

Evaluating the quality of tourist information services in heritage destinations: A case study of Bac Ninh Province, Vietnam

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Abstract

Tourist information services play a critical role in shaping visitor experience, particularly in heritage destinations where cultural interpretation and service accessibility intersect. This study examines the quality of tourist information services in Bac Ninh Province, Vietnam. By using a mixed-methods approach that combines survey data from 400 tourists with qualitative assessments from tourism enterprises and destination management authorities, the findings indicate that while information content is generally perceived as accurate and reliable, overall service quality remains moderate due to limited interpretive accessibility, inconsistent service responsiveness, and weak system integration. Fragmentation between physical and digital information channels limits the experiential value of otherwise reliable content. Importantly, the study demonstrates that institutional and organizational capacity functions as a structural determinant of service quality, shaping how content, infrastructure, and delivery mechanisms translate into visitor perceptions. By integrating SERVQUAL-based dimensions with ISO 14785:2024 requirements, the study offers a context-sensitive framework for evaluating and improving tourist information services in heritage destinations.

Keywords: Tourist information services; Service quality; Heritage destinations; Institutional capacity; Bac Ninh Province

1. Introduction

In heritage destinations, tourist information services play a pivotal role in mediating the relationship between cultural resources and visitor experience. Unlike mass tourism contexts where information primarily supports logistics and consumption, information services in heritage destinations function as an interpretive interface through which historical narratives, cultural meanings, and local identities are communicated to visitors. The quality of such services therefore directly shapes tourists' understanding, satisfaction, and overall perception of destination value, particularly in destinations where intangible heritage and cultural authenticity are central attractions [1], [2].

In recent decades, service quality has been widely acknowledged as a critical determinant of competitiveness and sustainability in tourism destinations [3]. However, while extensive research has examined service quality in accommodation, transportation, and destination management, tourist information services have often been treated as a secondary or auxiliary component of the tourism system. This limitation becomes especially evident in heritage destinations, where inadequate or poorly structured information services may not only diminish visitor satisfaction but also risk misinterpretation or trivialization of cultural heritage values [4], [5].

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The rapid advancement of digital technologies has further transformed the landscape of tourist information provision. Digital platforms, mobile applications, QR codes, and smart tourism solutions have expanded the channels through which tourists access information before, during, and after their visits [6], [7]. At the same time, this transformation has introduced new challenges related to information consistency, content accuracy, inclusiveness, and the balance between technological innovation and heritage conservation. International standards such as ISO 14785:2024 emphasize that tourist information services should not merely disseminate data but ensure accessibility, reliability, responsiveness, and cultural appropriateness across diverse user groups [8]. Despite this, empirical evaluations of tourist information service quality that are explicitly grounded in such standards remain limited, particularly in developing and transitional tourism contexts.

Vietnam has identified tourism as a strategic economic sector, with national policies emphasizing both service quality improvement and digital transformation in destination management [9]. Within this framework, heritage-rich provinces such as Bac Ninh - widely recognized as the cradle of Kinh Bac culture and Quan Ho folk singing - face a dual imperative: to preserve and promote cultural heritage while enhancing visitor experience through effective information services. Provincial policies explicitly link heritage preservation with tourism development, underscoring the importance of organized, high-quality tourist information services as a public service function [10]. Nevertheless, in practice, the extent to which existing information services meet visitors' expectations and align with international quality standards has not been systematically assessed.

Existing studies on tourism service quality in Vietnam have predominantly focused on overall destination satisfaction or specific service sectors, with limited attention paid to tourist information services as a distinct object of analysis [7], [12]. Moreover, many evaluations rely on generalized service quality constructs without sufficient contextualization to heritage destinations, where interpretive depth, cultural sensitivity, and informational coherence are as critical as efficiency and responsiveness. This gap highlights the need for empirical, destination-specific research that integrates service quality perspectives with the characteristics of heritage tourism.

Responding to these gaps, this study aims to evaluate the quality of tourist information services in heritage destinations through a case study of Bac Ninh Province, Vietnam. Drawing on primary survey data collected from tourists and tourism enterprises, as well as an assessment framework aligned with international service quality standards, the study seeks to (i) examine how tourists perceive the quality of information services across key dimensions, (ii) identify critical gaps between current service provision and user expectations, and (iii) discuss implications for improving tourist information services in heritage destinations. By focusing explicitly on tourist information services rather than general tourism services, this research contributes empirical evidence to a relatively underexplored area and offers policy-relevant insights for heritage-based destination management in Vietnam and comparable contexts..

2. Literature Review

2.1. Conceptualizing service quality in tourism: from general services to information-centered perspectives

The concept of service quality has long been central to tourism research, primarily grounded in the disconfirmation paradigm that views quality as the gap between customer expectations and perceived performance [1], [13]. Foundational contributions by Parasuraman, Zeithaml, and Berry emphasize that service quality is not an objective attribute of service delivery, but a subjective evaluation shaped by users' perceptions across multiple dimensions, including reliability, responsiveness, assurance, empathy, and tangibles [13]. Grönroos further extends this perspective by distinguishing between technical quality (what is delivered) and functional quality (how it is delivered), highlighting the experiential and process-oriented nature of services [2].

In tourism contexts, these theoretical foundations have been widely applied to assess service quality in accommodation, transportation, and destination services [3]. Augustyn and Ho argue that tourism service quality is inherently complex due to simultaneity of production and consumption, heterogeneity of services, and the co-creation of experience between providers and tourists [3]. Consequently, service quality in tourism cannot be reduced to standardized performance indicators but must be interpreted within specific destination contexts and visitor expectations.

However, much of the tourism service quality literature has treated information provision as an implicit or supporting element rather than a distinct service domain. Information services are often subsumed under broader destination management or customer service constructs, which obscures their unique role in shaping tourists' cognitive and emotional engagement with destinations—particularly in heritage tourism settings where interpretation and meaning-making are essential.

2.2. Tourist information services as a distinct service domain

Tourist information services differ fundamentally from other tourism services in both function and impact. Rather than directly delivering core tourism products, information services mediate tourists' interactions with destinations by guiding choices, framing experiences, and interpreting cultural and environmental resources [5]. Varotsis and Mylonas highlight that tourist information services operate at the intersection of information management and tourist behavior, influencing how tourists search for, process, and trust information throughout the travel cycle [5].

From a managerial standpoint, information services increasingly resemble public services rather than purely commercial offerings, especially in heritage destinations where accuracy, neutrality, and cultural sensitivity are paramount [8]. ISO 14785:2024 explicitly frames tourist information services as a structured system that must ensure accuracy, accessibility, timeliness, inclusiveness, and responsiveness across diverse user groups [8]. This standard underscores that quality in information services extends beyond content availability to include organizational capacity, technological infrastructure, and interaction mechanisms.

Despite these advancements, empirical research has not kept pace with normative frameworks. Many studies continue to evaluate information services using adapted SERVQUAL scales without sufficiently interrogating whether traditional service quality dimensions adequately capture the interpretive, educational, and cultural functions of tourist information—particularly in heritage contexts [14].

2.3. SERVQUAL and Its applicability to tourist information services

SERVQUAL remains one of the most widely used instruments for measuring perceived service quality in tourism [4], [13]. Its enduring appeal lies in its multidimensional structure and flexibility across service sectors. Recent studies have applied SERVQUAL-based approaches to evaluate tourism service quality in community-based tourism, smart tourism environments, and destination services [7], [14].

However, scholars have increasingly questioned the uncritical application of SERVQUAL to tourist information services. First, the original SERVQUAL dimensions were developed in commercial service contexts and may insufficiently capture the public service orientation and cultural responsibility embedded in information services [2], [5]. Second, SERVQUAL's emphasis on expectation-perception gaps presupposes relatively stable and explicit customer expectations, which may not hold in heritage destinations where many tourists lack prior knowledge and often rely heavily on on-site interpretation [4].

Chen et al. demonstrate that when SERVQUAL is applied to tourism information services, it often requires contextual adaptation, including the integration of content-related indicators (e.g., interpretive clarity, cultural accuracy) and technology-mediated interaction factors [14]. This suggests that while SERVQUAL provides a useful analytical foundation, it should be complemented by context-specific indicators aligned with the unique characteristics of tourist information services.

2.4. Digital transformation and smart tourism information services

The emergence of smart tourism and digital information systems has significantly reshaped how tourist information services are delivered and evaluated. Liu proposes an intelligent tourism information service model that integrates Internet of Things (IoT) technologies to enhance personalization, real-time interaction, and experiential quality [6]. Empirical evidence suggests that digital information services can positively influence tourist satisfaction by improving accessibility and responsiveness [7].

Nevertheless, the literature also points to critical tensions. Digitalization may enhance efficiency but risks fragmenting information systems, reducing narrative coherence, or marginalizing certain visitor groups such as older tourists or those with limited digital literacy [4], [9]. Moreover, in heritage destinations, excessive reliance on digital interfaces may dilute embodied and place-based experiences that are central to cultural tourism.

These tensions highlight the need to evaluate tourist information service quality not merely in terms of technological sophistication but in relation to user experience, inclusiveness, and heritage interpretation outcomes.

2.5. Research gaps and analytical positioning of the present study

Several research gaps emerge from the existing literature. First, there is a relative scarcity of empirical studies that treat tourist information services as a primary object of analysis rather than a peripheral component of destination services, particularly in heritage tourism contexts [4], [5]. Second, while international standards such as ISO 14785:2024 provide

comprehensive quality frameworks, few studies empirically assess real-world information services against these benchmarks [8]. Third, research in developing and transitional tourism economies, including Vietnam, remains limited and often focuses on general service quality rather than information-specific dimensions [7], [12].

This study positions itself at the intersection of these gaps by empirically evaluating the quality of tourist information services in a heritage destination context, using Bac Ninh Province as a case study. By integrating service quality perspectives with insights from information service management and heritage tourism, the study moves beyond descriptive assessment to critically examine how information services function, where quality deficits arise, and how these deficits relate to visitor experience and destination management objectives.

3. Methodology

3.1. Research design

This study adopts a mixed-methods design to evaluate the quality of tourist information services in a heritage destination context. The methodological choice reflects the premise that information service quality encompasses both quantifiable perceptions of service performance and qualitative institutional and interpretive dimensions that are particularly salient in heritage tourism [2], [4]. Quantitative and qualitative data were collected and analyzed in parallel and integrated at the interpretation stage.

3.2. Research questions and hypotheses

Guided by service quality theory [1], [13] and international standards for tourist information services [7], the study addresses the following research questions:

- *RQ1: How do tourists perceive the quality of information services at heritage destinations across key service dimensions?*
- *RQ2: Which dimensions of tourist information services exhibit the most significant quality gaps from the user perspective?*
- *RQ3: How do institutional and organizational factors shape the observed quality of tourist information services?*

To support empirical examination, the study advances two analytical hypotheses:

- H1: Tourists' overall evaluation of information service quality is significantly influenced by the quality of information content, service delivery, and supporting infrastructure.
- H2: Perceived deficiencies in tourist information services are associated with limitations in institutional coordination and organizational capacity.

These hypotheses are examined through the integrated analysis of visitor survey data and qualitative institutional assessments.

3.3. Data collection and analysis

Quantitative data were collected through a structured survey of 400 tourists at major heritage sites and cultural attractions in Bac Ninh Province. Survey items were adapted from established service quality dimensions [13] and contextualized to tourist information services, focusing on information accuracy, clarity, accessibility across channels, and overall satisfaction. Data analysis emphasized descriptive and comparative assessment across visitor groups and information channels.

Qualitative data were obtained from 200 tourism enterprises, checklist-based on-site assessments, and document analysis involving local tourism authorities. This component focused on institutional, organizational, and infrastructural factors influencing information service provision. Qualitative findings were used to explain and contextualize quantitative patterns rather than to generate independent generalizations.

3.4. Analytical Framework

Based on the integration of service quality theory [1], tourism service quality research [3], and ISO 14785:2024 [8], the study applies an analytical framework comprising four interrelated dimensions:

- Information content quality (accuracy, timeliness, clarity);

- Service delivery and interaction quality (accessibility, responsiveness);
- Supporting infrastructure and access conditions (physical and digital facilities);
- Institutional and organizational capacity (coordination and standards application).

These dimensions collectively shape tourists' perceived quality of information services and inform the interpretation of empirical findings.

4. Finding and Discussion

4.1. Patterns of tourist information used at heritage destinations in Bac Ninh

The empirical findings reveal that tourist information services in Bac Ninh Province are actively used by visitors, yet the pattern of use remains uneven across information channels, reflecting both destination characteristics and limitations in service organization. Survey results indicate that traditional, on-site information channels continue to dominate tourists' information-seeking behavior, while digital channels play a secondary and complementary role rather than a transformative one.

Table 1 Utilization of tourist information channels by visitor type in Bac Ninh Province (n = 400)

Information Channel	Domestic Tourists (%)	International Tourists (%)	Total (%)
On-site verbal interpretation	46.8	58.2	48.9
Information boards and signage	62.5	54.6	61.1
Printed materials (brochures, maps)	38.9	41.8	39.4
QR codes at heritage sites	21.4	36.5	23.8
Digital platforms and websites	29.7	48.1	32.6

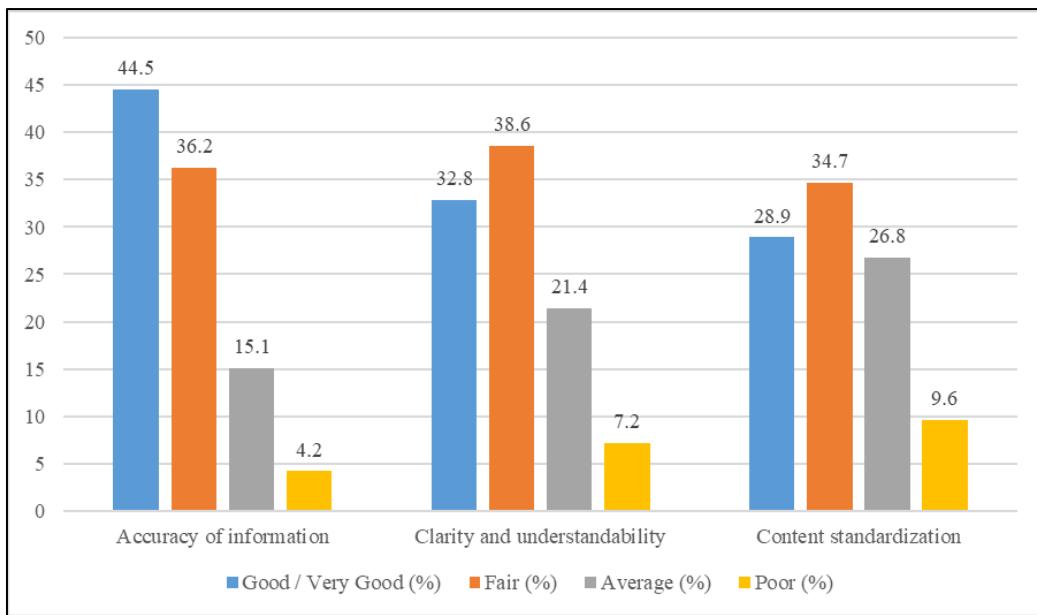
Source: Research team, 2025

These figures suggest that information services in Bac Ninh remain largely place-bound, relying heavily on physical presence and direct interaction. This pattern aligns with the heritage nature of the destination, where on-site interpretation plays a central role in shaping visitor experience. However, when viewed through the lens of service quality theory [1], [2], the dominance of traditional channels also signals limited integration and coherence across information systems, particularly between physical and digital environments.

From a service quality perspective, this fragmentation constrains the functional quality of information services [2]. While information may be available through multiple channels, tourists are required to actively navigate between them, increasing cognitive effort and reducing perceived service convenience. This finding echoes concerns raised in the literature that multi-channel information provision does not automatically translate into higher service quality unless channels are strategically integrated [5].

4.2. Perceived quality of information content: Accuracy, clarity, and standardization

Information content quality emerges as a relative strength of tourist information services in Bac Ninh, particularly with respect to accuracy. Survey results show high levels of trust in historical and cultural information provided at heritage sites, reflecting careful content curation and institutional caution in heritage interpretation.



Source: Research team, 2025

Figure 1 Tourists' evaluation of information content quality at heritage destinations

While accuracy scores are notably high, clarity and standardization exhibit more modest evaluations. This discrepancy highlights a critical distinction emphasized by Grönroos [2]: technical quality (what is communicated) may be satisfactory, while functional quality (how it is communicated) remains constrained. In heritage tourism, this imbalance has significant implications, as accurate yet poorly structured or insufficiently contextualized information may fail to engage visitors or support meaningful interpretation.

Further analysis by visitor type reveals that international tourists consistently report lower levels of comprehension, particularly for interpretive narratives related to rituals, festivals, and intangible cultural heritage. This pattern indicates that current information services are implicitly oriented toward domestic visitors with shared cultural reference frames. From a service quality standpoint, this represents a gap in empathy and accessibility dimensions [13], undermining inclusiveness as emphasized in ISO 14785:2024 [8].

4.3. Service delivery and interaction quality: accessibility and responsiveness

Beyond content, tourists' evaluations point to structural limitations in service delivery, particularly regarding accessibility and responsiveness. Although on-site staff and guides are generally perceived as knowledgeable, their availability is inconsistent, and interaction remains largely reactive rather than proactive.

Table 2 Qualitative analysis of service delivery and interaction quality in tourist information services

Analytical Theme	Empirical Evidence (Qualitative Findings)	Interpretive Implications for Service Quality
Limited-service accessibility	Tourism enterprises and site managers reported that information services are primarily available at fixed locations and during standard office hours, with limited presence during peak visitation periods and festivals.	Information services function as static contact points rather than continuous support systems, reducing perceived accessibility and weakening the responsiveness dimension of service quality.
Reactive interaction patterns	Interviews and checklist-based assessments indicate that information staff typically respond to direct inquiries but rarely engage in proactive guidance or visitor-oriented interpretation.	The dominance of reactive service behavior constrains experiential value and reflects a service delivery model focused on task completion rather than visitor experience enhancement.

Inconsistent service capacity	Stakeholders highlighted disparities in staff availability, language skills, and interpretive competence across heritage sites and time periods.	Variability in interaction quality undermines service reliability and contributes to uneven tourist experiences, particularly for international visitors.
Event-related service overload	During festivals and special cultural events, information demand increases sharply while service capacity remains largely unchanged.	Institutional rigidity limits adaptive service delivery, amplifying perceived quality gaps under high-demand conditions.

Source: Research team, 2025

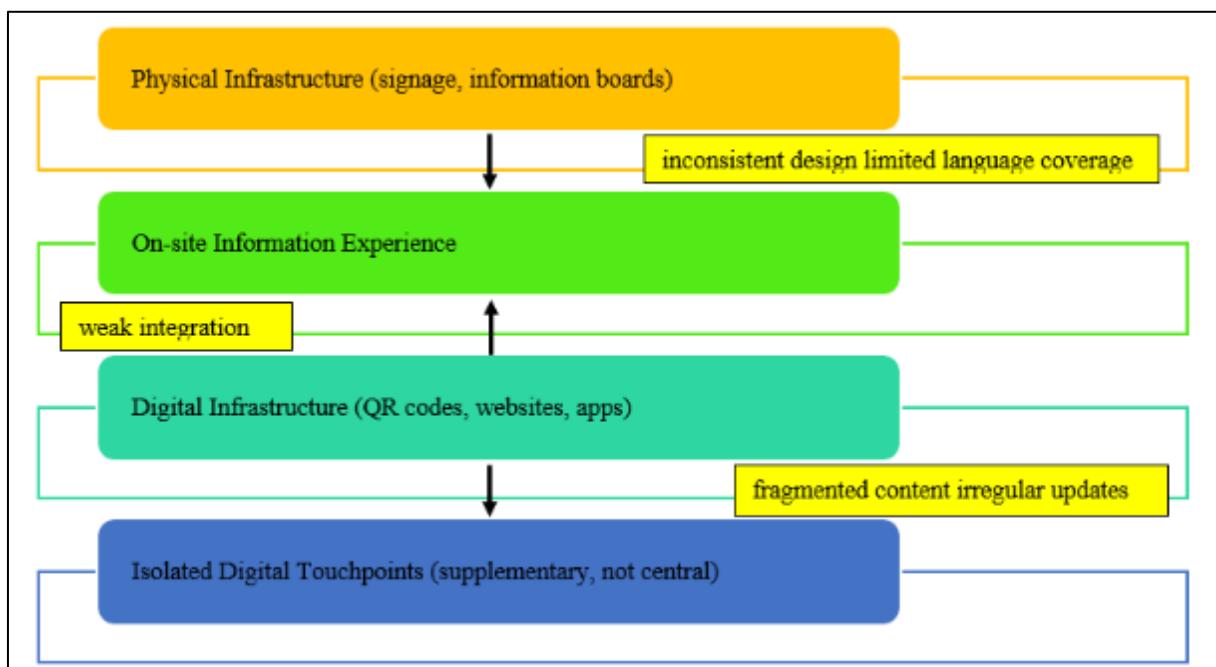
International standards emphasize that tourist information services should function as continuous support systems, not merely as ad hoc points of contact [8]. In Bac Ninh, however, findings suggest that information services are still organized around fixed locations and office hours, limiting their capacity to respond dynamically to visitors' needs during peak periods or special events.

This limitation becomes especially salient during festivals, when visitor density increases and information demand becomes more complex. From a SERVQUAL perspective, responsiveness emerges as a critical quality gap, aligning with observations in other heritage destinations where institutional capacity falls behind experiential demand [14].

4.4. Supporting infrastructure and digital readiness

Infrastructure-related findings reveal a dual character of tourist information services in Bac Ninh: foundational elements are in place, yet systemic coherence is lacking. Physical infrastructure such as signage and information boards is widely present, but varies significantly in design, language coverage, and interpretive depth.

Digital infrastructure, including QR codes and online platforms, is perceived as supplementary rather than central to information provision. While younger and international tourists show greater willingness to use digital tools, their experience is often fragmented due to inconsistent content updates and limited cross-platform integration.



Source: Research team, 2025

Figure 2 Fragmentation of supporting infrastructure and digital information systems in Bac Ninh

This finding resonates with critiques in the literature that digitalization alone does not guarantee service quality improvement unless supported by organizational coordination and content governance mechanisms [5], [6]. In the context of Bac Ninh, digital tools appear to function as isolated initiatives rather than as components of a coherent smart tourism information system.

4.5. Institutional and organizational constraints

Qualitative findings from tourism enterprises and management assessments point to institutional fragmentation as a root cause of many observed service quality gaps. Responsibilities for content creation, infrastructure maintenance, and service delivery are distributed across multiple actors, often without clear coordination mechanisms.

Table 3 Institutional and organizational constraints affecting tourist information services in Bac Ninh Province (n = 200 enterprises)

Institutional Constraint	Enterprises Reporting the Issue (%)	Perceived Impact on Service Quality (Mean score*)	Primary Service Dimension Affected
Lack of inter-agency coordination	68,5	3,9	Accessibility, responsiveness
Unclear division of responsibilities	61,2	3,7	Reliability, consistency
Limited private sector participation	73,4	4,1	Innovation, service improvement
Absence of unified information standards	56,8	3,6	Content standardization
Weak incentives for service innovation	64,9	3,8	Responsiveness, adaptability

*Mean score measured on a 5-point Likert scale (1 = very low impact; 5 = very high impact).

Source: Research team, 2025

From the perspective of tourism enterprises, information services are perceived as public infrastructure with limited opportunities for private sector engagement. This perception constrains collaborative innovation and reduces incentives for service improvement. Such institutional arrangements contrast with best practices highlighted in international frameworks, which emphasize cross-sector coordination and shared governance in tourist information services [8].

4.6. Integrated explanation of quality gaps in tourist information services

The integrated analysis of quantitative and qualitative findings indicates that the quality of tourist information services in Bac Ninh Province is shaped by a structurally interdependent set of factors, rather than by isolated weaknesses in individual service components. Specifically, perceived service quality emerges from the interaction between information content orientation, service delivery configuration, and institutional and organizational capacity.

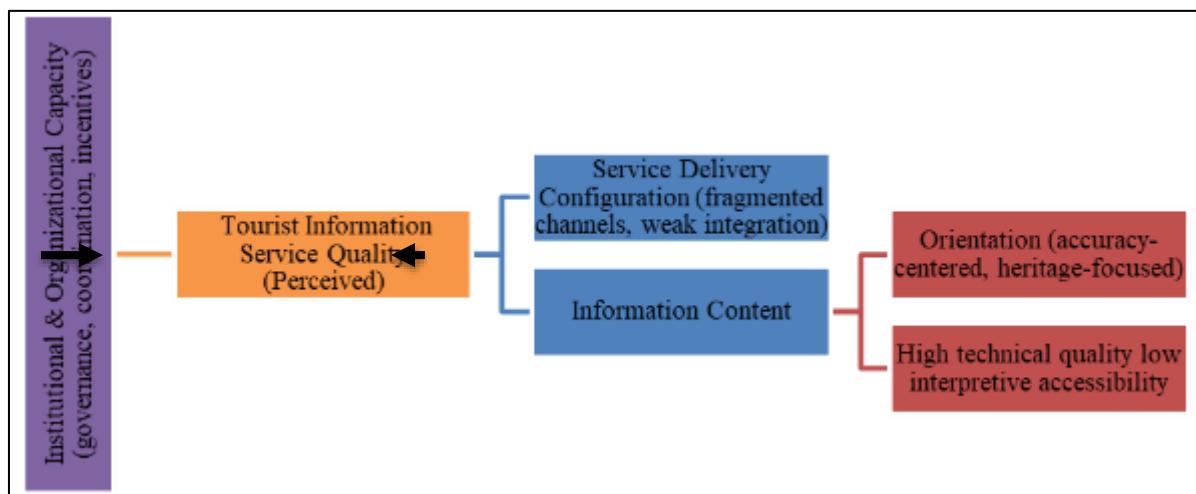
First, tourist information services in Bac Ninh exhibit a content-centric orientation, in which priority is given to ensuring the accuracy and authenticity of heritage-related information. This orientation reflects the province's strong commitment to cultural preservation and aligns with heritage management principles emphasizing historical correctness. As evidenced by high trust scores for information accuracy, this focus constitutes a foundational strength of the destination's information services. However, the findings also reveal that this emphasis on accuracy often comes at the expense of interpretive accessibility, particularly for international visitors and first-time tourists. In service quality terms, technical quality is prioritized over functional quality [2], limiting the experiential value of otherwise reliable information.

Second, this content-centric orientation is reinforced by a fragmented service delivery system, where information is disseminated through multiple channel signage, printed materials, on-site staff, and digital tools—without a coherent integrative logic. Quantitative results demonstrate uneven usage patterns across channels, while qualitative evidence points to a lack of coordination in content updating, language coverage, and cross-channel navigation. Rather than functioning as a seamless information ecosystem, these channels operate in parallel, placing the burden of integration on tourists themselves. This fragmentation directly undermines perceived accessibility and responsiveness, two core dimensions of service quality identified in both SERVQUAL-based tourism studies [13] and recent reviews of tourism information services [5].

Crucially, both content orientation and service delivery fragmentation are rooted in institutional and organizational constraints. Qualitative findings from tourism enterprises and management assessments indicate that responsibilities for tourist information services are dispersed across multiple actors, with limited coordination mechanisms and weak incentives for cross-sector collaboration. Information services are largely treated as static public infrastructure rather than as dynamic service systems requiring continuous adaptation to visitor needs. As a result, improvements in content or infrastructure tend to be incremental and isolated, rather than systemic.

Considering these interrelated factors explain why tourist information services in Bac Ninh are consistently evaluated as moderate rather than high quality, despite substantial investment and supportive policy frameworks. The findings thus provide empirical support for H1, confirming that perceived information service quality is shaped by multiple service dimensions, and H2, demonstrating that institutional capacity plays a decisive role in mediating how these dimensions translate into visitor experience.

The relationships identified above can be synthesized into the following conceptual structure, which illustrates how institutional capacity conditions the effectiveness of content, infrastructure, and service delivery in shaping perceived service quality:



Source: Research team, 2025

Figure 3 Integrated explanation of quality gaps in tourist information services

This synthesis highlights that institutional capacity functions as a structural determinant, rather than as a parallel service dimension. It shapes not only the availability of information and infrastructure, but also the degree to which these elements are integrated into a coherent, visitor-centered service system.

Overall, the findings demonstrate that the core challenge facing tourist information services in Bac Ninh does not lie in informational inadequacy, but in the translation of accurate heritage content into accessible, integrated, and experience-oriented services. The province's case illustrates a common paradox in heritage destinations: strong cultural resources and reliable information coexist with service systems that remain fragmented and institutionally constrained.

Addressing this gap requires a strategic shift from a content provision mindset toward a service system perspective, in which information quality is understood as the outcome of coordinated institutional governance, integrated delivery channels, and adaptive management practices. This integrated interpretation provides a foundation for the policy and managerial implications discussed in the concluding section.

5. Conclusion

This study set out to evaluate the quality of tourist information services in a heritage destination context through an integrated empirical investigation of Bac Ninh Province, Vietnam. Guided by service quality theory [1], [8] and international standards for tourist information services [4], the research addressed three interrelated research questions concerning tourists' perceptions of service quality, the identification of critical quality gaps, and the institutional factors shaping observed service outcomes. By adopting a mixed-methods approach that combined visitor

survey data with qualitative institutional assessments, the study provides a nuanced and context-sensitive understanding of how tourist information services function in a heritage-rich destination.

In response to RQ1, the findings demonstrate that tourists generally perceive the quality of information services in Bac Ninh as moderate, rather than high. Visitors express relatively strong confidence in the accuracy and authenticity of heritage-related information, reflecting the province's commitment to cultural preservation and content correctness. However, positive evaluations of informational accuracy do not translate into equally strong assessments of overall service quality. This divergence underscores the distinction between technical quality and functional quality emphasized in service quality literature [2], confirming that accurate information alone is insufficient to deliver a high-quality service experience in heritage tourism contexts.

Addressing RQ2, the study identifies the most significant quality gaps in the dimensions of interpretive accessibility, service responsiveness, and system integration. While information content is generally reliable, deficiencies emerge in how information is structured, contextualized, and delivered across different visitor groups and channels. Fragmentation across physical and digital platforms places a disproportionate burden on tourists to navigate information systems independently, thereby undermining accessibility and responsiveness. These findings align with recent tourism service quality research highlighting that fragmented information environments diminish perceived service value, even when individual components perform adequately [4], [5].

The analysis further confirms H1, demonstrating that tourists' overall evaluation of information service quality is shaped by the combined influence of information content, service delivery configuration, and supporting infrastructure. Importantly, the findings reveal that these dimensions do not operate independently. Instead, their effects are mutually reinforcing - or constraining - depending on how coherently they are integrated within the destination service system. In Bac Ninh, strengths in content quality are partially offset by weaknesses in delivery and infrastructure integration, resulting in an overall service quality assessment that remains below its potential.

In relation to RQ3 and H2, the study provides strong empirical evidence that institutional and organizational capacity constitutes a structural determinant of tourist information service quality. Qualitative findings indicate that responsibilities for information provision are dispersed across multiple actors, with limited coordination mechanisms and weak incentives for cross-sector collaboration. Information services are largely treated as static public infrastructure rather than as adaptive, visitor-oriented service systems. These institutional constraints shape not only the availability of information but also the degree to which content, infrastructure, and delivery mechanisms can be aligned into a coherent whole. Consequently, perceived service deficiencies are closely associated with limitations in institutional coordination and organizational capacity, lending clear support to H2.

Combining these findings together suggest that the central challenge facing tourist information services in Bac Ninh does not lie in informational inadequacy or resource scarcity. Rather, it lies in the translation of accurate and heritage-sensitive content into accessible, integrated, and experience-oriented service systems. This conclusion highlights a broader paradox common to heritage destinations: strong cultural resources and reliable information coexist with service systems that remain fragmented and institutionally constrained. Without addressing the structural conditions under which information services are organized and governed, incremental improvements in content or infrastructure are unlikely to yield substantial gains in perceived service quality.

From a theoretical perspective, this study contributes to tourism service quality literature by reinforcing the importance of moving beyond content-centric or technology-driven evaluations toward a service system perspective. By empirically demonstrating the conditioning role of institutional capacity, the study extends existing service quality frameworks into the domain of heritage tourism information services, where public governance and cultural stewardship play particularly salient roles. Moreover, the integration of SERVQUAL-based dimensions with ISO 14785:2024 provides a structured yet flexible analytical lens that can be applied to comparable heritage destinations.

In conclusion, the study underscores that enhancing tourist information services in heritage destinations requires not merely better information or more digital tools, but coordinated institutional governance, integrated delivery mechanisms, and adaptive management practices. By grounding these insights in a detailed case study of Bac Ninh Province, the research offers a transferable analytical framework for understanding and improving tourist information service quality in heritage contexts, while laying a solid foundation for future comparative and longitudinal research.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no competing interests. Each author confirms that there are no financial or personal relationships with other people or organizations that could inappropriately influence the research presented in this manuscript:

- Tran Duc Thanh: No conflict of interest declared.
- Dong Xuan Dam: No conflict of interest declared.
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- Chu Hoai Linh: No conflict of interest declared

Statement of informed consent

Informed consent was obtained from all individual participants (hotel managers and industry experts) included in the study. All participants were briefed on the research objectives and voluntarily agreed to participate, ensuring their anonymity and the confidentiality of their responses

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