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# Habitability and gender: Comfort and control of domestic space in housing in southern Sinaloa. A preliminary review of a scale

## Habitabilidad y género: comodidad y control del espacio doméstico en la vivienda del sur de Sinaloa. Revisión preliminar de una escala

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**ABSTRACT**

Gender relations are produced and reproduced in the home, yet few habitability studies adopt a gender perspective. This instrumental, cross-sectional and exploratory study carried out a preliminary review of a ten-item scale with two dimensions, comfort in the dwelling and control of domestic space, administered in the pilot survey of project FZ-HAB-0020 of the Factoriza UAS platform to people aged 18 or older living in southern Sinaloa, Mexico. A preliminary cut sof 7 cases, out of a target of 100, was analyzed with descriptive statistics, Cronbach's alpha and Pearson inter-item correlations; omega, exploratory factor analysis and the correlation between dimensions could not be estimated because the correlation matrix is singular. Item means ranged from 3.00 to 4.43. Control of domestic space showed high internal consistency (α = .836), whereas comfort in the dwelling showed low consistency (α = .325), supported by two items with identical responses in every case, which calls for checking data capture. The dataset does not record respondents' sex or gender, so the gender comparison the project intends requires adding those variables. The results do not estimate the properties of the scale, but they guide its revision before the final data cut.

Keywords: gender; housing habitability; domestic space; psychometric evidence

**RESUMEN**

Las relaciones de género se producen y reproducen en la vivienda, pero pocos estudios de habitabilidad incorporan esa perspectiva. Este estudio instrumental, transversal y exploratorio realizó una revisión preliminar de una escala de diez reactivos con dos dimensiones, Comodidad en la vivienda y Control del espacio doméstico, aplicada en el levantamiento piloto del proyecto FZ-HAB-0020 de Factoriza UAS a personas de 18 años o más residentes en el sur de Sinaloa. Se analizó un corte preliminar de 7 casos, de una meta de 100, con estadísticos descriptivos, alfa de Cronbach y correlaciones de Pearson entre reactivos; el omega, el análisis factorial exploratorio y la correlación entre dimensiones no fueron estimables porque la matriz de correlaciones es singular. Las medias se situaron entre 3.00 y 4.43. Control del espacio doméstico mostró una consistencia interna alta (α = .836), mientras que Comodidad en la vivienda mostró una consistencia baja (α = .325), sostenida por dos reactivos con respuestas idénticas en todos los casos, lo que exige verificar la captura. El conjunto de datos no registra el sexo ni el género de las personas encuestadas, de modo que la comparación por género que plantea el proyecto requiere incorporar esas variables. Los resultados no estiman las propiedades de la escala, pero orientan su revisión antes del corte final.

Palabras clave: género; habitabilidad de la vivienda; espacio doméstico; evidencias psicométricas

## INTRODUCTION

The habitability of a dwelling depends not only on its physical attributes but also on how its occupants are able to use it, appropriate it and feel comfortable in it.

This experience is not the same for all members of the household. Gender relations are produced and reproduced within the domestic sphere. A critical review of the literature on housing and health found that, overall, the consequences of housing conditions were worse for women and for non-binary or trans people, although very few studies incorporate a gender perspective (Vásquez-Vera et al., 2022).

Two aspects of domestic experience are particularly sensitive to gender relations. The first is comfort, understood as the possibility of finding rest, sufficient space for daily activities, and safety in the home. The second is control over domestic space: participating in decisions about how spaces are used, having a place for one's own belongings, using common areas when needed, and having privacy. Both aspects depend on the size and layout of the dwelling, but also on who makes decisions about it; they are therefore natural candidates for observing differences among the people who live in it.

In Mexico, housing policy in the first decades of this century prioritized the mass production of social housing, with small dwellings, housing developments located far from urban centers, and insufficient services (Hernández Ilizaliturri et al., 2025).

In the housing developments of Mérida, Torres Pérez (2023) argued that standardized minimal housing was designed around a male user and documented that women showed greater concern than men about noise, visibility, and privacy. In the hot climates of the northwest, thermal comfort becomes an additional requirement: in Culiacán, residents of a social housing subdivision described their homes as very hot (Barraza-Bracamontes et al., 2022).

Project FZ-HAB-0020 of the Factoriza UAS platform set out to study housing habitability from a gender perspective in southern Sinaloa. To this end, a ten-item scale organized into two dimensions, Comfort in the Dwelling and Control of Domestic Space, was designed, and a pilot survey of individuals aged 18 years or older was launched.

This article presents the results of the first preliminary data cut of that survey. The general objective is to conduct a preliminary review of how the scale performs. The specific objectives are to describe the responses to the items, estimate the internal consistency of each dimension, examine the correlations among the items within each dimension, and identify the adjustments the instrument and the survey require before the final data cut. Because the data cut does not record the sex or gender of the respondents, the between-group comparison that gives the project its purpose falls outside the scope of this work and is proposed as a requirement for the final survey.

## DEVELOPMENT

### GENDER AND THE EXPERIENCE OF HOUSING

The literature distinguishes between housing as a material object and home as an experience. Keynejad et al. (2026) proposed a framework spanning a continuum from housing, as its most concrete manifestation, through the symbolic representations of home, to the psychological experience of belonging to a place; they placed ontological security at the center of the relationship between housing, place, and women's mental health. From this perspective, housing can offer protection and belonging, but it can also be a space of control and insecurity, depending on the relationships established within it.

The review by Vásquez-Vera et al. (2022) allows this proposal to be situated within the empirical evidence. Of the 90 articles analyzed in full, most examined housing affordability and physical conditions, and only some adopted a feminist or gender-sensitive perspective; the remaining studies merely compared outcomes by sex or did not include a gender perspective.

The authors considered it urgent to establish an interdisciplinary and intersectoral agenda on the relationship between gender, housing and health. An instrument measuring comfort and control over domestic space, administered to people of different sexes and genders, could contribute to this agenda if it shows sufficient evidence of validity.

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## COMFORT AND SPACE IN THE HOME

Housing comfort encompasses rest, the space available for daily activities, and safety. Insufficient space has been consistently associated with well-being.

In Hong Kong, a study of 413 female caregivers living in subdivided units found that a total floor area of less than 13.0 $m^2$ was associated with a higher likelihood of anxiety and depression and with lower health-related quality of life; it also found that overcrowding was related to well-being through the physical, relational, and personal aspects of the experience of home (Chan et al., 2024).

In Beijing, among 1,613 residents, residential crowding was associated with a higher risk of depression through stress specific to the living space; women were among the subgroups with a relatively stronger association (Wang and Liu, 2023).

Housing can also function as a restorative environment. In Israel, a study of Arab and Jewish women that applied the Perceived Restorativeness Scale in four environments, including the home, found between-group differences in the restoration experienced at home and in the residential environment; social discomfort was the intervening variable most strongly associated with restoration (Saadi et al., 2021).

This finding indicates that the possibility of resting at home depends not only on the physical conditions of the dwelling but also on the social relationships that take place within and around it. More broadly, the review by Saleem and Alchalabi (2025) grouped the factors associated with residential satisfaction into interacting categories, ranging from functional and technical to psychological and public policy categories.

## SAFETY AND POWER RELATIONS IN THE HOUSEHOLD

The scale used in the project includes safety within the dwelling as part of comfort, and the possibility that other people decide where to be as part of control over space. Both items point to power relations within the household. According to the 2021 National Survey on the Dynamics of Household Relationships, 70.1% of women aged 15 years and older had experienced at least one situation of violence over their lifetime, and 11.4% had experienced violence in the family setting in the previous 12 months (Instituto Nacional de Estadística y Geografía [INEGI], 2022).

In the housing developments of Mérida, about half of the women reported feeling safe in their homes; among those who did not, some attributed their sense of insecurity to the external environment and others to their partner (Torres Pérez, 2023).

Outside the home, women's perceived safety in urban public space has been described as the result of an interaction among personal, social, environmental and temporal factors, including age, socioeconomic status, social cohesion, urban design and the difference between day and night (te Braak and van Tienoven, 2025).

Gender differences are not limited to safety either: in the suburbs of Shanghai, some associations between the residential environment and self-reported mental health, such as the one involving the distance between workplace and home, were observed only in men, whereas proximity to outdoor facilities and lower noise pollution were associated with better mental health in both groups (Shen et al., 2021).

These results support designing an instrument on housing habitability and gender that allows women's and men's responses to be compared, rather than one that merely describes the experience of a single group.

## CONTROL OF DOMESTIC SPACE AND PRIVACY

Control over domestic space refers to the ability to decide how the dwelling is used and to have places of one's own within it. In Mexican social housing, Torres Pérez (2023) observed that women, in their role as homemakers, reorganized interior and exterior spaces to meet the family's needs and to earn income, that they adapted to the small house, and that, in some cases, the bathroom was the only private space for the couple. In Hong Kong, feelings of repression and low self-efficacy were among the negative home experiences documented in very small dwellings (Chan et al., 2024).

Control over space is also evident in the community environment. In Yangpu District, Shanghai, a study based on 923 valid questionnaires across 36 communities found that the built environment of community facilities was associated both with residents' perception that

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the neighborhood takes women's needs into account and with residential satisfaction, and that subjective perception mediated the relationship between the built environment and satisfaction (Fang et al., 2025).

The project's scale focuses on the interior of the dwelling, but these findings are a reminder that the experience of domestic space extends into the shared spaces of the neighborhood.

## VALIDITY EVIDENCE IN THE INITIAL STAGE OF SCALE DEVELOPMENT

The internal consistency of a dimension is usually estimated with Cronbach's alpha (Cronbach, 1951), which assumes equivalent loadings across items, and with McDonald's omega (McDonald, 1999/2013), which does not; simulation studies have compared the performance of both coefficients under different data conditions (Malkewitz et al., 2023).

Internal structure is examined through exploratory factor analysis, which first requires verifying the adequacy of the data and a sufficient sample size; current recommendations for this analysis call for treating cutoff values as guidelines rather than rules (Ferrando et al., 2022; Goretzko et al., 2021).

Scales with items keyed in both directions may show wording effects, because some respondents respond inconsistently to the positive and negative items of the same dimension (Steinmann et al., 2022); identifying these responses can reduce such effects (García-Batista et al., 2021). The project's scale includes one reverse-keyed item in each dimension.

At the initial stage of an instrument's development, a data cut with few cases does not allow its properties to be estimated precisely, but it does make it possible to detect construction problems that should be corrected before data collection is completed: items that are not related to their dimension, items that behave identically, and missing variables needed to answer the research question. That is the use made of the available data cut in this article.

## METHODOLOGY

### DESIGN

An instrumental, quantitative, non-experimental, cross-sectional study with a descriptive and exploratory scope was conducted. The data correspond to survey LEV-0025, "Piloto sur de Sinaloa · Habitabilidad y género," from project FZ-HAB-0020 on the Factoriza UAS platform, and to the frozen dataset DST-0025, with a data cutoff date of 9 October 2026. The survey is an independent sample and is the only one in the project.

### POPULATION, SAMPLE AND DATA CUTOFF

The population was defined as individuals aged 18 years or older residing in southern Sinaloa; data were collected in localities selected by the project lead. According to the Factoriza log, 15 individuals opened the questionnaire and 7 completed it; no cases were excluded on quality-control grounds, so 7 cases were analyzed (Table 2).

The data cut analyzed here is preliminary: it comprises 7 cases out of a target of 100, and data collection was still open and in the field as of the cut-off date. With 7 cases for 10 items, the ratio is 0.7 cases per item; consequently, the inter-item correlation matrix is not invertible. The dataset does not include sex or gender variables.

### INSTRUMENT

A ten-item scale was administered, with a five-point response format ranging from Strongly disagree (1) to Strongly agree (5). The items were organized into two dimensions of five items each: Housing comfort (R1 to R5) and Control of domestic space (R6 to R10). Two items, R4 and R9, are reverse-worded and have already been recoded in the data matrix, so that a higher score indicates greater comfort and greater control of space. Table 1 presents the code, dimension, wording, and direction of each item.

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**Table 1. Structure of the instrument.**

| Code | Dimension | Item | Reverse |
|---|---|---|---|
| R1 | Comfort | I feel comfortable in my home | No |
| R2 | Comfort | My home has space for my daily activities | No |
| R3 | Comfort | In my home, I find moments of rest | No |
| R4 | Comfort | My home is uncomfortable for me | Yes |
| R5 | Comfort | I feel safe inside my home | No |
| R6 | Control | I participate in decisions about the use of the spaces in my home | No |
| R7 | Control | In my home I have a place for my belongings | No |
| R8 | Control | I can use the room when I need it | No |
| R9 | Control | In my home, other people decide for me where to be | Yes |
| R10 | Control | I have privacy within my home | No |

Note. Comfort = Housing comfort; Control = Control of domestic space. Five-point response scale (Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree). Reverse-scored items have already been recoded in the data matrix provided. Source: Factoriza UAS, project FZ-HAB-0020, survey LEV-0025, dataset DST-0025.

## PROCEDURE

Responses were collected using the survey questionnaire administered through Factoriza UAS, which records explicit online informed consent before the first item and does not collect identifying data. Factoriza locked dataset DST-0025 with a cryptographic hash, generated the data matrix with reverse-scored items recoded, and produced the descriptive, internal consistency, and within-dimension correlation analyses (runs RUN-00133 to RUN-00137).

## DATA ANALYSIS

Factoriza UAS computed the mean, standard deviation, skewness, kurtosis and percentages of responses at the extreme values of each item; the internal consistency of each dimension using Cronbach's alpha (Cronbach, 1951), with the corrected item-total correlation and alpha if item deleted; and the Pearson correlations among the items of each dimension, with 95% confidence intervals obtained through Fisher's z transformation.

In addition, the project's supplementary analysis program (analisis_psicometrico.py, version 1.0) was run in Python 3.13.16 (Python Software Foundation, 2026) using NumPy (Harris et al., 2020), SciPy (Virtanen et al., 2020) and pandas to estimate McDonald's omega (McDonald, 1999/2013), conduct the exploratory factor analysis and estimate the correlation between dimensions.

The program stopped when computing the measure of sampling adequacy because, with 7 cases for 10 items, the correlation matrix is singular, so those results were not obtained. The execution log is provided in the reproducibility appendix.

Given the size of the cohort, the Factoriza coefficients are reported to document how the instrument performed and not as estimates of its properties. The reference values for the psychometric indices are treated as guidance and not as decision rules (Ferrando et al., 2022). No items were removed, and no confirmatory factor analysis was performed.

## ETHICAL CONSIDERATIONS

Participation was voluntary and anonymous. Factoriza UAS records explicit informed consent online and does not collect names, email addresses or any other identifying data.

## STATEMENT ON THE USE OF ARTIFICIAL INTELLIGENCE

During the preparation of this manuscript, the following were used: the Factoriza UAS platform, for data management and for descriptive, internal consistency and inter-item correlation analyses; a Python analysis program with fixed and validated procedures, whose execution was halted because of the singularity of the correlation matrix; and the Claude Opus (Anthropic)

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language model, for running that program, assisted literature searching, writing a draft and assembling the document from the results. The authors reviewed, corrected and approved the entire text, verified every reference and take full responsibility for the content of the article.

## RESULTS

## SAMPLE COMPOSITION

Table 2 summarizes the flow of cases. Of the 15 individuals who opened the questionnaire, 7 completed it and were analyzed, with no exclusions on quality-control grounds. All 7 analyzed cases answered the ten items.

**Table 2. Sample composition.**

| Indicator | Value |
|---|---|
| Individuals who opened the questionnaire | 15 |
| Completed questionnaires | 7 |
| Cases excluded by quality control | 0 |
| Cases analyzed | 7 |
| Items | 10 |

Note. Survey "Southern Sinaloa Pilot · Habitability and Gender" (LEV-0025); population: persons aged 18 years or older residing in southern Sinaloa; territory: southern Sinaloa, in localities selected by the project lead. Dataset DST-0025, fingerprint 76b3f828557e1bb5. Source: Factoriza UAS. Preliminary cut-off: n = 7 of a target of 100, with the survey still open.

## COMFORT AND CONTROL OF THE DOMESTIC SPACE

Table 3 and Figure 1 present the descriptive statistics. The means of the ten items ranged from 3.00 to 4.43. In the Comfort in the Home dimension, finding moments of rest had the highest mean (R3: *M* = 4.29, *SD* = 0.76), followed by comfort and safety within the home, which had identical descriptive statistics (R1 and R5: *M* = 4.00, *SD* = 0.58).

The availability of space for daily activities (R2: *M* = 3.57, *SD* = 1.27) and the recoded version of the reverse-scored item on discomfort in the home (R4: *M* = 3.57, *SD* = 1.51) had the lowest means in the dimension, with the greatest dispersion.

In the Control of domestic space dimension, privacy had the highest mean on the instrument and the lowest dispersion (R10: *M* = 4.43, *SD* = 0.53), followed by the possibility of using the living room when needed (R8: *M* = 4.29, *SD* = 1.11) and the availability of a place for one's own belongings (R7: *M* = 3.86, *SD* = 1.07).

Participation in decisions about the use of spaces had a mean of 3.43 (R6: *SD* = 1.27), and the reverse-scored item on whether other people decide where one stays, after recoding, had the lowest mean on the instrument and the greatest dispersion (R9: *M* = 3.00, *SD* = 1.53). Overall, respondents reported having privacy and access to common areas, but more limited participation in decisions about space and widely dispersed responses regarding autonomy to decide where to be.

**Table 3. Descriptive statistics of the items.**

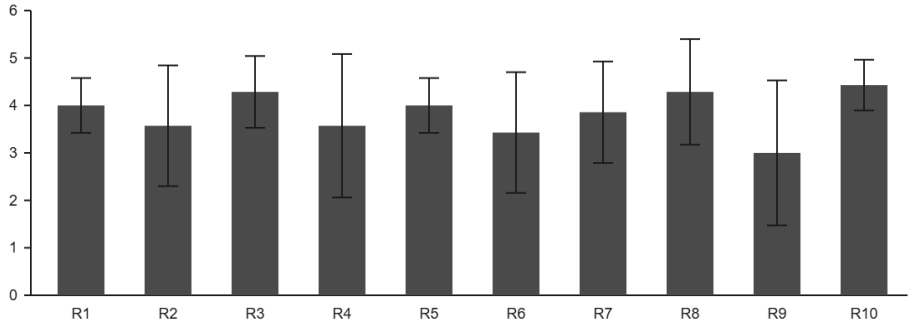
| Item | M | SD | Skewness | Kurtosis | Floor | Ceiling |
|---|---|---|---|---|---|---|
| R1 | 4.00 | 0.58 | 0.00 | 3.00 | 14% | 14% |
| R2 | 3.57 | 1.27 | -1.58 | 3.17 | 14% | 14% |
| R3 | 4.29 | 0.76 | -0.60 | -0.35 | 14% | 43% |
| R4 | 3.57 | 1.51 | -1.00 | -0.20 | 14% | 29% |
| R5 | 4.00 | 0.58 | 0.00 | 3.00 | 14% | 14% |
| R6 | 3.43 | 1.27 | 0.22 | -1.71 | 29% | 29% |
| R7 | 3.86 | 1.07 | -0.77 | 0.26 | 14% | 29% |
| R8 | 4.29 | 1.11 | -1.78 | 3.23 | 14% | 57% |
| R9 | 3.00 | 1.53 | 0.39 | -1.11 | 14% | 29% |

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| Item | M | SD | Skewness | Kurtosis | Floor | Ceiling |
|---|---|---|---|---|---|---|
| R10 | 4.43 | 0.53 | 0.37 | -2.80 | 57% | 43% |

Note.N = 7. Floor and ceiling indicate the percentage of responses at the minimum and maximum values. The item-total correlation column from the Factoriza descriptive table is omitted; its values do not match those in Table 4 because they are not calculated from the total of each dimension. Factoriza UAS run RUN-00133. Preliminary cutoff: n = 7 out of a target of 100, with data collection still open.

**Figure 1. Mean scores per item with error bars representing one standard deviation.**




## INTERNAL CONSISTENCY

Table 4 presents the item analysis by dimension computed with Factoriza. The two dimensions showed opposite patterns. Control of domestic space had an alpha of .836. Participation in decisions about the use of spaces was the most consistent item (R6: .882), followed by having a place for belongings (R7: .790) and use of the living room (R8: .733); the reverse-scored item showed a moderate relationship (R9: .575), and privacy was the weakest (R10: .312), so removing it would raise the alpha to .872.

Comfort in the home had an alpha of .325. Only comfort and safety within the home reached a corrected item-total correlation of .502 (R1 and R5); rest showed a weak relationship (R3: .256), the reverse-scored item on discomfort was practically unrelated to the other items (R4: .085), and the availability of space for daily activities was negatively related (R2: -.078), such that its removal would raise the alpha to .525. Removing R1 or R5, by contrast, would reduce it to .120.

**Table 4. Item analysis by dimension.**

| Dimension | Item | Corrected item-total r | α if item deleted |
|---|---|---|---|
| Comfort | R1 | .502 | .120 |
| Comfort | R2 | -.078 | .525 |
| Comfort | R3 | .256 | .220 |
| Comfort | R4 | .085 | .414 |
| Comfort | R5 | .502 | .120 |
| Control | R6 | .882 | .725 |
| Control | R7 | .790 | .763 |
| Control | R8 | .733 | .777 |
| Control | R9 | .575 | .844 |
| Control | R10 | .312 | .872 |

Note.N = 7. Scale from 1 to 5; reverse-scored items R4 and R9 are shown recoded. Run RUN-00133 of Factoriza UAS. Preliminary cutoff: n = 7 of a target of 100, with data collection still open.

Table 5 presents all correlations among the items of each dimension. In the Comfort dimension, the correlation between comfort and safety inside the home was 1.000 (R1 and R5); that is, both items received identical responses in all 7 cases. The remaining correlations in the dimension ranged from -.285 (R2 and R4) to .417 (R3 and R4), and none of their intervals excluded zero; rest was not related to comfort or to safety (R1 and R3, R3 and R5: $r$ = .000).

In the Control dimension, the correlations were mostly positive and of moderate or high magnitude. The correlation between participation in decisions and a place for belongings was

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the only one whose interval excluded zero (R6 and R7: *r* = .788, 95% CI [.085, .967], *p* = .035). This was followed by the correlation between a place for belongings and use of the room (R7 and R8: *r* = .741, 95% CI [-.028, .959], *p* = .057) and that between participation in decisions and use of the room (R6 and R8: *r* = .723, 95% CI [-.066, .956], *p* = .066). Privacy was related mainly to use of the room (R8 and R10: *r* = .600) and was not related to the reverse-scored item (R9 and R10: *r* = .000).

**Table 5. Correlations between the items of each dimension.**

| Dimension | Variable pair | r | IC 95% | p |
|---|---|---|---|---|
| Comfort | R1 and R2 | .227 | [-.635, .837] | .625 |
| Comfort | R1 and R3 | .000 | [-.753, .753] | 1.000 |
| Comfort | R1 and R4 | .191 | [-.657, .825] | .682 |
| Comfort | R1 and R5 | 1.000 | [1.000, 1.000] | < .001 |
| Comfort | R2 and R3 | -.025 | [-.764, .742] | .958 |
| Comfort | R2 and R4 | -.285 | [-.855, .596] | .536 |
| Comfort | R2 and R5 | .227 | [-.635, .837] | .625 |
| Comfort | R3 and R4 | .417 | [-.490, .890] | .352 |
| Comfort | R3 and R5 | .000 | [-.753, .753] | 1.000 |
| Comfort | R4 and R5 | .191 | [-.657, .825] | .682 |
| Control | R6 and R7 | .788 | [.085, .967] | .035 |
| Control | R6 and R8 | .723 | [-.066, .956] | .066 |
| Control | R6 and R9 | .686 | [-.139, .949] | .089 |
| Control | R6 and R10 | .420 | [-.487, .891] | .348 |
| Control | R7 and R8 | .741 | [-.028, .959] | .057 |
| Control | R7 and R9 | .612 | [-.261, .934] | .144 |
| Control | R7 and R10 | .125 | [-.693, .803] | .789 |
| Control | R8 and R9 | .392 | [-.512, .884] | .384 |
| Control | R8 and R10 | .600 | [-.279, .932] | .154 |
| Control | R9 and R10 | .000 | [-.753, .753] | 1.000 |

Note.N = 7. Comfort = Comfort in the home; Control = Control of domestic space. The corrected item-total correlation excludes the item itself from the total of its dimension. Cronbach's α for each full dimension (5 items each): Comfort = .325 (run RUN-00134); Control = .836 (RUN-00136). Source: Factoriza UAS, Tables 4 and 6 of the package, combined without modifying values. Preliminary data cut: n = 7 out of a target of 100, with data collection still open.

## INTERNAL STRUCTURE AND RELATIONSHIP BETWEEN THE DIMENSIONS

Exploratory factor analysis, McDonald's omega and the correlation between the two dimension scores could not be estimated. With 7 cases for 10 items, and with two items showing identical responses, the correlation matrix was singular, and the supplementary analysis program stopped while calculating the measure of sampling adequacy. Consequently, the study provides no evidence on the dimensionality of the instrument or on the relationship between comfort and control of the domestic space.

## DISCUSSION OF RESULTS

The purpose of this study was to conduct a preliminary review of the performance of a scale assessing comfort and control of domestic space in southern Sinaloa. With 7 cases, the coefficients cannot be interpreted as estimates of the instrument's properties: the simulation literature on alpha and omega has been developed with much larger samples (Malkewitz et al., 2023), and factor analysis requires a sample size that this data cut does not reach (Ferrando et al., 2022; Goretzko et al., 2021).

The data cut does, however, make it possible to identify three problems that should be resolved before data collection continues.

The first is the complete overlap between the responses to R1 and R5. Comfort and safety

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within the home are distinct constructs, and although two items may coincide by chance in a sample of 7 people, the exact match across all cases means that an error in the questionnaire setup or in data entry must be ruled out. This finding has direct consequences for the Comfort dimension: R1 and R5 are the only items that sustain its internal consistency, and without one of them alpha would drop to .120. Until this point is verified, the internal consistency of the dimension cannot be assessed.

The second is the lack of coherence in the Comfort dimension, even without considering that problem. The availability of space for daily activities was negatively related to the other items, and the reverse-worded item on discomfort was virtually unrelated to this item. The literature on crowding indicates that available space is a central component of the home experience (Chan et al., 2024; Wang and Liu, 2023). Its lack of association with comfort in this cross-section therefore points not so much to its irrelevance as to the possibility that the dimension combines heterogeneous content, such as rest, space, and safety, that may not form a single construct.

Furthermore, the behavior of R4 is consistent with an artifact associated with reverse wording (García-Batista et al., 2021; Steinmann et al., 2022).

The Control of the domestic space dimension, by contrast, functioned more coherently, with high item-total correlations for participation in decisions, having a place for one's belongings, and use of the living room. This finding is consistent with the notion that the capacity to make decisions about the space and to have places of one's own is part of a single experience of appropriation of the home (Keynejad et al., 2026; Torres Pérez, 2023).

Privacy was the least coherent item in the dimension and had the highest mean and the lowest dispersion in the instrument; with responses so concentrated, its ability to relate to the other items is limited in this cross-section. The reverse-scored item on whether other people decide where one should be showed the greatest dispersion in the instrument, suggesting that it captures real differences among respondents that warrant examination with a larger sample.

The placement of safety within the home in the Comfort dimension also warrants review. The literature on residential safety links it to household relationships and to the immediate surroundings (INEGI, 2022; te Braak and van Tienoven, 2025; Torres Pérez, 2023), rather than to rest or available space. If the final data collection wave confirms that safety does not cluster with the rest of the Comfort content, it could be considered a dimension in its own right, bringing together safety within the home, on arriving there, and in the surrounding area.

Similarly, the item on whether other people decide where one should be relates to control over space but also to power relations within the household; its interpretation would be more precise if the questionnaire recorded who makes decisions about the dwelling.

The third problem is one of design and affects the aim of the project. The scale was administered to people aged 18 years or older, but the dataset does not include the respondents' sex or gender, so it is not possible to examine whether comfort and control over domestic space differ between women and men.

The review by Vásquez-Vera et al. (2022) warned that many studies on housing and health lack a gender perspective or are limited to comparisons by sex; if the project is to contribute to that agenda, the final survey will need to record at least the sex and gender of respondents and, where possible, their role in the household and in caregiving tasks.

## CONCLUSIONS

The study met its objective to the extent permitted by a preliminary data cut of 7 cases: it does not provide estimates of the psychometric properties of the scale, but it identifies the adjustments the scale requires.

The Control of domestic space dimension showed high internal consistency ($\alpha = .836$), with participation in decisions, a place for belongings, and use of the living room as the most coherent items. In contrast, the Comfort in the home dimension showed low internal consistency ($\alpha = .325$), supported only by two items that received identical responses across all cases. Respondents reported privacy and moments of rest in their homes, while their responses on participation in decisions about the space and autonomy in deciding where to be were lower and more dispersed.

The limitations are substantial. With 7 cases against a target of 100, and with data collection still ongoing, the sample is insufficient to estimate internal consistency precisely and does not permit factor analysis, omega, or the correlation between dimensions, none of which could be calculated. Respondents completed the questionnaire in localities selected by the project lead, so the results cannot be generalized to the population of southern Sinaloa. The dataset does

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not include the sex or gender of the respondents, which precludes the comparison that gives the project its purpose. Because the design is cross-sectional, the direction of the relationships cannot be established. No confirmatory factor analysis was performed.

Several decisions for the authors follow from these results. The first is to verify the complete agreement between the responses to R1 and R5 in Factoriza and, if it stems from an error, to correct it before proceeding. The second is to review the Comfort dimension, particularly R2 and R4, and decide whether their contents should remain together or be separated. The third is to add the sex and gender of the respondents, and their role in the household, to the questionnaire. The fourth is to document the origin of the items and the criterion used to select the localities. None of these decisions was made in the present analysis, which retains all ten items.

For future work, we propose completing data collection to the planned target using a design that ensures the participation of women and men in sufficient proportions to allow comparison between them; repeating the internal consistency analysis and performing the exploratory factor analysis on the final dataset; confirming the structure in an independent sample through confirmatory factor analysis; and examining whether comfort and control of domestic space differ by gender once the validity evidence for the instrument has been established. A scale with such evidence would allow a gender perspective to be incorporated into habitability studies in northwestern Mexico.

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