



EFFECTIVENESS OF ON-SITE INTERPRETIVE SIGNAGES AT TOURIST SITES IN BAGUIO CITY AS MARKETING COLLATERAL

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Abstract:

This study assessed the effectiveness of on-site interpretive signages at tourist sites in Baguio City as marketing collateral and examined the challenges encountered by tourists in engaging with these signages. Using a mixed-method research design, data were collected from 384 non-resident tourists across six major tourist destinations, Camp John Hay, Baguio Cathedral, Mirador Heritage and Eco Park, Tam-Awan Village, Burnham Park, and the Botanical Garden, through convenience sampling. The study employed a structured questionnaire validated by three experts and pilot-tested for reliability, achieving a Cronbach's alpha of 0.86. Quantitative data were analyzed using weighted mean and Pearson correlation, while qualitative responses from interviews were interpreted thematically. Results indicate that interpretive signages are generally effective as marketing collateral, with promotional value rated high (WM = 3.16) and clarity of information rated moderate (WM = 2.99), yielding an overall effectiveness score of 3.08. Tourists reported high severity of challenges overall (WM = 2.62), with interactivity identified as the most critical issue (WM = 3.27), while visibility and maintenance were less problematic. A significant negative correlation ($r = -0.462$, $p = .000$) was observed between signage effectiveness and the challenges encountered, suggesting that increased effectiveness is associated with fewer difficulties for tourists. Interview responses and literature corroborated that while signages provide foundational information and promotional appeal, limitations in interactivity and content density reduce visitor engagement. The study identified five key intervention themes to address these challenges: enhancement of interactivity, simplification of information content, improvement of visual design and layout, integration of digital support tools, and consistency in signage standards across sites. These findings have implications for tourists, site managers, tourism authorities, and the local economy, as they directly affect visitor experience, operational efficiency, destination image, and economic benefits.

Keywords: interpretive signages, tourist sites, marketing collateral, Baguio City

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1. Introduction

The tourism industry in the Philippines has become a significant contributor to national economic growth, playing a central role in employment, spending, and overall output in recent years. According to the Philippine Statistics Authority (PSA), tourism directly contributed 8.9 percent to the country's gross domestic product (GDP) in 2024, with tourism receipts growing and internal tourism expenditure, comprising domestic and inbound spending, rising substantially compared to previous years (BusinessWorld, 2025). Domestic tourism in particular maintained momentum, with local visitor spending increasing by more than 16 percent, reflecting sustained demand for travel within the country (BusinessWorld, 2025). The sector also supported an estimated 6.75 million jobs in 2024, equivalent to nearly 14 percent of total employment, indicating its importance for livelihoods across regions. Beyond sheer numbers, tourism has demonstrated resilience and recovery from the disruptions caused by the COVID-19 pandemic, pushing economic activity back toward and even beyond pre-pandemic levels (Rivera *et al.*, 2024). Given this backdrop of robust tourism performance, understanding how tourism infrastructure, especially communications tools like on-site interpretive signages, affects visitor engagement and destination experience has become vital for maintaining competitiveness and enhancing visitor satisfaction.

Within this national setting, Baguio City has emerged as a key tourism hub in the Cordillera Administrative Region (CAR) and one of the Philippines' most visited destinations. In 2024, Baguio City recorded 1.56 million tourist arrivals, a notable increase from the previous year and representing the majority of the region's total visitor numbers (See, 2025). These arrivals accounted for approximately 78 percent of the nearly 2 million tourists visiting CAR in 2024, demonstrating Baguio's centrality in regional tourism performance. The steady flow of visitors supports local businesses, from accommodation and food services to retail and transport, bolstering the city's economic base and stimulating job creation. Tourism receipts flowing into the region were estimated at around ₱10.7 billion in 2024, reflecting the tangible economic impact of tourism activity in and around Baguio (See, 2025). Prior to the pandemic, the city also recorded high tourist counts in 2018, indicating long-standing popularity as a destination (Ciores, 2026). As Baguio continues to recover and attract both domestic and international travelers, stakeholders have increasingly focused on destination development, promotional campaigns, and infrastructure improvements to support the growing tourism demand.

Despite strong tourist arrivals and economic contributions, there remain infrastructural and experiential challenges at local tourist sites that may affect visitor satisfaction and the overall quality of the tourism product (Ragusta *et al.*, 2024). One such area of concern is the provision and quality of on-site interpretive signages, which are intended to communicate information, contextualize attractions, and aid navigation. In many tourism destinations internationally, research suggests that the clarity, visibility, and interactivity of signage can shape how effectively visitors understand and engage with cultural, historical, and natural features of a site (Othman *et al.*, 2025; Wan, 2024).

Ineffective or poorly maintained signages may lead to confusion, reduced learning, and diminished perceptions of a destination's promotional appeal. Although empirical studies on interpretive signage within the Philippine context are relatively limited, findings from other settings indicate that well-designed interpretive tools can enhance visitor experiences and satisfaction (Leong *et al.* 2024). Such tools also contribute to reinforcing destination branding and storytelling, which are essential elements of tourism marketing. Within Baguio City, given its mix of cultural parks, heritage sites, and natural attractions, ensuring that interpretive signages perform well in terms of clarity of information, promotional value, interactivity, visibility, and maintenance is important not only for individual visitor journeys but also for broader destination promotion efforts.

The motivation for conducting this study arises from the need to evaluate how interpretive signages function as part of the visitor experience and as marketing collateral. By assessing the effectiveness of these signages in delivering clear information and promotional value, identifying the challenges tourists face in engaging with them, and exploring the relationship between these variables, this research fills a notable gap in the understanding of tourism communication in Baguio City. The findings can inform practical interventions to improve signage design and implementation, thereby enhancing tourist comprehension and overall satisfaction. Such improvements have the potential to benefit local tourism authorities tasked with infrastructure planning, business owners and community stakeholders who rely on tourism for revenue and employment, and destination management organizations striving to position Baguio as a high-quality, visitor-friendly destination. A deeper understanding of interpretive signage effectiveness can also help support sustainable tourism growth, enrich learning experiences for visitors, and strengthen the city's appeal in a competitive tourism environment.

2. Review Related Literature

Research in tourism has increasingly examined how interpretive signages and related informational tools contribute to visitor understanding, behaviour, and satisfaction, though such studies are still emerging and fragmented across contexts. A foundational work by Arowosafe *et al.* (2024) empirically investigated interpretive signages at the Lekki Conservation Center in Nigeria, revealing that visitors not only recognized these signages but also complied with them, and that signage awareness was significantly related to visitor satisfaction and revisit intention. Specifically, the study reported positive correlations between interpretive signage awareness and both compliance ($r = .404, p < .01$) and satisfaction ($r = .335, p < .01$). This suggests that clarity and accessibility of signage information can strengthen visitor satisfaction and influence behavioural intentions, elements central to the clarity and promotional value dimensions of signage effectiveness. Although this research does not expand into marketing collateral per se, it

provides valuable evidence of how signage impacts visitor behaviour and evaluation outcomes.

Studies extending beyond core signage functions to linguistic landscape and communication in tourism settings further illustrate how informational tools can shape visitor experiences. Sieras (2024) for example, analyzed tourists' perceptions of signage language in Northern Mindanao, finding that signage with clear text and symbols aided navigation and contributed to visitors' sense of security and convenience. While this study did not explicitly measure promotional value, it implies that clarity of content and language choice play a role in visitor cognition and satisfaction, particularly in multilingual contexts where tourists may depend on signage as a primary informational resource. Similarly, research on language preservation challenges at world heritage sites documented how poorly maintained signage, outdated translations, and missing information undermine signage effectiveness in conveying cultural meaning, suggesting that maintenance issues and linguistic accuracy affect the communicative functions of interpretive materials (Yahaya, 2025). Both studies contribute to an understanding of clarity and contextual appropriateness as components of communication effectiveness, with implications for interpretive signage quality.

Research from related areas revealed how signage design, placement, and content impact accessibility and experience quality, with potential relevance for interpretive signages at tourist sites. Wan's (2024) work on tourist signage accessibility, grounded in universal design principles, found that signage structures in heritage settings sometimes failed to meet diverse user needs, underscoring the importance of visibility, readability, and physical placement for overall accessibility. Likewise, work by researchers examining broader signage systems emphasizes how visual consistency and spatial integration contribute to spatial comprehension and information flow in urban tourism environments (Ma & Yang, 2025; Shao *et al.*, 2024). These findings situate interpretive signage within larger information environments where coherence, placement, and design influence users' engagement and navigation, and point toward interactivity and visibility as practical issues to address.

Several studies have investigated how interpretive communication strategies influence visitor engagement and learning, albeit not always focusing on static on-site signs alone. For example, research in cultural and religious tourism contexts in Kuala Lumpur found that traditional physical signage lacked sufficient multilingual content and effective placement, limiting engagement among international visitors, and that multilingual and contextually rich signage significantly enhanced visitors' understanding of cultural narratives (Othman *et al.*, 2025). Such work supports the notion that interactivity and inclusivity in signage content influence how informational tools function as marketing and educational media in tourism contexts. Complementing this, studies in heritage interpretation demonstrate that informational accuracy and contextual relevance significantly influence knowledge acquisition and emotional engagement with tourism sites (Ginzarly *et al.*, 2022; Moreno-Melgarejo *et al.*, 2019),

reinforcing the idea that interpretive content quality matters for visitor comprehension and satisfaction.

Although broader signage and communication studies establish the importance of clear, visible, and well-maintained information systems for visitor experience, specific empirical research linking signage challenges (like interactivity, visibility, and maintenance) with signage effectiveness and promoting signage as part of a destination's marketing collateral remains underdeveloped. Global literature on visitor research generally highlights that visitor behaviour and satisfaction are mediated by information quality and accessibility, whether in museums, heritage sites, or environmental attractions, but the degree to which static interpretive signages function as an effective marketing tools within urban tourism contexts has not been definitively established (Dadizadeh & Doğan, 2024). Even studies focusing on signage accessibility primarily address usability or universal design aspects rather than connecting these challenges to signage's promotional value for destinations.

Overall, while existing literature supports the idea that clarity, visibility, and content quality of interpretive signage influence visitor comprehension, engagement, and satisfaction, there is a clear gap in systematic research explicitly examining interpretive signages at tourism sites as marketing collateral and linking signage effectiveness with specific challenges such as interactivity, visibility, and maintenance. There is also limited research that proposes and evaluates intervention measures to address these challenges. Most work either focuses on broader visitor satisfaction determinants or on specific elements like language choice, design principles, or digital enhancements, without exploring their combined effects on signage efficacy and promotional outcomes. This study, therefore, fills a significant gap by focusing directly on interpretive signages in a Philippine tourism context (Baguio City), evaluating their effectiveness in terms of clarity and promotional value, assessing signage challenges systematically, examining the relationship between challenges and effectiveness, and proposing practical interventions. By doing so, it contributes new empirical evidence where current literature is sparse and advances understanding of interpretive signage as a strategic component of destination communication and marketing practice.

3. Theoretical Framework

One theory that can effectively guide this study is interpretation theory, originally advanced by Tilden (1957), which explains how interpretive media such as signs, exhibits, and guides communicate meanings and values to visitors rather than merely presenting facts. The theory proposes that interpretation should be clear, relevant to the audience, engaging, and organized in a way that provokes interest and understanding. Within the context of tourism sites, interpretive signage functions as a structured communication tool that translates complex cultural, historical, or environmental information into accessible messages for visitors. Recent studies continue to apply and validate Interpretation Theory in contemporary tourism settings, demonstrating that

well-designed interpretive materials contribute to visitor comprehension, satisfaction, and engagement (Pei, 2025). In particular, clarity of information is viewed as essential for interpretation to be effective, as visitors are more likely to understand and remember messages that are concise, logically structured, and visually readable (Shen *et al.*, 2020; Lojo & Timothy, 2020). The theory also supports the notion that interpretive signage can serve a promotional function by shaping visitor perceptions and strengthening destination image when messages are relevant and meaningful, thereby aligning with marketing objectives (Zhu *et al.*, 2021).

Interpretation Theory further accounts for the challenges addressed in this study, including interactivity, visibility, and maintenance. Contemporary applications of the theory recognize that interpretation is not limited to static text but increasingly incorporates interactive elements, such as digital extensions or participatory features, which can enhance visitor engagement and sustain attention (Zhang & Chen, 2025). Visibility and physical condition of signage are likewise critical, as poorly placed or deteriorated interpretive materials reduce the likelihood that visitors will engage with or trust the information presented, weakening the interpretive process (Nowak & Janeczko, 2025). Empirical research indicates that deficiencies in signage maintenance and design negatively affect visitor understanding and overall experience, supporting the theoretical assumption that interpretation must be accessible and appealing to fulfill its communicative purpose (Yang, 2024). By framing interpretive signage as both an informational and experiential medium, Interpretation Theory provides a coherent basis for examining the relationship between signage effectiveness and the challenges encountered by tourists. It also supports the development of intervention measures to improve interpretive communication, as the theory encourages the continuous adaptation of interpretive tools to audience needs and site conditions. In this way, Interpretation Theory offers a relevant and robust framework for guiding the assessment of interpretive signage effectiveness and informing practical improvements within tourism destinations such as Baguio City.

4. Research Questions

The study aimed to evaluate the effectiveness of on-site interpretive signages at tourist sites in Baguio City as marketing collateral. Specifically, it sought to address the following research questions:

1. What is the level of effectiveness of on-site interpretive signages at tourist sites in Baguio City as marketing collateral in terms of:
 - a. clarity of information; and
 - b. promotional value?
2. What is the level of severity of challenges encountered by tourists when engaging with interpretive signages at tourist sites in Baguio City in terms of:
 - a. interactivity;
 - b. visibility; and

- c. maintenance?
- 3. Is there a significant relationship between the effectiveness of on-site interpretive signages and the challenges encountered by tourists at tourist sites in Baguio City?
- 4. What intervention measures may be proposed to address the difficulties tourists encounter in understanding and using interpretive signages at tourist sites in Baguio City?

4.1 Research Hypothesis

- 1. There is no significant relationship between the effectiveness of on-site interpretive signages and the challenges encountered by tourists at tourist sites in Baguio City.

5. Methodology

5.1 Research Design

This study employed a mixed research design, integrating both quantitative and qualitative approaches to provide a more comprehensive understanding of the effectiveness of on-site interpretive signages at tourist sites in Baguio City. The quantitative component was used to measure the level of effectiveness of interpretive signages and the severity of challenges encountered by tourists, as well as to determine the relationship between these variables using statistical techniques. The qualitative component complemented the quantitative data by allowing respondents to provide open-ended responses regarding their experiences and suggestions, which informed the development of proposed intervention measures. The use of a mixed research design was appropriate for this study as it enabled the researcher to capture measurable patterns while also considering tourists' perspectives and contextual experiences that could not be fully explained through numerical data alone.

5.2 Population and Locale of the Stud

The population of the study consisted of non-resident tourists visiting Baguio City, and the locale covered six major tourist destinations, namely Camp John Hay, Baguio Cathedral, Mirador Heritage and Eco Park, Tam-Awan Village, Burnham Park, and the Botanical Garden. A total sample size of 384 respondents was determined using the Cochran formula, which is commonly applied to large or unknown populations to achieve a representative sample. Respondents were selected through convenience sampling, given the transient nature of tourists and the practical constraints of accessing visitors on-site. The inclusion criteria required respondents to be non-resident tourists, at least 18 years old, and have engaged with or observed on-site interpretive signages during their visit to any of the selected tourist sites. Tourists who were residents of Baguio City, individuals below 18 years old, and visitors who did not encounter or use interpretive signages during their visit were excluded from the study. These criteria

ensured that the respondents were appropriate sources of data relevant to the objectives of the study.

5.3 Data Gathering Tool and Procedure

The primary data-gathering tool used was a structured questionnaire. The questionnaire was developed based on extensive readings from relevant and recent literature on interpretive signage, tourism communication, and visitor experience. It consisted of sections measuring the effectiveness of interpretive signages in terms of clarity of information and promotional value, the severity of challenges encountered by tourists in terms of interactivity, visibility, and maintenance, and open-ended questions that solicited suggestions for improving interpretive signages. Prior to data collection, the questionnaire was subjected to content validation by three experts, one academic specializing in hospitality and tourism and two doctoral candidates with research experience in tourism-related studies. All the validators affirmed that the instrument was appropriate, clear, and aligned with the objectives of the study. The questionnaire was subsequently pilot tested with 10 respondents who shared similar characteristics with the target population. The data from the pilot test were analyzed using Cronbach's alpha, which yielded a reliability coefficient of 0.86, indicating a high level of internal consistency and confirming the reliability of the instrument. After securing the necessary ethical clearance and institutional approvals, the researcher personally administered the questionnaires through face-to-face data collection at the six selected tourist destinations in Baguio City. Ethical considerations were strictly observed throughout the data-gathering process. Participation was voluntary, informed consent was obtained from all respondents, and they were assured of anonymity and confidentiality. Respondents were informed of the purpose of the study, their right to withdraw at any time, and the exclusive use of the data for academic purposes. No personally identifiable information was collected, and all responses were handled with discretion and stored securely.

5.4 Statistical Treatment of Data

All gathered data were tallied, organized, and subjected to appropriate statistical and qualitative analyses. Weighted mean was used to determine the level of effectiveness of interpretive signages and the severity of challenges encountered by tourists. Pearson product-moment correlation was employed to test the relationship between signage effectiveness and the challenges encountered. Qualitative responses from open-ended questions were analyzed using Braun and Clarke's (2006) thematic analysis, which involved systematic coding, theme generation, and interpretation to support the development of proposed intervention measures. This combination of analytical techniques ensured that the findings were robust, reliable, and aligned with the objectives of the study.

6. Results and Discussion

This chapter presents and discusses the results of the study based on the data gathered from non-resident tourists across selected tourist sites in Baguio City. The findings are organized according to the research objectives and are interpreted using appropriate statistical and qualitative analysis techniques. The discussion integrates relevant literature to explain patterns observed in the data and to provide context for the results obtained.

Table 1: Level of effectiveness of on-site interpretive signages at tourist sites as marketing collateral

Dimensions	Weighted Mean	Interpretation
1 Promotional value	3.16	High effectiveness
2 Clarity of information	2.99	Effectiveness
Overall Weighted Mean	3.08	Effectiveness

Presented in Table 1 are the results for the level of effectiveness of on-site interpretive signages at tourist sites as marketing collateral. The findings show that promotional value obtained a weighted mean of 3.16, interpreted as high effectiveness, indicating that respondents generally perceived interpretive signages as capable of promoting tourist sites and enhancing their appeal. Clarity of information registered a weighted mean of 2.99, interpreted as effective, suggesting that while signages were largely understandable, there remains room for improvement in how information is presented to tourists. The overall weighted mean of 3.08, interpreted as effective, reflects a generally favorable assessment of on-site interpretive signages as marketing collateral, although the results indicate varying levels of performance across the measured dimensions.

The implications of these findings extend to several key stakeholders. For tourists, effective interpretive signages contribute to smoother site navigation and better comprehension of attractions, which can shape their overall experience and influence their perception of the destination. For local tourism authorities, the results suggest that interpretive signages already functions as a supporting marketing tool, affecting how destinations are communicated on-site and potentially influencing tourist satisfaction and destination image. For local businesses and service providers, effective promotional messaging embedded in interpretive signages can influence visitor movement patterns and engagement with nearby services, indirectly affecting economic activity. For heritage managers and site administrators, the effectiveness of signages carries consequences for how cultural, historical, and environmental narratives are communicated and preserved, shaping visitor understanding and interaction with site values.

A closer examination of the dimensions reveals notable distinctions. The higher weighted mean for promotional value indicates that signages are perceived to contribute positively to the attractiveness and marketability of tourist sites. This suggests that visual design, messaging tone, and informational framing may successfully support destination promotion and reinforce tourists' interest in the sites they visit. In contrast, the slightly

lower mean for clarity of information suggests that while information is generally understandable, some tourists may encounter difficulty in interpreting content due to language choice, information density, or presentation style. This difference implies that promotional appeal may be prioritized over informational precision, which can influence how effectively tourists absorb and retain site-related knowledge.

The findings are corroborated by both existing literature and the personal interview comments of the respondents, which collectively demonstrate how interpretive signages contribute to tourists' overall perceptions of tourist sites. The higher effectiveness rating for promotional value is consistent with Shen *et al.*'s (2020) view that interpretive materials that are visually engaging and well-designed can positively shape how visitors perceive and emotionally connect with a destination. This theoretical position is reflected in one respondent's statement, "*The signages make the place look more attractive and give you a good impression even before you explore the area,*" which suggests that signages play a role in forming initial perceptions and expectations. Similarly, Arowosafe *et al.* (2023) reported that interpretive signages enhanced visitor satisfaction and engagement by providing contextual information that made visits more meaningful. This finding is mirrored in another interview comment, "*Reading the signs made me appreciate the site more and feel that it was well-presented to tourists,*" indicating that interpretive signages help frame tourist sites as organized, purposeful, and visitor-friendly. Together, these perspectives show that interpretive signages in Baguio City contributes to the marketing function of tourist sites by shaping favorable impressions and reinforcing the perceived value of the destination.

In contrast, the qualitative responses also reveal concerns that align with studies highlighting limitations in signage clarity. Wan (2024) noted that unclear structure and overly dense information can hinder visitor comprehension, even when signages are visually appealing. This concern is evident in a respondent's observation that "*The signs are nice to look at, but sometimes the information is confusing or too much, so I don't fully understand what they are trying to explain.*" This comment illustrates how visual appeal alone may not guarantee effective communication, as tourists may struggle to process or retain information when content is poorly organized or excessive. Krasae-in *et al.* (2022) similarly found that deficiencies in readability and information hierarchy reduced the communicative effectiveness of interpretive signages, limiting their ability to support learning and understanding. These contrasting views reinforce the quantitative results by demonstrating that while interpretive signages in Baguio City is generally effective in promoting tourist sites, challenges related to clarity and information structure persist. The combination of evidence reiterates the dual role of interpretive signages as both promotional tools and informational resources, revealing strengths in attraction and presentation alongside continuing issues in clear message delivery.

Table 2: Level of severity of challenges encountered by tourists when engaging with interpretative signages at tourist sites

	Dimensions	Weighted Mean	Interpretation
1	Interactivity	3.27	Very high severity
2	Visibility	2.30	Low severity
3	Maintenance	2.28	Low severity
	Overall Weighted Mean	2.62	High severity

Presented in Table 2 are the results for the level of severity of challenges encountered by tourists when engaging with interpretative signages at tourist sites. Among the measured dimensions, interactivity obtained the highest weighted mean of 3.27, interpreted as very high severity, indicating that tourists experience significant difficulty interacting with the signages. Visibility registered a weighted mean of 2.30, and maintenance recorded 2.28, both interpreted as low severity, suggesting that these aspects pose relatively minor problems for tourists. The overall weighted mean of 2.62, interpreted as high severity, demonstrates that while certain aspects of the signage function effectively, tourists still face notable challenges that affect their engagement and overall experience at the sites.

These findings carry implications for multiple stakeholders. For tourists, high interactivity challenges may limit engagement with the sites, potentially reducing the depth of learning and satisfaction derived from the visit. For site managers, the persistence of high interactivity issues indicates that while signages are adequately maintained and visible, they may fail to fully engage visitors, which could affect the perceived quality of the tourist experience. Local government units may face implications for destination image and competitiveness, as visitors who cannot fully interact with site materials may develop only superficial impressions of the attractions. For the local community and tourism-related businesses, reduced engagement may limit opportunities for extended visits, repeat patronage, and deeper appreciation of local heritage, indirectly influencing economic outcomes linked to tourism activities.

Examining the dimensions, interactivity clearly presents the most pressing challenge, suggesting that signages largely provides static information without mechanisms for participation, reflection, or visitor involvement. Visibility and maintenance were rated low in severity, indicating that signages are generally legible, well-placed, and adequately cared for, allowing tourists to access basic information without obstruction. This demonstrates a functional baseline where the physical and visual aspects of signage are sufficient, but the capacity to actively engage and retain visitor attention is limited.

The findings are corroborated and contrasted by both existing literature and personal interview comments, providing a more nuanced understanding of the challenges associated with interpretive signages. Deri *et al.* (2023) explained that traditional, static interpretive materials, even when designed with clear visuals and readable text, tend to generate only brief attention from visitors because they offer limited opportunities for participation or active engagement. This observation is consistent with the very high severity rating recorded for interactivity in this study, suggesting that

tourists in Baguio City encounter similar limitations. This pattern was clearly reflected in the experience of one respondent who stated, *"I usually just glance at the signs because there's nothing interactive that keeps me interested,"* indicating that while the signages are accessible, they do not encourage prolonged engagement or deeper exploration of the site's meaning. This finding is further supported by Ko (2025), who found that well-maintained and clearly written signages contribute to basic understanding but is insufficient in sustaining visitor involvement when interactive elements are absent. Their study noted that tourists often treat such signages as supplementary rather than integral to the experience. This aligns with another interview comment in the present study: *"The signs are readable and clean, but they feel static, like they're just there to be looked at quickly."* This response illustrates how tourists may acknowledge the functional quality of the signages while simultaneously perceiving them as limited in their capacity to stimulate curiosity or engagement beyond surface-level reading.

In contrast, the low severity ratings for visibility and maintenance are consistent with Li *et al.* (2025) findings, which indicated that appropriate placement, legibility, and regular upkeep significantly reduce physical barriers to information access. When signages are positioned at eye level, free from obstruction, and well maintained, visitors are less likely to experience frustration related to reading or locating information. This contrast is reflected in one respondent's observation: *"The signs are fine to read and not damaged, so it's easy to get the basic information."* Such comments suggest that the fundamental physical conditions of the signages in Baguio City generally meet visitor expectations and do not constitute major obstacles to information acquisition.

Taken together, this evidence from literature and interview comments demonstrates a clear pattern: while interpretive signages at the tourist sites perform adequately in terms of visibility and maintenance, it is less effective in fostering interactive engagement. The signages appear to function primarily as informational tools rather than experiential components of the visit. As a result, tourists may acquire essential facts but miss opportunities for deeper understanding, reflection, and emotional connection with the attractions. This imbalance explains why interactivity emerged as the most severe challenge and clarifies how the physical adequacy of the signages does not necessarily translate into a more engaging or immersive visitor experience.

Table 3: Significant relationship between the effectiveness of on-site interpretive signages and the challenges encountered by tourists at tourist sites

Variables	Effectiveness of on-site interpretive signages
Challenges encountered by tourists	
Pearson Correlation (r)	-.462**
Sig. (2-tailed)	.000
N	384

Presented in Table 3 are the results for the significant relationship between the effectiveness of on-site interpretive signages and the challenges encountered by tourists at tourist sites. The Pearson correlation coefficient of -0.462, with a significance value of

.000 at the 0.01 level, indicates a statistically significant moderate negative relationship between the two variables among the 384 respondents. This result suggests that higher levels of effectiveness of interpretive signages are associated with lower levels of challenges encountered by tourists, while lower effectiveness corresponds with greater difficulties in engaging with and understanding the signages. The null hypothesis stating that there is no significant relationship between the effectiveness of on-site interpretive signages and the challenges encountered by tourists at tourist sites in Baguio City is rejected, since the computed p-value (.000) is less than the 0.01 level of significance.

This significant inverse relationship carries important implications for key stakeholders in the tourism sector. For tourists, the relationship implies that when interpretive signages are less effective, their site experience becomes more fragmented, leading to confusion, reduced engagement, and limited appreciation of the attractions. For site managers, ineffective signages can result in increased operational strain, as visitors may require additional guidance or assistance to compensate for gaps in information delivery. For local government units and tourism authorities, the findings suggest that challenges linked to signage effectiveness may influence perceptions of destination quality, potentially affecting visitor satisfaction levels and overall destination image. For the local tourism economy, including small enterprises operating near tourist sites, higher levels of visitor difficulty may contribute to shorter site visits and reduced participation in tourism-related activities, thereby affecting economic returns.

Examining the nature of the relationship further, the negative correlation indicates that effectiveness and challenges are closely connected dimensions. Effectiveness, reflected in the ability of signages to communicate clearly and support promotional objectives, appears to function as a mitigating factor against challenges such as limited engagement or difficulty in comprehension. When effectiveness declines, challenges become more pronounced, weakening the role of interpretive signages as functional and marketing tools within tourist sites. This relationship underscores the interconnectedness of communication quality and user experience in tourism environments.

The findings are corroborated and contrasted by existing literature and personal interview comments, which together clarify how the effectiveness of interpretive signages relates to the challenges encountered by tourists. Mokhli *et al.* (2023) reported that interpretive signages with limited communicative depth and experiential value often lead to higher levels of visitor disengagement, as tourists are less likely to invest time and attention in materials that fail to sustain interest. This observation supports the negative relationship identified in the present study, where lower effectiveness corresponds with greater challenges. This pattern was reflected in one interview comment: *"When the signs don't really explain things well or catch your attention, you end up feeling lost and just ignore them."* The statement illustrates how weak communication and limited appeal can directly translate into confusion and disengagement, reinforcing the statistical association between poor effectiveness and increased difficulty. Similarly, Medina-Chavarria *et al.* (2024) found that destinations with more effective interpretive tools reported fewer visitor-related difficulties, as clear and engaging signages reduced the

need for external assistance and supported smoother visitor movement. This finding aligns closely with the inverse association observed in this study and was echoed in another respondent's remark: "*The clearer and more interesting the signs are, the easier it is to move around without asking for help.*" This comment reflects how effective signages can reduce functional challenges by supporting independent exploration and comprehension, thereby lowering the overall burden experienced by tourists during site visits.

In contrast, Xu *et al.* (2025) noted that even when signages are well maintained and visibly accessible, challenges may still persist due to content density, excessive text, or complex information structures. This perspective introduces a contrasting explanation for the moderate strength of the relationship found in the study, suggesting that effectiveness does not automatically eliminate all forms of difficulty. This contrast is evident in a respondent's observation: "*Some signs are clear, but there's too much to read, so it still feels like a challenge.*" The comment indicates that while basic effectiveness may be present in terms of legibility and placement, cognitive overload can still hinder engagement and understanding. Taken together, these perspectives demonstrate that the relationship between effectiveness and challenges is shaped by multiple interacting factors. While improved effectiveness generally corresponds with reduced tourist difficulties, limitations related to content design and information volume may continue to affect engagement. This explains why the relationship, although significant, remains moderate rather than strong, reflecting the complex role interpretive signages play in shaping visitor experiences at tourist sites.

6.1 Proposed intervention measures to address tourists' difficulties in using interpretive signages at tourist sites in Baguio City

Presented in this subsection of the paper are the proposed intervention measures to address tourists' difficulties in using interpretive signages at tourist sites in Baguio City. Based on the interviews conducted with the respondents, five major themes emerged as proposed intervention measures to address tourists' difficulties in using interpretive signages at tourist sites in Baguio City: enhancement of interactivity, simplification of information content, improvement of visual design and layout, integration of digital support tools, and consistency in signage standards across sites. Collectively, these themes carry important consequences for key stakeholders. For tourists, the findings suggest that unresolved signage difficulties may continue to limit engagement, learning, and overall satisfaction during site visits. For site managers, persistent gaps in signage use can lead to increased dependence on staff for explanations and reduced efficiency in visitor flow. For local government units and tourism authorities, ineffective interventions may affect destination image and perceived professionalism of tourist sites. For the local tourism economy, including nearby businesses, reduced engagement at sites may translate into shorter stays and lower visitor spending.

The first theme, enhancement of interactivity, reflects tourists' preference for interpretive signages that promotes active participation rather than one-way information

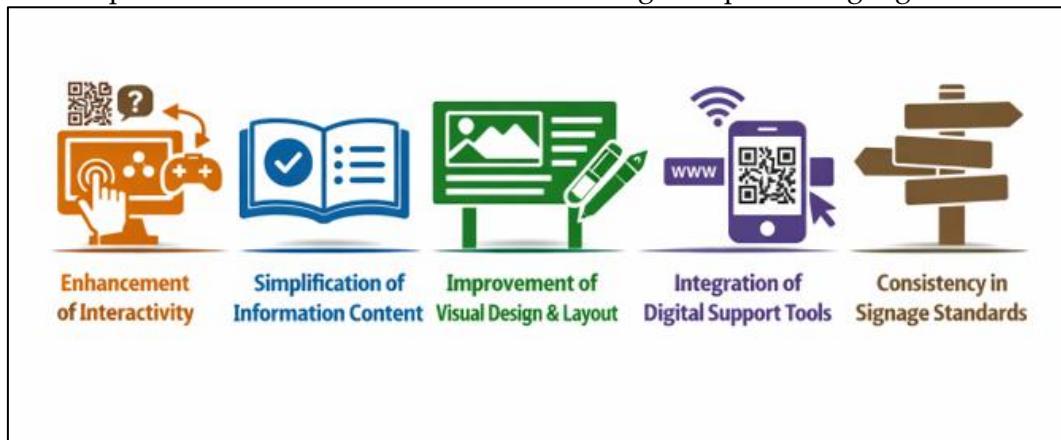
delivery. Respondents consistently described static signages as easy to overlook, particularly in busy or visually stimulating environments, suggesting that the absence of interactive elements limits sustained attention and engagement. Liu (2020) explained that interpretive materials incorporating interactive features support deeper cognitive processing by encouraging visitors to reflect, explore, and connect information to their own experiences. In a similar vein, Ozdemir and Zonah (2025) found that interactive interpretive tools reduced visitor confusion and fostered greater participation at heritage sites by transforming signages from passive displays into experiential components of the visit. These observations were reflected in respondents' comments, such as, *"If the signs had something interactive, like QR codes or simple activities, I would spend more time reading them,"* and *"I usually skip signs because they don't invite you to do anything,"* which illustrate how limited interactivity contributes to disengagement. The second theme involves simplification of information content, as many respondents described difficulty engaging with signages that contained dense, technical, or overly lengthy text. This difficulty aligns with Chen *et al.* (2025) finding that excessive information load can overwhelm visitors and weaken comprehension, even when signages are visually accessible. Gaceu and Oprea (2024) similarly noted that concise wording and logical structuring of content improve readability and allow visitors to grasp key messages more efficiently. These findings were echoed by interview comments such as, *"Some signs have too much text, so I just read the title and move on,"* and *"Shorter explanations would make it easier to understand the story of the place."* Such responses indicate that information overload can discourage engagement and limit the communicative function of interpretive signages.

The third theme centers on the improvement of visual design and layout, including font size, spacing, and the strategic use of images. Respondents indicated that visual presentation strongly influences how easily information is processed, particularly in outdoor settings. Gao *et al.* (2020) found that balanced combinations of text and images improved recall and visitor satisfaction, while Chen and Lehto (2024) reported that clear visual hierarchy supports faster information processing in interpretive environments. These findings align with respondents' remarks that *"Pictures help me understand the place better than long paragraphs"* and *"Some signs would be easier to read if the layout was cleaner."*

The fourth theme is the integration of digital support tools to complement physical signages, reflecting tourists' familiarity with mobile-based information access. Xanthakis *et al.* (2024) found that digital extensions of interpretive signages enhanced learning and engagement without replacing traditional displays, while Srinivasan *et al.* (2024) reported that digital interpretive tools supported more personalized visitor experiences. Respondents expressed similar views, noting that *"Scanning a code for more details would be very helpful"* and *"Digital options would let me choose how much information I want."* The fifth theme relates to consistency in signage standards across sites, as respondents observed noticeable variations in style, tone, and quality. Gelter *et al.* (2021) noted that standardized interpretive frameworks support coherence and destination branding, while Kimambo (2025) found that consistent signage design reduced visitor confusion in multi-site destinations. This concern was reflected in comments such as, *"Every place has*

different kinds of signs, so it feels uncoordinated," and "It would be better if the signs looked and worked the same way in all sites." Together, these findings show that addressing tourists' difficulties requires coordinated attention to engagement, content, and design, shaping how tourism sites are experienced and managed in Baguio City.

Figure 1: Proposed Intervention Themes for Enhancing Interpretive Signages at Tourist Sites



7. Conclusions

This section presents the conclusions drawn from the study based on the results generated from the analysis of data gathered from non-resident tourists at selected tourist sites in Baguio City. The conclusions are aligned with the research questions and reflect the overall outcomes of the investigation into the effectiveness and challenges associated with on-site interpretive signages;

1. On-site interpretive signages at tourist sites in Baguio City generally function effectively as marketing collateral, particularly in promoting the attractiveness and appeal of the destinations. However, while the signages support positive impressions, their role in delivering clear and easily understood information is less consistent, indicating variation in how well informational content is communicated to tourists.
2. Tourists experience a high level of difficulty when engaging with interpretive signages, with interactivity presenting the most serious concern compared to visibility and maintenance. This suggests that although signages are physically accessible and adequately maintained, they often fail to actively engage tourists or sustain their attention during site visits.
3. There is a statistically significant inverse relationship between the effectiveness of on-site interpretive signages and the challenges encountered by tourists at tourist sites in Baguio City. This underscores that lower levels of effectiveness are associated with increased difficulties in use and understanding, while higher effectiveness corresponds with reduced challenges.
4. The analysis indicates that proposed intervention measures are centered on enhancing interactivity, simplifying information content, improving visual design

and layout, integrating digital support tools, and ensuring consistency in signage standards across tourist sites. These conclusions emphasize that tourists' difficulties are closely linked to both the communicative and experiential qualities of interpretive signages.

8. Recommendations and Future Implications

This section outlines the practical actions and forward-looking implications drawn from the results of the study. These points are aligned with the research questions and are intended to guide stakeholders in strengthening the role of on-site interpretive signages while anticipating their longer-term effects on tourism development and visitor experience in Baguio City.

- 1) Given that on-site interpretive signages are effective as marketing collateral, particularly in promoting site appeal, site administrators and local tourism authorities may focus on regularly updating content to reflect current attractions, seasonal events, and cultural narratives. Practically, this can involve reviewing signages annually, incorporating visually appealing graphics, and including brief promotional messages that capture the essence of each site. Over time, maintaining attractive and relevant signages can strengthen destination branding, encourage repeat visits, and enhance word-of-mouth promotion.
- 2) Since tourists experience a high level of challenges, particularly in interactivity, site managers can implement practical methods to make signages more engaging. For example, they can integrate interactive elements such as QR codes linking to multimedia content, augmented reality features showing historical reconstructions, or simple question-and-answer activities that prompt visitor participation. These measures can help tourists engage actively with the site, increase time spent exploring, and reduce reliance on guides for information, thereby improving overall visitor satisfaction.
- 3) In view of the significant negative relationship between signage effectiveness and tourist challenges, tourism authorities can treat these variables as complementary, addressing both simultaneously. Practically, this could involve training staff to periodically observe and record how visitors interact with signages, adjusting content placement or design in response to observed difficulties. For example, signages may be placed at eye level with clear headings, simplified bullet points, and pictorial cues to enhance readability and reduce confusion, ensuring that higher effectiveness correlates with fewer challenges for tourists.
- 4) For the identified intervention measures, interactivity, content clarity, visual design, digital integration, and consistency across sites, tourism stakeholders can implement coordinated strategies. Practically, this could involve creating a standardized signage template for all major tourist sites, using uniform fonts, color schemes, and layout patterns; ensuring information is concise and structured; introducing QR codes or companion mobile apps for extended content; and

scheduling regular maintenance checks to prevent deterioration. Over time, these coordinated measures can provide a more coherent, engaging, and informative experience for tourists, supporting heritage appreciation, longer site visits, and economic benefits for local communities.

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Conflict of Interest Declaration

The author declares that no conflict of interest exists in the conduct of this study, and no financial or personal relationships influenced the research outcomes or interpretation of the results.

About the Author

Edmon Garcia Manabat is a faculty member at the College of Hospitality Management, Easter Colleges Inc., where he has been serving since August 2025. He is currently pursuing a Master of Arts in Business Administration with a thesis at the University of the Cordilleras, Philippines. He earned his Bachelor of Science in Tourism Management from the same university in May 2023, graduating Cum Laude. Throughout his academic journey, Manabat has consistently demonstrated excellence in both scholarship and leadership. He has received numerous recognitions, including being a consistent Dean's Lister, Plaque Awardee for academic performance, and the Pinya Awardee of Excellence for internship performance. He has also represented his university in national and regional competitions, earning awards in research, hospitality, and leadership activities. Manabat has participated in various seminars and trainings, including research development, Filipino Brand of Service, and financial literacy programs. His research interests include hospitality management, tourism marketing, and the development of innovative tools for enhancing the hotel and tourism industry.

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