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SYMBOLIC SUSTAINABILITY IN THE AGE OF SMART TECHNOLOGIES: CAN CULTURAL HERITAGE RETAIN ITS SOUL? A SCALE DEVELOPMENT PROPOSAL

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ABSTRACT

Symbolic sustainability is central to tourism marketing research and it is particularly relevant to cultural tourism. It offers a promising framework for analyzing logos, branding, destination narratives, symbolic consumption, authenticity, and memorable experiences, in relation to the behaviors of postmodern tourists and the actual sustainability of territories. To this end, this research presents a literature review of the concept of symbolic sustainability before proposing a measurement scale to assess the tourist experience in the context of cultural tourism in Tunisia.

KEYWORDS: Cultural Tourism, Smart Technologies, Symbolic Sustainability, Scaling Up.

1. INTRODUCTION

Over the past twenty years, cultural tourism has been profoundly transformed by digitalization and the emergence of smart technologies, such as artificial intelligence, augmented reality, and immersive experiences (Sánchez-Martín et al., 2025). These technologies, after initially serving to optimize flows and information, are now reshaping the heritage experience by altering the way visitors perceive, interpret, and appropriate cultural narratives (Shekhar & Valeri, 2025; Gretzel et al., 2015; Neuhofer et al., 2014). Simultaneously, the concept of sustainability in tourism, which traditionally focuses on environmental, economic, and social aspects (UNWTO, 2018), is undergoing a conceptual expansion. It includes a symbolic dimension associated with the transmission of meaning, values, and cultural identity (Chen et al., 2025; Shin et al., 2023; Belk, 1988; Arnould and Thompson, 2005). Thus, cultural heritage is no longer limited to a material reality, but it also encompasses a set of meanings that convey collective memory and identity (García-Morales et al., 2024).

In this context, smart technologies enhance the interpretation of heritage, enrich the immersive experience, and foster visitors' emotional and identity-based engagement (Buhalis and Amaranggana, 2015; Tussyadiah et al., 2018). Consequently, they contribute to the symbolic sustainability of heritage that is characterized by its capacity to maintain and renew its cultural meanings over time (Gretzel et al., 2015; Wu et al., 2024). However, despite this growing interest, the literature on tourism marketing remains limited. Despite the increasing interest in the tourist experience and smart technologies, the available literature remains conceptually fragmented and offers neither an integrated conceptualization nor a rigorous operationalization of the symbolic sustainability of cultural heritage. This theoretical and methodological gap is reflected, particularly, by the absence of validated measurement scales for understanding this concept. This gap seems more significant given that several major theoretical frameworks emphasize the crucial role of symbolic dimensions in consumer behavior. Research on symbolic consumption (Belk, 1988), social identity (Tajfel and Turner, 1979), signaling (Spence, 1973), and Consumer Culture Theory (Arnould and Thompson, 2005) demonstrates that people use consumption experiences to express their identity and values. Thus, with the support of smart technologies, tourism heritage becomes a vehicle for identity expression and meaning-making (Koo et al.,

2025).

Indeed, the problem addressed in this study lies in the lack of a rigorous conceptualization and implementation of the symbolic sustainability of cultural heritage in smart tourism contexts. The lack of validated measurement tools limits the understanding of the mechanisms through which heritage preserves and reinvents its cultural and identity-related meanings. This study aims to be one of the first attempts to develop and validate a scale specifically for symbolic sustainability within the framework of smart tourism. This research expands upon the existing literature on sustainability by incorporating a symbolic dimension that has received little empirical attention, and suggests a coherent link between symbolic consumption, social identity, signaling, and Consumer Culture Theory. It also offers an innovative operationalization of constructs through a scale validated according to Churchill's recommendations (1979). From a managerial perspective, this research provides tourist destinations with a tool for assessing the transmission of cultural meaning through technology, and offers decision-makers a framework for guiding strategies toward the sustainable development of heritage beyond purely functional considerations.

2. LITERATURE REVIEW

1. *Smart Technologies and Cultural Tourism*

The integration of smart technologies into cultural tourism is currently a major driver of transformation in the tourist experience and the enhancement of heritage (Ionescu, 2024). Smart technologies encompass a variety of tools, including artificial intelligence, augmented reality, contextualized mobile applications, suggestion systems, and interactive digital platforms (Sánchez-Martín, 2025). These tools facilitate the collection, analysis, and dissemination of real-time information to improve the visitor experience (Buhalis and Amaranggana, 2015). In the field of cultural tourism, these technologies go beyond a simple practical function; they play a key role in interpreting meaning and in creating heritage-related experience (Wu et al., 2024). Recent research in the field of smart tourism demonstrates that these technologies are radically changing the way visitors interact with cultural sites (Shin et al., 2023; García-Morales et al., 2024). For example, augmented reality offers the possibility of overlaying historical, narrative, or visual elements onto the real environment. Thus, they enhance immersion and understanding of heritage (Fazio, 2024; Gretzel et al., 2015). Similarly, smart mobile

applications offer customized itineraries that take into account the user's preferences, behaviors, and context, therefore, they foster a more engaging and relevant experience (Zandi, 2023). This personalization helps intensify the feeling of authenticity and connection with cultural heritage (Shen et al., 2020).

In the context of tourism marketing, smart technologies also play a key role in the symbolic enhancement of cultural destinations (Sánchez-Martín et al., 2025; Shin, 2023). They offer a platform for telling stories about heritage in an interactive and engaging way. Thus, they facilitate the dissemination of cultural and identity values (Neuhofer et al., 2015). According to Xiang and Fesenmaier (2017), smart tourism relies on a digital ecosystem where data, platforms, and users communicate continuously to jointly produce tourism value (Sánchez-Martín et al., 2025; Shin et al., 2023). In the context of cultural heritage, this co-creation of value is particularly appropriate, given that meaning is not rigid but constantly redefined through visitors' experiences (Pralhad and Ramaswamy, 2004). Furthermore, smart technologies help improve the accessibility and inclusion of cultural heritage (Sánchez-Martín et al., 2025). They facilitate the overcoming of geographical, linguistic, or cognitive barriers by offering personalized content to diverse visitor profiles (Shin et al., 2023). This aspect promotes a democratization of access to heritage and indirectly contributes to its symbolic sustainability by expanding the circle of people who are capable of interpreting its meanings (Neuhofer et al., 2015). Therefore, Smart tourism goes beyond optimizing tourist flows. It plays a crucial role in cultural mediation and the creation of meaning (Neuhofer et al., 2015). Within this framework, smart technologies emerge as drivers of the symbolic sustainability of cultural heritage (Sánchez-Martín et al., 2025). By fostering engagement, individualization, and immersion, they ensure the preservation of cultural significance in a constantly evolving tourism context (Fazio et al., 2024; Zandi, 2023). Thus, they contribute to the transformation of heritage into a living, dynamic experience, continually redefined by visitors (Shin, 2023).

2. Theoretical Foundations of Symbolic Sustainability

The concept of symbolic sustainability builds upon previous work on cultural sustainability and the symbolic value of goods and heritage (Ripp and Rodwe, 2022). While economic and environmental sustainability focuses on preserving material and

financial resources, symbolic sustainability refers to the capacity of a heritage site, place, or experience to perpetuate and renew its social, cultural, and identity-related meanings over time (Pendlebury and Short, 2020). Therefore, it is concerned with the intergenerational transmission of values, stories, and representations linked to cultural objects (Giccaria and Minca, 2021). In the field of tourism marketing, this symbolic aspect is crucial, given that tourists do not simply consume services or views, but also experiences rich in meaning, authenticity, and identity (Richards, 2018).

In the context of cultural heritage, this means that sites, traditions, or tourist narratives are transformed into means of personal expression, values, and social identity (Duxbury et al., 2023; Nocca, 2017). Symbolic sustainability can therefore be defined as the capacity of cultural heritage to maintain, over time, its value in terms of meaning, identity, and social recognition among visitors and local communities (Nocca, 2017). In a context characterized by digitalization and the development of smart technologies (augmented reality, artificial intelligence, immersive platforms), symbolic sustainability is no longer based solely on material preservation, but also on the capacity to revitalize cultural meanings through innovative means of mediation (Buhalis and Amaranggana, 2015; Ionescu and Sârbu, 2024). These technologies offer a new perspective for telling the story of places in a different way. This strengthens emotional engagement and makes heritage more accessible and relevant to diverse audiences (Ivanov and Webster, 2019). The process of symbolic sustainability thus becomes dynamic, where tradition and innovation interact to preserve meaning while adapting it to contemporary expectations (Sánchez-Martín et al., 2025).

The conceptualization of symbolic sustainability is based on a set of theories from marketing and the social sciences, which focus on the role of meaning, identity, and culture in purchasing behavior. Symbolic consumption theory (Belk, 1988) argues that consumers use objects and experiences as symbols to construct and express their identity (Elliott and Wattanasuwan, 1998; Arnould and Thompson, 2005). In the field of heritage tourism, this perspective highlights that visiting a cultural site is not simply a leisure activity, but a symbolic act through which individuals express certain values (authenticity, cultural openness, responsibility) (Holt, 2002; Ruvio, 2013). Furthermore, the Consumer Culture Theory (CCT) of Arnould and Thompson (2005) provides a central framework for examining consumption as a meaning-making

process embedded within cultural systems. According to this perspective, individuals analyze market offerings through shared narratives, myths, and ideologies (Holt, 2002). In the field of cultural tourism, the Consumer Culture Theory (CCT) allows us to analyze how heritage is imbued with social meanings and how these interpretations can be preserved or modified over time (Askegaard and Linnet, 2011). Symbolic sustainability refers to the capacity of heritage to remain consistent with dominant cultural values while adapting to social changes (Arnould and Thompson, 2018). Social identity theory (Tajfel and Turner, 1979) also provides crucial insights. It suggests that individuals construct their identity through their membership in social groups (Turner et al., 1987). In the field of tourism, cultural heritage becomes an indicator of symbolic belonging: the act of visiting, sharing, and promoting a heritage site allows one to affirm their belonging to a cultural or ideological community (Abrams and Hogg, 2010; Reicher et al., 2010). Thus, Symbolic sustainability refers to the capacity of heritage to maintain its role as a vector of collective identity (Reicher et al., 2010).

Finally, signaling theory (Spence, 1973) makes it possible to understand how individuals use various behaviors or consumption choices to send signals to others (Spence, 2002). In this context, consuming cultural and sustainable tourism experiences can be interpreted as a signal of values (responsibility, cultural sophistication, commitment) (Connelly et al., 2011; Kirmani and Rao, 2000). Therefore, symbolic sustainability is linked to the social recognition of heritage as a bearer of valuable and sustainable signs in the public sphere (Throsby and Short, 2021).

Building on the theoretical foundations developed above, the following section demonstrates the methodological approach adopted for the construction and validation of the symbolic sustainability measurement scale for smart tourism.

3. METHODOLOGY AND RESULTS

The creation of a scale for measuring symbolic sustainability in the field of cultural and heritage tourism provides major theoretical and operational advantages. Indeed, the availability of a measurement instrument that is specific to a vaguely defined variable enriches the literature on tourism marketing. Its design can highlight a link between the hard dimensions of sustainability and tourism communication. Despite its importance in promoting territorial heritage, few studies have attempted to operationalize symbolic sustainability. Therefore, a survey of 490 visitors to Tunisia has been conducted. The survey focused on cultural and heritage tourism clients (see appendix). The data collected via a questionnaire were processed using SPSS and Amos 27 software to generate the results of exploratory and confirmatory analyses. Furthermore, Churchill's paradigm (1979) has been adopted to design the new instrument for measuring symbolic sustainability. This paradigm has been updated by relying on the work of Gerbing and Anderson (1988) and Gerbing and Hamilton (1996). As Evrard et al. (2003) point out that this paradigm consists of three phases: the definition of the conceptual domain, the exploratory phase, and the validation phase. The different stages which correspond to each of these three phases are mentioned in detail in Table 1 below:

Table 1: Operationalization of Churchill's paradigm (1979) in measuring symbolic sustainability.

Phases	Stages	Description of the stage and specification of adopted techniques
Phase 1: Definition of the domain of construct	Stage1: Specification of the construct domain.	Explanation of symbolic sustainability in the context of cultural and heritage tourism.
	Stage 2 : Generation of items.	The items were generated from 13 structured interviews with tourists. These tourists were visitors to guesthouses that promote this type of tourism through rich experiences in terms of meaning and symbolism.
Phase 2 : Exploration Phase	Stage 3 : First data collection.	A preliminary survey has been conducted with 90 tourists.
	Stage 4: Item purification.	Development of a principal component analysis (with Varimax rotation) and exploratory reliability test.

Phase 3 : Validation phase	Stage 5 : Second data collection.	A second survey has been conducted with 400 tourists (This survey was shared among groups of visitors to guesthouses and rural lodges in Tunisia.)
	Stage 6 : Reliability assessment	Reliability test has been done after a second practice of PCA. Joreskog Rho allows the assessment of a confirmatory level.
	Stage 7 : Validity assessment	The Rho of convergent validity allows the testing of the validity of the scale obtained at the confirmatory level.
	Stage 8: Development of the norms	Determination of the mean and standard deviation for each item on the measurement scale. Identification of respondents' profiles.

In addition, we will present in detail the different phases which enable us to reach a reliable and valid scale for measuring symbolic sustainability.

1. Definition of construct domain

By analyzing the framework of the scientific literature on tourism marketing that addresses the sustainability and symbolic aspects of cultural and heritage tourism, and by taking into account the verbatim comments of each participant in the qualitative study, symbolic sustainability is defined as follows: "Symbolic sustainability embodies the capacity of places, practices, rituals, traditions, customs, and heritage objects to preserve their cultural, identity-related, and spiritual significance, despite the dominance of tourism commodification. Thus, it relies on the symbolic authenticity of such a

destination, as it is extended like a magical guiding line between inherited meanings and their postmodern representations."

2. The Exploration Phase

During this phase, we will generate the items based on Roussel's (2005) deductive approach, before presenting the results of the data collection and purification from the preliminary survey. In this regard, the generation of items on symbolic sustainability was based on 13 structured individual interviews conducted as part of a qualitative study. The interviews primarily targeted visitors to guesthouses and rural lodges in Tunisia. These interviewees were between 40 and 62 years old. The main themes addressed during the interviews are shown in table 2 below:

Table 2: Clarification of the main themes addressed in the qualitative study.

Theme 1	Exploring the relationship between tourists and the cultural tourism experience
Theme 2	Highlighting the factors that drive contemporary tourism towards cultural and heritage tourism
Theme 3	Understanding the role of the local community in promoting local heritage and culture
Theme 4	Clarifying the transmission of cultural heritage from one generation to another and from one nationality to another
Theme 5	Understanding how the transmission of meaning, narratives, and practices can ensure the sustainability of cultural heritage

The verbatim responses from each respondent were subsequently used to generate items related to symbolic sustainability. Therefore, we developed 14 items by relying on the interviewees' answers. These items will be listed as follows:

Item 1: This tourist experience helps me understand the cultural heritage of this destination.

Item 2: Authenticity preserves the continuity of this heritage.

Item 3: The know-how linked to traditional crafts is the living memory of this heritage.

Item 4: The art of living is embedded in this heritage.

Item 5: The local community seems proud of their cultural identity.

Item 6: This heritage typically reflects the local cultural identity.

Item 7: The rituals of the local community keep this heritage alive and vibrant.

Item 8: The symbolic narratives related to this heritage build a rich and dynamic collective memory.

Item 9: Storytelling enhances local and symbolic narratives, creating continuity of cultural heritage.

Item 10: The originality of the tourist experience guarantees the future survival of this heritage.

Item 11: This heritage allows me to connect with

the culture of others.

Item 12: I feel an emotional connection to this heritage.

Item 13: I feel a different spiritual connection to this heritage.

Item 14: I feel connected to this place and its

values.

Furthermore, the resulting scale was submitted to a preliminary survey of 90 tourists. The results of this exploratory analysis, presented in Table 3 below, enable us to initially refine the measurement scale and confirm its psychometric quality.

Table 3: Preliminary Exploratory Analysis of Symbolic Sustainability.

Items	Extractions	Components after Varimax rotation		
		Axe 1	Axe 2	Axe 3
DS_1	0,426	0,624	-	-
DS_2	0,754	0,810	-	-
DS_3	0,821	0,852	-	-
DS_4	0,421	0,619	-	-
DS_5	0,589	-	0,695	-
DS_6	0,574	0,673	-	-
DS_7	0,791	-	0,815	-
DS_8	0,700	-	0,841	-
DS_9	0,854	-	0,852	-
DS_10	0,851	0,849	-	-
DS_11	0,409	-	-	0,604
DS_12	0,769	-	-	0,727
DS_13	0,660	-	-	0,707
DS_14	0,459	-	-	0,536
Eigenvalues		2,870	2,388	2,261
Cronbach's Alpha		0,751	0,742	0,728
KMO = 0,707		Bartlett's Sig = 0,000		
Percentage of explained variance = 69,479 %.				

Upon reviewing the table above, we observed that the results of the exploratory analysis are valid, given that the KMO indicates a satisfactory value that is higher than 0.5, allowing for an acceptable factor structure, with a Bartlett's sphericity test capable of generating a non-zero inter-item correlation matrix. The examination of the quality of representation allowed us to refine items DS_1, DS_4, Aut_11, and Aut_12. Consequently, three were retained, each with an eigenvalue of 7.519. These axes are reliable at the exploratory level, given that the Cronbach's alpha value for each dimension exceeds 0.6. Finally, the retained items will undergo a second PCA during a

second data collection.

3. The Validation Phase

This phase consists of validating the symbolic sustainability measurement scale based on the results of the final survey. The next step is to generate the results of the exploratory analysis of the purified scale before studying its psychometric quality at the confirmatory level and developing norms. Table 4 below presents the results of the exploratory analysis of symbolic sustainability following a second data collection.

Table 4: Exploratory Analysis of Symbolic Sustainability after Purification.

Items	Extractions	Components: Symbolic Sustainability
DS_2	0,710	0,843
DS_3	0,631	0,795
DS_5	0,806	0,898
DS_6	0,817	0,904
DS_7	0,699	0,836
DS_8	0,765	0,875
DS_9	0,689	0,767
DS_10	0,729	0,854
DS_12	0,763	0,873
DS_13	0,629	0,728
Eigenvalues		7,039
Cronbach's Alpha		0,953
KMO = 0,923		Bartlett's Sig = 0,000

Percentage of explained variance = 70,38 %.

Table 4 shows that the PCA is valid, given that the KMO and Bartlett's test yielded satisfactory results. Furthermore, all items were grouped under a single dimension, namely symbolic sustainability, with good representation of each item and a significant eigenvalue (3.891), allowing it to retain 70.38% of the total information. This resulting scale is reliable, as

evidenced by the high value of Cronbach's alpha (0.953). Therefore, the results obtained support the use of a confirmatory analysis. Table 5 makes it possible to assess the quality of the model by taking into account absolute, incremental, and parsimony indices.

Table 5: Adjustment of the Symbolic Sustainability Measurement Model.

Indices	Parsimony indices	Absolute indices				Incremental indices	
	Chi-deux/ddl	GFI	AGFI	RMR	RMSEA	NFI	CFI
Values	13,350	0,911	0,803	0,055	0,176	0,898	0,886

Table 5 above shows that the measurement model has a good quality of adjustment, as most indices exceed the empirical acceptance thresholds.

Figure 1 below graphically represents the symbolic sustainability measurement model.

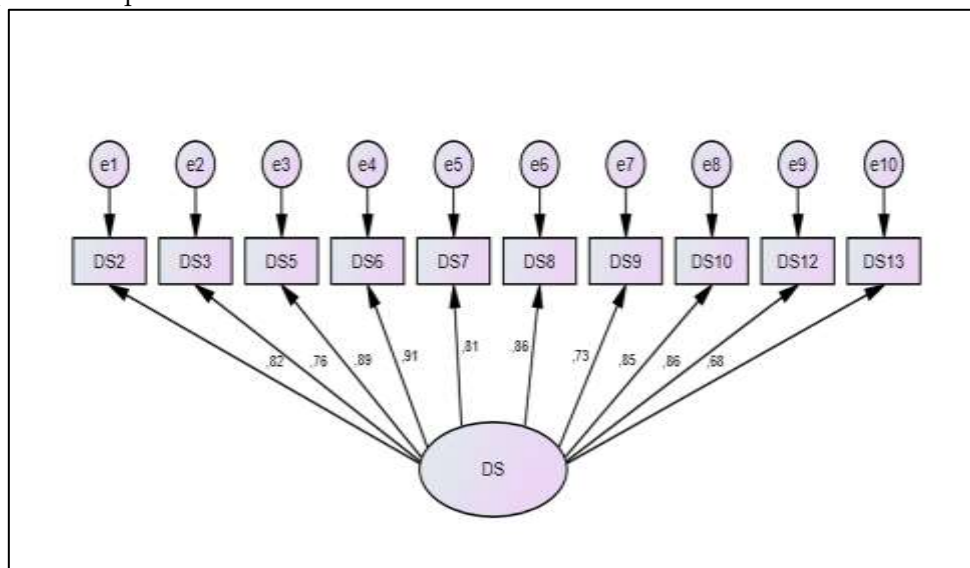


Figure 1: The Symbolic Sustainability Measurement Model.

Table 6 below confirms the reliability and validity of the resulting measurement scale, based on the

approach of Fornell and Larcker (1981).

Table 6: Verification of the Reliability and Validity of the Symbolic Sustainability Dimensions.

Dimension	Reliability (Joreskog's Rho)	Convergence validity (pvc)
Symbolic Sustainability	0,953	0,772

As shown in Table 6 above, Jöreskog's rho is satisfactory, as it exceeded the empirical threshold of 0.7, while the convergent validity rho yields relevant results, as the value obtained significantly exceeds the empirical acceptance threshold of 0.5. Based on these results and considering the uni-dimensionality of symbolic sustainability within the framework of this research, it is possible to deduce that the present measurement scale is reliable and valid at the

confirmatory level.

To this end, it will be possible to derive certain norms by taking into account the work of Roussel (2005). To do this, we will determine the means and standard deviations of the symbolic sustainability items (Table 7) and identify the respondents' profiles based on the results of the dynamic cloud classification (Table 8).

Table 7: Determination of Means and Standard Deviations of Symbolic Sustainability Items.

Items	Means	Standard deviations
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DS_2	3,71	1,150
DS_3	3,18	1,083
DS_5	3,70	1,128
DS_6	3,55	1,123
DS_7	3,47	1,205
DS_8	3,33	1,086
DS_9	3,86	1,089
DS_10	3,34	1,119
DS_12	3,15	1,137
DS_13	3,57	1,149

Table 7 above shows that the item scores are significant, as they exceed the mean value with relatively homogeneous standard deviations. The indicator DS_12 has the lowest mean value (3.15), while item DS_9 has the highest mean value (3.86).

To further explore these results, a consumer typology to categorize consumers based on their symbolic sustainability has been developed. The classification results are presented in Table 8 below:

Table 8: Identification of Respondents' Profiles Based on Symbolic Sustainability.

	Group 1: High Symbolic Sustainability	Group 2: Low Symbolic Sustainability	F. Anova	P
DS_2	3,78	1,82	31,229	0,000
DS_3	3,29	1,69	22,190	0,000
DS_5	3,77	1,82	60,562	0,000
DS_6	3,66	1,81	49,584	0,000
DS_7	3,62	1,72	25,891	0,000
DS_8	3,44	1,79	31,073	0,000
DS_9	3,95	1,86	51,536	0,000
DS_10	3,39	1,77	20,501	0,000
DS_12	3,25	1,69	37,060	0,000
DS_13	3,72	1,77	17,549	0,000
Observation count	328	72		
Pourcentage	82%	18%		
Convergence was achieved at the third iteration				

The results of the dynamic clustering analysis reveal two distinct profiles: consumers with high symbolic sustainability (82% of observations in the sample) and those with low symbolic sustainability (18% of observations). Fisher's exact test shows strong ANOVAs with significant probability levels at the 5% level for all items. Therefore, it is possible to conclude that symbolic sustainability towards Tunisian cultural heritage represents a relevant segmentation criterion, based on the measurement tool validated in this research.

4. DISCUSSION OF RESULTS

The results of this research confirm the relevance of conceptualizing symbolic sustainability as a measurable construct within the framework of cultural tourism in the age of smart technologies. While simplifying a potentially complex construct, the unidimensionality of the developed scale suggests that tourists perceive symbolic sustainability as an integrated, holistic experience rather than a set of distinct dimensions. This aligns

with research on the holistic perception of the tourist experience (Holbrook, 1999) and fits within the framework of value co-creation (Nadeem et al., 2025), where the meaning and significance of the experience are constructed globally and subjectively by the tourists through their interpretations and interactions with technology and cultural heritage.

From a methodological perspective, adherence to Churchill's paradigm (1979) strengthens the validity of the developed measurement scale and meets the statistical requirements for developing measurement tools in management science (Hair et al., 2019). Furthermore, this research highlights the crucial role of smart technologies in reshaping the cultural tourism experience, particularly through the lens of symbolic sustainability. This perspective aligns with the research on smart tourism, which emphasizes the importance of emerging technologies in enriching the tourist experience while also posing challenges related to preserving authenticity (Banerjee & Bhat, 2025; Gretzel et al., 2015).

Thus, this work offers insights into the tension

between technological transformation and the preservation of cultural meaning. While emerging technologies enable enhanced mediation of cultural heritage, they can alter the perception of authenticity in the tourist experience if they are not integrated coherently (Moliner-Tena et al., 2026). The results obtained confirm the importance of studying the concept of symbolic sustainability, which proves to be a key variable for understanding how tourists continue to ascribe meaning to a tourist experience after its technological mediation. In this sense, symbolic sustainability relies on a subtle balance between cultural continuity and technological modernity.

5. CONCLUSION

This research seeks to develop and validate a scale for measuring symbolic sustainability within the context of cultural tourism in the age of smart technologies. To achieve this, we rigorously followed the paradigm for constructing a measurement scale proposed by Churchill (1979). First, the scope of our construct has been defined through a thorough literature review on symbolic sustainability in cultural and heritage tourism in the digital age.

Subsequently, a qualitative study was conducted with 13 structured individual interviews with tourists staying in guesthouses. These interviews were designed to frame the participants' responses and prevent any digressions into topics irrelevant to our research objective. This exploratory phase made it possible to establish the necessary conceptual foundations of symbolic sustainability and to generate an initial set of 14 items.

This scale was then tested in a preliminary survey with 90 tourists. To refine our measurement scale and test its psychometric properties, an exploratory factor analysis has been conducted by calculating Cronbach's alpha coefficient. These statistical analyses led to the elimination of four redundant and non-significant items.

In the final phase of the process, a second

quantitative survey was carried out with 400 visitors to guesthouses and rural lodges in Tunisia. Following Churchill's paradigm (1979), a confirmatory factor analysis was performed to test the construct's structure. The final results confirmed a unidimensional structure, as well as satisfactory reliability and validity which attest to the relevance of the developed scale.

To conclude, this study contributes to the literature by offering a conceptual clarification and an operationalization of an emerging construct within the context of cultural tourism. Thus, this study responds to the call from several researchers to strengthen the conceptualization and measurement of the complex and emerging tourism concepts in digitalized and connected contexts, where the symbolic dimensions of lived experience are highly increasing (Gretzel et al., 2015; Neuhofer et al., 2015).

However, this study has certain limitations, notably related to its contextual nature, the unidimensional structure of the developed measurement scale, and the methodological constraints inherent in the nature of the sample and the use of self-reported data. The latter is likely to introduce biases, such as social desirability bias and the subjectivity of responses (Podsakoff et al., 2024). These limitations open the door to future research avenues aimed at testing the scale in other contexts to verify its validity and stability beyond the initial framework of the study. Furthermore, analyzing the relationship between symbolic sustainability and other key variables of tourist behavior, such as loyalty, satisfaction, and return intention, would contribute to a better understanding of its role in the tourist experience and enrich the existing theoretical framework. Finally, the rapid evolution of technological innovation, particularly artificial intelligence and immersive devices, represents a promising field of research for deepening our understanding of symbolic sustainability within the context of increasingly digitalized tourism (Xiang et al., 2021).

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APPENDIX

Table 1: Specification of Sample Characteristics.

Caractéristiques	Details	Percentage	
		Survey sample (1)	Survey sample (2)
Gender	Male	46	49
	Female	54	51
Age	25--- 34 yrs	0	9
	35--- 49 yrs	39	41
	50---64 yrs	47	38
	More than 65	14	12
Socio-professional category	Executive / Managerial staff	22,8	15,5
	Entrepreneur / Craftsperson / Trader	13,7	30,4
	Civil servant	27,7	20
	Intermediate occupation	32,8	18
	Retired person	13	16,1
Nationality	Tunisian	42	57
	French	48	43
	Belgian	10	0
(1) Preliminary survey sample (90 observations).			
(2) Final survey sample (400 observations).			