CRAFTING HERITAGE FUTURES THROUGH THE URBAN SOCIO-CULTURAL NEXUS

Shahim Abdurahiman*

*Jindal School of Art & Architecture, O.P. Jindal Global University, Sonipat, India

Abstract

This study presents the development and validation of a comprehensive assessment framework for evaluating socio-cultural impacts of urban development interventions in historic precincts. Through mixed-method grounded theory and rigorous psychometric analysis, the Urban Heritage Socio-Cultural Impact Assessment (UHSCIA) scale was developed to quantify the multifaceted relationships between urban development and heritage preservation. The scale encompasses four primary constructs: sense of place, social cohesion, cultural assets, and local economy. Confirmatory factor analysis validated the scale's psychometric properties, yielding strong reliability coefficients and satisfactory model fit indices. The validated framework provides urban planners, policymakers, and heritage professionals with an evidence-based tool for evaluating development proposals' impacts on the socio-cultural fabric of historic urban environments.

Keywords

Urban heritage, historic precincts, impact assessment, scale validation, heritage futures, urban development, conservation

1. Introduction

Urban development within historic urban precincts presents a nuanced challenge that demands an equilibrium between the drivers of growth and modernization and the need to conserve cultural and historical heritage. The rapid pace of urbanization, combined with the ever-increasing pressure for spatial expansion, emphasizes the necessity for a systematic and multidimensional approach to assess the impacts of development on urban heritage assets (Abdurahiman & Kasthurba, 2022). In response to this exigency, the present research endeavors to create and validate the Urban Heritage Socio-Cultural Impact Assessment (UHSCIA) scale, a robust instrument designed to measure the complex and interwoven effects of urban development projects on historic urban precincts.

Historic urban areas serve not only as living repositories of architectural and cultural heritage but also as fundamental contributors to the social, economic, and environmental fabric of contemporary cities (Abdurahiman, Kasthurba, & Nuzhat, 2022). These districts embody the collective memory, identity, and sense of place of local communities, representing the continuous historical and cultural evolution of urban spaces (Savvides et al., 2015). They are physical

manifestations of a community's values and narratives, with each building, street, and public space conveying rich layers of cultural significance. However, these heritage-rich precincts are increasingly susceptible to the adverse consequences of urban development, such as the loss of architectural integrity, the obliteration of historical landmarks, and the degradation of socio-cultural values (Abdurahiman, Kasthurba, Arlikatti, et al., 2022).

To address these challenges, the establishment of a comprehensive, standardized, and dynamic assessment framework is imperative. Such a tool would provide decision-makers, urban planners, and heritage professionals with a scientifically grounded approach to assess the potential impacts of development on historic urban assets. By adopting a multifaceted evaluation model, this scale will not only account for the physical and architectural dimensions of urban heritage but also consider socio-cultural, economic, and environmental factors that influence and are influenced by urban development (Elnokaly & Elseragy, 2013).

The UHSCIA scale aims to bridge the longstanding divide between the imperatives of urban development and the delicate requirements of heritage conservation by offering a systematic methodology for evaluating and monitoring the

multifarious impacts of development interventions. This novel framework, through its multifactorial and interdisciplinary approach, provides an innovative avenue for integrating heritage considerations into the urban planning and policymaking processes. It ensures that development projects are designed with a sensitivity to the unique cultural and historical characteristics that define historic urban precincts (Abdurahiman et al., 2023), promoting urban growth that respects and enhances the distinctive heritage of these areas (Abdurahiman et al., 2024b). Furthermore, by systematically identifying both potential risks and opportunities for heritage enhancement, the UHSCIA scale offers critical guidance to urban planners and policymakers in making informed, future-oriented decisions that preserve and promote the social, cultural, and physical attributes of these urban spaces.

This research builds on a rich body of existing literature on urban heritage conservation, impact assessment methodologies, and the emerging field of heritage-led urban development (Santagata, 2011). By providing a validated, scientifically grounded assessment scale, the study contributes to an expanding discourse on sustainable and heritage-sensitive urbanization. The findings of this research not only enrich the theoretical understanding of heritage conservation but also offer practical tools for heritage professionals, urban planners, and policymakers to effectively navigate the complex intersection of development and conservation. The scale serves as a powerful instrument for fostering a balanced, inclusive approach to urban development that considers the social, environmental, and cultural imperatives of heritage conservation in an era of rapid urbanization.

The subsequent sections of this paper will outline the methodology employed in the scale development process, the psychometric validation of the tool, and an exploration of its implications for fostering heritage-sensitive urban development. The outcomes of this study have the potential to shape a new paradigm in urban heritage management, guiding policies, planning strategies, and conservation practices. Ultimately, the UHSCIA scale contributes to the sustainable, inclusive, and culturally enriched development of historic urban precincts worldwide, helping to create cities that are both forward-looking and grounded in their rich cultural legacies.

2. Literature Background

A comprehensive literature review reveals critical gaps in impact assessment methodologies within urban heritage conservation, emphasizing the need for a socio-cultural lens. Urban cultural regeneration initiatives (Evans, 2002), heritage-led urban development approaches (Rodwell, 2008), and frameworks for measuring social impacts of cultural heritage (Loulanski, 2007; Throsby, 2000) form the basis of this study. The literature highlights the intersection of heritage conservation with urban planning and community engagement, necessitating a structured assessment approach.

In evaluating urban cultural regeneration, studies have identified that heritage assets play a pivotal role in enhancing local identity and promoting sustainable development (Pendlebury, 2008). However, there is limited focus on socio-cultural metrics to gauge the impact of development on community cohesion, place attachment, and cultural awareness. Existing methodologies, such as the Historic Urban Landscape (HUL) approach by UNESCO (2011), provide a holistic framework but lack specific socio-cultural metrics (UNESCO, 2011).

Historic urban precincts are dynamic spaces defined by multiple interrelated values that shape their context (Azzopardi et al., 2023; Jain, 2023; Zancheti & Jokilehto, 1997). These precincts are not just architectural or physical entities; they are imbued with cultural meanings, memories, and practices that evolve over time. Scholars have argued that urban heritage serves as a living entity that adapts to societal changes, fostering a sense of continuity and identity (Graham & Howard, 2012). This perspective highlights the socio-cultural significance of heritage sites in maintaining collective memory and fostering a sense of belonging.

Recent research underscores the growing importance of integrating socio-cultural elements into urban regeneration efforts. Traditional urban regeneration approaches have predominantly focused on physical restoration and economic revitalization (Abdurahiman, Kasthurba, Arlikatti, et al., 2022; Shehata, 2023). However, contemporary studies emphasize the need to go beyond these tangible aspects to address the intangible cultural values embedded in historic urban spaces (Cheshmehzangi, 2023; Logan, 2012).

Socio-cultural elements such as community engagement, cultural practices, and local traditions play a crucial role in preserving the "spirit of place" and fostering resilience in historic precincts (Fairclough et al., 2014; L. Smith, 2006). The concept of "place attachment" is central to understanding the socio-cultural impact of urban heritage. Place attachment refers to the emotional bonds people form with specific locations, which are often tied to cultural practices and social interactions (Lewicka, 2011).

This emotional connection is essential for maintaining social cohesion within communities, particularly in historic precincts that are undergoing urban transformations. Studies have shown that place attachment can significantly influence residents' perceptions of urban development projects and their willingness to engage in heritage conservation efforts (Manzo & Perkins, 2006; Scannell & Gifford, 2010a, 2010b).

Furthermore, the socio-cultural impact of urban regeneration is intricately linked to issues of social equity and inclusivity (Abdurahiman et al., 2024a; Jain, 2023). Heritage-led urban development initiatives must consider the diverse cultural identities and experiences of local communities to ensure that regeneration efforts do not result in social exclusion or gentrification (Pendlebury, 2015). Inclusivity in heritage conservation involves recognizing and valuing the cultural contributions of marginalized groups, thereby promoting social justice and community empowerment (Waterton & Smith, 2010).

The proposed UHSCIA scale builds upon these frameworks by integrating socio-cultural dimensions into urban impact assessments, aligning with global trends in heritage conservation that emphasize inclusive, community-centered approaches. The scale seeks to address the existing gaps in impact assessment methodologies by providing a structured tool to evaluate the socio-cultural effects of urban development projects on historic urban precincts. By incorporating metrics related to place attachment, social cohesion, cultural awareness, and local economy, the UHSCIA scale aims to guide policymakers and practitioners in crafting heritage futures that are sustainable, inclusive, and resilient.

3. Methodology

The study adopts a Mixed Method-Grounded Theory (MM-GT) approach (Ashley-Smith, 1999; Glaser & Strauss, 2017; Howell Smith et al., 2020) to develop and validate the Urban Heritage Socio-Cultural Impact Assessment (UHSCIA) scale. The MM-GT approach is particularly suitable for exploring complex socio-cultural dimensions and generating constructs that can be operationalized in the context of urban heritage. MM-GT allows for iterative refinement, integrating qualitative depth with quantitative validation (Howell Smith et al., 2020). The methodology is structured into two distinct phases: (1) Qualitative Exploration and Item Development, and (2) Quantitative Validation and Scale Development, as illustrated in Figure 1 and 2.

The qualitative phase involves in-depth interviews with heritage experts, urban planners, and community stakeholders to capture diverse perspectives on the socio-cultural dimensions of urban heritage, particularly in historic urban precincts. Using open coding, axial coding, and selective coding (Glaser & Strauss, 2017), key themes related to socio-cultural impacts are identified, forming the basis of the conceptual framework. Expert consultations further validate these constructs to ensure both theoretical robustness and practical relevance. Based on the qualitative findings, an initial pool of items for the UHSCIA scale is generated. The items undergo refinement through pilot testing and expert feedback to ensure clarity, relevance, and cultural sensitivity across diverse urban contexts. The final item set represents the socio-cultural constructs identified and aims to comprehensively measure heritage-related socio-cultural impacts.

The refined UHSCIA scale is validated through a survey administered to heritage professionals, architects, urban planners, and urban development practitioners. The survey employs a Likert scale to measure perceptions of the socio-cultural impacts of urban heritage. The survey data are analyzed using Confirmatory Factor Analysis (CFA) via SPSS AMOS software. Given the ordinal nature of responses and non-normal data distribution, the Unweighted Least Squares (ULS) method is applied, which offers a robust alternative to maximum likelihood estimation, especially with small sample sizes (Zulkifli et al., 2023).
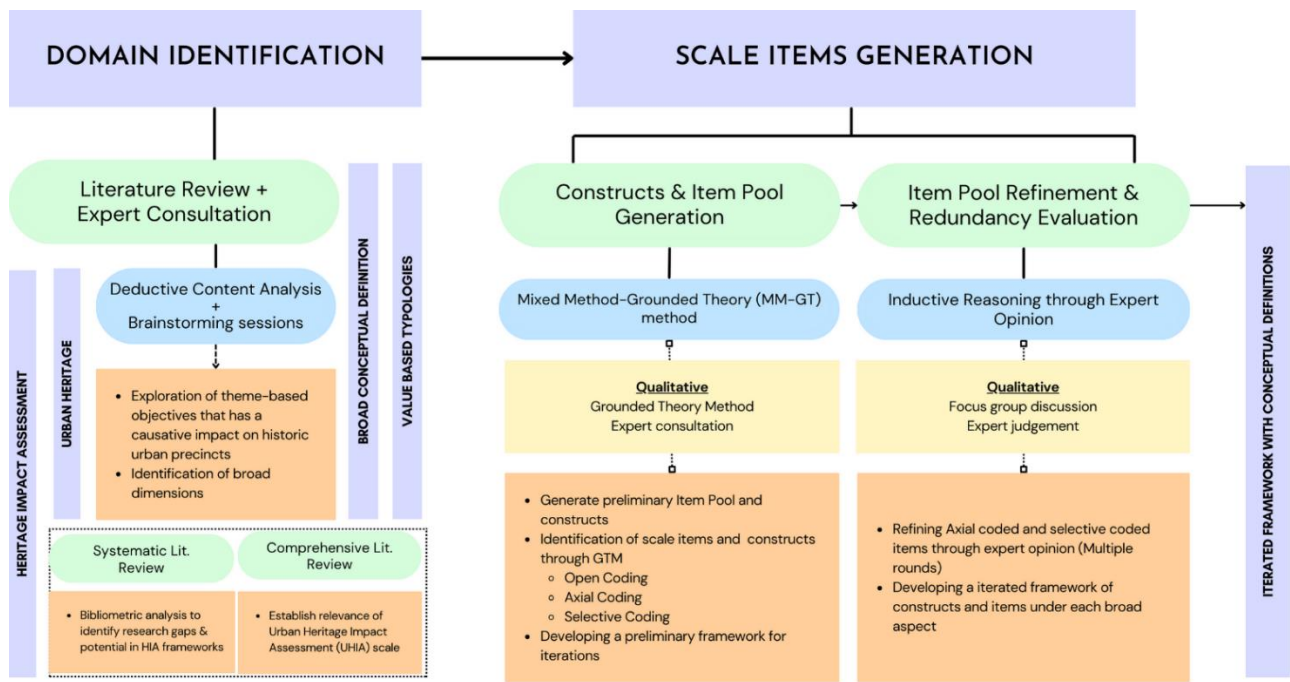
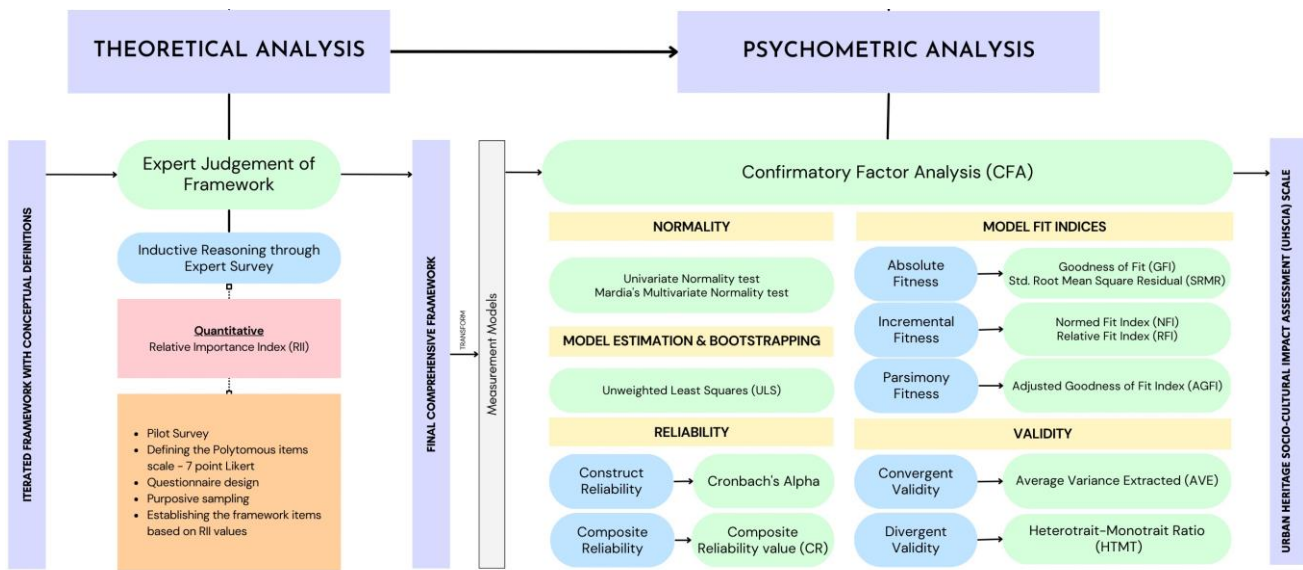**Fig. 1:** Qualitative exploration and Item development

Fig. 2: Quantitative validation and Scale development

The final version of the scale is evaluated for reliability and validity using appropriate psychometric tests, including internal consistency and construct validity. The iterative process of data collection and analysis ensures that the scale is both theoretically sound and empirically validated, ready for application in urban heritage assessments.

4. Qualitative exploration and Item development

The initial phase of the development of the Urban Heritage and Socio-Cultural Impact Assessment (UHSCIA) scale involves an in-depth qualitative exploration and item development process (Fig. 1). This phase is crucial in establishing a foundational framework by identifying key domain dimensions, defining the constructs to be measured, and generating a comprehensive pool of items that will collectively

form the assessment scale. The qualitative exploration is structured into two interrelated sub-phases: (i) Domain Identification and (ii) Scale Item Generation.

4.1 Domain Identification

Domain Identification involves a rigorous review of existing literature and consultation with subject-matter experts to delineate the core dimensions that are critical for assessing the impacts of urban development on historic precincts. This iterative process adopts a broader analytical lens to capture both tangible and intangible heritage values, ensuring a comprehensive assessment of socio-cultural and economic aspects. Thematic goals were developed through deductive content analysis, resulting in a preliminary coding schema that guided the identification of key dimensions—namely social, cultural, and economic—essential for evaluating urban heritage impacts. Although a detailed discussion on the coding schema is beyond the scope of this paper, it is noteworthy that these dimensions were derived from extensive content analysis that prioritized inclusivity and contextual relevance.

4.2 Scale Item generation

Scale Item Generation was conducted to develop specific items corresponding to each dimension. Understanding public perceptions of urban heritage values formed a critical component of this process. Drawing from qualitative inputs and expert consultations, an initial pool of items was generated through iterative item refinement, ensuring clarity, relevance, and elimination of redundancy. The process employed Mixed Methods Grounded Theory (MM-GT)(Glaser & Strauss, 2017; Howell Smith et al., 2020), integrating both deductive and inductive reasoning to derive constructs and associated items. This methodological approach allowed for the seamless integration of theoretical insights with empirical evidence, enhancing the robustness of the scale's content.

5. Socio-cultural framework

The socio-cultural framework forms a crucial pillar of the Urban Heritage Socio-Cultural Impact Assessment (UHSCIA) scale, emphasizing the multifaceted interactions between communities and their historic urban environments. This framework underscores that heritage is not limited to physical structures but also encompasses intangible elements that shape the collective memory, identity, and social fabric of historic urban. The socio-cultural dimension is vital in assessing the impacts of urban development on these precincts, as it captures the nuances of community identity, cultural continuity, and economic vitality.

This framework operates on the premise that historic urban areas are living cultural landscapes, where past traditions and contemporary practices coalesce to create a unique sense of place. It recognizes the dynamic role of local communities in safeguarding intangible heritage, fostering cultural awareness, and sustaining traditional knowledge systems. Central to this framework is the concept of "spirit of place" (genius loci), which reflects the unique cultural, historical, and social character of a precinct, essential for nurturing a sense of belonging and place attachment.

In addition to socio-cultural considerations, the framework highlights the importance of economic sustainability within historic precincts. By linking heritage conservation with local economic vitality, the socio-cultural dimension extends beyond preservation to address the socio-economic well-being of communities. The promotion of heritage tourism, traditional craftsmanship, and business incubation within these precincts not only ensures the protection of cultural assets but also enhances economic resilience, making historic areas viable in the long term (Abdurahiman et al., 2024a).

The socio-cultural framework integrates four key constructs: Sense of Place, Social Cohesion and Inclusion, Cultural Assets and Awareness, and Local Economy. Each construct encompasses specific items that reflect distinct aspects of socio-cultural and economic impacts. These items collectively offer a holistic and multidimensional assessment tool for evaluating heritage-sensitive urban development interventions, ensuring that such interventions respect and enhance the cultural essence of historic urban precincts.

The final pool of items within their respective constructs is presented in Tab 1. Each item reflects a distinct aspect of socio-cultural and economic impacts, collectively offering a holistic and multidimensional framework for assessing heritage-sensitive urban development interventions.

Tab. 1: Socio-cultural aspects of the UHSCIA scale

Construct	Items	Definition
C1. Sense of Place	C11. Genius Loci	The unique spirit or essence of a place that reflects its historical, cultural, and social character (Gustafsson, 2019)
	C12. Local Experience	The distinct lifestyle, activities, and interactions that contribute to the identity and atmosphere of a historic urban precinct (Kusumowidagdo et al., 2023)
	C13. Place Attachment	The emotional bond between people and a place, fostering a sense of belonging and attachment to a historic urban precinct (Giuliani, 2003; Wang, 2021; Zhao, 2023).
	C14. Place banding	The development and promotion of a unique identity that distinguishes a historic urban precinct from others and enhances its appeal to residents, visitors, and investors (Aitken & Campelo, 2011; Walters & Insch, 2018).
C2. Social Cohesion & Inclusion	C21. Community & Social Engagement	The level of interaction, cooperation, and participation among community members in local decision-making, events, and activities (Cachadinha et al., 2011; Pe et al., 2014; Su, 2011).
	C22. Multiculturalism	The recognition, acceptance, and celebration of diverse cultural backgrounds and traditions within a historic urban precinct (Cui et al., 2023; Reitz et al., 2009).
	C23. Cultural affiliations	The connections & associations that individuals or groups have with specific cultural traditions, practices, or values within a historic urban precinct (Azzopardi et al., 2023; Hannerz, 1996; Stoffle, 2020).
	C24. Social Innovation	The development and implementation of creative solutions to address social challenges and enhance community resilience in a historic urban precinct (Cancellieri et al., 2018; García et al., 2015; Grimm et al., 2013; Martins et al., 2023).
C3. Cultural Assets & Awareness	C31. Intangible Cultural assets	The non-material elements of cultural heritage, such as traditions, customs, beliefs, and skills, that contribute to the identity and character of a historic urban precinct (Cominelli & Greffe, 2012; Lenzerini, 2024).
	C32. Heritage Learning & Outreach	Educational and interpretive programs that promote awareness and appreciation of local history, culture, and heritage among residents and visitors (İslamoğlu, 2018; Lenzerini, 2024).
	C33. Traditional Knowledge Systems	The collective wisdom, practices, and values of a community that have been passed down through generations and contribute to the preservation of cultural heritage (Battiste, 2016; Yan & Li, 2023).
	C34. Skill & Craftsmanship	The abilities and expertise of local artisans and craftspeople in producing traditional or culturally significant products, which support the local economy and cultural heritage (Klamer, 2012; Ocejo, 2017).
C4. Local Economy	C41. Job Opportunities	The availability of stable, diverse, and equitable employment options for residents within a historic urban precinct (Kousa et al., 2023; Ocejo, 2017; Theodora, 2020).
	C42. Heritage Tourism	The development and promotion of tourism activities that focus on the historical, cultural, and architectural aspects of a historic urban precinct (Du Cros et al., 2005; Madandola & Boussaa, 2023; Quinn, 2013).
	C43. Property Value	The monetary worth of real estate within a historic urban precinct, influenced by factors such as location, condition, and heritage significance (Yigitcanlar et al., 2019; Zaei & Zaei, 2013).
	C44. Business Incubation	The support and encouragement of new and innovative businesses within a historic urban precinct, fostering economic growth and diversification (Franco et al., 2018; Gražulevičiūtė, 2006; Gustafsson & Ijla, 2017; Romein & Trip, 2017; Schiopu et al., 2015).

6. Quantitivae validation and Scale development

6.1 Theoretical Analysis

The theoretical analysis process ensures that the items in the UHSCIA scale are appropriately aligned with their respective constructs and cover various facets of the measured concepts. This was achieved through expert judgment of the developed framework, followed by statistical analysis of the expert survey results. A pilot survey was initially conducted to refine the questionnaire based on feedback, leading to improvements in item clarity and relevance (Barbour et al., 2011; De Vaus, 2012; Lindquist, 1991; Van Teijlingen et al.,

2001). To establish content validity, an expert questionnaire survey was conducted after iterative revisions of the framework (Lawshe, 1975; Lynn, 1986; Polit & Beck, 2006). Quota sampling was employed to select survey participants, ensuring proportional representation across various professional roles. This non-probability sampling method targets specific subgroups, such as conservation architects, urban planners, and historians, to achieve diversity (Neyman, 1992; Sudman & Kalton, 1986). A total of 250 experts were invited, and the survey was administered online using Google Forms®. The achieved quotas, as outlined in Tab 2, indicate that the sampling method was effective.

Tab. 2: Expected target quota – expert selection

Field of Expertise	Expected Quota		Achieved Quota	
Conservation Architect	40%	100	43.2	102
Architect	20%	50	21.9	52
Urban Designer	20%	50	17.3	41
Urban Planner	10%	25	10.1	24
Heritage Spl./ Historian	5%		4.2	10
Archaeologist		25	0.8	2
City Planner	5%		1.7	4
Regional Planner			0.8	2
Total		**250**	**100%**	**237**

The questionnaire used a 7-point Likert scale to capture experts' opinions on the relative importance and impact of each item within its construct. The collected responses were analyzed to calculate the Relative Importance Index (RII) values, as shown in Tab 3 and Tab 4. To ensure valid results in Confirmatory Factor Analysis (CFA), the sample size must correspond to the number of variables in the constructs. Typically, a minimum of 200 cases is recommended for CFA (Myers et al., 2011; Jum C Nunnally, 1978). Ultimately, 237 experts participated in the survey, meeting the criteria for a robust CFA analysis.

Tab. 3: Relative Importance Index (RII)- Constructs

Construct	RII	Rank
C1. Sense of Place	0.8427	4
C2. Social Cohesion & Inclusion	0.8957	2
C3. Cultural Assets & Awareness	0.9337	1
C4. Local Economy	0.8758	3

Tab. 4: Relative Importance Index (RII) - Items

Items	RII	GRII	Rank
C11. Genius Loci	0.9445	0.7959	9
C12. Local Experience	0.9445	0.7959	8
C13. Place Attachment	0.9036	0.7614	14
C14. Place banding	0.8969	0.7558	15
C21. Community & Social Engagement	0.9397	0.8417	5
C22. Multiculturalism	0.9228	0.8266	7
C23. Cultural affiliations	0.9470	0.8482	4
C24. Social Innovation	0.8523	0.7634	13
C31. Intangible Cultural assets	0.9662	0.9022	1
C32. Heritage Learning & Outreach	0.9385	0.8763	3
C33. Traditional Knowledge Systems	0.9427	0.8802	2
C34. Skill & Craftsmanship	0.8855	0.8268	6
C41. Job Opportunities	0.8873	0.7771	11
C42. Heritage Tourism	0.8837	0.7739	12
C43. Property Value	0.8975	0.7861	10
C44. Business Incubation	0.8457	0.7407	16

6.2 Psychometric Analysis

The expert survey data underwent psychometric analysis to evaluate the scale's reliability and validity using Confirmatory Factor Analysis (CFA) (Jöreskog, 1969, 1971; Jöreskog & Sörbom, 1981). The analysis was conducted using SPSS AMOS software (Arbuckle, 2013) to assess how well the observed items relate to their constructs and determine if the hypothesized model fits the data.

The proposed Urban Heritage Socio-Cultural Impact Assessment (UHSCIA) scale comprises four main latent constructs, each defined by a set of measurable indicators. These indicators are designed to evaluate how urban development proposals impact the historic urban fabric. Each construct's measurement model was analyzed separately to assess reliability, validity, and model fitness.

The data collection utilized a Likert scale, which typically yields ordinal data. Despite having an adequate sample size of 237 for CFA, achieving normal distribution was unlikely, particularly

given the nature of Likert scale responses. For such non-normally distributed data, research suggests using the Unweighted Least Squares (ULS) model estimation technique for CFA (Zulkifli et al., 2023). The resulting factor loadings are shown in Tab 5.

Tab.5: Factor loadings

Factor	Est.	Std. Est.	Items	Estimate	Std. Est.
C1	1.000	.936	C11	1.000	.753
			C12	.705	.631
			C13	1.373	.832
			C14	1.103	.659
C2	.670	.671	C21	1.000	.867
			C22	.970	.834
			C23	.722	.682
			C24	.870	.653
C3	.439	.589	C31	1.000	.686
			C32	.951	.533
			C33	1.293	.769
			C34	1.864	.771
C4	.586	.612	C41	1.000	.763
			C42	1.112	.879
			C43	0.7861	10
			C44	0.7407	16

The model fitness assessment evaluated how well the UHSCIA scale's measurement model fits the observed data and accurately represents the underlying latent constructs. In Confirmatory Factor Analysis (CFA), fitness indices are used to assess model adequacy across three categories: absolute fit indices, incremental fit indices, and parsimony fit indices (Hu & Bentler, 1998; T. D. Smith & McMillan, 2001; Ullman & Bentler, 2012). For this study, only indices suitable for the Unweighted Least Squares (ULS) estimation method were considered (Tab 6). Absolute indices measure how closely the model aligns with the data, incremental indices compare the model to a baseline null model, and parsimony indices evaluate model simplicity. The results indicated that the model achieved a good fit, with all indices exceeding acceptable thresholds.

Tab.6: Model fitness indices

	Absolute		Incremental		Parsimony
CMIN	GFI	SRMR	NFI	RFI	AGFI
38.22	.955	.0946	.929	.914	.937

Construct reliability was established through the expert survey, with all items yielding a Cronbach's alpha value above 0.75, indicating strong internal consistency within item sets (Cronbach, 1951; J C Nunnally & Bernstein, 1978). Composite reliability (CR) was calculated for each construct, with all values exceeding the 0.7 threshold considered acceptable for research purposes (Tab 7), confirming CR across all constructs.

Tab.7: Cronbach's Alpha (α) AND CR values

Item	Cronbach's Alpha (α)	(α) after item deletion	CR
C1	.799	-	0.812
C2	.840	.845 | C24	0.847
C3	.784	.788 | C34	0.787
C4	.845	-	0.848

Content validity was assessed using an expert opinion survey, where participants rated the relative importance of each item within its construct (Lawshe, 1975; Lynn, 1986; Polit & Beck, 2006) High Relative Importance Index (RII) values across all three aspects (Tab 3, Tab 4) confirmed the content validity of the UHSCIA structure.

Convergent validity was measured using the Average Variance Extracted (AVE) for each construct (Fornell & Larcker, 1981). Most constructs achieved AVE values above the 0.5 threshold (Tab 8), indicating that over 50% of variance was explained by the constructs (Hair et al., 2010). Although construct C3 recorded an AVE of 0.485, it was retained due to its CR value exceeding 0.7.

Tab.8: AVE values of constructs

Construct	AVE	Construct	AVE
C	0.512	C1	0.523
		C2	0.584
		C3	0.485
		C4	0.584

Discriminant validity was verified using the Heterotrait-Monotrait (HTMT) ratio method, with all HTMT values below the 0.9 threshold (Fornell & Larcker, 1981; Henseler et al., 2015) , confirming adequate discriminant validity (Tab 9).

Tab.9: HTMT Table

	Mono-trait Correlation			
C1	0.515			
C2	0.573			
C3	0.473			
C4	0.576			
	Hetro-trait correlation			
	C1	C2	C3	C4
C1				
C2	0.339			
C3	0.267	0.226		
C4	0.156	0.067	0.430	
	Hetro-trait Mono-trait (HTMT) Ratio			
	C1	C2	C3	C4
C1				
C2	0.625			
C3	0.540	0.434		
C4	0.287	0.116	0.824	

7. Final weighted UHSCIA Scale

Factor loadings were calculated for each item to determine their strength of association with their respective constructs. Higher factor loadings indicate a stronger relationship between an item and its construct. The product of these loadings yielded the final global weight for each item, determining its contribution to the overall UHSCIA score. Items with higher loadings carry greater weight within their construct and broader aspect.

The aggregated weighted scores of individual items generate the UHSCIA score for each construct. This weighted scoring approach provides a comprehensive understanding of the impact of urban development proposals across various heritage-sensitive dimensions. The final weighted UHSCIA scale is presented in Tab 12.

Tab. 12: Weighted UHSCIA Scale

Code	Construct	Code	Variables	Global Weight
C1	Sense of Place	C11	Genius Loci	0.705
		C12	Local Experience	0.591
		C13	Place Attachment	0.779
		C14	Place Branding	0.617
C2	Social Cohesion & Inclusion	C21	Community & Social Engagement	0.582
		C22	Multiculturalism	0.560
		C23	Cultural Affiliations	0.458
		C24	Social Innovation	0.438
C3	Intangible Assets & Awareness	C31	Intangible Cultural Assets	0.404
		C32	Heritage Learning & Outreach	0.314
		C33	Traditional Knowledge Systems	0.453
		C34	Skill & Craftsmanship	0.454
C4	Local Economy	C41	Job Opportunities	0.467
		C42	Heritage Tourism	0.538
		C43	Property Value	0.456
		C44	Business Incubation	0.400

8. Discussion

The psychometric analysis of the UHSCIA scale affirms its robustness, reliability, and validity in evaluating the socio-cultural impacts of urban development in historic precincts. Confirmatory Factor Analysis (CFA) revealed well-defined dimensions within the scale, capturing essential aspects of socio-cultural values. High internal consistency, as indicated by Cronbach's alpha values above accepted thresholds, and strong construct validity through correlations with relevant external variables, confirm the scale's effectiveness in measuring the intended constructs. Unlike conventional impact assessments that primarily focus on physical or architectural dimensions, the UHSCIA scale offers a more holistic framework by integrating socio-cultural indicators such as sense of place, social cohesion, cultural assets, and the local economy. This broadened scope encourages urban planners and policymakers to consider both tangible and intangible heritage values, promoting more inclusive and sustainable urban development approaches.

The analysis further revealed "Place Attachment" (C13) as the most critical variable in the socio-cultural dimension, with a global weight of 0.779. This underscores the importance of nurturing emotional bonds between communities and their environments to preserve social cohesion and cultural identity in historic precincts.

Conversely, "Heritage Learning & Outreach" (C32), with a global weight of 0.314, was the least prioritized, suggesting that while educational efforts remain valuable, they play a supplementary role compared to more immediate socio-cultural concerns.

By introducing a weighting system, the UHSCIA scale enables nuanced evaluation of development proposals. This system assigns relative importance to socio-cultural variables, providing decision-makers with an objective tool to prioritize conservation strategies. High-scoring variables such as Genius Loci (C11) and Community & Social Engagement (C21) reinforce the need to safeguard the unique spirit of place and foster participatory heritage management.

Despite its strengths, the study is not without limitations. The data collection was geographically limited, which may affect the generalizability of the findings across diverse cultural contexts. Additionally, the qualitative components, while insightful, introduce a degree of subjectivity inherent to interviews and expert assessments. Future research should seek to expand the geographical scope and incorporate longitudinal studies to observe how socio-cultural impacts evolve over time.

Importantly, this study offers a distinct contribution to the heritage and urban development literature. While previous research has acknowledged the significance of socio-cultural dimensions, few have operationalized these concepts into a validated, scalable assessment tool. The UHSCIA scale bridges this gap by providing a methodologically rigorous and context-sensitive framework that translates intangible heritage values into actionable planning insights. This innovation is especially relevant in policy-fragmented and resource-constrained environments such as historic precincts in the Global South, where formal heritage assessments often overlook lived experiences and community-based values.

9.   *Conclusion*

The development and validation of the UHSCIA scale represent a significant contribution to the field of urban heritage conservation and management. The scale provides a reliable and comprehensive tool for assessing the socio-cultural impacts of urban development projects in historic precincts, facilitating evidence-based decision-making that prioritizes heritage-sensitive urban growth. By assigning global weights to various socio-cultural variables, the UHSCIA scale enables policymakers, urban planners, and heritage professionals to evaluate and compare development proposals more objectively. This structured approach allows for the identification of critical socio-cultural factors that must be preserved to maintain the character, identity, and values of historic urban areas. The scale's practical application holds immense potential for fostering sustainable and culturally vibrant cities, where development aligns with heritage conservation goals.

The findings of this study highlight the importance of community engagement, place attachment, and cultural awareness in urban planning decisions. Variables such as Place Attachment (C13) and Community & Social Engagement (C21) emerged as key factors in maintaining socio-cultural continuity in historic precincts. These insights underscore the need to prioritize emotional connections between people and places, recognizing that heritage conservation is as much about preserving cultural values and social practices as it is about safeguarding physical structures.

The UHSCIA scale also offers a dynamic and adaptable framework that can be refined and customized for diverse urban contexts. Longitudinal studies that track the evolving socio-cultural impacts of urban development projects can further enhance the scale's utility, providing valuable insights into the long-term effectiveness of heritage-sensitive urban planning. Moreover, the UHSCIA scale serves as a comprehensive database upon which future researchers can build. It offers a valuable reference for academics, practitioners, and policymakers, fostering cross-disciplinary collaborations in the fields of urban planning, heritage conservation, and socio-cultural studies. The scale's application encourages inclusive community participation in urban development processes, empowering local communities to play an active role in shaping their heritage futures. The current research establishes the theoretical basis and validates the measurement tool, while practical applications have shown promising results deserving separate discussion. This deliberate division between scale development and implementation allows thorough examination of both areas, ensuring each contributes meaningfully to theory and practice.

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