Chapter 14 / Capítulo 14

Habitability, territory, and sustainability: Interdisciplinary studies on housing, environment, and society in northwestern Mexico
ISBN: 978-9915-9966-6-0
DOI: 10.62486/978-9915-9966-6-0.Ch14
Pages: 178-189

Check for updates

© 2026 The authors. This is an open access book chapter distributed under the terms of the Creative Commons Attribution (CC BY) 4.0 License.

Habitability and second-home tourism of North Americans in northwestern Mazatlán: Presentation of a scale and pilot results

Habitabilidad y turismo de segundas residencias de norteamericanos en el noroeste de Mazatlán: presentación de una escala y resultados de un piloto

Gael García Sauceda[1]
Víctor Manuel Martínez García[1]
Yennifer Díaz Romero[1]
Pedro Antonio Valdez Lizárraga[1]
José de Jesús Reyes Machain[1]
Manuel Iván Tostado Ramírez[1]

1 Universidad Autónoma de Sinaloa, Vicerrectoría. Mazatlán, México.

ABSTRACT

Residential tourism and seasonal housing are transforming the coastal neighbourhoods of Mazatlán, yet the experience of their permanent residents has received little attention. This study presented the Seasonal Housing and Local Habitability Scale, with fifteen items and three dimensions, Presence of seasonal housing, Living conditions for local residents and Relationship with seasonal residents, and described its behaviour in the pilot survey of project FZ-HAB-0035 on the Factoriza UAS platform in northwestern Mazatlán. With a cross-sectional design, 6 cases out of a target of 100 were analysed while data collection remained open. Descriptive statistics, Cronbach's alpha and Spearman inter-item correlations were estimated; omega, factor analysis and the correlation between dimensions could not be estimated because the correlation matrix is singular with fewer cases than items. Internal consistency was high for Relationship with seasonal residents (α = .818), moderate for Living conditions (α = .612) and negative for Presence of seasonal housing (α = -.064), whose items did not vary together. Residents rated services and shops favourably, described a distant relationship with seasonal residents and leaned towards having considered moving. With 6 cases, the findings provide no validity evidence, but they identify the items to revise before completing data collection.

Keywords: residential tourism; second homes; housing habitability; tourism gentrification

RESUMEN

El turismo residencial y la vivienda de temporada transforman las colonias costeras de Mazatlán, pero la experiencia de sus residentes permanentes ha recibido poca atención. Este estudio presentó la Escala de vivienda de temporada y habitabilidad local, de quince reactivos y tres dimensiones, Presencia de vivienda de temporada, Condiciones de vida para los residentes locales y Relación con residentes de temporada, y describió su comportamiento en el levantamiento piloto del proyecto FZ-HAB-0035 de Factoriza UAS en el noroeste de Mazatlán. Con diseño transversal, se analizaron 6 casos de una meta de 100, con el levantamiento abierto. Se estimaron descriptivos, alfa de Cronbach y correlaciones de Spearman entre reactivos; el omega, el análisis factorial y la correlación entre dimensiones no fueron estimables porque la matriz de correlaciones es singular con menos casos que reactivos. La consistencia interna fue alta en Relación con residentes de temporada (α = .818), moderada en Condiciones de vida (α = .612) y negativa en Presencia de vivienda de temporada (α = -.064), cuyos reactivos no variaron juntos. Los residentes valoraron favorablemente los servicios y el comercio, describieron una relación poco estrecha con los residentes de temporada y una tendencia a haber pensado en mudarse. Con 6 casos, los resultados no aportan evidencias de validez, pero identifican los reactivos que conviene revisar antes de completar el levantamiento.

Palabras clave: turismo residencial; segundas residencias; habitabilidad de la vivienda; gentrificación turística

INTRODUCTION

Mazatlán is undergoing an urban transformation driven by tourism and by its associated real estate market. The boom in high-rise construction aimed at second homes and residential tourism has generated social tensions, pressure on infrastructure, and the replacement of traditional land uses along the coastal strip (Bojorquez Luque et al., 2023; Bojórquez Luque and Osuna Covarrubias, 2025). Recent studies also describe processes of touristification and tourism gentrification with sociocultural impacts on the local population (Mendieta Vega and Roldán Clarà, 2024).

In this context, housing ceases to be merely a place to live and also becomes an asset that can be allocated to seasonal residents.

Mexico is one of the main destinations for North American migration to Latin America. In Chapala, Jalisco, a leading destination for North American retirees, residential tourism development has been analyzed as an agent of social change that reconfigures local identities and community dynamics (Zepeda-Hernández, 2024).

Home purchases by foreigners in the country's coastal and border areas are concentrated in a small number of localities, and destinations differ in buyers' nationality and in the size of the properties acquired, according to records from the Secretaría de RelacionesExteriores (Ministry of Foreign Affairs) analyzed by Colorado Giraldo (2022) for the period 2008 to 2019. These processes raise direct questions about the livability of neighborhoods (colonias) for those who live there permanently.

The literature on tourism gentrification has documented the rising cost of land and of everyday life, the transformation of commerce and of the uses of space, and the weakening of the resident population's attachment to place (Nikšić Radić and Dragičević, 2025; Zarza Ballina and Cruz Jiménez, 2024).

In Mexican coastal cities, however, the experience of permanent residents who live alongside seasonal housing has received less attention, and no brief instruments were identified that jointly measure the perceived presence of such housing, the living conditions of local residents, and their relationship with seasonal residents.

Project FZ-HAB-0035 of the Factoriza UAS platform set out to study habitability and second-home tourism by North Americans in northwestern Mazatlán. To this end, the Seasonal Housing and Local Habitability Scale was designed, comprising fifteen items organized into three dimensions: Presence of Seasonal Housing, Living Conditions for Local Residents, and Relationship with Seasonal Residents. The items refer to seasonal residents and foreign residents, without specifying their origin.

This article presents the instrument and its performance in the preliminary data cut of the pilot survey, which comprises only six cases. Given this sample size, the scope of the study is limited to describing the instrument, its administration procedure and the initial responses; it does not permit the estimation of population parameters or a reliable evaluation of its psychometric properties.

The overall objective was to describe the Seasonal Housing and Local Habitability Scale and its initial performance among permanent residents of northwestern Mazatlán. The specific objectives were, first, to present the structure and rationale of the instrument; second, to describe the responses to each item and the internal consistency of each dimension in the data available so far; and third, to document the conditions that the survey must meet for psychometric analysis to be possible. The project package records no hypotheses, so the study is descriptive in scope.

DEVELOPMENT

RESIDENTIAL TOURISM, LIFESTYLE MIGRATION AND GENTRIFICATION

Touristification refers to the process whereby an urban space is reorganized around tourism, such that its land uses, commerce and housing become increasingly oriented toward visitors.

When this process is accompanied by rising land prices and the arrival of temporary or more affluent residents, the literature refers to it as tourism gentrification. Zarza Ballina and Cruz Jiménez (2024) reviewed the scientific literature published between 2008 and 2022 on tourism-driven gentrification and organized it into four lines of research: socio-spatial and sociocultural impacts, the relationship between capitalism and displacement, gentrification in rural areas, and the relationship between gentrification and governance.

https://doi.org/10.62486/978-9915-9966-6-0.Ch14

The integrative review by Nikšić Radić and Dragičević (2025) found that tourism gentrification and lifestyle migration can produce displacement and inequality, but also opportunities for regeneration when accompanied by inclusive governance and local participation.

Residential tourism, in which housing is occupied seasonally by people who are not permanent residents of the locality, shares features with tourism gentrification but adds the prolonged presence of new neighbors whose lifestyles, languages and economic capacities differ from those of local residents.

In Chapala, Zepeda-Hernández (2024) used qualitative techniques to analyze residential tourism development and concluded that its economic base has produced economic subordination, cultural imposition, inequality, and symbolic barriers, reshaping local identities and community dynamics.

Among coastal localities in other countries, the case of Marsascala, Malta, shows the transition from a fishing village to a site of intense tourism consolidation, marked by overdevelopment, pressure on infrastructure and declining quality of life. The authors proposed adding a stage of "real-estatization" to touristification models, one in which speculation and short-term rentals reconfigure the locality beyond tourism (Agius et al., 2025).

Digital platforms have changed how housing is incorporated into the tourism circuit. Sequera (2025) proposed the concept of platform gentrification to describe how rental platforms, social media, app-based transport services and coworking spaces mediate, valorize and restructure urban life.

The conversion of residential housing into short-term accommodation also responds to economic incentives that can be estimated: in the central wards of Tokyo, this conversion was more profitable when the prior rent was lower, when the dwelling was close to high-ridership stations, and when there were many tourist attractions nearby (Murota et al., 2025).

TOURISM AND HOUSING IN MAZATLÁN

Studies on Mazatlán consistently describe an accelerated transformation of coastal urban space.

Bojorquez Luque et al. (2023) analyzed the production of vertical tourism space and the social tensions associated with it, and Bojórquez Luque and Osuna Covarrubias (2025) examined the Playa Norte area between 2009 and 2024 from the perspective of creative destruction. Mendieta Vega and Roldán Clarà (2024) characterized the sociocultural impacts of touristification and tourism gentrification in the city.

Taken together, these studies place Mazatlán among the Mexican coastal cities in which tourism and the real estate market are redefining who lives in their neighborhoods and under what conditions.

What the local literature documents in less detail is the everyday experience of permanent residents. In other Mexican cities, tourism designation has been accompanied by gated developments, rising land and housing prices, and the replacement of traditional commerce, with little direct displacement but physical and symbolic segregation (Hernández Flores, 2023).

In the historic center of Zacatecas, Ramos-Jiménez and De La Barrera-Medina (2025) linked tourist-use housing to a shrinking supply of traditional rental housing, rising rents, the displacement of residents, and the loss of traditional commerce; they also noted that the city's planning instruments did not take this type of housing into account.

THE DIMENSIONS OF THE SCALE

The Seasonal Housing Presence dimension captures five indicators from the residents' perspective: dwellings in the neighborhood occupied only seasonally (R1), the construction of buildings for seasonal residents (R2), the recent arrival of new foreign residents (R3), the retention of long-standing neighbors (R4, reverse-scored), and English-language advertisements for home sales (R5).

After recoding R4, a higher score indicates greater perceived presence. The items combine changes in the housing stock, changes in the population, and signals from the real estate market, which do not necessarily move at the same pace.

The Living conditions for local residents dimension captures the ability to afford the cost of living in the neighborhood (R6), the adequacy of services (R7), the availability of necessary retail

https://doi.org/10.62486/978-9915-9966-6-0.Ch14

(R8), whether the household has considered moving away (R9, reverse-coded), and enjoyment of living in the neighborhood (R10). It thus links affordability, services, and rootedness, which the literature identifies as the domains in which tourism gentrification becomes a matter of livability.

In Guangzhou, a study based on 1,568 questionnaires administered in 74 communities found that perceived neighborhood disorder was positively associated with the intention to move, whereas community attachment and satisfaction were negatively associated with it (Gu et al., 2025).

The Relationship with seasonal residents dimension covers greeting seasonal residents (R11), their participation in the life of the neighborhood (R12), the feeling of displacement in public spaces (R13, reverse-scored), seasonal residents' respect for the neighborhood's customs (R14), and comfort in sharing spaces with them (R15).

In a traditional industrial area of Beijing, Lin et al. (2023) used Q methodology to identify the privatization of public spaces, the reorientation of services toward visitors, and the weakening of community ties as sources of stress linked to the desire to relocate. In the Chinese-language literature, Xing (2026) analyzed the case of the ancient city of Pingyao and proposed that the emotions of residents in heritage destinations be understood as the lived expression of tensions between heritage protection, local life, and commercial development.

The review by Kamani Fard and Paydar (2024) on place attachment in urban settings, for its part, noted that social interaction is associated with a stronger bond with place.

REQUIREMENTS FOR EVALUATING THE INSTRUMENT

The internal consistency of a dimension is usually estimated with Cronbach's alpha (Cronbach, 1951), which assumes equivalent loadings across items; McDonald's omega (McDonald, 1999/2013) does not make this assumption, and simulation studies have compared the performance of the two 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 having a sufficient sample size (Ferrando et al., 2022; Goretzko et al., 2021). When there are fewer cases than items, the correlation matrix cannot be inverted and these analyses cannot be estimated. In a cross-sectional design, moreover, any observed relationship must be interpreted as an association and not as a dependence relationship.

METHODOLOGY

DESIGN

A quantitative, non-experimental, cross-sectional, descriptive study was conducted. The data come from survey LEV-0040, "Piloto noroeste de Mazatlán · Vivienda de temporada," of project FZ-HAB-0035 on the Factoriza UAS platform, and from frozen dataset DST-0037, with a data cutoff date of 9 October 2026. The survey is an independent sample and the only one in the project.

POPULATION, SAMPLE AND DATA CUT-OFF

The population was defined as individuals aged 18 years or older who permanently reside in northwestern Mazatlán, Sinaloa. The neighborhoods (colonias) included were documented using a territorial or real estate source. According to the Factoriza log, 14 individuals opened the questionnaire and 6 completed it; no cases were excluded on quality-control grounds, so 6 cases were analyzed (Table 2).

The data cut analyzed here is preliminary: it comprises 6 cases out of a target of 100, and data collection was still open, in the field, as of the cut-off date. With 6 cases for 15 items, the ratio is 0.4 cases per item, so the inter-item correlation matrix is not invertible.

INSTRUMENT

The Seasonal Housing and Local Habitability Scale was administered. It comprises fifteen items with a five-point response format, ranging from Strongly disagree (1) to Strongly agree

https://doi.org/10.62486/978-9915-9966-6-0.Ch14

(5), organized into three dimensions of five items each: Presence of Seasonal Housing (R1 to R5), Living Conditions for Local Residents (R6 to R10), and Relationship with Seasonal Residents (R11 to R15).

Three items are reverse-worded, one per dimension (R4, R9 and R13), and have been recoded in the data matrix. After recoding, a higher score indicates greater perceived presence of seasonal housing, better living conditions and a more favorable relationship with seasonal residents. Table 1 presents the code, dimension, wording and direction of each item.

Table 1. Structure of the instrument.

Code	Dimension	Item	Reverse
R1	Presence of seasonal housing	In my neighborhood, there are homes that are occupied only seasonally	No
R2	Presence of seasonal housing	In my neighborhood, buildings are being constructed for seasonal residents	No
R3	Presence of seasonal housing	In recent years, new foreign residents have arrived in my neighborhood	No
R4	Presence of seasonal housing	My neighborhood retains its long-time residents	Yes
R5	Presence of seasonal housing	Home sale listings in my neighborhood are in English	No
R6	Living conditions for local residents	I can afford the cost of living in my neighborhood	No
R7	Living conditions for local residents	The services in my neighborhood are sufficient for the residents	No
R8	Living conditions for local residents	I can find the shops I need in my neighborhood	No
R9	Living conditions for local residents	My family has considered moving out of the neighborhood	Yes
R10	Living conditions for local residents	I like living in my neighborhood	No
R11	Relationship with seasonal residents	I greet the seasonal residents of my neighborhood	No
R12	Relationship with seasonal residents	Seasonal residents participate in the life of the community	No
R13	Relationship with seasonal residents	I feel displaced in the public spaces of my neighborhood	Yes
R14	Relationship with seasonal residents	Seasonal residents respect the customs of the colony	No
R15	Relationship with seasonal residents	I feel comfortable sharing the community's spaces with seasonal residents	No

Note. Seasonal Housing and Local Habitability Scale. Five-point response scale (Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree). Reverse-scored items have already been recoded in the delivered data matrix. Source: Factoriza UAS, project FZ-HAB-0035, survey LEV-0040, dataset DST-0037.

PROCEDURE

Responses were collected through the survey questionnaire administered in Factoriza UAS, which records explicit online informed consent before the first item and does not collect identifying data. Factoriza froze dataset DST-0037 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-00217 to RUN-00223).

DATA ANALYSIS

Factoriza UAS computed the mean, standard deviation, skewness, kurtosis and the percentages of responses at the extreme values of each item; the internal consistency of each dimension using Cronbach's alpha (Cronbach, 1951), together with the corrected item-total correlation and alpha if item deleted; and the Spearman correlations between the items of each dimension, with 95% confidence intervals obtained by Fisher's z transformation. In addition, the project's complementary analysis program, analisis_psicometrico.py, version 1.0, was run in Python 3.13.16 (Python Software Foundation, 2026), with NumPy (Harris et al., 2020), SciPy (Virtanen et al., 2020) and pandas, to estimate McDonald's omega (McDonald, 1999/2013), perform the exploratory factor analysis and estimate the correlation between dimensions.

The program stopped when computing the measure of sampling adequacy because, with 6 cases for 15 items, the correlation matrix is singular; consequently, these results were not obtained. The execution log is provided in the reproducibility appendix.

Given the cohort size, the Factoriza coefficients are reported to document how the instrument functions and not as estimates of its properties. Reference values for the psychometric indices are treated as guidelines and not as decision rules (Ferrando et al., 2022). No item was removed, and

https://doi.org/10.62486/978-9915-9966-6-0.Ch14

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

The following tools were used in preparing this manuscript: 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 size of the data cut; and the Claude Opus language model (Anthropic), for running that program, assisted literature searching, preparing a draft, and assembling the document from the results. The authors reviewed, corrected and approved the entire text, verified every reference, and assume full responsibility for the content of the article.

RESULTS

SAMPLE COMPOSITION

Table 2 summarizes the case flow. Of the 14 individuals who opened the questionnaire, 6 completed it and were analyzed, with no exclusions for quality control. The 6 analyzed cases answered all fifteen items.

Table 2. Sample composition.

Indicator	Value
People who opened the questionnaire	14
Completed questionnaires	6
Cases excluded by quality control	0
Cases analyzed	6
Items	15

Note. Survey “Northwest Mazatlán Pilot · Seasonal Housing” (LEV-0040); population: persons aged 18 years or older who permanently reside in northwest Mazatlán; territory: northwest zone of Mazatlán, Sinaloa, in neighborhoods (colonias) documented with a territorial or real-estate source. Dataset DST-0037, fingerprint cff0333d73566415. Source: Factoriza UAS. Preliminary cutoff: n = 6 of a target of 100, with the survey still open.

ITEM RESPONSES

Table 3 and Figure 1 present the descriptive statistics. With 6 cases, each response carries considerable weight in the mean, and three items (R5, R7 and R8) show kurtosis values of 6.00, indicating responses concentrated on a single value. In Presence of seasonal housing, all means fell below the scale midpoint: the existence of dwellings occupied only seasonally (R1: M = 2.83, SD = 0.98), the arrival of new foreign residents (R3: M = 2.67, SD = 1.21), the loss of long-time neighbors, in its recoded version (R4: M = 2.50, SD = 1.22), the construction of buildings for seasonal residents (R2: M = 2.17, SD = 1.17) and for-sale advertisements in English (R5: M = 1.83, SD = 0.41).

In Living conditions for local residents, the adequacy of services had the highest mean on the instrument (R7: M = 4.17, SD = 0.41), followed by the availability of shops (R8: M = 3.67, SD = 0.82), the ability to afford the cost of living in the neighborhood (R6: M = 3.50, SD = 1.05), and enjoyment of living there (R10: M = 3.33, SD = 1.03).

The absence of the idea of moving, in its recoded version, had a low mean (R9: M = 2.17, SD = 0.98), indicating a tendency for the family to have considered moving out of the neighborhood. Regarding Relationship with Seasonal Residents, the recoded item on the absence of displacement in public spaces was at the midpoint (R13: M = 3.17, SD = 0.75), as was respect for customs (R14: M = 3.00, SD = 0.89). In contrast, the participation of seasonal residents in neighborhood life (R12: M =

https://doi.org/10.62486/978-9915-9966-6-0.Ch14

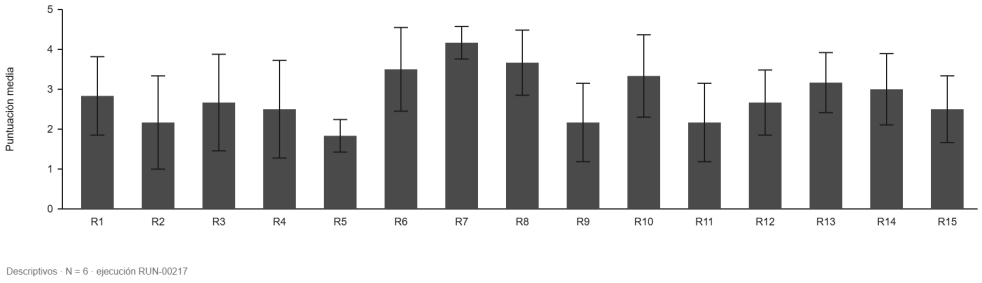
2.67, *SD* = 0.82), comfort when sharing spaces (R15: *M* = 2.50, *SD* = 0.84), and greeting (R11: *M* = 2.17, *SD* = 0.98) had low means.

Table 3. Descriptive statistics of the items.

Item	M	SD	Skewness	Kurtosis	Floor	Ceiling
R1	2.83	0.98	0.46	-2.39	50%	33%
R2	2.17	1.17	0.67	-0.45	33%	17%
R3	2.67	1.21	-0.08	-1.55	17%	33%
R4	2.50	1.22	0.49	-1.47	17%	33%
R5	1.83	0.41	-2.45	6.00	17%	83%
R6	3.50	1.05	-0.00	-0.25	17%	17%
R7	4.17	0.41	2.45	6.00	83%	17%
R8	3.67	0.82	-2.45	6.00	17%	83%
R9	2.17	0.98	1.44	3.60	17%	17%
R10	3.33	1.03	-0.97	-1.88	33%	67%
R11	2.17	0.98	1.44	3.60	17%	17%
R12	2.67	0.82	0.86	-0.30	50%	17%
R13	3.17	0.75	-0.31	-0.10	17%	33%
R14	3.00	0.89	0.00	-1.88	33%	33%
R15	2.50	0.84	1.54	1.43	67%	17%

Note.N = 6. 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, as its values do not match those in Table 4 because they are not calculated from the total of each dimension. Factoriza UAS run RUN-00217. Preliminary cut-off: n = 6 out of a target of 100, with data collection still open.

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



INTERNAL CONSISTENCY

Table 4 presents the item analysis by dimension. Presence of seasonal housing yielded a negative alpha (α = -.064), indicating that its items covary, on average, in opposite directions. The arrival of new foreign residents correlated negatively with the rest of the dimension (R3: -.364), and its removal would raise alpha to .424. The recoded loss of neighbors showed a virtually null correlation (R4: -.041), and the other three items had low correlations (between .109 and .267).

Living conditions for local residents yielded α = .612. Enjoying living in the neighborhood was the most consistent item (R10: .828), whereas the ability to afford the cost of living there was barely related to the rest (R6: .076); its removal would raise alpha to .723. Relationship with seasonal residents showed the highest consistency (α = .818), with comfort in sharing spaces (R15: .850), the participation of seasonal residents (R12: .828), and greeting (R11: .812) as the most consistent items; the recoded absence of displacement was weakly related to the dimension (R13: .235), and its removal would raise alpha to .873.

https://doi.org/10.62486/978-9915-9966-6-0.Ch14

Table 4. Item analysis by dimension.

Dimension	Item	Corrected item-total r	α if item deleted
PVT	R1	.240	-.449
PVT	R2	.109	-.290
PVT	R3	-.364	.424
PVT	R4	-.041	-.023
PVT	R5	.267	-.214
CVL	R6	.076	.723
CVL	R7	.443	.573
CVL	R8	.458	.513
CVL	R9	.290	.602
CVL	R10	.828	.229
RRT	R11	.812	.712
RRT	R12	.828	.717
RRT	R13	.235	.873
RRT	R14	.398	.844
RRT	R15	.850	.708

Note.N = 6. Scale from 1 to 5; reverse-scored items R4, R9, and R13 are shown recoded. Run RUN-00217 of Factoriza UAS. Preliminary cutoff: n = 6 out of a target of 100, with data collection still open.

CORRELATIONS BETWEEN ITEMS

Tables 5, 6, and 7 present the Spearman correlations between the items of each dimension. With 6 cases, the confidence intervals are very wide, and only two correlations had intervals lying entirely on one side of zero. In Presence of Seasonal Housing, the existence of seasonally occupied dwellings was related to the loss of long-standing neighbors (R1 and R4: ρ = .867, 95% CI [.186, .985], *p* = .025), whereas the arrival of new foreign residents was negatively related to seasonal housing (R1 and R3: ρ = -.524) and to signs in English (R3 and R5: ρ = -.539), although the intervals for these correlations were not conclusive.

For Relationship with seasonal residents, the participation of seasonal residents was associated with comfort in sharing spaces (R12 and R15: ρ = .822, 95% CI [.030, .980], *p* = .045). For Living conditions, no correlation had an interval that excluded zero; the highest was between the availability of shops and the absence of any thought of moving (R8 and R9: ρ = .775, 95% CI [-.100, .974], *p* = .070). Three correlations were exactly zero, with *p* = 1.000, a result to be expected when there are few cases and many tied responses.

Table 5. Correlations among the Presence of Seasonal Housing items.

Variable pair	r	IC 95%	p
R1 and R2	-.127	[-.851, .763]	.810
R1 and R3	-.524	[-.937, .500]	.285
R1 and R4	.867	[.186, .985]	.025
R1 and R5	.424	[-.591, .919]	.402
R2 and R3	.409	[-.603, .916]	.421
R2 and R4	-.318	[-.898, .665]	.539
R2 and R5	.539	[-.484, .940]	.269
R3 and R4	-.429	[-.920, .587]	.396
R3 and R5	-.539	[-.940, .484]	.269
R4 and R5	.141	[-.757, .855]	.789

Note.N = 6. PVT = Presence of seasonal housing; CVL = Living conditions for local residents; RRT = Relationship with seasonal residents. The corrected item-total correlation excludes the item itself from the total of its dimension. A negative alpha indicates that the items covary, on average, in opposite directions. Cronbach's α for the full dimensions, with 5 items each: PVT = -.064 (run RUN-00218); CVL = .612 (RUN-00220); RRT = .818 (RUN-00222). Source: Factoriza UAS, Tables 4, 6, and 8 of the package, combined without modifying values. Preliminary cutoff: n = 6 out of a target of 100, with data collection still open.

https://doi.org/10.62486/978-9915-9966-6-0.Ch14

Table 6. Correlations between the Living Conditions items for local residents.

Variable pair	r	IC 95%	p
R6 and R7	.674	[-.303, .960]	.142
R6 and R8	-.270	[-.887, .694]	.605
R6 and R9	-.348	[-.904, .646]	.499
R6 and R10	.320	[-.664, .898]	.537
R7 and R8	.200	[-.730, .870]	.704
R7 and R9	.000	[-.812, .812]	1.000
R7 and R10	.316	[-.666, .897]	.541
R8 and R9	.775	[-.100, .974]	.070
R8 and R10	.632	[-.368, .954]	.178
R9 and R10	.612	[-.396, .951]	.196

Note.N = 6. Spearman correlation coefficient, labeled r in the Factoriza table. Confidence intervals were obtained using Fisher's z transformation. Cross-sectional design: the reported relationships are associations. Factoriza UAS run RUN-00219. Preliminary data cut: n = 6 of a target of 100, with data collection still ongoing.

Table 7. Correlations among the items of Relationship with seasonal residents.

Variable pair	r	IC 95%	p
R11 and R12	.730	[-.200, .968]	.099
R11 and R13	.456	[-.564, .925]	.363
R11 and R14	.000	[-.812, .812]	1.000
R11 and R15	.700	[-.258, .964]	.121
R12 and R13	.033	[-.800, .823]	.950
R12 and R14	.516	[-.508, .936]	.294
R12 and R15	.822	[.030, .980]	.045
R13 and R14	.000	[-.812, .812]	1.000
R13 and R15	.055	[-.792, .829]	.918
R14 and R15	.495	[-.529, .932]	.318

Note.N = 6. Spearman's correlation coefficient, labeled r in the Factoriza table. Confidence intervals were obtained using Fisher's z transformation. Cross-sectional design: the reported relationships are associations. Factoriza UAS run RUN-00221. Preliminary cutoff: n = 6 of a target of 100, with data collection still open.

DISCUSSION OF RESULTS

The purpose of this study was to present the Seasonal Housing and Local Habitability Scale and to describe its initial performance among permanent residents of northwestern Mazatlán.

With only 6 cases, no result can be generalized or taken as an estimate of the instrument's properties: the literature on internal consistency coefficients has been developed with far larger samples (Malkewitz et al., 2023), and the internal structure could not be examined. Nevertheless, this data cut provides useful signals for revising the instrument before data collection continues.

The first indication is that Presence of Seasonal Housing did not behave as a scale. The dimension combines changes in the housing stock, such as seasonally occupied dwellings and new buildings, with changes in the population, such as the arrival of foreign residents and the loss of long-standing neighbors, and with market signals, such as advertisements in English. These processes do not necessarily move together: a neighborhood may receive new permanent foreign residents without an increase in seasonal housing, or vice versa.

The positive relationship between seasonal housing and the loss of long-standing neighbors, the only conclusive one in this dimension, is consistent with the association between touristification and displacement described in the literature (Nikšić Radić and Dragičević, 2025; Ramos-Jiménez and De La Barrera-Medina, 2025), but with only 6 cases it cannot be interpreted further.

The second sign is that Relationship with Seasonal Residents showed a coherent core made up of greeting, the participation of seasonal residents and comfort when sharing spaces, whereas the sense of displacement, which was reverse-worded, diverged from the rest.

https://doi.org/10.62486/978-9915-9966-6-0.Ch14

This is consistent with the view that everyday coexistence and symbolic displacement are distinct aspects of the relationship with new neighbors, as suggested by studies that distinguish community ties from the privatization or appropriation of public spaces (Lin et al., 2023) and that describe symbolic barriers in residential tourism (Zepeda-Hernández, 2024).

In Living Conditions, affordability separated from the rest of the dimension, a result that warrants careful examination because affordability is one of the central mechanisms of tourism gentrification (Nikšić Radić and Dragičević, 2025).

Finally, the descriptive profile should be interpreted with caution. The low mean scores for the presence of seasonal housing may indicate that the first respondents' neighborhoods have little exposure to this phenomenon, which would be relevant to the selection of neighborhoods for the final wave.

The combination of favorably rated services and commerce, a weak relationship with seasonal residents and a tendency to have considered moving is consistent with the literature linking residential tourism to changes in community life (Zepeda-Hernández, 2024) and perceptions of the surrounding environment to the intention to move (Gu et al., 2025). With 6 cases, however, it does not constitute a finding.

CONCLUSIONS

The study presented the Seasonal Housing and Local Habitability Scale from project FZ-HAB-0035 and described its performance in a preliminary sample of 6 cases. The Relationship with seasonal residents dimension showed high internal consistency (α = .818), Living conditions for local residents had moderate consistency (α = .612), and Presence of seasonal housing yielded a negative alpha (α = -.064), with items that do not covary.

The supplementary analysis program could not estimate omega, fit the factor analysis, or compute the correlation between dimensions, because the correlation matrix is singular when there are fewer cases than items. These results do not provide validity evidence, but they identify the items that warrant revision.

The limitations are decisive. The sample of 6 cases, against a target of 100 (0.4 cases per item), precludes estimation of the instrument's properties and makes all statistics unstable. Data collection was still ongoing, and of the 14 individuals who opened the questionnaire, only 6 completed it.

No information is available on the participating neighborhoods or on the survey respondents, and the instrument does not identify the nationality of the seasonal residents, so the study cannot refer specifically to North American residents. The cross-sectional design precludes establishing dependence relationships.

Several decisions for the authors follow from these results. The first is to complete data collection before any inferential or psychometric analysis. The second is to revise Presence of seasonal housing and consider splitting it into indicators of the housing stock, the population and the real estate market, or reformulating R3. The third is to revise R6, affordability, and R13, displacement in public spaces, which departed from their dimensions.

The fourth is to decide whether the instrument should document the nationality of seasonal residents, so that the project title matches what is measured. The fifth is to document the neighborhoods, the origin of the items, and the content review. None of these decisions was made in the present analysis, which retains the original fifteen items.

For future research, we propose completing the survey to the planned target, with neighborhoods (colonias) that differ in their exposure to seasonal housing, documented through territorial or real estate sources. Omega and the exploratory factor analysis would then be estimated, and the resulting structure subsequently evaluated by confirmatory factor analysis in an independent sample.

Combining the scale with records of property purchases by foreigners, such as those used by Colorado Giraldo (2022), or with short-term rental records would make it possible to contrast perceived presence with recorded presence. It would also give Mazatlán an instrument for monitoring the livability of its neighborhoods as residential tourism expands.

https://doi.org/10.62486/978-9915-9966-6-0.Ch14

REFERENCES

Agius, K., Briguglio, M., y Bermúdez Pérez, J. L. (2025). Tourism, real estate, and urban pressures: The case of Marsascala, Malta. *Open Research Europe*, *4*, Artículo 183. https://doi.org/10.12688/openreseurope.17641.2
Bojorquez Luque, J., Olivarría Núñez, C. A., y Sánchez Sánchez, E. (2023). Producción del espacio turístico vertical y tensiones sociales en Mazatlán (México). *Ateliê Geográfico*, *17*(3), 45–64. https://doi.org/10.5216/ag.v17i3.75540
Bojórquez Luque, J., y Osuna Covarrubias, J. E. (2025). Turismo y destrucción creativa en Mazatlán, México. La zona de Playa Norte (2009-2024). *Bitácora Urbano Territorial*, *35*(1), 30–45. https://doi.org/10.15446/bitacora.v35n1.117255
Colorado Giraldo, A. (2022). La adquisición de bienes inmuebles por compradores extranjeros en zonas costeras y fronterizas de México (2008-2019). *PASOS Revista de Turismo y Patrimonio Cultural*, *20*(4), 1055–1069. https://doi.org/10.25145/j.pasos.2022.20.070
Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297–334. https://doi.org/10.1007/BF02310555
Ferrando, P. J., Lorenzo-Seva, U., Hernández-Dorado, A., y Muñiz, J. (2022). Decalogue for the factor analysis of test items. *Psicothema*, *34*(1), 7–17. https://doi.org/10.7334/psicothema2021.456
Goretzko, D., Pham, T. T. H., y Bühner, M. (2021). Exploratory factor analysis: Current use, methodological developments and recommendations for good practice. *Current Psychology*, *40*(7), 3510–3521. https://doi.org/10.1007/s12144-019-00300-2
Gu, J., Zhang, C., Li, X., y Chen, X. (2025). Research on the association between community environmental perception and residents' intention to relocation: A case study of Guangzhou. *Frontiers in Public Health*, *13*, Artículo 1557220. https://doi.org/10.3389/fpubh.2025.1557220
Harris, C. R., Millman, K. J., van der Walt, S. J., Gommers, R., Virtanen, P., Cournapeau, D., Wieser, E., Taylor, J., Berg, S., Smith, N. J., Kern, R., Picus, M., Hoyer, S., van Kerkwijk, M. H., Brett, M., Haldane, A., Fernández del Río, J., Wiebe, M., Peterson, P., . . . Oliphant, T. E. (2020). Array programming with NumPy. *Nature*, *585*(7825), 357–362. https://doi.org/10.1038/s41586-020-2649-2
Hernández Flores, J. Á. (2023). El rol gentrificador del Programa Pueblos Mágicos. El caso de San Pedro y San Andrés Cholula, Puebla. *Estudios Demográficos y Urbanos*, *38*(3), 715–761. https://doi.org/10.24201/edu.v38i3.2134
Kamani Fard, A., y Paydar, M. (2024). Place attachment and related aspects in the urban setting. *Urban Science*, *8*(3), Artículo 135. https://doi.org/10.3390/urbansci8030135
Lin, B., Lee, W., y Wang, Q. (2023). Residents' perceptions of tourism gentrification in traditional industrial areas using Q methodology. *Sustainability*, *15*(22), Artículo 15694. https://doi.org/10.3390/su152215694
Malkewitz, C. P., Schwall, P., Meesters, C., y Hardt, J. (2023). Estimating reliability: A comparison of Cronbach's α, McDonald's ωt and the greatest lower bound. *Social Sciences & Humanities Open*, *7*(1), Artículo 100368. https://doi.org/10.1016/j.ssaho.2022.100368
McDonald, R. P. (2013). *Test theory: A unified treatment*. Psychology Press. https://doi.org/10.4324/9781410601087 (Obra original publicada en 1999)
Mendieta Vega, R. A., y Roldán Clarà, B. (2024). Turistificación y gentrificación turística en la ciudad de Mazatlán: impactos socioculturales del modelo de desarrollo turístico neoliberal. *LATAM Revista Latinoamericana de Ciencias Sociales y Humanidades*, *5*(1), 1592–1610. https://doi.org/10.56712/latam.v5i1.1695
Murota, K., Gu, Y., Wang, X., y Matsushita, D. (2025). Property attributes influencing profitability before and after conversion of vacant long-term rentals to short-term rentals. *PLOS ONE*, *20*(11), Artículo e0336375. https://doi.org/10.1371/journal.pone.0336375
Nikšić Radić, M., y Dragičević, D. (2025). Integrative review on tourism gentrification and lifestyle migration: Pathways towards regenerative tourism. *Sustainability*, *17*(11), Artículo 5163. https://doi.org/10.3390/su17115163
Python Software Foundation. (2026). *Python* (Versión 3.13.16) [Software]. https://www.python.org/
Ramos-Jiménez, L. S., y De La Barrera-Medina, M. S. (2025). Transformaciones en la vivienda a partir del uso turístico en centros históricos: Zacatecas, *México. Legado de Arquitectura* y *D*iseño, 20(37), 129–138. https://legadodearquitecturaydiseno.uaemex.mx/article/download/23115/19605/
Sequera, J. (2025). Platform gentrification: The production of urban inequalities in the on-demand city. *Open Research Europe*, *5*, Artículo 147. https://doi.org/10.12688/openreseurope.20362.2
Virtanen, P., Gommers, R., Oliphant, T. E., Haberland, M., Reddy, T., Cournapeau, D., Burovski, E., Peterson, P., Weckesser, W., Bright, J., van der Walt, S. J., Brett, M., Wilson, J., Millman, K. J., Mayorov, N., Nelson, A. R. J., Jones, E., Kern, R., Larson, E., . . . Vázquez-Baeza, Y. (2020). SciPy 1.0: Fundamental algorithms for scientific computing in Python. *Nature Methods*, *17*(3), 261–272. https://doi.org/10.1038/s41592-019-0686-2
Xing, B. (2026).¿Cómo pasan los conflictos a la cocreación? Estudio sobre la lógica evolutiva de las emociones y acciones de los residentes en destinos de turismo patrimonial: el caso de la ciudad antigua de Pingyao. *Advances in Social Sciences*, *15*(3), 602–615. https://doi.org/10.12677/ass.2026.153265
Zarza Ballina, J., y Cruz Jiménez, G. (2024). Una aproximación documental a la gentrificación debida al turismo en los espacios rurales. *Desde el Sur*, *16*(4), Artículo e0069. https://doi.org/10.21142/DES-1604-2024-0069
Zepeda-Hernández, S. L. (2024). El desarrollo turístico-residencial como agente de cambio social. El caso de Chapala, México. *Revista Latino-Americana de Turismologia*, *10*, 1–12. https://doi.org/10.5281/zenodo.14577706