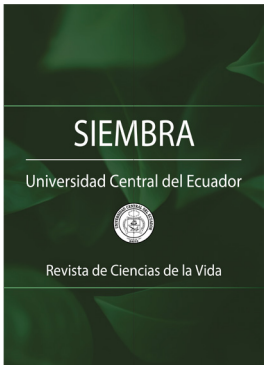
Citizen perception of tourism in public markets: Development and validation of an evaluation tool



Percepción ciudadana del turismo en los mercados de abastos: Desarrollo y validación de una herramienta de evaluación

Laura Estefania Vivas Yepez[1], Ramiro José Vivas Vivas[2]

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[1] Universidad San Francisco de Quito, Colegio de Ciencias Sociales y Humanos, Psicología Clínica. Diego de Robles y Vía Interoceánica. Campus Cumbayá. CP 170901. Quito, Ecuador.
✉ lvivasy@estud.usfq.edu.ec
https://orcid.org/0009-0002-9835-8213

[2] Universidad Central del Ecuador, Facultad de Ciencias Agrícolas. Jerónimo Leiton y Gatto Sobral s/n. Ciudadela Universitaria. CP 170521, Quito, Ecuador.
✉ rjvivas@uce.edu.ec
https://orcid.org/0000-0002-3319-8725

Corresponding author:
lvivasy@estud.usfq.edu.ec.

Abstract

Municipal markets are key spaces for economic exchange, cultural preservation, community socialization, and the transfer of traditional knowledge. Despite their high heritage and experiential value, their potential for cultural tourism has been underutilized, and there are no specific instruments to assess public perception of these spaces. A mixed methodological design was applied to address this gap. In the exploratory qualitative phase, semi-structured interviews were conducted with tourism professionals and local users to generate preliminary items. Then, a Delphi panel of 21 experts reviewed and refined the items in three rounds. In the quantitative phase, the instrument was applied to a stratified probabilistic sample of 490 residents from the 32 urban parishes of Quito. Reliability was assessed using Cronbach's alpha; internal consistency was evaluated through the item homogeneity coefficient [IHc], and dimensionality was analyzed using the Cronbach-Mesbah curve. An exploratory factor analysis was also performed. The final instrument consisted of 22 items grouped into three dimensions: social-cognitive, social-territorial, and social-cultural. Cronbach's alpha was 0.927. All IHc values exceeded 0.20. The Cronbach-Mesbah curve showed upward stability. Factor analysis, with a Kaiser-Meyer-Olkin [KMO] measure of 0.889 and a statistically significant Bartlett's test ($p < 0.001$), extracted four factors with eigenvalues greater than 1, explaining 77.8% of the variance. The instrument presented high reliability and psychometric robustness. Its multidimensional structure allows its application in various cities with public markets, facilitating its implementation in different urban contexts.

Keywords: public markets, social perception, cultural tourism, urban spaces, evaluation instruments

Resumen

Los mercados de abastos o municipales son espacios clave de intercambio económico, preservación cultural, socialización comunitaria y transmisión de saberes. A pesar de su alto valor patrimonial y experiencial, su potencial en el turismo cultural ha sido subutilizado, y no existen instrumentos específicos para evaluar la percepción ciudadana. Se aplicó

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un diseño metodológico mixto. En la fase cualitativa exploratoria, se realizaron conversatorios semiestructurados con profesionales del turismo y usuarios locales para generar ítems preliminares. Luego, un panel Delphi con 21 expertos revisó y depuró los ítems en tres rondas. En la fase cuantitativa, el instrumento fue aplicado a una muestra probabilística estratificada de 490 habitantes de las 32 parroquias urbanas de Quito. La fiabilidad se evaluó con el alfa de Cronbach, la coherencia interna con el índice de homogeneidad de ítems [IHc] y la dimensionalidad con la curva de Cronbach-Mesbah. También se realizó un análisis factorial exploratorio. El instrumento final constó de 22 ítems agrupados en tres dimensiones: social-cognitiva, social-territorial y social-cultural. El alfa de Cronbach fue de 0,927. Todos los índices IHc superaron 0,20. La curva de Cronbach-Mesbah evidenció estabilidad ascendente. El análisis factorial, con la medida Kaiser-Meyer-Olkin [KMO] de 0,889 y prueba de Bartlett significativa ($p < 0,001$), extrajo cuatro factores con autovalores > 1, explicando el 77,8 % de la varianza. El instrumento mostró alta fiabilidad y robustez psicométrica. Su estructura multidimensional permite su aplicación en diversas ciudades con mercados de abastos, favoreciendo su implementación en distintos contextos urbanos.

Palabras clave: mercados municipales, percepción social, turismo cultural, espacios urbanos, instrumentos de evaluación

1. Introduction

Public or municipal markets are not just spaces for the exchange of goods; they also serve as vital hubs of social interaction, identity-building, and cultural reproduction. In many parts of the world, these sites have become settings where traditional economic practices converge with everyday symbolic expressions, such as popular language, religious festivities, culinary knowledge, or healing rituals. This convergence makes them privileged sociocultural spaces where the material and immaterial intertwine in deeply rooted ways of life. Their historical persistence, as well as their role in connecting rural and urban spheres, gives them both functional and symbolic centrality within the urban fabric and the collective memory of cities. In some contexts, markets have been formally incorporated into local heritage—for example, as food heritage—but these processes can spark disputes over the symbolic use of the space. While some see them as acts of recovery and valorization, others view them as a form of instrumentalization for tourism or commercial purposes (Lacarrieu, 2016).

In this context, tourism has experienced a significant evolution, from models centered on passive contemplation to an immersive prioritization, authenticity and experience (López, 2024; Salazar Dzul et al., 2020). This transition led to the development of cultural tourism, alternative urban tourism and, more recently, experiential tourism—modalities that prioritize contact with the everyday life and intangible values of host communities (Cardoso de Santana et al., 2021; Morillo Moreno, 2011). Public or municipal markets emerge as suitable places for this kind of experience, as they offer visitors direct access to local dynamics, far removed from conventional tourist circuits. Recent research warns that exalting "authenticity" for tourism can drive transformations that distort these markets. In many cases, the gentrification resulting from their touristification has caused these spaces to lose their public character, turning them into stage sets for consumption (Hernández Cordero & Adreeva Eneva, 2016).

Diverse studies and developmental plans have started to recognize the touristic potential of the local markets, especially in historical or culturally diverse cities (Crespí Vallbona & Domínguez Pérez, 2016; Fusté-Forné et al., 2020; Ortega Palomo & Urriza, 2023). It has been highlighted that these spaces allow the tourists to visit vital spots of the local culture, such as food practices, intergenerational links or the exchange of traditions. The growing recognition has promoted heritage preservation and urban revitalization, and, at the same time, proposes the integration of markets in the development of touristic strategies without distorting their original function or excluding their traditional actors. However, heritage preservation of markets presents contradictions because, though it looks for conserving valuable elements, it often responds to market logic that prioritizes the rentability and tourism becoming in entertainment markets with no community value (Hernández Cordero & Adreeva Eneva, 2016; Lacarrieu, 2016).

It is therefore pertinent to analyze how these processes manifest in cities with high heritage value and a complex social diversity. In different urban environments of the world, like Mexico City, Istanbul, Barcelona, Marrakech or Quito, local or municipal markets play a central role in shaping the urban fabric. These cities, marked by the coexistence of historical centers, popular neighborhoods and metropolitan expansion zones, house market nets that not only guarantee daily supplies but also operate as meeting points, intercultural exchange and reproduction of popular knowledge (Cuvi, 2017; Jaramillo, 2010; Medina & Cano-Ciborro, 2023). Their active presence and their symbolic value reflect how the financial, social and cultural aspects are inter-

twined in the contemporary urban dynamics.

Public or municipal markets play a multifunctional role that brings together the economic, social, and cultural practices of urban communities. These spaces host complex dynamics that go beyond mere commercial exchange, involving processes of socialization, the transmission of traditional knowledge, and the expression of local identities. Their day-to-day operation consolidates them as territorial reference points deeply rooted in the population's collective memory. Despite the sustained growth of supermarkets and shopping centers, markets have managed to remain relevant, demonstrating remarkable resilience as spaces of trust, identity, and social belonging (Cuvi, 2015). However, this importance has not been proportionally reflected in urban tourism policies or in academic production on the subject, where public or municipal markets have been historically undervalued or directly ignored.

Although public or municipal markets have proven to be spaces of notable resilience and sociocultural relevance, their historical exclusion from urban tourism policies poses serious challenges for their effective integration into tourism development strategies. In this sense, the success of any initiative aimed at revaluing these spaces depends largely on how citizens perceive tourism activity and its impacts. Numerous studies have shown that when local communities feel included and valued in planning processes, they are more likely to adopt a favorable attitude toward tourism, actively contributing to its consolidation (Ceballos-Álvarez, 2019; Osorio García, 2006; Domínguez Medina, 2024). Conversely, failing to recognize their opinions and aspirations can generate tensions, resistance, and social conflict—particularly in spaces traditionally excluded from tourism narratives, such as popular markets.

Despite the emerging recognition of the tourism value of public or municipal markets, a significant methodological gap persists regarding the availability of scientifically validated tools to assess public perception of this phenomenon. In the Latin American context, studies that have addressed the relationship between markets and tourism are typically characterized by a limited descriptive approach, relying on exploratory qualitative techniques or loosely structured surveys that do not meet the minimum psychometric standards required for large-scale application. This deficiency hinders not only comparisons between territories but also the ability to make decisions grounded in robust empirical evidence.

Many of the existing tools for measuring tourism perception have been designed in European or Anglo-Saxon contexts, with variables and indicators that are not very sensitive to the sociocultural realities of the Global South (Alamineh et al., 2023; Stevic et al., 2024; Šegota et al., 2024). Their direct application in Latin American contexts can be inadequate or even counterproductive, as it can render invisible key elements such as popular economies, reciprocity practices, community symbolic systems, or the structural informality of certain spaces. Moreover, most of these instruments lack participatory and context-specific validation, which limits their relevance and social acceptability.

Having these limitations, it becomes necessary to design a specific instrument that answers the particularities of the Latin-American urban environment, and at the same time, meet rigorous validity and reliability criteria. This study attempts to fill this gap through the development of a psychometrically validated survey, capable of measure citizen perception about tourism in an objective and multidimensional way in local or municipal markets.

2. Materials and Methods

The study adopted a mixed methodological design in two complementary phases. In the first, qualitative in nature, semi-structured discussion sessions were held with citizens and tourism professionals, from which the initial survey items were defined. These items were then subjected to the Delphi method with the participation of 21 national and international experts in tourism, heritage, and social sciences, who assessed and refined the items over three rounds until reaching a consensus greater than 75%, ensuring their relevance and coherence.

During the second phase of quantitative nature, the final version of the questionnaire was applied to a stratified probabilistic sample of 490 residents of the 32 urban districts of Quito. It was calculated with a 95% confidence level and 5% margin of error. The instrument used Likert scale of 4 points (0 = "totally disagree", 3 = "totally agree") organized in three dimensions: social-cognitive, social-territorial and social-cultural.

The statistic validation included the alpha coefficient of Cronbach to measure intern consistency, the corrected homogeneity index to identify differentiating items, the curve of Cronbach-Mesbah to probe one-dimensionality and an exploratory factorial analysis to confirm construct validity, using KMO measure and

Bartlett test as criteria. These procedures ensured the reliability and psychometric robustness of the designed instrument.

2.1. Study type

The study adopted an exploratory, descriptive, and comparative approach to deepen the understanding of the phenomena analyzed. By comparing variables, similarities, differences, and relationships were identified, allowing the delineation of both common and specific aspects of the elements studied. A cross-sectional design was used, with data collected at a single point in time, capturing a representative snapshot of the context. In addition, it was a non-experimental study, as the variables were observed in their natural environment without manipulation.

2.2. Participants

Participants came from 32 urban districts of Quito that sum up to 1.776.364 inhabitants in 2022 (Observatorio Metropolitano de Seguridad Ciudadana [OMSC], 2022). A sample size of 384 individuals was calculated with a 95% confidence interval and a 5% margin of error, guarantying statistical representation. However, the final sample was of 490 people. A stratified probabilistic sampling with equitable allocation by district was used, ensuring random sampling, bias reduction and extrapolation of results to the total population. Table 1 summarizes the distribution of the districts in urban Quito, organized in three sectors along with the number of participants:

Table 1. Participants from Urban Quito.

North Sector	N	Central Sector	N	South Sector	N
Carcelén	15	Belisario Quevedo	15	Chilibulo	15
El Condado	15	Itchimbía	15	Chimbacalle	16
Ponceano	15	Mariscal Sucre	15	Puengasí	15
Comité del Pueblo	16	San Juan	16	Magdalena	15
Cotocollao	16	Centro Histórico	15	San Bartolo	15
Kennedy	15	La Libertad	15	La Ferroviaria	15
El Inca	15			La Mena	15
Concepción	15			Solanda	16
Cochapamba	15			La Argelia	15
Rumipamba	15			Chillogallo	16
Jipijapa	15			La Ecuatoriana	16
Iñaquito	15			Quitumbe	16
				Turubamba	16
				Guamaní	16

2.3. Survey Construction

The survey was developed in two stages. In the first, a literature review was conducted to identify key concepts and theoretical references, which were then used to create a semi-structured interview with open-ended questions across three dimensions: socio-cognitive, territorial, and cultural. This interview was carried out through discussion sessions with four groups: five tourism professionals, five tourism students, and ten people from different professions (five men and five women), which made it possible to gather diverse perspectives for qualitative analysis.

In the second stage, a Likert-type scale was designed based on the most frequent responses from the interviews. This scale, as a psychometric instrument, used values from 0 to 3, allowing for an orderly an objective measurement of perceptions in a unidimensional way.

2.4. Validation of the survey: citizen perception about tourism in local or municipal markets through the Delphi method

The instrument's validation was done through the Delphi method recognized by its efficiency to reach consensus between experts through successive rounds of consultation. On the first stage, 28 specialists were invited from which 23 gave their consent, and 21 actively participated during the entire process (Table 2). This number was considered appropriate according to methodological criteria that showed sufficient to guarantee the validity of the analysis (Linstone et al., 2002; Okoli & Pawlowski, 2004). To avoid bias, a heterologous panel of specialists with no conflicts of interest and a proven trajectory in tourism, cultural heritage and methodology of social research was formed.

Table 2. Experts who participated in the validation of the survey.

No.	Academic degree	Institution's Category	Experience
1	Master in Educational Research	Public organism	15 years
2	Doctor in History	Private organism	12 years
3	Doctor in Anthropology	Private organism	8 years
4	Master in Tourism	Private organism	12 years
5	Master in Psychology	Private university	18 years
6	Master in Education	Private university	9 years
7	Master in Tourism	Private university	16 years
8	Master in Sociology	Private university	10 years
9	Doctor in History	Public University	10 years
10	Doctor in Educational Research	Private university	11 years
11	Doctor in Tourism	Private university	17 years
12	Doctor in Clinical Research	Private university	15 years
13	Doctor in Geography	Public University	7 years
14	Doctor in Developmental Psychology	Public University	13 years
15	Doctor in Education	Private organism	17 years
16	Doctor in Tourism	Private university	9 years
17	Master in Higher Education	Private organism	16 years
18	Master in Tourism	Private organism	7 years
19	Master in Psychology	Private organism	12 years
20	Master in Educational Research	Private university	16 years
21	Master in Higher Education	Private university	11 years

The process of validation was structured in three phases: preparation, execution and consensus (Nasa et al., 2021; Vio et al., 2016). The preparation phase included two key moments: first, the application of a semi structural survey with 15 open questions to 20 people from different professional areas, and second, the most popular answer conversion into items that could be evaluated in a Likert-like scale.

The execution phase was developed in three successive rounds. In the first round, a preliminary version of the survey was sent to 21 experts, aimed to measure citizen perception about tourism in local or municipal markets, and asking for qualitative feedback using notes at the margin. The goal was to verify the sufficiency of the dimensions and items in relationship with the purposes of the instrument, as well as to evaluate its pertinence, clarity and intern coherence.

In the second round, the feedback was analyzed, and only the comments endorsed by more than 17 experts were included. Moreover, a Likert scale of four points was introduced (0 = "totally irrelevant", 3 = "totally relevant"), and the corrected items were sent for a new assessment.

In the third round, a quantitative assessment was conducted: the results were tabulated, and measures of central tendency and dispersion were calculated (mean, percentage of agreement, and standard deviation per item). Each expert received this summary along with the updated version of the instrument, so they could confirm or adjust their evaluation in light of the group's overall opinion.

Finally, in the consensus phase, only the items that reach a convergency similar or more than 75% were considered (Vivas Vivas & Fuentes Moreno, 2024; Vivas-Vivas et al., 2022). The validated items were the definitive version of the instrument, which was later subjected to statistical validation to verify its intern consistency and reliability.

2.5. Validation of the survey: citizen perception about tourism in local or municipal markets by statistical methods

The reliability of the instrument was evaluated through the alpha coefficient of Cronbach with the purpose of measure the intern consistency of the survey, which means the correlation between the items of each dimension of the survey. This technique allows to determine to what extent the items contribute to a coherent measure of the construct. The criteria of (Tuapanta et al., 2017) was used to interpret the obtained values.

To ensure the instrument's internal coherence and to discard nondiscriminating items, the homogeneity index [HI] was calculated, understood as the correlation between each item and the questionnaire's total score. In this study, corrected homogeneity indices [HIc] were used to assess the individual contribution of each item to the underlying theoretical construct. The absence of non-discrimination items was established when all HIc values exceeded the 0.20 threshold, a criterion supported by the specialized literature (Enríquez Negrete & Sánchez-Medina, 2022).

The validation of the construct's dimensionality was carried out using the Cronbach–Mesbah curve, a tool that makes it possible to verify the unidimensionality of each dimension of the instrument. This concept refers to the scale's ability to measure a single latent trait, such that differences in responses are explained solely by that trait. The curve analyzes how Cronbach's alpha evolves as each item is progressively incorporated, with a constant increase in alpha being the expected pattern. If a decrease is observed when adding a specific item, that item is considered to potentially affect the cohesion of the dimension, and its removal is recommended (Bernaola Ugarte et al., 2022; Vivas et al., 2025).

For the validation of the construct, exploratory factor analysis was used, a technique widely recognized for this purpose (Pérez-Gil et al., 2000). This procedure was carried out in several phases: first, a matrix was computed to reflect the joint variability of the variables; then, the optimal number of factors was determined, and a rotation was performed to facilitate interpretation; finally, participants' scores on the newly identified dimensions were estimated.

3. Results

3.1. Study of the validity of the survey to evaluate citizen perception of tourism in local or municipal markets through the Delphi method

Based on the application of a semi-structured interview, a preliminary survey was designed consisting of 30 items, organized into three dimensions. The sociocognitive dimension included 10 items aimed at exploring perceptions of the experiential, symbolic, and educational value of markets. The social–territorial dimension assessed, also through 10 items, aspects related to the physical, logistical, and accessibility conditions that influence tourist visits. Finally, the social–cultural dimension addressed, through another 10 items, the symbolic, affective, and cultural identity value that people attribute to markets. Table 3 presents the contents of this initial version of the survey.

After the experts' review, several aspects of the survey were identified as needing improvement. First, some items showed ambiguity, as they were too general or made assumptions without sufficient nuance. This was noted in items 1, 2, 4, 5, 6, and 13. In addition, a lack of neutrality was observed in the wording of certain items, which were framed in strongly affirmative terms or carried value-laden biases, such as items 3, 5, 6, and 7. The presence of double negatives or unnecessary negative phrasing was also detected in items 23 and 30, which could lead to confusion when interpreting responses.

Table 3. Initial survey.

Dimensions	No.	Items
Social- cognitive	1	One can learn diverse and new things without guidance in the markets
	2	Markets are enjoyable places
	3	All the visitors go to the market during their free time
	4	Markets hold the entire history of the city
	5	It is obvious that markets are cultural spaces
	6	Markets sell the most delicious typical food
	7	If there is not a "spiritual cleansing" station, it is not a market
	8	The informal treatment in the markets is sometimes annoying
	9	Exchanging of products is the only traditional way to buy at the markets
	10	In the markets, one can feel more connected to the city
Social-territorial	11	The constructions of the markets are well done
	12	All the markets are safe places for any visitor
	13	The buses and taxis always arrive directly to any market
	14	Some markets have ramps for wheelchairs
	15	All the markets have basic services: electricity, internet and security
	16	The hygiene of the markets depends only on the sellers
	17	Markets are disappearing due to the arrival of supermarkets
	18	Some markets are too dirty to be touristic places
	19	Markets are well-distributed throughout the city
	20	It is difficult to locate markets if one does not live nearby
Social cultural	21	Markets are only attraction for curious foreigners
	22	One goes to the market only to save money
	23	Visiting markets does not cause emotion in locals
	24	Markets represent part of the identity of my community
	25	Sometimes, one goes to the market just toe at something delicious
	26	Going to the market reminds me of my grandparents
	27	Markets are older than shopping malls
	28	I would only recommend markets if they were clean
	29	In markets, a lot of old traditions are conserved
	30	Markets should not be considered touristic places

Another key issue was conceptual overlap: items 5, 19, 24, and 29 appeared to measure the same construct without adding distinctive information. Their revision was recommended to avoid redundancy. Moreover, some items contained nontechnical or colloquial language, such as items 6, 7, and 25, which used informal expressions like "tastier typical food," "spiritual cleansing," or "nice things," which are not appropriate in a formal survey context.

Finally, geographic or contextual imprecision was noted in certain items, which could generate confusion among respondents. As a result of these observations, the survey was refined and reduced from 30 to 22 items, improving its clarity and precision. A quantitative evaluation of the survey was then carried out for each of its dimensions, with results presented in Table 4.

Table 4. Quantitative evaluation of the survey.

No.	Dimension/Item	μ	%	σ	P
	Dimension: Social Cognitive				
1	Visiting a market is a way to learn about local culture	2.04	80	0.35	Yes
2	Markets are favorable spaces to acquire new experiences	2.74	94	0.45	Yes
3	Markets allow people to enjoy free time in a distinct way	2.34	86	0.73	Yes
4	One can learn about the city's history in the markets	2.04	80	0.6	Yes
5	Markets contribute to the transmission of popular knowledge	2.24	84	0.51	Yes
6	Food sold in markets reflects local identity	2.14	82	0.66	Yes
7	Traditional practices like "spiritual cleansing" enrich the visitor's experience	2.44	88	0.56	Yes
8	Informal interactions in the markets contribute to the cultural experience	2.54	90	0.55	Yes
	Dimension: Social Territorial				
9	The market buildings feel safe for visitors	2.64	92	0.51	Yes
10	Markets offer adequate hygiene and cleanliness conditions	2.64	92	0.51	Yes
11	Markets are accessible by public transportation	2.64	92	0.51	Yes
12	Markets have infrastructure for disabled people	2.44	88	0.56	Yes
13	Markets have basic services (water, electricity, connectivity)	2.44	88	0.56	Yes
14	Markets are part of the urban landscape and are points of reference	2.44	88	0.56	Yes
15	The closeness to supermarkets has not decreased the interest on visiting local markets	2.44	88	0.56	Yes
	Dimension: Social Cultural				
16	Markets reinforce my sense of belonging to the city	2.74	94	0.45	Yes
17	Visiting the market connects me to local traditions	2.74	94	0.45	Yes
18	I recommend visiting markets as part of cultural tourism	2.64	92	0.51	Yes
19	Markets promote cuisine diversity of the city	2.84	96	0.35	Yes
20	The tourism in markets should be promoted by local authorities	2.84	96	0.35	Yes
21	I feel proud about markets being considered tourist attractions	2.84	96	0.35	Yes
22	Markets are places where every day-life and tourism coexist	2.84	96	0.35	Yes

Two specific items were checked and corrected, considering the general feedback provided by the experts. The modifications made to these items are detailed in Table 5.

Table 5. Expert reconsiderations.

No.	Dimension/Item	μ	%	σ	P
1	Visiting a market is a way to learn more about local culture	2.13	83	0.43	Yes
4	In the markets, one can learn about the history of the city	2.09	81	0.54	Yes

3.2. Study of the validity of the survey to evaluate citizen perception of tourism in the local markets through statistical methods

Cronbach's alpha coefficient was applied to evaluate the reliability of the instrument, yielding a value of 0.927. To interpret this result, the criteria proposed by Tuapanta et al. (2017) were used as a reference, according to which this value is indicative of excellent reliability.

The results presented in Table 6 show that all items in the instrument reached a value greater than 0.2 in the

HIc, indicating that no items with differentiating behavior were identified within the analyzed sample. The values obtained reflect an adequate level of consistency, confirming satisfactory internal homogeneity in each of the instrument's dimensions.

Table 6. Calculation of the corrected homogeneity index.

Item	Social Cognitive	Item	Social Territorial	Item	Social Cultural
	Ri(T-i)		Ri(T-i)		Ri(T-i)
1	0.503	9	0.295	16	0.582
2	0.742	10	0.446	17	0.654
3	0.358	11	0.476	18	0.755
4	0.397	12	0.289	19	0.611
5	0.219	13	0.453	20	0.541
6	0.612	14	0.778	21	0.448
7	0.353	15	0.787	22	0.391
8	0.429				

Figure 1 shows the curve of Cronbach-Mesbah, which shows how the reliability coefficient of the instrument varies (alpha of Cronbach) as each item is progressively eliminated from the total. The ascendant stability of the curve shows that no item significantly reduces the intern consistency of the instrument, supporting the relevance of their inclusion. Moreover, the lack of abrupt falls in the curve suggests that there is no item that could negatively affect the homogeneity of the set, thus reinforcing the structural solidity of the validated instrument.

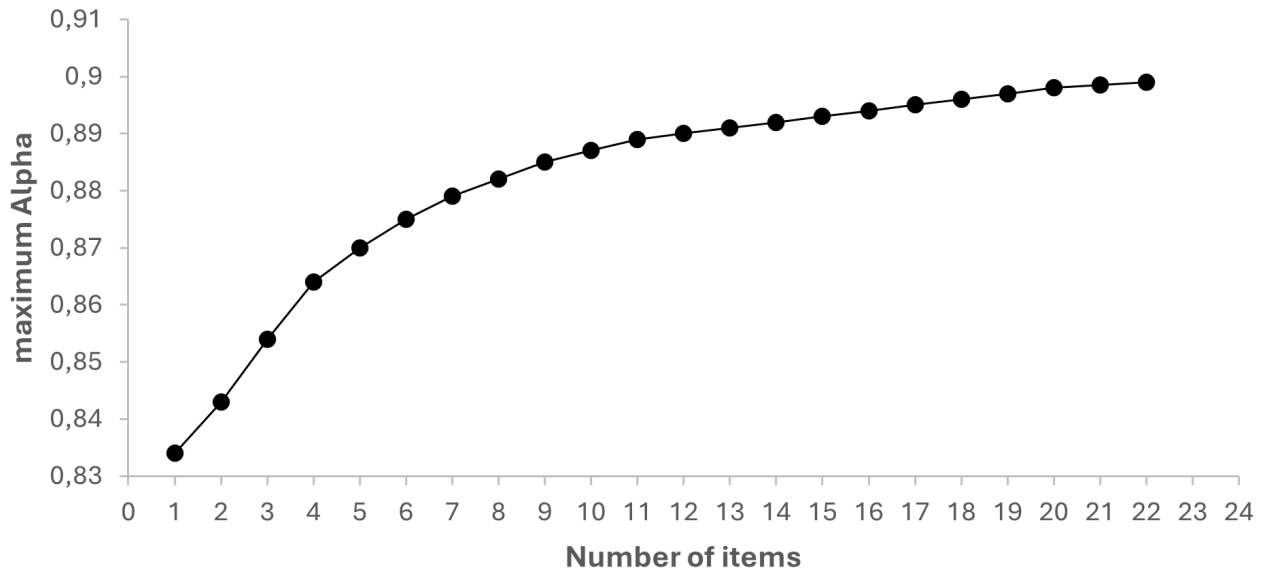

Figure 1. Cronbach-Mesbah curve.

The analysis of the Kaiser–Meyer–Olkin [KMO] measure of sampling adequacy produced a value of 0.889, which shows an adequate correlation among the variables and, therefore, good suitability of the data for applying factor analysis. Likewise, Bartlett's test of sphericity was significant ($p < 0.000$), reinforcing the validity of this technique by confirming that the correlation matrix is not an identity matrix. Taken together, these results confirm the appropriateness of conducting factor analysis with the data obtained.

The principal component analysis identified four factors with eigenvalues greater than 1, indicating that these factors retain a significant amount of variance and should be considered in the interpretation. Table 7 shows that the first factor explained 37% of the variance, the second explained 18.5%, the third 11.3%, and the

fourth 11%, reaching a cumulative percentage of 77.8% of total variance explained. This result indicates that a reduced set of four factors is sufficient to synthesize most of the information contained in the data, reflecting a clear and consistent factorial structure.

Table 7. Total variance explained.

Item	Initial Eigenvalues			Sum of the squared saturations of the extraction		
	Total	% Variance	% Accumulated	Total	% Variance	% Accumulated
1	9.880	37.000	37.000	9.880	37.000	37.000
2	4.935	18.500	55.500	4.935	18.500	55.500
3	3.030	11.300	66.800	3.030	11.300	66.800
4	2.950	11.000	77.800	2.950	11.000	77.800
5	0.920	3.400	81.200			
6	0.740	2.700	83.900			
7	0.660	2.400	86.300			
8	0.580	2.100	88.400			
9	0.520	1.900	90.300			
10	0.470	1.700	92.000			
11	0.400	1.500	93.500			
12	0.370	1.400	94.900			
13	0.300	1.100	96.000			
14	0.260	1.000	97.000			
15	0.210	0.800	97.800			
16	0.180	0.700	98.500			
17	0.140	0.500	99.000			
18	0.110	0.400	99.400			
19	0.080	0.300	99.700			
20	0.040	0.200	99.900			
21	0.020	0.100	100.00			
22	0.010	0.000	100.00			

The identification of these four factors supports the construct validity of the instrument because it confirms that the evaluated dimensions coherently group the items and explain high levels of variance. Clarity in the grouping of items for each factor and the high proportion of explained variance conclude that the instrument correctly measures the construct of interest, providing a solid base for its application in future studies.

4. Discussion

The increasing attention towards local markets as touristic spaces is a global tendency driven by the demand of authentic immersive and cultural-significant experiences (Cardoso de Santana et al., 2021; Salazar Dzul et al., 2020). In multiple urban contexts around the world, these spaces have transformed from being to be mere food supply centers to consolidate as essential cultural nodes that reflect local identities, historical practices for exchange and urban socially forms (Crespí Vallbona & Domínguez Pérez, 2016; Stevic et al., 2024).

Diverse studies done in Europe (Ortega Palomo & Urriza, 2023), Asia (Cardoso de Santana et al., 2021) and America (Fusté-Forné et al. 2020) confirm that markets constitute irreplaceable platforms for the valorization of local cuisine, historical neighborhood revitalization and the dynamization of popular economies. However, the integration of these spaces to the tourism development policies has been done, in a lot of cases,

in a fragmented way, instrumentalizing their image without ensuring its complete preservation (Šegota et al., 2024).

This problem highlights the urgent need to have rigorous instruments of evaluation that allow to measure citizen perception towards tourism in local markets. Social perception is recognized as a critical factor for the sustainability of any model of touristic development (Alamineh et al., 2023) because it directly influences the level of acceptance, participation and appropriation of the touristic dynamics by local people.

The instrument developed in this study answers to this need through the combination of initial qualitative techniques and advanced quantitative validation, following a mixed methodological approach recommended for research of high social complexity (Nasa et al., 2021). The transversal design and the stratified probabilistic sampling secure an adequate representation of the urban population, just like asked by quality standards in social sciences applied to tourism (Ceballos-Álvarez, 2019).

The structure of the instrument, based on three principal dimensions: social-cognitive, social-territorial and social-cultural, is found in previous findings about the experiential, territorial and symbolic values associated to the traditional markets in diverse latitudes (Fusté-Forné et al., 2020; Medina & Cano-Ciborro, 2023). This conceptual organization facilitates the integral comprehension of citizen attitude towards tourism in markets, surpassing fragmented approaches observed in previous studies (Stevic et al., 2024; Šegota et al., 2024).

Content validation using the Delphi method was carried out with a panel of experts with high academic qualifications and established trajectories in relevant fields, following methodological recommendations widely accepted in applied social research (Linstone et al., 2002; Okoli & Pawlowski, 2004). The level of consensus achieved (greater than 75%) reinforces the validity of the selected content (Nasa et al., 2021).

Regarding the reliability of the instrument, the Cronbach's alpha coefficient obtained (0.927) confirms excellent internal consistency (Tuapanta et al., 2017). This value exceeds that of other recently validated instruments for measuring tourism perception, such as (Šegota et al., 2024) in Slovenia ($\alpha = 0.84$) or (Stevic et al., 2024) in Porto ($\alpha = 0.86$). Likewise, the HIc shows that all items contribute significantly to the measurement of their respective constructs (Enríquez Negrete & Sánchez-Medina, 2022), ruling out the need to eliminate items due to low correlation, an issue that frequently arises in social scales (Bernaola Ugarte et al., 2022).

In terms of construct validity, the exploratory factor analysis yielded solid results. The KMO measure (0.889) and Bartlett's test ($p < 0.000$) confirmed the suitability of the data for factor analysis, in line with widely accepted methodological criteria (Pérez-Gil et al., 2000). The four extracted factors explained 77.8% of the total variance, exceeding the 60% threshold recommended for robust factorial structures (Lloret-Segura et al., 2014). This level of variance indicates that the identified factors efficiently capture the relevant information of the construct, reinforcing its validity (Watkins, 2018). The first factor explained 37%, followed by 18.5%, 11.3%, and 11% for the remaining ones, representing an appropriate distribution. Although factors with variances close to 10% require caution, their relevance is supported by consistent loadings and theoretical coherence (Floyd & Widaman, 1995; Matsunaga, 2010). These results align with studies on tourism perception scales that report similar variances in complex contexts, confirming the usefulness of parsimonious structures in social measurement (Pérez-Gil et al., 2000; Šegota et al., 2024).

It is worth noting that the instrument remained intact throughout the statistical validation, with no need to remove items, an additional indication of its theoretical and methodological robustness. The Cronbach–Mesbah curve confirmed the internal cohesion of the proposed dimensions, validating the initial structure derived from the qualitative findings (Vivas et al., 2025; Vivas Vivas & Fuentes Moreno, 2024; Vivas-Vivas et al., 2022).

One of the main contributions of this study was demonstrating that the instrument developed is applicable in diverse urban contexts, regardless of the city's geographic location or level of socioeconomic development. This is because the dimensions evaluated, experiential value, territorial perception, and cultural symbolism, are universal attributes present in traditional urban and public markets. This is evidenced by research conducted in cities as different as Barcelona, London, Bangkok, Mexico City, Quito, and La Paz, where these spaces fulfill similar functions as centers of social interaction, territorial anchors, and repositories of shared cultural meanings (Briones-Orellana et al., 2021; Comisión Económica para América Latina y el Caribe [CEPAL], 2002).

Moreover, it is acknowledged that the instrument's applicability may vary depending on local governance dynamics, the level of institutionalization of tourism activity, and the ways citizens engage with these spaces in each city. In this regard, it is suggested that future research carry out comparative analyses among different cities with varying levels of tourism in their markets, to identify common patterns and contextual particularities

in citizens' perceptions. This type of study will facilitate fine-tuning the instrument to different urban realities and strengthen its potential for designing public policies aimed at the sustainable integration of markets into tourism.

The flexibility of the instrument allows it to be adapted to emerging urban contexts, consolidated metropolitan areas, and heritage cities, providing a robust comparative framework for future international research on cultural tourism, urban revitalization, and community planning (Ortega Palomo & Urriza, 2023).

Among the main practical implications, the instrument's potential to guide policies for the sustainable integration of markets into tourism circuits stands out, fostering revitalization processes that respect local sociocultural values and prevent gentrification or excessive commodification (Domínguez Medina, 2024). Additionally, its longitudinal application could allow for the assessment of long-term social impacts, providing valuable input for the development of more inclusive urban governance strategies (Alamineh et al., 2023).

Regarding limitations, it is acknowledged that the initial validation of the instrument was conducted in a specific urban context, which may affect the generalization of the results. Although the dimensions evaluated are potentially transferable, future applications should consider linguistic and cultural adaptations according to the particularities of each setting. Moreover, this study focused on general citizen perceptions without directly incorporating the perspectives of tourism operators and foreign visitors, actors whose participation could offer a complementary viewpoint and enrich the instrument's validity.

Likewise, a limitation is the lack of specification regarding the type of rotation used in the exploratory factor analysis, which restricts a detailed interpretation of the factor loading structure. For future studies, it is recommended to use appropriate rotations (varimax or oblimin) according to the theoretical nature of the dimensions, as well as to complement the analysis with confirmatory factor analysis to assess the model's goodness of fit and strengthen the instrument's convergent and discriminant validity (Herrero, 2010).

Finally, to overcome the identified limitations and strengthen the use of the instrument in market-related tourism planning, it is recommended that future research incorporate participatory methodologies that include the perspectives of vendors, tourism operators, and visitors, as well as longitudinal analyses that evaluate changes in citizen perceptions over time in response to processes of touristification or revitalization. These lines of research will make it possible to validate the instrument's stability, enhance its applicability in changing contexts, and contribute more decisively to the sustainable tourism governance of traditional markets.

The present study offers a solid psychometric instrument, conceptually found and methodically replicable to evaluate citizens' perception about tourism in local markets under urban context at global scale. Its development represents a significative contribution to the scientific production of cultural sustainable tourism, and at the same time, it provides concrete tools for urban management of more equitable, participatory and sensitive to living heritage values that these places embody.

5. Conclusions

The present study validated a solid psychometric and congruent instrument to measure citizens' perception of tourism in local markets through the Delphi method. The 30 initial items were depurated through an exhaustive mixed qualitative-quantitative process, resulting in a 22-item version with substantial improvement in conceptual clarity, lexical neutrality and rigorous thematic. High levels of consensus with up to 96% of agreement between experts endorsed the validity of content of the social-cognitive and social-cultural dimensions. The linguistic amendments eliminated ambiguities and value biases, reinforcing methodology rigor. Overall, the final instrument is presented as a valid, reliable and suitable tool for future research to guide the design of local touristic policies.

The statistical analysis proved the intern consistency of the instrument, reflected on alpha coefficient of Cronbach higher to 0.80 in the three dimensions. The index of homogeneity presented satisfactory values in most of the items, which indicated a solid correlation item-scale and intern coherence. Likewise, the exploratory factorial analysis ratified the validity of the construct, identifying a congruent factorial structure with the theorical dimensions: social-cognitive, social-territorial and social-cultural. The results from the KMO index and Bartlett's sphericity test confirmed the suitability of the sample and data relevance for this type of factorial analysis. Overall, these findings consolidate the questionnaire as a valid and rigorous instrument from the statistical point of view, suitable for evaluation of citizen's perception of tourism in local markets.

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Author Contributions

- Laura Estefania Vivas Yepez: conceptualization, methodology, project administration, writing – original draft.
- Ramiro José Vivas Vivas: investigation, validation, supervision, writing – review and editing.

Ethical Implications

The authors declare that semi-structured questionnaires were used, fully respecting the principles of autonomy, beneficence, non-maleficence, and justice. Each participant was verbally informed about the purpose and voluntary nature of the research, and their prior consent was obtained. The surveys were administered in public spaces without collecting personal data, thereby ensuring the anonymity and confidentiality of the responses.

Conflicts of interest

The authors declare that they have no affiliation with any organization with a direct or indirect financial interest that could have appeared to influence the work reported.

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