

Navigating Cities Through Play: A Study of Geo AR Induced Urban Flânerie During the Pikmin Bloom Tour in Kaohsiung

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Abstract

This study examines whether geolocation-based augmented reality (Geo AR) gameplay can encourage urban flânerie, cultural landscape perception, and initial place connection in a cultural walking event. Using Pikmin Bloom Tour 2025: Kaohsiung as a case study, the research analyzes a non-linear walking event that placed 12 Special Spots across urban areas of Kaohsiung and allowed players to arrange their own routes. This study adopts a questionnaire-based research design supported by an exploratory field study, with data collected through on-site participant observation, short interviews, and open-ended survey responses. The survey collected 171 valid responses, among which 87 participants provided open-ended responses. The findings indicate that most participants joined the event mainly to collect Pikmin while also using it as an opportunity to visit Kaohsiung. Participants noticed harbor landscapes, markets, streets, and event installations, and some extended the activity into nearby consumption, photo-taking, wandering, or additional visits. Thematic analysis shows that frequently mentioned themes included urban and cultural landscape perception, exploratory movement, and place meaning or initial connection. Descriptive results show high agreement with visiting unfamiliar places ($M = 4.39$), walking into unplanned streets or alleys ($M = 4.36$), and paying attention to both the game screen and real streets ($M = 4.38$). These findings suggest that walking-based Geo AR mechanics can transform physical movement into digitally guided urban flânerie, allowing the activity area to be experienced as a meaningful urban space perceived through movement, observation, and attention switching.

Keywords: geolocation-based augmented reality (Geo AR), Pikmin Bloom, urban flânerie, initial place connection

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Introduction

With the widespread use of smartphones, global positioning systems, mobile networks, and augmented reality technologies, geolocation-based augmented reality games (Geo AR games) have become an important medium connecting digital gameplay experiences with real urban spaces. Unlike conventional digital games, which mostly take place on screens or within virtual environments, Geo AR games require players to move physically, arrive at specific locations, or interact with their surroundings in order to progress through gameplay (Huang, 2017). As a result, gameplay is no longer limited to digital interfaces, but becomes connected with bodily movement, urban routes, streetscapes, and local environments. In this context, the city is transformed into a hybrid space in which digital missions and real-world environments are intertwined (Tsao, 2020).

Previous discussions of Geo AR games have mostly focused on representative cases such as *Pokémon GO*, often emphasizing competition, challenge, collection, social interaction, physical activity, or continuance intention (e.g., Chu, 2017; Oleksy & Wnuk, 2017). These studies help explain how location-based games change player behavior, but they also tend to place Geo AR game research within frameworks of game participation, motivation, and behavioral intention. In contrast, Geo AR games centered on walking, daily records, companionship, and low-pressure collection have been less frequently discussed in relation to urban flânerie, cultural landscape perception, and place experience. Moreover, AR walking games do not necessarily lead directly to urban flânerie. Players may enter the city because of game missions, but their attention may still remain on smartphone screens, map spots, and game symbols, causing physical places to be simplified as task backgrounds or coordinates (Park, 2025). Therefore, how Geo AR games move from guiding walking to facilitating place observation, cultural landscape perception, and initial place connection remains a question requiring further investigation.

Pikmin Bloom offers a case distinct from competition-oriented Geo AR games. Unlike location-based games that require frequent navigation to points of interest or real-time responses to missions, *Pikmin Bloom* allows players to progress through walking, flower planting, collecting, character companionship, and retrospective review. Laato et al. (2022) describe *Pikmin Bloom* as a gamified walking experience that enhances everyday walking while avoiding excessive interference with users' daily lives. However, when this low-interruption and everyday form of Geo AR gameplay is placed within the context of a local tourism or cultural event, its spatial experience may change.

Pikmin Bloom Tour 2025: Kaohsiung provides a useful case for examining this change. The event was held in Kaohsiung on October 11 and 12, 2025. It was the first physical Pikmin Bloom Tour event in Taiwan and was organized in collaboration with the Tourism Bureau of Kaohsiung City Government. As a free physical walking event, participants used the *Pikmin Bloom* mobile application to complete in-game missions, visit 12 Special Spots on the event map, and collect event rewards. A key feature of the event was its non-linear route design: participants did not have to complete missions in a fixed order, but could freely arrange the order of visits and walking routes according to their location, time, interests, and pace of movement.

This event context transforms *Pikmin Bloom* from everyday gamified walking into a cultural walking event with implications for local tourism and urban exploration. Players were not only completing digital missions; they were also guided by Special Spots and route

arrangements into urban districts, alleys, and local landscapes such as harbor areas, markets, streets, and event installations. From this perspective, the Special Spots designed for the *Pikmin Bloom* Tour may supplement the relatively weak spatial navigation motivation in everyday gameplay, allowing players to move beyond low-interruption movement records and enter a more purposeful and place-sensitive process of urban flânerie. Although this study does not claim that a short-term event can form stable place attachment, it assumes that participants may develop preliminary place perception and emotional connection with the activity area through mission completion, landscape observation, and movement experience.

Based on this background, this study uses *Pikmin Bloom Tour 2025: Kaohsiung* as a case study to examine the role of walking-based Geo AR gameplay in urban exploration within a cultural event. Specifically, the study has three objectives. First, it explores how Geo AR missions guide participants' urban walking and exploration. Second, it analyzes whether participants experienced digital flânerie, physical-virtual attention switching, and cultural landscape perception during the event. Third, it discusses how urban flânerie guided by digital missions may contribute to participants' initial place connection with the activity area.

Literature Review

This literature review is organized around three key concepts: Geo AR games, urban flânerie, and initial place connection. These concepts provide the theoretical foundation for examining how walking-based Geo AR gameplay may guide participants' movement, perception, and preliminary connection with the activity area.

Geo AR Games

Geolocation-based augmented reality games (Geo AR games) refer to a form of mobile gameplay that combines geolocation, augmented reality, and mobile gaming. According to Liu (2022), Geo AR mobile games can be understood as the integration of three elements: geolocation, augmented reality, and mobile gameplay. Geolocation connects game content to real-world locations; augmented reality links digital content with the physical world; and mobile gameplay enables players to interact through smartphones and bodily movement. Tsao (2020) further notes that Geo AR games operate through location-aware technologies, such as GPS, digital map data, and sensors embedded in mobile devices. Unlike conventional online games, which mostly take place on screens or within virtual environments, Geo AR games require players to walk in the real world while using mobile applications to view virtual content connected to physical environments (Huang, 2017).

Therefore, the core feature of Geo AR games lies in their ability to connect digital missions, bodily movement, and real urban space. Players' experiences no longer occur only within digital interfaces, but extend into public spaces through walking, positioning, route choices, and interaction with their surroundings. In this context, the city becomes a hybrid space in which digital information, bodily action, and physical environments are intertwined (Tsao, 2020). Previous studies on Geo AR games have mainly focused on games with competitive or real-time interactive features, such as *Pokémon GO* and *Ingress*, and have examined issues such as player motivation, social interaction, physical activity, and place attachment (Chu, 2017; Laato et al., 2022; Oleksy & Wnuk, 2017). In contrast, *Pikmin Bloom* centers on walking, flower planting, collecting, character companionship, and daily records. Its low-interruption and walking-oriented features make it particularly suitable for examining how

non-competitive Geo AR games may guide players into urban space and generate exploration, observation, and place perception in the context of cultural activities.

Urban Flânerie

The concept of urban flânerie originates from discussions of nineteenth-century modern urban experience. The traditional flâneur is commonly understood as a modern urban wanderer who strolls through the city, observes urban life, and experiences the street through walking and looking (Baudelaire, 1863; Benjamin, 1999). Therefore, flânerie is not merely aimless walking, but a way of perceiving, understanding, and interpreting the city through bodily movement, visual attention, and incidental encounters.

With the widespread use of smartphones, digital maps, and location-based services, the figure of the flâneur has gradually shifted toward the post-flâneur. The post-flâneur no longer observes the city only through direct visual perception, but also records, shares, and reinterprets urban experience through smartphones and location-based applications (Argin et al., 2020). In this context, the smartphone is not simply a device that distracts users from their surroundings, but a medium that reorganizes the visual relationship between people and streets. The walker's attention may shift among the mobile screen, digital maps, image records, and physical streets, giving urban experience a hybrid physical-virtual character.

When location-based services are combined with augmented reality games, the flâneur further enters hybrid space. Geo AR players may be understood as digital flâneurs guided by digital missions. On the one hand, they follow maps, mission points, symbols, and rewards on the mobile screen; on the other hand, they must also move through the physical city, identify directions, choose routes, and observe their surroundings. Pereira da Cunha (2018), using *Pokémon GO* as an example, proposes the concept of the hybrid flâneur, arguing that players search for virtual clues through the game interface while walking through the physical city, thereby recognizing and re-signifying urban public space. In this study, digital flânerie refers to a form of urban walking guided by digital missions, in which players experience exploratory movement, physical-virtual attention switching, sensory recording, and place meaning generation.

Initial Place Connection

Place studies suggest that place is not merely a physical space, but a meaningful space shaped by human experience, memory, emotion, and interpretation (Relph, 1976; Tuan, 1977). When people assign value, emotion, or attachment to a space, that space may be transformed from a simple location into a meaningful place (Tuan, 1977; Williams & Vaske, 2003). Therefore, urban space is not only a background in which activities take place, but may gradually acquire place meaning through people's movement, stopping, interaction, and perception.

Place attachment is commonly used to describe the emotional and functional bond between people and places. Previous studies have suggested that place attachment develops through direct contact, use experience, and interaction between people and places (Lewicka, 2011; Low & Altman, 1992; Perkins & Long, 2002). In the context of Geo AR games, gameplay experience may also influence how players perceive physical locations. Oleksy and Wnuk (2017), in their study of *Pokémon GO*, found that satisfaction with location-based AR gameplay and social interaction positively predicted players' place attachment to the locations where they played. However, place attachment is often understood as a relatively

stable relationship that develops through long-term contact, repeated visits, and accumulated experience.

For a one-time or short-term cultural walking event, it may be an overstatement to claim that participants have already developed stable place attachment. Therefore, this study adopts the more cautious concept of initial place connection to refer to participants' place perception, emotional response, and preliminary meaning-making toward the activity area generated through Geo AR-guided walking and digital *flânerie*. In the context of *Pikmin Bloom Tour 2025: Kaohsiung*, participants may initially join the event to collect *Pikmin* or complete event badges. However, through walking, stopping, photographing, detouring, and encountering local landscapes, the activity area may gradually be transformed from a background for game missions into a meaningful urban space associated with cultural atmosphere, urban characteristics, and personal memory.

Methodology

This study adopted a questionnaire-based research design supported by an exploratory field study. Using *Pikmin Bloom Tour 2025: Kaohsiung* as a case study, the research examined how a walking-based Geo AR game guided participants' urban exploration and contributed to experiences of digital *flânerie* and initial place connection within the Kaohsiung event area.

The research process consisted of two main stages. First, an exploratory field study was conducted during the event through on-site participation, field observations, and short interviews with participants. This stage aimed to understand participants' activity experiences, including their motivations for joining the event, movement patterns, observations of the surrounding environment, and extended exploration behaviors. The exploratory findings were used to support the design of the questionnaire and to provide contextual understanding for interpreting the survey results.

Second, an online questionnaire survey was conducted with participants who had taken part in *Pikmin Bloom Tour 2025: Kaohsiung*. The questionnaire was distributed through Facebook groups, LINE communities, and Threads. The questionnaire items were developed based on the theoretical concepts discussed in the literature review and adjusted to the context of the *Pikmin Bloom Tour* event. The survey included four main parts: digital *flânerie*, initial place connection, activity behavior, and background information. Digital *flânerie* focused on exploratory movement, physical-virtual attention switching, cultural landscape perception, and place meaning formation. Initial place connection examined participants' place-related feelings and emotional responses toward the Kaohsiung event area. Activity behavior included route choice, visits to Special Spots, stopping, photographing, and other exploration-related behaviors.

A total of 171 valid questionnaire responses were collected, among which 87 respondents provided open-ended answers. For data analysis, descriptive statistics were used to present participants' overall tendencies in the digital *flânerie* items. In addition, thematic coding was applied to the open-ended responses to identify recurring themes related to urban and cultural landscape perception, exploratory movement, place meaning, game missions, physical-virtual interaction, and extended activities. By combining quantitative survey results with qualitative responses, this study analyzes how a *Pikmin Bloom* collaborative city event transformed game missions into walking-based urban exploration and encouraged participants to observe, interpret, and initially connect with the Kaohsiung event area.

Results and Discussion

The results of this study are mainly derived from exploratory field interviews, open-ended questionnaire responses, and descriptive statistics of the digital flânerie items. The findings show that Pikmin Bloom Tour 2025: Kaohsiung, as a Geo AR city walking event, not only attracted players through game missions and limited-time rewards, but also guided participants to walk, observe, and extend their exploration within the Kaohsiung event area through Special Spots and a non-linear route design.

The exploratory short interviews showed that most participants joined the event mainly for game-related purposes, such as collecting limited Pikmin, completing event missions, or obtaining event badges. However, during the actual participation process, players did not focus only on the game missions themselves. They also noticed elements of the surrounding urban environment while walking, including harbor landscapes, markets, streets, and event installations. Some participants further extended the activity into broader urban actions, such as local consumption, photography, wandering, or visiting other attractions in Kaohsiung. These findings show that although game missions served as an important motivation for participation, the bodily movement guided by these missions also encouraged participants to interact with the physical urban environment.

The open-ended questionnaire responses further supported this tendency. Among the 87 open-ended responses, the most frequently mentioned theme was “urban/cultural landscape perception,” with 46 mentions, accounting for 52.9%. This was followed by “exploratory movement,” with 43 mentions, accounting for 49.4%. In addition, “place meaning/initial connection” appeared 33 times, accounting for 37.9%; “game missions/rewards” appeared 25 times, accounting for 28.7%; “physical-virtual interaction” appeared 13 times, accounting for 14.9%; and “extended activities” appeared 11 times, accounting for 12.6%. Since one respondent’s answer could be coded into multiple themes, the percentages do not add up to 100%. These results show that participants’ activity experiences were not limited to game rewards or mission completion, but were also clearly related to urban landscapes, cultural environments, route exploration, and place-related feelings.

The descriptive statistics of the digital flânerie items also showed a relatively high level of agreement. The digital flânerie scale showed good internal consistency, with a Cronbach’s alpha of .873. The item “visited unfamiliar places” received a mean score of 4.39, while “walked into unplanned streets or alleys” received a mean score of 4.36. These results suggest that participants tended to experience exploratory movement through the event missions. This finding echoes Rashid and Ara’s (2026) discussion of tactical detour: when players move between digital cues and the physical city, they may not simply pursue the shortest or most efficient route, but may instead produce detours, wandering, and exploration between mission points. In this study, the non-linear route design of Pikmin Bloom Tour allowed participants to decide the order in which they visited Special Spots and to enter unplanned streets, alleys, or nearby places during the activity. This indicates a form of urban flânerie guided by digital missions while still retaining participants’ autonomy.

In addition, the item “paid attention to both the game screen and real streets” received a mean score of 4.38, indicating that participants were not simply looking at the mobile screen during the activity, but were shifting their attention between digital missions and physical streetscapes. This finding echoes Argin et al.’s (2020) discussion of the post-flâneur. The post-flâneur is not completely absorbed by the smartphone screen in public space, but instead

distributes visual attention between the mobile device and the surrounding environment. In the context of this study, *Pikmin Bloom* players can be understood as digital flâneurs. On the one hand, they followed game cues to move toward Special Spots; on the other hand, they also observed streetscapes, buildings, shops, harbor views, and cultural landscapes during the walk. Digital cues did not separate players from the environment, but may instead have become a medium for looking at the city anew.

Taken together, these findings can be further discussed from the perspectives of Geo AR gameplay, digital flânerie, and initial place connection. First, digital missions did not replace participants' physical experience of the city. Rather, they functioned as cues and guidance that redirected participants' attention back to the urban environment. This echoes the view that Geo AR games connect digital content, real-world movement, and physical environments, and also suggests that the city became a hybrid space in which game missions and physical environments were intertwined. In the context of mobile media and Geo AR, urban flânerie is no longer only aimless wandering, but is also shaped by digital cues, mission objectives, and the physical event area. Participants followed game cues to visit Special Spots, while also choosing routes and adjusting their movement between different locations. Therefore, the design of Special Spots and non-linear routes transformed the Kaohsiung event area from a background for game missions into an urban space that could be walked through, observed, and rediscovered.

Finally, the open-ended responses related to place meaning and initial connection suggest that walking-based Geo AR gameplay may contribute to participants' early emotional and cognitive connection with the event area. Relph (1976) and Tuan (1977) both point out that place is not merely a physical space, but is formed through human experience, perception, and the assignment of meaning. Low and Altman (1992), as well as Williams and Vaske (2003), further explain that place attachment is related to people's emotions, identity, and use experiences associated with place. Although place attachment is often understood as developing gradually through repeated contact and long-term experience, the findings of this study suggest that short-term, activity-based encounters may also evoke initial place-related feelings. Through walking, stopping, photographing, and noticing local details, participants were able to assign new meanings to the Kaohsiung event area. Therefore, *Pikmin Bloom Tour 2025: Kaohsiung* shows how a Geo AR city walking event can transform game participation into a situated experience of urban and cultural landscape perception.

Overall, the findings indicate that walking-based Geo AR games can serve as a medium for urban exploration within the context of city tourism and cultural activities. Through Special Spots, non-linear routes, and game rewards, *Pikmin Bloom Tour 2025: Kaohsiung* guided participants to move, observe, and stay within the Kaohsiung event area, thereby facilitating digital flânerie and initial place connection. This also suggests that the impact of Geo AR city walking events lies not only in enhancing game participation, but also in potentially reorganizing how participants interact with urban cultural spaces.

Table 1
Themes Mentioned in Open-Ended Responses

Theme	Mentions	Percentage
Urban / Cultural Landscape Perception	46	52.9%
Exploratory Movement	43	49.4%
Place Meaning / Initial Connection	33	37.9%
Game Missions / Rewards	25	28.7%
Physical-Virtual Interaction	13	14.9%
Extended Activities	11	12.6%

Note. Valid questionnaire responses: N = 171; open-ended respondents: n = 87. One respondent's answer could be coded into multiple themes; therefore, percentages do not add up to 100%.

Table 2
Descriptive Statistics of Digital Flânerie Items

Item	Description	Mean	SD	N
FL1	Walked into streets or alleys that were not originally planned to complete the event missions.	4.36	0.905	171
FL2	Visited places that I was previously unfamiliar with during the activity.	4.39	0.876	171
FL3	Paid attention to both the game screen and the surrounding real street environment.	4.38	0.791	171
FL4	Actively observed the surrounding streetscape instead of only looking at the phone.	4.29	0.878	171
FL5	Stopped to observe buildings, landscapes, or neighborhood details because of the event guidance.	4.19	0.948	171
FL6	Paid more attention to small neighborhood details than during usual walks.	4.07	0.949	171
FL7	Gained a different understanding of the event area through the activity.	4.28	0.835	171
FL8	Felt that I was exploring the city rather than merely playing a game.	4.29	0.886	171

Note. Items were measured on a five-point Likert scale. Cronbach's alpha for the digital flânerie scale was .873.

Conclusion

This study used Pikmin Bloom Tour 2025: Kaohsiung as a case study to examine how walking-based Geo AR gameplay guides participants' urban exploration and contributes to digital flânerie and initial place connection. The findings show that Pikmin Bloom Tour attracted players not only through game missions and limited-time rewards, but also through its Special Spots and non-linear route design, which encouraged participants to enter, observe, and reinterpret the Kaohsiung event area while completing the missions.

The main finding of this study is that walking-based Geo AR gameplay can transform digital missions into an embodied experience of urban exploration. Participants were not simply immersed in their mobile screens; rather, they shifted their attention between the game interface and real streets. In this process, digital cues became a medium for looking at the city anew. Through digital flânerie, the event area was no longer merely a background for game missions, but became an urban cultural space that could be walked through, observed, and assigned meaning.

This study contributes to previous research on Geo AR games, which has often focused on competition, collection, or continuance intention, by connecting walking-based gameplay with digital flânerie and initial place connection. The case of *Pikmin Bloom* suggests that a non-competitive and low-pressure Geo AR game centered on walking can also serve as a useful lens for understanding interactions between people, digital missions, and urban space.

In practical terms, this study suggests that local tourism or cultural activities incorporating Geo AR missions, Special Spots, and freely explorable routes may guide participants into urban spaces they do not usually encounter, while also increasing their attention to local landscapes and cultural characteristics. This indicates that Geo AR city walking events are valuable not only for game participation, but also for urban guidance, tourism promotion, and the interpretation of cultural landscapes.

However, this study has several limitations. The findings are mainly derived from the specific event context of Pikmin Bloom Tour 2025: Kaohsiung, and the respondents were players who had participated in the event and were willing to complete the questionnaire. Therefore, the results may be influenced by the event design, sample characteristics, and participants' interests. Future research may compare different cities and different forms of Geo AR activities, or further examine whether digital flânerie can develop into longer-term place attachment or future visitation.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

The author declares that ChatGPT and Gemini were used as AI-assisted tools during the preparation of this manuscript. ChatGPT was used for language translation, proofreading, and formatting assistance. Gemini was used to assist in checking the consistency between selected source passages, in-text citations, and the author's written interpretation. The author reviewed and revised all AI-assisted outputs. The research ideas, study design, data collection, analysis, interpretation, and conclusions are the author's own original work.

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