Investigating the Impact of Chinese Cultural Elements on Player Loyalty in Video Games: A Cross-National Exploratory Study

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Abstract. With the swift evolution of the gaming market, video games have developed into a prominent medium for cultural dissemination. However, current research exhibits limitations in comprehending the elements within games that significantly influence users' intention to continue to play. Acknowledging this gap, this study adopts the framework of Cultural Adaptation Theory to investigate the impact of cultural elements in the game Genshin Impact on player loyalty. Leveraging online surveys and PLS-SEM analysis, we deduced the following findings: cultural symbols, storyline, and characters associated with Chinese culture exert a positive influence on player loyalty, whereas no significant impact was observed in the case of values. This research contributes to enhancing our comprehension of the pivotal interplay between culture and gameplay, thereby informing the efforts of game developers in crafting more culturally resonant and captivating gaming experiences.

Keywords: Cultural Adaptation Theory, Genshin Impact, Chinese cultural elements; Player loyalty

1 Introduction

In recent years, the global gaming industry has experienced a remarkable surge in growth, transcending geographical confines and uniting players from diverse backgrounds through shared virtual encounters. What were once simple forms of entertainment have evolved into powerful vehicles for cultural expression, exerting a profound influence on a worldwide scale [1]. Numerous video games have adeptly harnessed the potential of cultural elements to cultivate international appeal. Amidst these instances, China emerges as a nation steeped in profound historical and traditional heritage, successfully transposing its cultural distinctiveness into popular gaming phenomena. A striking example is the game Honor of Kings, which ingeniously adapts classic heroes

S. A. Qalati et al. (eds.), *Proceedings of the 2023 3rd International Conference on Social Development and Media Communication (SDMC 2023)*, Advances in Social Science, Education and Humanities Research 807,
https://doi.org/10.2991/978-2-38476-178-4_34

in diverse forms, utilizing these heroes as conduits and games as mediums to propagate cultural identity [2]. Nevertheless, a comprehensive exploration into the lasting implications of cultural elements within games remains elusive, leaving a noteworthy gap in our comprehension of the precise mechanisms through which specific cultural facets within games contribute to player loyalty.

In the pursuit of deeper insights, this study aims to meticulously examine the intricate ways in which Chinese cultural elements, as integral components of the gaming experience, exert influence on players' determination to sustain their involvement. Employing a questionnaire survey methodology, we will concentrate our investigation on Genshin Impact, a domestically developed open-world game that boasts a substantial player base and has garnered significant attention both within China and across international spheres. By delving into the world of Genshin Impact, we endeavor to unearth insights that not only enrich the scholarly dialogue but also offer invaluable implications for game developers, industry stakeholders, and players alike.

2 Literature review and hypothesis development

2.1 Cultural Adaptation Theory and video games

Cultural Adaptation Theory is a conceptual framework rooted in the process of aligning communicative content, practices, and symbolic constructs with the cultural context of a target audience. This theory posits that effective communication and engagement occur when information is tailored to resonate with the cultural background, values, beliefs, and linguistic nuances of the recipient [3]. In essence, cultural adaptation seeks to bridge cultural gaps by facilitating understanding and acceptance through the modification and localization of communication, products, or experiences. It holds significant implications across various domains, such as marketing [4], education [5], and healthcare [6].

Within the cross-cultural diffusion of video games, the Cultural Adaptation Theory serves as a pivotal framework to scrutinize disparities in player acceptance, engagement behaviors, and cultural affiliations concerning games within diverse cultural contexts. For example, Dong & Mangiron [7] employed this theory and expanded the game design considerations such as color palettes, character portrayals, and gameplay mechanics. Bankler [8] applied this theory to investigate the suitable incorporation of culturalization strategies within educational games designed specifically for children. Nonetheless, despite these valuable contributions, the comprehensiveness of the aspects explored in the aforementioned studies remains limited. Consequently, the precise impact of cultural elements on game usage remains obscured.

2.2 Hypothesis

In the study, we focus on player loyalty, which refers to the intention of users to continue engaging with a game over an extended period [9]. Understanding the factors that

influence player loyalty is important for game developers, as it helps them design experiences that resonate with players and encourage prolonged engagement. Regarding the cultural factors that may affect it, we focus on the following aspects:

Cultural symbols embedded within a game, such as visual motifs, architecture, and artifacts [10], have the potential to resonate with players on a deeper level. Genshin Impact adeptly incorporates various elements of Chinese culture, including architectural styles of traditional Chinese buildings, intricately designed landscapes that mirror Chinese paintings, and artifacts that capture the essence of Chinese heritage. The presence of these symbols may lead to increased player loyalty by creating a sense of identity and belonging within the virtual world. Therefore, we hypothesize that:

H1. Cultural symbols in Genshin Impact have a positive effect on player loyalty.

Values are deeply held views that act as guiding principles for individuals and organizations [11]. Genshin Impact introduces themes of societal harmony, unity, honesty, and other ethical values that are celebrated in Chinese culture. Players traversing the game's environments often encounter scenarios where these values take center stage, guiding characters' actions and shaping the unfolding storyline. When the game reflects values that players are identified with, they are more likely to feel a sense of resonance and investment. Thus, we hypothesized that:

H2. Values in Genshin Impact have a positive effect on player loyalty.

Storyline of a game plays a pivotal role in engaging players and sustaining their interest [12]. The storyline in Genshin Impact transcends mere entertainment, ingeniously weaving threads of Chinese tales, myths, and cultural heritage. Players embark on quests that mirror ancient and legendary stories, fostering a sense of connection to their cultural lineage. The fusion of these cultural elements within the narrative engenders a deep emotional engagement. This emotional resonance fuels players' curiosity, motivating them to continue playing to unravel the narrative's intricacies and discover the secrets concealed within the virtual world. Thus, we hypothesize that:

H3. Storyline in Genshin Impact has a positive effect on the player loyalty.

Furthermore, in-game characters serve as avatars for players to project themselves into the virtual world. The character design in Genshin Impact is a careful combination of Chinese archetypes and diverse attributes, allowing players to identify with a wide array of personalities and backgrounds. Players who identify with characters' traits, backgrounds, or values often forge a deeper emotional bond with the game. As they venture on virtual journeys accompanied by relatable avatars, a sense of familiarity and belonging emerges, underpinning their motivation to continue engaging with the game. Hence, we hypothesize that:

H4. Character in Genshin Impact has a positive effect on the player loyalty.

The proposed research model and related hypotheses are shown in Figure 1.

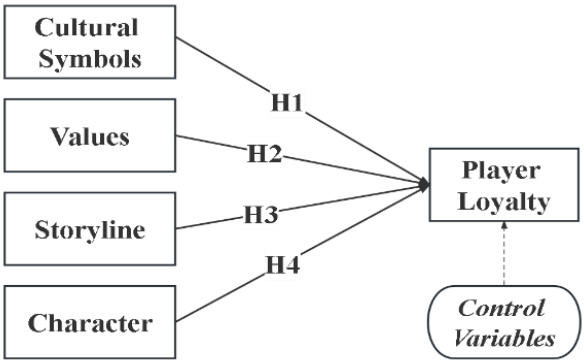

Fig. 1. Research model

3 Methodology

3.1 Measurements

All measures were evaluated on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The measurement items related to cultural symbols [13], values [14], character [15], and storyline [15] were adapted from the previous work. Additionally, we measure player loyalty by items derived from the research by Wu and Liu [16]. To ensure the appropriateness and relevance of the items to Genshin Impact's unique features, we conducted necessary modifications based on the game's characteristics.

3.2 Data Collection

We chose Qualtrics.com to administer the questionnaire and invited Genshin Impact players from various countries to participate in our study. We totally received 237 valid responses from more than fifteen different countries. Each participant was offered a reward of 0.1 USD as a token of appreciation for their time and valuable input. Among the 237 participants, 106 self-reported as female, 126 as male, and 5 as non-binary. Their age ranged from 18 to 64 years (M = 31.53 years, S.D. = 8.83). Participants were recruited from a wide range of countries, with the largest representation from the United States (n = 198), followed by India (n = 10), and Brazil (n = 5), among others. We employed Partial Least Squares Structural Equation Modeling (PLS-SEM) as the analysis method and used the software SmartPLS 3.0 to conduct the analysis [17].

4 Results

4.1 Test of measurement model

We conducted a series of statistical tests and analyses to assess the measurement model's validity and reliability. As shown in Table 1, the Cronbach's alpha coefficients for all constructs were above the acceptable threshold of 0.70, suggesting sufficient levels of reliability [17]. For convergent validity, the composite reliability (CR) values were above 0.70 and the average variance extraction (AVE) values were above 0.50, exceeding the recommended cutoff [17]. All factor loadings were found to be above 0.70, indicating significant relationships between the measurement items and their corresponding latent constructs [18].

As presented in Table 2, the square root of AVE for each construct was higher than the correlation between that construct and any other construct, indicating that discriminant validity was acceptable [18]. Additionally, the variance inflation factors (VIF) ranged from 1.000 to 1.983, suggesting no significant multicollinearity problem [19]. The results provide strong support for the validity and reliability of the measurement items.

Table 1. Descriptive statistics of variables.

Constructs	Cronbach's alpha	CR	AVE
Cultural Symbols	0.832	0.882	0.599
Values	0.832	0.888	0.665
Storyline	0.804	0.872	0.630
Character	0.809	0.875	0.636
Player Loyalty	0.791	0.864	0.615

Table 2. Correlation matrix and square root of AVE.

Constructs	Character	Storyline	Cultural Symbols	Values	Player Loyalty
Character	0.797				
Storyline	0.783	0.794			
Cultural Symbols	0.764	0.701	0.774		
Values	0.791	0.757	0.739	0.815	
Player Loyalty	0.547	0.545	0.518	0.469	0.784

Note. Values on the diagonal are the square roots of the average variance extracted (AVE) for each construct.

4.2 Test of structural model

The strength of the relationships between variables was assessed employing the standard bootstrap method with 5,000 bootstrapping samples. As presented in Table 3, the results revealed that Genshin Impact's cultural symbols ($\beta = 0.206$, $p < 0.05$), storyline ($\beta = 0.275$, $p < 0.01$), character ($\beta = 0.240$, $p < 0.05$) had a positive impact on player

loyalty, thereby supporting H1, H3, and H4. However, values did not have a significant impact on player loyalty ($p > 0.05$), leading to the non-support of H2. R2 for player loyalty is 0.371, indicating that the proposed structural model explains 37.1% of the variance of it. Regarding control variables, the test results showed the positive relationship between users' profession and play loyalty ($\beta = 0.127$, $p < 0.05$), while their age, gender and education background had no significant impacts on it ($p > 0.05$).

Table 3. Detailed path results.

	Path Coefficient	Standard Deviation	T Statistics	P values	Hypothesis
H1: SYM→PL	0.206	0.096	2.138	0.033	Supported
H2: V→PL	-0.064	0.114	0.564	0.573	Not
H3: SL→PL	0.275	0.099	2.763	0.006	Supported
H4: C→PL	0.240	0.110	2.177	0.029	Supported

Note. SYM = Cultural Symbols, V = Values, SL = Storyline, C = Character, PL = Player Loyalty.

5 Conclusions

Through our calculations, cultural symbols, storyline, and character exert a positive moderating influence on player loyalty. However, the impact of values is not significant, the reason of which may lie in the variation in cultural values resides within countries [20]. Theoretically**,** our study provides insights in several aspects. Firstly, by extending Cultural Adaptation Theory to game environment, this research introduces a novel context for understanding its ecological validity. Secondly, this research enriches our understanding of the cultural factors that contribute to enhanced player loyalty. Thirdly, the study offers insights into the dynamics of cross-cultural communication within game environments, illuminating the mechanism that facilitates cultural communication and fosters mutual understanding. The research also carries significant practical implications. By understanding how cultural adaptation enhances player engagement, developers can integrate authentic cultural elements thoughtfully into game narratives, character design, and world-building. For game publishers aiming to penetrate diverse global markets, they can tailor marketing campaigns and localization efforts to emphasize cultural authenticity, leading to more successful launches in different regions.

Acknowledgments

This work was supported by the Ministry of Education of the People's Republic of China Humanities and Social Sciences Youth Foundation (Grant No. 22YJC860034), and Nankai University Asian Studies Center Project (Grant No. AS2310).

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