gender-sensitive considerations into spatial programming for architects and interior designers. It includes addressing activity-based spatial requirements, ensuring adequate privacy across gender identities, and designing flexible spaces that adapt to the evolving dynamics of household roles and functions.

From the perspective of housing developers, gender-inclusive design represents a valuable feature that aligns with increasing social demand for equitable living environments. By incorporating spatial configurations that reflect diverse occupant needs, developers can offer housing products that appeal to broader market segments, including families with varying cultural or religious backgrounds.

Urban planners and policymakers are encouraged to acknowledge the significance of incorporating gender-inclusive principles across both public infrastructure and private residential settings. Establishing regulations that support inclusive design, with particular attention to aspects such as safety, privacy, and accessibility, can play a crucial role in promoting social equity and integrating gender perspectives within the broader architectural landscape.

Finally, within the field of education, the study underscores the importance of embedding gender awareness into architectural and urban planning curricula. Equipping future professionals with the ability to assess the sociocultural dimensions of space critically will be essential in cultivating more empathetic, responsive, and inclusive design practices moving forward.

E. Conclusion

This research discusses respondents' perspectives towards gender-sensitive designs applied in housing designs. The results found three categories of gender perspective preferences in housing designs: those who agree, those who are neutral, and those who disagree with the gender perspective. The agree group is fond of applying a gender-sensitive approach in housing design as they see that it can better respond to the specific needs of inhabitants of different genders. The neutral group in the interview conveyed that housing design should be gender-neutral, prioritizing individual occupant preferences over gender considerations while being inclusive and flexible for all residents. Meanwhile, the disagreeing group argues that the main focus of housing design should be on inhabitants' comfort, functionality, and long-term investment value rather than the gender approach, which is seen to reduce the flexibility and adaptability of the designs.

With the agree group being the dominant preference, it can be concluded that gender-responsive designs are still preferable among community members. The approach is believed to enhance the emotional and psychological well-being of the inhabitants since the designs offer more comfortable, secure, and personal spaces due to tackling the specific needs and preferences of inhabitants of different genders. Further, gender-sensitive design improves the sense of privacy and comfort that often varies between individuals of different genders. Ergonomic and accessible designs, along with aesthetic considerations based on gender preferences, also enhance physical and visual comfort for all users.

Pushing forward inclusivity and equity for all genders becomes the main agenda of this approach, and it is important to develop designs that empower all individuals of different genders. Nevertheless, despite the benign purpose of this approach, architects and other designers still have a task to explore the universal sides of gender-sensitive designs to answer all the concerns raised about the inflexibility of gender-sensitive designs and to reduce the potential costs needed for future adjustment when the inhabitants change.

This study is not without limitations. First, using non-probability snowball sampling limits the generalisability of the findings. Although the sample includes respondents from various age and marital status groups, it may not fully represent the diversity of socioeconomic backgrounds, gender identities

beyond the binary, or regional housing contexts in Indonesia. Second, while the qualitative data provided rich insights, the lack of formal psychometric validation of the questionnaire restricts the ability to quantify constructs such as emotional comfort or spatial satisfaction with precision. Third, the study was conducted online, which may have excluded participants with limited internet access or digital literacy, potentially skewing the sample toward more urban, digitally literate, and educated populations. Additionally, this study was conducted within the Indonesian context, which officially recognizes only two gender categories: male and female. Consequently, the gender classification in this study reflects the legal and cultural norms of the setting.

Future research should broaden the participant pool across various regions and social groups, including voices from rural areas, lower-income households, and traditionally underrepresented communities. Incorporating mixed-method triangulation—such as in-depth interviews and participatory design workshops—would also enhance the depth and richness of qualitative findings. In addition, cross-cultural or international comparative studies, especially in societies that recognize a broader spectrum of gender identities, could offer valuable insights into how gender-sensitive architecture is understood and implemented across different sociocultural contexts. It is equally important to examine the economic dimensions of gender-sensitive housing design, including its long-term usability, investment value, and market appeal. Expanding the scope in these ways would strengthen the empirical foundation of future research and reflect the evolving discourse surrounding gender and inclusivity, especially within settings that uphold varying cultural norms and legal definitions of gender identity.[s]

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