

## **STRENGTHENING COMMUNITY-BASED ECOTOURISM THROUGH WOODEN DIRECTIONAL SIGNAGE IN MARRENONG HAMLET, KANEKES VILLAGE (BADUY LUAR)**

**Fauziah EDDYONO<sup>1</sup>, Budi HANTORO<sup>2</sup>, Sandra Yap DIANGGOROBLES<sup>3\*</sup>**

<sup>1,2,3</sup> *Universitas Sahid, Jakarta, INDONESIA*

<sup>\*</sup>*sandrarobles@komservico.com*

### **ABSTRACT**

Marrenong Hamlet in Kanekes Village (Outer Baduy) holds strong ecotourism potential through its cultural richness, local wisdom, and natural beauty. However, accessibility remains a major challenge, particularly the absence of adequate directional signage leading to the area. This condition often causes confusion among tourists in understanding directions, travel distance, and time estimation, which in turn affects their comfort and overall satisfaction. This community service program aimed to provide education for local customary leaders regarding the importance of directional signage for visitors, as well as to reach a collective agreement on its planned installation. The methods included initial assessments with local guides, educational sessions for customary leaders, and focused group discussions involving traditional authorities. The results indicate a mutual agreement to install ten wooden signposts at strategic points along the route to Marrenong Hamlet. The choice of natural wood material reflects the principles of simplicity, environmental preservation, and cultural harmony upheld by the Outer Baduy community. Beyond their function as navigation tools for tourists, the signposts also strengthen customary spatial order, facilitate local community access, and create opportunities for economic empowerment through the involvement of local wood artisans. This program demonstrates that community-based ecotourism management can succeed when customary leaders and the local community are fully involved in every stage of planning. Therefore, directional signage becomes not only a tool for tourist navigation but also a medium that bridges visitor needs with local cultural values, while serving as a best practice for the development of sustainable ecotourism in indigenous communities.

**Keywords:** Community Service, Outer Baduy, Ecotourism, Directional Signage, Community Empowerment

### **1. INTRODUCTION**

Baduy Luar, located in Kanekes Village, Marrenong Hamlet, represents a segment of the Baduy indigenous community that plays a significant role in interactions with tourists. Unlike the more culturally restrictive Baduy Dalam, the Baduy Luar community is relatively more open to accommodating visitor arrivals. The ecotourism potential in this area is considerable, encompassing cultural heritage, natural beauty, and local wisdom values, which collectively serve as the primary attractions for domestic tourists.

Nevertheless, a critical challenge pertains to accessibility and visitor orientation. Currently, the route to Marrenong Hamlet lacks adequate directional signage (Figure 1). This situation often causes confusion among tourists, as they do not have clear information regarding travel distances or estimated journey times. Consequently, tourists may experience uncertainty about the duration of travel, leading to physical fatigue, miscalculated energy expenditure, and potentially negative perceptions of their overall tourism experience. According to Eddyono (2024), signs or information boards are any forms of markers installed at strategic locations within ecotourism destinations. These signs are intended to provide visitors with information about locations, directions, and ecological and cultural aspects relevant to the ecotourism site.

In tourism literature, wayfinding systems emphasize that effective navigation requires clear visual cues, including signs, maps, and landmarks, supplemented by information on distance and estimated travel time (Montello, 2005; Passini, 1984a). Such information serves as a guide for tourists' expectations during their journey and can reduce uncertainty (Vilar et al., 2013). Previous studies have demonstrated that signage providing travel time or distance estimates significantly reduces anxiety, enhances comfort, and supports overall tourist satisfaction (Zhang et al., 2020).

Furthermore, research by (Kim, 2023) confirms that the quality of signage and clarity of navigational information directly influence tourists' intention to revisit. Similarly, a study in South Korea indicated that clear signage is strongly associated with safety aspects, as it assists visitors in estimating the effort and time required for their journey (Choi & Chong, 2022). In the context of ecotourism in Baduy Luar, the presence of directional signage with distance and travel time information is critically important. Beyond supporting visitor comfort and safety, signage designed with

local cultural elements can also serve as a visual identity for the destination, reinforcing the image of Baduy as a tourist area that is welcoming, safe, and sustainable (Duarte & Heitor, 2023) In the context of ecotourism in Baduy Luar, the presence of directional signage with distance and travel time information is critically important. Beyond supporting visitor comfort and safety, signage designed with local cultural elements can also serve as a visual identity for the destination, reinforcing the image of Baduy as a tourist area that is welcoming, safe, and sustainable (Duarte & Heitor, 2023)

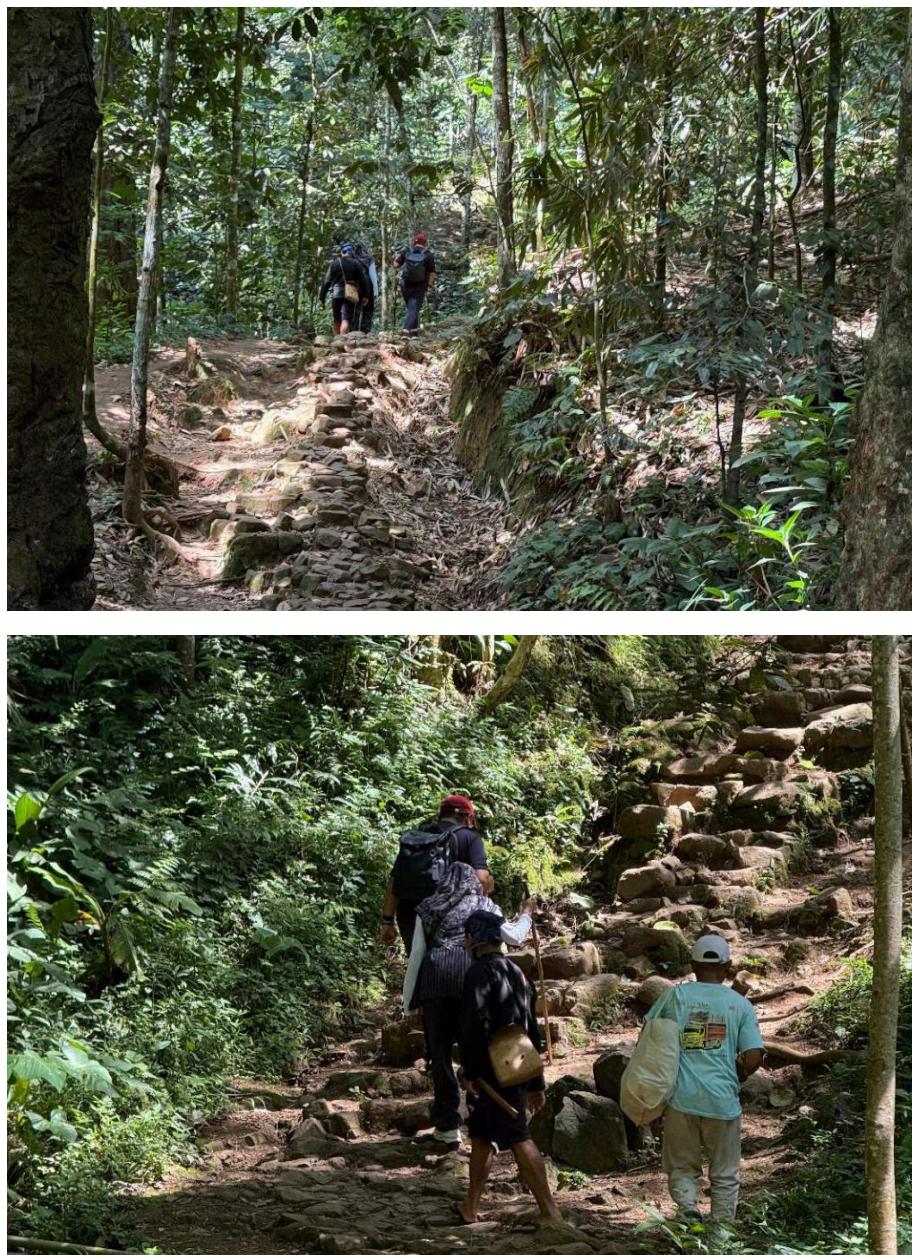


Figure 1. Road Leading to Barenong Hamlet without Directional Signage

Therefore, this community service initiative focuses on educating the Baduy Luar traditional leaders about the importance of installing directional signs to Marrenong Hamlet. The program is expected to enhance the indigenous community's understanding of the strategic function of signage, strengthen their participation in ecotourism governance, and promote sustainable, safe, and visitor-oriented tourism practices.

## 2. METHODE

This community service initiative employed a participatory community education approach, in which the indigenous community serves as the primary actor throughout the planning and evaluation processes. This approach aligns with the principles of community-based tourism (CBT), emphasizing that local communities are not merely beneficiaries but also owners and managers of tourism activities (Giampiccoli & Mtapuri, 2012; Goodwin & Santilli, 2009)

The first stage of the program involved an initial assessment through interviews and field observations conducted with local guides and representatives of the Baduy Luar community. Local guides conveyed tourists' experiences, highlighting frequent uncertainty regarding travel duration, which often leads to fatigue and may negatively affect overall satisfaction. Meanwhile, community representatives provided detailed knowledge about the route to Marrenong Hamlet, including natural landmarks, estimated travel times, and potential points of confusion for visitors ((Passini, 1984b; Vilar et al., 2013)

The next stage involved education on the importance of directional signage, which was specifically delivered through traditional leaders and village officials, including the Sesepuh Adat (Pu'un), Ketua Adat (Jaro), Vice Ketua Adat/Deputy Village Head, and local guides (members of the tourism awareness group). In the Baduy customary law system, local communities are not permitted to receive direct education or external intervention without the approval of traditional authorities. This practice is rooted in the *pikukuh* principle, which governs community life, including interactions with outsiders (Iskandar & Ellen, 2007). Accordingly, the Pu'un and Jaro act as formal and symbolic intermediaries between the external world and the Baduy community.

Education directed at traditional leaders is crucial because only through their authority can messages regarding the importance of directional signage be legitimately received by the community. This mechanism ensures that knowledge transfer does not conflict with customary rules while reinforcing the legitimacy of the community service program. Without the endorsement of traditional leaders, external interventions may be perceived as violations of local norms, potentially leading to social resistance. Therefore, involving traditional leaders is not only a sign of respect for local culture but also an essential requirement for the success of community-based initiatives within indigenous communities (Cole, 2007; Okazaki, 2008).

The educational materials covered the concept of wayfinding in tourism (Montello, 2005) and the role of signage in shaping the tourist experience (Wan, 2024a). In the educational process, theoretical instruction was complemented with case studies of directional signage practices in comparable ecotourism destinations in Indonesia. For example, in Penglipuran Village, Bali, wooden signs with traditional designs are used to guide visitors to key village locations, such as the bale banjar, traditional houses, and entrance/exit routes. The use of wood and local cultural symbols not only facilitates navigation but also reinforces the village's identity as a culture-based tourism destination (Sanjaya et al., 2018)

Another example can be observed in Kampung Naga, West Java, where simple bamboo directional signs are installed at intersections along the route to the traditional village. These signs provide information on directions and travel distances, enabling visitors to estimate journey times without disturbing the authenticity of the cultural environment (Jamaluddin, 2021).

These two practices emphasize that directional signage does not need to be modern or constructed from metal or plastic; rather, it can be designed in harmony with local cultural and environmental values. For the Baduy Luar community, these examples are particularly relevant, demonstrating that natural wooden signs—mandated by traditional leaders—align with the principles of cultural sustainability in ecotourism. Thus, the use of signage in Marrenong Hamlet can be positioned not as a threat to tradition but as an innovation that respects customary law.

The delivery of educational materials in the field faced challenges related to language and technical terminology used in tourism literature. Although the Baduy Luar community is relatively more open than Baduy Dalam, some traditional leaders still communicate primarily in the Baduy dialect of Sundanese. Therefore, the presence of local translators was often necessary to facilitate understanding. Translators function not only as verbal communication aids but also as cultural mediators, ensuring that messages regarding wayfinding, signage, and sustainable ecotourism principles are conveyed in ways that respect local norms and etiquette.

The practice of using translators in community education aligns with the intercultural communication approach, which emphasizes the importance of cultural sensitivity in knowledge transfer processes (Deardorff, 2009). With the assistance of translators, materials originally based on technical academic terminology can be conveyed as simplified

narratives, using everyday analogies that are more easily understood by indigenous communities. This approach makes the educational process more inclusive, reduces knowledge gaps, and prevents misinterpretation.

Furthermore, the role of translators also reinforces the legitimacy of the program, as messages from external parties are mediated by trusted community members. This mechanism enhances community acceptance of new ideas, thereby increasing the effectiveness of education on the importance of directional signage in influencing the attitudes and decisions of traditional leaders.

After the community leaders received an overall briefing, a focused group discussion (FGD) was conducted involving the Pu'un (Traditional Leader) and Jaro (Baduy Luar customary authority). Both hold absolute authority in granting approval for any changes within the traditional village, making their involvement crucial for the legitimacy of the program (Giampiccoli & Mtapuri, 2012; Okazaki, 2008). During the discussion, the leaders stipulated two main requirements: first, the directional signs to be installed must be made of natural wood to align with the Baduy community's principles of simplicity, sustainability, and environmental harmony (Cole, 2007); second, the installation sites were designated at ten strategic points along the route to Marrenong Hamlet. These locations were selected based on intersections, branching paths, and areas prone to visitor confusion.

Based on the FGD outcomes, a collaborative planning process was developed involving traditional leaders and the community. The action plan included the design of wooden signs, the types of information to be displayed (direction, distance, and estimated travel time), and mechanisms for community involvement in the fabrication, installation, and maintenance of the signage. The sign designs were also intended to represent local cultural identity, so that in addition to serving as navigational tools, they would reinforce the destination's cultural image (Duarte & Heitor, 2023).

The final stage involved participatory evaluation, conducted together with traditional leaders and the community to assess the effectiveness of the program. The evaluation focused on enhancing the community's understanding of the importance of signage, the alignment of the action plan with cultural values, and the community's readiness to implement the agreed-upon outcomes. This participatory evaluative approach aligns with the principles of Participatory Rural Appraisal (PRA), which emphasizes community involvement in reflection and decision-making processes (Chambers, 1994).

Through this participatory methodology, the community service program not only focused on increasing awareness of the importance of directional signage but also successfully established a dialogue space between external actors and the Baduy Luar customary structure. The educational process, beginning with the introduction of wayfinding concepts and tourism experiences and followed by FGDs with the Pu'un and Jaro, resulted in a concrete customary agreement regarding the installation of natural wooden directional signs. The agreement included approval of the number and locations of the signs, totaling ten strategic points along the route to Marrenong Hamlet.

### **3. RESULT AND DISCUSSION**

#### **Result**

The community service program in Kanekes Village, Marrenong Hamlet (Baduy Luar), yielded several key findings derived from the initial assessment, community education, and FGDs with traditional leaders. The assessment results indicated that tourists frequently experienced confusion regarding directions, distances, and estimated travel times to Marrenong Hamlet. This uncertainty led to fatigue, anxiety, and decreased tourist satisfaction. These findings support wayfinding theory, which emphasizes the importance of navigational information in enhancing visitors' sense of security and overall positive experience (Montello, 2005; Passini, 1984b; Vilar et al., 2013).



Figure 2. Example of Directional Signage Leading to Barenong Hamlet

The results of the community education program demonstrated an increase in traditional leaders' understanding of the function of directional signage. The leaders recognized that signage serves not only as a technical guide but also contributes to the destination's image and the sustainability of tourist visits (Wan, 2024b; Zhou et al., 2025).

The FGDs with traditional leaders resulted in a concrete customary agreement regarding the installation of wooden signage at ten strategic points along the route to Marrenong Hamlet (Figure 2). The leaders agreed on two main principles: (1) the signs must be made of natural wood, in accordance with the Baduy community's principles of simplicity and environmental harmony (Cole, 2007), and (2) the signs must be installed at intersections and areas prone to visitor confusion, ensuring both functionality and compliance with customary norms. The following table summarizes the ten selected strategic points.

Table 1. Ten strategic points for signage installation

No	Strategic Signage Location	Description
1	Main entrance of Kanekes Village trail	Starting point of the tourist route to Marrenong Hamlet
2	Small forest trail intersection	Branching area that often confuses visitors
3	Near bamboo bridge	Natural landmark along the trail
4	Community farmland area	Point with branching paths leading to rice fields
5	Intersection toward small river	Area prone to misdirection toward local daily activity zones
6	Natural rest stop (small gazebo)	Spot where tourists usually take a brief break
7	Steep rocky trail	Difficult section requiring travel time guidance
8	Intersection toward temporary settlements	Branching paths between tourist trail and local activity routes
9	Near protected forest area	Dense vegetation area that may confuse visitors
10	Entrance to Marrenong Hamlet	End of the route, serving as a welcome point for tourists





Figure 3. The process involved educational activities and focus group discussions (FGDs)

### Discussion

These results demonstrate that a traditional leader-based educational approach is highly effective within the Baduy Luar community context. According to customary rules, the community is not permitted to receive direct education from external parties without approval. Therefore, delivering materials through the Pu'un and Jaro functions as both social and customary legitimacy. This mechanism supports the community-based tourism model, which emphasizes the role of customary leaders in the success of ecotourism programs (Giampiccoli & Mtapuri, 2012; Okazaki, 2008). The agreement to use natural wood for signage represents a concrete application of cultural sustainability, where tourism infrastructure must align with local cultural values to gain community acceptance (Cole, 2007). This

practice is consistent with studies in Kampung Naga, West Java, where simple bamboo signs are used to preserve the authenticity of the environment (Jamaluddin, 2021), and in Penglipuran Village, Bali, where traditional-style wooden signs reinforce cultural identity (Paramita, 2025)

The novel contribution of these findings is that wayfinding in indigenous tourism destinations extends beyond technical navigation and constitutes an element of socio-cultural legitimacy. In Baduy Luar, the installation of signage must follow customary mechanisms, allowing external interventions to be accepted without compromising local values. This insight broadens the understanding of visitor management in indigenous tourism villages.

This community service program also opens opportunities for further development that can enhance ecotourism sustainability in Marrenong Hamlet. First, there is potential for the installation of wooden signage involving local artisans. This approach not only ensures that the signs align with customary aesthetics but also strengthens the community economy through the empowerment of traditional skills. According to (Scheyvens, 1999a), local community economic participation in tourism management is a key factor in enhancing both well-being and a sense of ownership over the destination.

Directional signage also has the potential to be integrated with educational functions. In addition to providing information on directions and travel distances, the signs can include brief explanations regarding the significance of landmarks or specific cultural symbols along the route. This model aligns with the principles of tourism interpretation, which emphasize the importance of delivering meaningful information to visitors, thereby making the tourism experience not only recreational but also educational (Ham, 2016).

The success of this program also requires continuous monitoring and evaluation. Monitoring is necessary to assess the effectiveness of the signage in enhancing visitor satisfaction, reducing navigational confusion, and influencing travel behavior. Such evaluation supports the principles of adaptive management, whereby tourism interventions are continuously refined based on empirical data and community feedback (Holling, 1978).

Thus, these development opportunities demonstrate that directional signage in Baduy Luar does not merely function as a technical navigation tool or to enhance visitor convenience. Beyond these roles, the signage can serve as a medium for local economic empowerment through the involvement of wood artisans and community members in the design, fabrication, and maintenance processes. Simultaneously, the signs can function as a cultural education tool for visitors, as they not only indicate directions and distances but also convey customary messages, landmark meanings, or travel philosophies that reflect Baduy local wisdom. Consequently, the innovation introduced is not solely technical but also culturally based, bridging visitor needs with the preservation of indigenous traditions and the sustainability of community-based ecotourism (Ham, 2016; Scheyvens, 1999b)

#### **4. CONCLUSION**

The community service program in Marrenong Hamlet, Kanekes Village (Baduy Luar), resulted in a customary agreement on the installation of natural wooden directional signage at ten strategic points. The main findings of this initiative include an increased community understanding of the importance of signage in supporting visitor comfort and safety, while simultaneously reinforcing customary spatial arrangements and internal community accessibility. The traditional leaders' decision to use natural wood emphasizes that any innovation in tourism management is only acceptable if it aligns with cultural values, as well as the Baduy principles of simplicity and environmental harmony.

The strength of this program lies in its participatory methodology, which positions traditional leaders (Pu'un and Jaro) as key actors in education, discussion, and decision-making. This approach establishes social legitimacy and ensures program sustainability. Additionally, community involvement in the planning and fabrication of wooden signage creates opportunities for local economic empowerment while providing a cultural education medium that can enrich the visitor experience.

Nevertheless, this program has certain limitations. The signage implementation remains at the planning stage and has not yet been fully realized in the field, so its actual impact on visitor travel behaviour cannot yet be evaluated. In addition, the use of translators during the educational process highlighted communication challenges that should be anticipated in similar future initiatives.

Looking ahead, the program has potential for further development through the actual installation of wooden signage according to customary agreements, the addition of simple interpretive elements to explain the significance of

landmarks, and a community-based maintenance mechanism. In this way, the program not only supports visitor comfort but also reinforces the role of the Baduy Luar community as the primary actors in managing community-based ecotourism.

## 5. REFFERENCE

Chambers, R. (1994). Participatory rural appraisal (PRA): Challenges, potentials and paradigm. *World Development*, 22(10), 1437–1454.

Choi, W. C., & Chong, K. S. (2022). Analysis of road sign-related factors affecting driving safety with Respect to city size. *Applied Sciences*, 12(19), 10163.

Cole, S. (2007). Beyond authenticity and commodification. *Annals of Tourism Research*, 34(4), 943–960.

Deardorff, D. K. (2009). *The SAGE handbook of intercultural competence*. Sage Publications.

Duarte, E. A., & Heitor, J. C. (2023). The Marian Paths of Portugal and Local Development. *International Journal of Religious Tourism and Pilgrimage*, 11(1), 5.

Eddyono, F. (2024). *Perencanaan Desa Wisata Berkelanjutan*. Damera Press.

Giampiccoli, A., & Mtapuri, O. (2012). Community-based tourism: An exploration of the concept (s) from a political perspective. *Tourism Review International*, 16(1), 29–43.

Goodwin, H., & Santilli, R. (2009). *Community-based tourism: a success?*

Ham, S. (2016). *Interpretation: Making a difference on purpose*. Fulcrum publishing.

Holling, C. S. (1978). *Adaptive environmental assessment and management*. John Wiley & Sons.

Iskandar, J., & Ellen, R. (2007). Innovation, 'hybrid'knowledge, and the conservation of relict rainforest in upland Banten. *Modern Crises and Traditional Strategies: Local Ecological Knowledge in Island Southeast Asia*, 6, 133.

Jamaluddin, M. F. (2021). Implementation of Indigenous Peoples Traditions based on Tourism Development in Kampung Naga. *Jurnal Hospitality Dan Pariwisata*, 7(1).

Kim, K.-W. (2023). Wayfinding Satisfaction on Tourist Revisit Intention: A Moderated Moderation Model of Travel Group Size and Tourism Information Service. *Journal of International Trade & Commerce*, 19(1), 37–49.

Montello, D. R. (2005). *Navigation*. Cambridge University Press.

Okazaki, E. (2008). A community-based tourism model: Its conception and use. *Journal of Sustainable Tourism*, 16(5), 511–529.

Paramita, I. B. G. (2025). Integrasi kearifan lokal Tri Hita Karana dalam pengelolaan pariwisata berkelanjutan: Studi kasus Desa Penglipuran, Bali. *Cultoure: Jurnal Ilmiah Pariwisata Budaya Hindu*, 6(1), 63–74.

Passini, R. (1984a). Wayfinding in architecture. (*No Title*).

Passini, R. (1984b). Wayfinding in architecture. (*No Title*).

Sanjaya, I. W. K., Putra, I. N. D., Ardika, I. W., & Mudana, I. G. (2018). THE CONSENSUAL INTERACTION BETWEEN A TRADITIONAL VILLAGE AND HOTEL INVESTORS. *International Journal of Applied Sciences in Tourism and Events*, 2(2), 135–146.

Scheyvens, R. (1999a). Ecotourism and the empowerment of local communities. *Tourism Management*, 20(2), 245–249.

Scheyvens, R. (1999b). Ecotourism and the empowerment of local communities. *Tourism Management*, 20(2), 245–249.

Vilar, E., Rebelo, F., Noriega, P., Teles, J., & Mayhorn, C. (2013). The influence of environmental features on route selection in an emergency situation. *Applied Ergonomics*, 44(4), 618–627.

Wan, Y. K. P. (2024a). Accessibility of tourist signage at heritage sites: An application of the universal design principles. *Tourism Recreation Research*, 49(4), 757–771.

Wan, Y. K. P. (2024b). Accessibility of tourist signage at heritage sites: An application of the universal design principles. *Tourism Recreation Research*, 49(4), 757–771.

Zhang, W., Zhu, L., Zhang, Z., Zhang, Z., & Lu, L. (2020). A sustainable evaluation method for a tourism public wayfinding system: A case study of Shanghai Disneyland Resort. *Sustainability*, 12(20), 8489.

Zhou, F., Liang, Z., & Liu, C. (2025). How does virtual co-creation of destination social responsibility affect consumer attitudes: the role of narrative transportation. *Tourism Recreation Research*, 1–15.