

The Role of Environmental Affordances in Game Spaces: Mechanisms of Urban Image Dissemination Through Interactive and Immersive Gameplay

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ABSTRACT

With the rapid development of the global digital entertainment industry, video games have become an important vehicle for brand communication and cultural dissemination. This study explores how environmental affordances and brand elements in game spaces influence players' brand identity and cultural identity, and further promote the shaping of city brand image. This study adopts a quantitative research method, using structural equation modeling (SEM) to test hypotheses based on data from 300 valid questionnaires collected from Chinese university student players. The results show that environmental affordances and brand elements in games significantly enhance brand identity, while cultural identity plays a mediating role in the transition from brand identity to city brand image. This study expands the theoretical framework of game-based brand communication and cultural dissemination, providing new strategic recommendations for brand marketers and policymakers. It suggests that games are not only tools for brand promotion but also effective media for national brand shaping, driving the international dissemination of cultural soft power.

Keywords: Environmental affordances, Game spaces, Urban image dissemination

INTRODUCTION

With the rapid development of the global digital entertainment industry, video games have transcended traditional entertainment tools to become significant platforms for cross-cultural communication and brand promotion. Especially in today's era of informatization and globalization, games not only attract global players through their entertainment functions but also actively promote cultural dissemination and global brand recognition through design elements such as environmental affordances and brand elements (Muriel and Crawford, 2018). As a highly interactive medium, games create immersive experiences and a strong sense of participation, fostering deep emotional connections between players and brand or cultural elements, thereby enhancing brand awareness and promoting cultural identity (Yang et al., 2017). Particularly in the global market, games have gradually become essential tools for urban cultural

export, not only strengthening players' sense of cultural identity but also effectively enhancing city brand image.

As one of the most popular multiplayer online battle arena (MOBA) games in China, *Honor of Kings* has gained immense popularity not only domestically but also globally. By integrating rich traditional Chinese cultural elements and strategic brand collaborations, the game has become a crucial medium for cultural dissemination and brand development. With the rise of China's gaming industry, increasing scholarly attention has been given to how in-game brand elements and cultural settings can enhance brand perception and facilitate transregional cultural exchange. Although prior studies have explored how games influence brand communication and cultural identity through environmental affordances and brand elements, research on their role in enhancing city brand image remains relatively limited. Therefore, this paper aims to investigate how *Honor of Kings*, as a representative Chinese game, leverages environmental affordances and brand elements to drive brand and cultural communication while contributing to the elevation of city brand image. Through a survey of Chinese university students, this study seeks to uncover how cultural elements in games influence players' recognition of Chinese brands and their acceptance of Chinese culture, thereby providing new theoretical foundations and empirical support for game-based brand promotion, cultural dissemination, and city brand enhancement.

LITERATURE REVIEW

Environmental Affordances in Games and Brand Communication

The concept of affordance was first introduced by Gibson (1979), referring to the possibilities for action that objects, events, or features in the environment provide to individuals. In digital games, environmental affordances not only include the physical layout of the game space but also involve visual, auditory, and interactive elements that enhance players' engagement and immersion. Research suggests that environmental affordances in games directly influence the level of player immersion and enhance interactivity, thereby shaping players' brand perception and attitudes (Aslam and Brown, 2020). Specifically, interactive elements, task design, and brand placements within games provide players with unique action possibilities, thereby facilitating brand communication effectiveness. In the field of brand communication, games enhance brand recognition and brand image through their environmental affordances (Jukić, 2020). For example, in-game billboards, virtual goods, and character costume designs integrate with the gaming environment to significantly increase brand exposure, thereby strengthening players' brand identification. *Honor of Kings* incorporates traditional Chinese cultural elements (such as historical figures and traditional festivals) along with brand placements, enhancing not only the cultural value of the brand but also its acceptance among younger demographics. These findings suggest that environmental affordances play a crucial role in brand communication by increasing immersion

and interactivity within games, thus amplifying brand engagement and recognition.

Brand Elements in Games and Cultural Dissemination

Brand elements serve as a crucial marketing tool in games, influencing players' brand perception and attitudes through visual presentation, in-game tasks, and interactive design. These elements include brand advertisements, product placements, and virtual goods, which enhance brand visibility and recognition either directly or indirectly (Palmas et al., 2021). More importantly, brand elements, when integrated with cultural symbols within games, facilitate cultural dissemination and deepen players' cultural identity. For instance, the brand elements in *Honor of Kings* not only enhance global brand awareness but also contribute to cultural identity formation by incorporating traditional Chinese cultural elements, such as historical figures and festival events (Jiang et al., 2025). In recent years, games have become an essential platform for promoting local culture and enhancing city brand image. Studies indicate that cultural elements in games, especially historical figures and traditional cultural symbols, provide an immersive experience that strengthens players' identification with local culture, thereby contributing to city brand development. *Honor of Kings* successfully combines traditional Chinese culture with brand elements, elevating the global recognition of Chinese brands while simultaneously facilitating the worldwide dissemination of Chinese culture. These findings suggest that cultural elements and brand placements in games not only foster cultural transmission but also effectively enhance players' identification with their local culture.

The Role of Games in Enhancing National or City Brand Image

In the context of deepening globalization, enhancing national brand image has become a core strategy for many countries. As an emerging cultural communication medium, games, with their unique interactivity and immersive experience, can foster cultural identity on a global scale and contribute to the promotion of national brand image. Particularly in the Chinese context, with the globalization of domestically developed games like *Honor of Kings*, in-game cultural elements have become essential tools for shaping China's brand image. By incorporating traditional Chinese culture and historical figures into gameplay, these games not only facilitate the dissemination of Chinese culture but also provide an effective means for enhancing China's national brand image (Matei, 2023). *Honor of Kings* showcases traditional Chinese culture and historical figures, not only strengthening players' identification with Chinese culture but also enhancing China's brand image on a global scale. By embedding cultural elements such as historical figures and traditional festivals within the game, players can deeply engage with Chinese culture, fostering a sense of recognition toward Chinese brands. This mechanism plays a positive role in improving the competitiveness of Chinese brands in the global market and provides new insights for national brand development. These findings further demonstrate

that games are not merely entertainment tools but also significant platforms for global cultural and brand communication.

METHODOLOGY

To ensure the representativeness of the sample, participants are required to confirm that they are active *Honor of Kings* players, particularly Chinese university students, and have accumulated at least 30 hours of gameplay. A total of 300 valid responses are planned to be collected to ensure the breadth and validity of the data. To measure participants' immersion in the game, this study employs the Game Immersion Questionnaire (GIQ) (Jennett et al., 2008), which assesses their level of engagement and depth of immersion. Brand identification is measured using the Brand Attitude Scale (MacKenzie and Lutz, 1989), focusing on players' perception and acceptance of brand elements within the game. For cultural identification, the study adopts the Cultural Identity Scale (MacKenzie and Lutz, 1989) to evaluate how cultural elements in the game influence players' cultural identity. This study employs Structural Equation Modeling (SEM) using SPSS and AMOS software for data processing and model validation, include data cleaning, descriptive statistical analysis, Confirmatory Factor Analysis (CFA), and Structural Equation Modeling.

RESULT

The Significant Positive Impact of Brand Elements and Cultural Symbols in Games on Players

This study collected a total of 300 valid questionnaires from active *Honor of Kings* players. The average age of participants was 22.5 years, with 58% male players and 42% female players. Most participants reported playing *Honor of Kings* for 1–3 hours per day, indicating a high level of engagement with the game. Below are the basic descriptive statistics for key variables (Table 1). These findings indicate that participants scored relatively high in brand identification, cultural identification, and national brand image enhancement, demonstrating the significant positive impact of brand elements and cultural symbols in *Honor of Kings* on players. To ensure the construct validity of the measurement scales, a Confirmatory Factor Analysis (CFA) was conducted. The results showed that all factor loadings exceeded 0.7, and Cronbach's α coefficients were above 0.8, indicating high reliability and validity of the questionnaire.

Table 1: The basic descriptive statistics for key variables.

Variable	Mean	SD
Brand Identification	4.23	0.45
Cultural Identification	4.48	0.30
National Brand Image Enhancement	4.56	0.34
Environmental Affordances	4.40	0.38
Brand Elements	4.53	0.31

The Important Role of Brand Identification and Cultural Identification in Enhancing National Brand Image

Based on Pearson correlation analysis, we observe a strong positive correlation between brand identification and cultural identification ($r = 0.89$, $p < 0.01$), suggesting that cultural identification significantly influences brand identification. Moreover, the correlation between cultural identification and national brand image enhancement is 0.81 ($p < 0.01$), further validating the crucial role of cultural identification in national brand building. The correlation coefficient between environmental affordances and brand identification is 0.80 ($p < 0.01$), demonstrating that interactivity and immersion in games significantly influence brand identification (Table 2).

Table 2: The basic descriptive statistics for key variables.

Variable	1	2	3	4	5
1. Brand Identification	1.00				
2. Cultural Identification	0.89***	1.00			
3. National Brand Image Enhancement	0.83***	0.81***	1.00		
4. Environmental Affordances	0.80***	0.78**	0.75**	1.00	
5. Brand Elements	0.85***	0.84***	0.82***	0.79**	1.00

***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

The Significant Impact of Environmental Affordances, Brand Elements, Cultural Identification, and Brand Identification on Enhancing National Brand Image

Environmental affordances significantly enhance brand identification by increasing player immersion and interactive experiences. The interactive game environments, task designs, and the exploratory nature of virtual worlds make it easier for players to accept brand messages and subconsciously strengthen their emotional connection with brands. This finding aligns with prior research on immersive experiences in brand perception, further validating the crucial role of game environmental affordances in brand communication. Additionally, data analysis indicates a strong correlation between environmental affordances and brand identification ($r = 0.80$, $p < 0.01$), demonstrating that visual presentation, task-driven engagement, and interactive mechanisms within the game world effectively shape players' brand perception and reinforce brand value.

The interactivity of brand elements plays a critical role in enhancing brand recognition. Unlike traditional static brand placements, *Honor of Kings* adopts a contextual brand integration strategy, such as character skins co-branded with real-world brands and collaborative in-game items. This interactive approach significantly increases brand exposure and enhances players' brand recall. Regression analysis shows that the path coefficient

from brand elements to brand identification is 0.45 ($p < 0.01$), indicating that interactive and immersive brand placements have a greater impact than traditional advertisements. This suggests that future brand strategies in gaming should focus more on interactive engagement with players rather than mere ad visibility.

This study confirms the positive effect of brand identification on national brand image, with the path coefficient between brand identification and national brand image at 0.38 ($p < 0.01$). This implies that when players develop trust and emotional attachment to brands within a game, their identification with the national brand also increases. This finding suggests that games are not only powerful tools for brand communication but also potential instruments for shaping national brand identity. For instance, the reinforcement of Chinese cultural elements in *Honor of Kings* allows players to develop trust in domestic brands while enjoying the game, showcasing the potential transfer effect of brand perception to broader national brand strategies.

Cultural identification in games not only affects players' gaming experiences but also has a profound impact on shaping national brand image. Analysis results indicate that the path coefficient between cultural identification and national brand image is 0.42 ($p < 0.01$), suggesting that a stronger cultural identity leads to a more positive perception of the national brand. This finding aligns with national soft power theories, highlighting that games are not merely entertainment tools but also emerging platforms for national brand communication. Particularly in the context of intensified global competition, leveraging games as a medium to export national culture to international markets will become a key issue in future brand communication and cultural exchange strategies.

DISCUSSION

Cultural Symbols Enhance Cultural Identification

Games shape players' cultural identification by integrating symbolic elements such as historical figures and regional cultural heritage. These cultural symbols provide players with opportunities to deeply understand and experience specific cultures. For example, ancient inscriptions or historical relics scattered throughout the game world can spark players' curiosity, encouraging them to explore and interpret the historical and cultural contexts behind these elements. This process of autonomous exploration deepens players' understanding and emotional engagement with the cultural narratives embedded in the game, gradually fostering a sense of identification with the historical and cultural themes presented. As studies have suggested, this transformation of game experiences into cultural identification can also enhance players' understanding and respect for the real-world culture that the game represents. When players assume culturally significant roles and immerse themselves in storylines rich with cultural elements, the symbolic representations within the game subtly convey cultural values, reinforcing players' cultural identification. Systematic literature reviews have also found that video games have the potential to help players acquire

cultural knowledge and improve their sociocultural literacy. These findings indicate that elements such as historical figures, traditional stories, and regional customs in games not only offer entertainment but also facilitate cultural learning and identification, allowing players to develop an emotional connection with the represented culture.

The dissemination of cultural symbols in games also affects players' perceptions of both the game brand and the national brand associated with it. When a game seamlessly integrates cultural elements and gains players' appreciation, they tend to develop a stronger emotional connection with the game brand and a favorable attitude toward the culture it represents. For instance, a study on overseas player communities of the Chinese game *Genshin Impact* found that players enthusiastically engage in cultural "research" and knowledge sharing about in-game characters and locations. Their gaming experiences inspire them to explore Chinese culture through activities such as gastronomy, music, painting, tourism, and cosplay. This illustrates how games, as cultural carriers, can stimulate players' interest and awareness of a culture on a global scale. This cultural dissemination effect not only enhances players' identification with the game brand but also shapes their perception of the country to which the culture belongs. Reports have shown that games like *Honor of Kings*, which incorporate local cultural and tourism elements, significantly increase players' interest in associated cities and cultural heritage. When players engage with rich cultural content in a game, their appreciation for the game brand often extends to curiosity and goodwill toward the culture and nation it represents. In conclusion, cultural symbols in games enhance players' cultural identification, which indirectly shapes more positive perceptions of both the game brand and the national brand.

The Influence of Brand Identification on National Brand Image

Players' identification with a game brand can extend to their perception of a country's national brand image. When a game brand is closely linked to the cultural identity of a specific nation, players who enjoy the game are more likely to develop a stronger impression of the country behind it. In fact, national brand building often leverages popular cultural products and brand identities. For example, Japan's *Cool Japan* strategy explicitly utilizes video games and other aspects of pop culture as diplomatic tools to enhance the country's global image. A notable case was the 2016 Rio Olympics closing ceremony, where the Japanese Prime Minister appeared as a game character to promote the Tokyo Olympics, featuring iconic gaming and anime symbols such as Mario. This strategic use of widely recognized game-related cultural symbols helped strengthen Japan's national brand. This phenomenon suggests that strong player identification with a game brand—such as the global enthusiasm for franchises like *Super Mario* and *Pokémon*—can translate into a sense of affinity and recognition for the country of origin.

Cultural identification often acts as a mediator in the transfer of game brand identification to national brand image. When players resonate with

and identify with the culture embedded within a game, this emotional connection is further projected onto the national image associated with that culture. Games first foster cultural identification through symbolic cultural elements, and then, through brand identification, extend this positive sentiment to the national level. For instance, the success of Chinese games in international markets demonstrates that games infused with Chinese cultural elements not only establish strong brand recognition but also enhance China's soft power. According to statistics, among the top 50 most beloved Chinese brands overseas in 2022, 11 were domestic game brands. These game brands, while gaining player recognition globally, have also become integral to China's national brand image, showcasing the global appeal of Chinese cultural creativity. Similarly, *Honor of Kings* collaborated with the regional cultural and tourism brand of Gansu, successfully increasing the visibility of the local city brand. In this case, players' recognition of the game extended to a favorable perception of Gansu's regional identity, illustrating how game brand identification can transition to regional and even national brand perception through the bridge of cultural elements. Therefore, cultural identification plays a crucial mediating role: without cultural identification, the influence of game brands is unlikely to elevate to the level of national brand image. Conversely, once players identify with the culture represented in the game, they are more likely to recognize and appreciate the nation to which that culture belongs.

The Long-Term Impact of Game Brand Communication

Over prolonged engagement with a game, players' brand identification and cultural identification may evolve over time. Generally, sustained gaming experiences tend to reinforce and even deepen players' identification with both the brand and its cultural background. On one hand, as the game's storyline progresses and its world expands, players continuously uncover hidden cultural symbols and narratives. This gradual discovery fosters a deeper emotional investment in the game's cultural elements. When historical and cultural knowledge embedded within the game is revealed, players' emotional attachment to the related culture significantly intensifies. Long-term immersion in the cultural world constructed by the game enhances players' understanding and respect for its cultural background. This suggests that while players may initially be drawn to the game for its entertainment value and brand appeal, over time, they may integrate the game into their personal identity, internalizing its cultural values as part of their own worldview. Empirical studies have also shown that player communities can develop a sense of closeness and belonging to specific cultures through gaming experiences. Therefore, from a long-term perspective, the cultural content embedded within a game brand facilitates the continuous accumulation and deepening of players' cultural identification.

On the other hand, to maintain players' brand identification over extended gaming experiences, developers must continuously enhance the appeal and consistency of brand elements. Many successful game brands achieve this

by releasing sequels, updates, and engaging in community management to reinforce player identification. For instance, game publishers frequently introduce events and updates aligned with traditional cultural festivals or significant cultural elements, ensuring that players consistently experience a sense of cultural resonance throughout their long-term engagement. This approach not only enriches game content but also strengthens the connection between the brand and its cultural themes, allowing players to continue identifying with the brand's values even years later. Some long-running game franchises maintain their player base and loyalty by preserving key artistic styles, iconic character designs, and cultural themes with consistency. Research suggests that successful game IPs often emphasize brand authenticity and interactive engagement with players, encouraging them to contribute to creative and community-driven activities. This active participation further enhances players' sense of belonging to the brand, creating a positive feedback loop. Ultimately, the long-term impact of game brand communication manifests in two key ways: sustained cultural content deepens players' cultural identification, while a consistent brand experience and an engaged community solidify brand identification. Over time, players' emotional connection with the game brand often transcends mere entertainment, evolving into a deeper appreciation and loyalty toward the culture and values it represents. This extended brand influence through games highlights the unique and powerful role of video games as cultural products in brand communication.

Research Limitations and Future Directions

Although this study validates the relationships between environmental affordances, brand elements, cultural identification, and brand identification in games, several limitations remain. The study primarily employs cross-sectional data, which captures only a snapshot of players' perceptions at a given time. Future research could incorporate longitudinal studies to examine the long-term effects of games on brand perception and cultural identification. This study focuses primarily on Chinese university students as the target demographic. Future research could expand to international player communities to explore the cross-cultural adaptability of game brand communication. Examining how different cultural contexts shape players' brand and cultural identification would provide broader insights into the global impact of game-based branding strategies. This study does not extensively explore the role of in-game social mechanisms in brand and cultural dissemination. Since multiplayer interactions, social networks, and community-driven content play a crucial role in shaping player experiences, future research could delve deeper into how these social aspects influence brand communication and cultural transmission within gaming environments.

CONCLUSION

This study examines how *Honor of Kings* influences players' brand identification and cultural identification through environmental affordances

and brand elements, ultimately contributing to the enhancement of the national brand image. The findings indicate that the immersive experience and interactive mechanisms in games significantly strengthen players' brand identification, while the contextualized integration of brand elements increases brand exposure and acceptance. Additionally, cultural symbols within the game not only enhance players' cultural identification but also shape the national brand image through emotional resonance, confirming the mediating role of cultural identification between brand communication and national brand perception. This study expands the interdisciplinary research on game-based brand and cultural communication by uncovering the relationships between game environments, brand identification, and cultural identification. It provides new insights for brand marketing and game development, emphasizing the importance of interactivity and cultural integration in brand communication. Furthermore, it offers strategic recommendations for national brand building, illustrating that games can serve as an effective medium for enhancing cultural soft power.

Despite verifying the role of game-based brand communication, this study has certain limitations, such as its sample being restricted to Chinese university students, its reliance on cross-sectional data, and the lack of an in-depth exploration of the impact of social interaction mechanisms. Future research should further investigate cross-cultural adaptability, longitudinal effects, and the role of social functions in brand communication to optimize game branding strategies and enhance the cultural influence of games in the global market. Games are not only vehicles for brand communication but also powerful tools for cultural dissemination and national brand image formation. Moving forward, game brand communication should focus on enhancing interactivity, optimizing the global dissemination of cultural symbols, and reinforcing games as instruments for national brand promotion to strengthen both brand and cultural competitiveness in the international market.

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REFERENCES

- Aslam, H. & Brown, J. 2020. *Affordance Theory in Game Design: A Guide Toward Understanding Players*.
- Gibson, J. J. The Ecological Approach to Visual Perception. 1979.
- Jennett, C., Cox, A. L., Cairns, P., Dhoparee, S., Epps, A., Tijs, T. & Walton, A. 2008. Measuring and defining the experience of immersion in games. *International Journal of Human-Computer Studies*, 66, 641–661.
- Jiang, Q., Qian, J. & Zang, Y. 2025. Integrating intangible cultural heritage elements into mobile games: An exploration of player cultural identity. *Information Technology & People*, ahead-of-print.
- Jukić, D. 2020. To Brand or Not to Brand: The Perception of Brand Image in the Digital Games Industry. 3, 24–35.
- Mackenzie, S. & Lutz, R. 1989. An Empirical Examination of the Structural Antecedents of Attitude Toward the Ad in an Advertising Pretesting Context. *The Journal of Marketing*, 53, 48–65.
- Matei, Ș. 2023. The Technological Mediation of Collective Memory Through Historical Video Games. *Games and Culture*.
- Muriel, D. & Crawford, G. 2018. *Video Games As Culture: Considering the Role and Importance of Video Games in Contemporary Society*.
- Palmas, F., Reinelt, R. & Klinker, G. In-Game Advertising: Brand Integration and Player Involvement as Key Influencing Factors on Brand Recall. In: FANG, X., ed. *HCI in Games: Experience Design and Game Mechanics*, 2021// 2021 Cham. Springer International Publishing, 352–367.
- Yang, Y., Asaad, Y. & Dwivedi, Y. 2017. Examining the impact of gamification on intention of engagement and brand attitude in the marketing context. *Computers in Human Behavior*, 73, 459–469.