Exploring the impact of perceived value dimensions and brand image on in-game purchase intention in freemium mobile games

Abstract:

This study investigates the factors influencing in-game purchase intention in freemium mobile games, with a focus on perceived value dimensions and the mediating role of brand image. The findings reveal that perceived enjoyment is the most significant predictor of purchase intention, while economic and quality values have limited direct effects. Surprisingly, perceived unobstructedness positively impacts purchase intention, challenging previous assumptions. Social value, however, does not significantly affect purchase intention, suggesting its role may be overestimated in freemium games. This research contributes to the academic understanding of how players' perceived values and brand image shape their purchase decisions. It introduces brand image as a key mediator and offers new insights into how emotional, unobstructedness and brand image drive consumer behaviour in freemium mobile games. By broadening the conceptualization of perceived value, this study enriches the theoretical framework of in-game purchase intention, providing valuable implications for both academic research and practical game design and marketing strategies.

Key words: Freemium mobile games, In-game purchase intention, perceived value
Track: Consumer Behaviour

Research Background

Freemium mobile games have become the most commercially valuable game category, accounting for 49% of total global gaming revenue as of 2023, a sevenfold increase since 2012 (Newzoo, 2023). Unlike other platforms, mobile game companies derive revenue mainly through in-game purchases, as intrusive advertising has declined and the market for one-time payment games has been overshadowed by free-to-play models. Freemium games now dominate, relying on microtransactions to sustain revenue. Understanding why players spend money in games they can play for free is vital for game developers. However, research on players' purchase intentions in this segment remains insufficient. Previous studies have identified factors such as game loyalty (Balakrishnan & Griffiths, 2018), satisfaction (Wei & Lu, 2014), and technology acceptance (Kostopoulos et al., 2023), but these studies often lack comprehensive theoretical frameworks and fail to differentiate between perceived value dimensions. As freemium mobile games hold immense market potential, this study aims to explore factors influencing players' willingness to pay in this specific category.

Literature Review

Freemium model and mobile games

The term "freemium," coined by Wilson (2006), combines "free" and "premium" to describe products offering basic features for free while charging for premium upgrades. In mobile games, this model has shifted design priorities from selling games to encouraging in-game purchases (Hamari & Lehdonvirta, 2010). Research highlights various psychological drivers of purchase intention, including satisfaction (Wei & Lu, 2014), flow experience (Ghazali et al., 2022), and social cohesion (Fang et al., 2019). Some studies also critique how game companies exploit psychological vulnerabilities, such as inducing addiction or leveraging impatience (Evans,

2016; Geng & Chen, 2019). However, most research generalizes freemium and paid games or focuses on platforms other than mobile. Studies on freemium mobile games remain scarce despite their significant commercial value. This research addresses the gap by investigating in-game purchase behaviour in this specific context.

Perceived value theory

Perceived value theory explains consumer behaviour as an assessment of utility versus cost based on subjective perception (Sheth et al., 1991). It contains emotional, social, quality, and economic values, known as the PERVAL framework (Sweeney & Soutar, 2001). Perceived value theory has been extensively used in digital marketing research (Hsu & Chen, 2018). Freemium mobile games uniquely involve both free and paid content, making perceived value particularly relevant. Understanding how players evaluate these dimensions is critical for studying willingness to pay in freemium games.

Perceived unobstructedness in mobile Games

In freemium games, gameplay fluency, or "perceived unobstructedness," significantly influences purchase behaviour in Hamari's (et al., 2017) qualitative research. Developers often introduce deliberate obstacles, such as waiting times or restricted features, to encourage purchases of premium items (Mäntymäki et al., 2019). While fluency improves perceived utility, overly fluent free experiences may reduce purchase incentives. This study incorporates perceived unobstructedness as a key factor in understanding player behaviour in freemium games.

Research gaps and hypotheses development

Although perceived value theory has been applied in gaming, previous studies often focus narrowly on specific features within each dimension, neglecting comprehensive assessments.

This research uniquely integrates perceived unobstructedness into the perceived value model to better reflect the dynamics of freemium games.

Additionally, this study explores whether variables indirectly influence willingness to pay through mediating factors like brand image. For example, perceived value may enhance brand image, which in turn impacts in game purchase decisions. This approach addresses unexplored aspects of consumer behaviour, offering insights for developers and marketers into the interplay between perceived value and brand loyalty in freemium mobile games.

Emotional value

Emotional value refers to the utility generated by the emotional and mental experiences users derive from a product or service (Sweeney & Soutar, 2001). In hedonic systems like games, emotional value often manifests as perceived enjoyment, encompassing positive emotions such as pleasure, excitement, and relaxation (Guo & Barnes, 2011). Perceived enjoyment has been shown to increase users' engagement and willingness to pay in digital environments (Guo & Barnes, 2012). Games, as hedonic products, prioritize creating enjoyable experiences, directly influencing user behaviour (Hsiao & Chen, 2016). Positive emotional experiences also enhance brand attitudes and image (Chul-Moo, 2018).

H1: Perceived enjoyment positively influences in-game purchase behaviour.
H2: Perceived enjoyment positively impacts the company's brand image.

Social value

Social value is the utility derived from enhancing one's social self-concept through interactions, status, and community belonging (Sweeney & Soutar, 2001). In games, social value drives purchasing behaviour as players seek to enhance their social image or status through virtual goods (Messinger et al., 2009). Positive social experiences also foster favourable brand perceptions and word-of-mouth advocacy (Berger & Fitzsimons, 2008).

H3: Social value positively influences in-game purchase behaviour.
H4: Social value positively impacts the company's brand image.

Quality value

Quality value reflects users' perceptions of a product's quality and performance (Sweeney & Soutar, 2001). In games, this includes elements like graphics, design, and audio. High-quality games not only enhance engagement but also boost purchase intentions (Hamari et al., 2017). Moreover, quality perceptions significantly shape brand image (Setyadi et al., 2017).

H5: Quality value positively influences in-game purchase behaviour.
H6: Quality value positively impacts the company's brand image.

Economic value

Economic value pertains to perceptions of cost, price fairness, and the balance of value received versus price paid (Sweeney & Soutar, 2001). Freemium games rely on microtransactions and strategic pricing to encourage purchases (Hsiao, 2013). Fair pricing strategies enhance players' trust and brand perception (Hung et al., 2011).

H7: Economic value positively influences in-game purchase behaviour.
H8: Economic value positively impacts the company's brand image.

Perceived unobstructedness

Unique to freemium games, perceived unobstructedness reflects seamless gameplay without artificial barriers like waiting times or repetitive tasks (Hamari et al., 2017). While paid features can improve gameplay flow, perceived obstructions may harm brand perception (Hamari & Lehdonvirta, 2010). Conversely, fluent gameplay fosters positive brand attitudes.

H9: Perceived unobstructedness negatively influences in-game purchase behaviour.
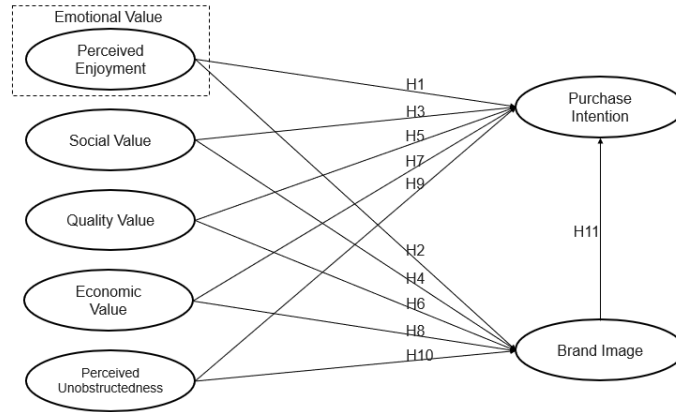*H10: Perceived unobstructedness positively impacts the company's brand image.*

Brand image and purchase intention

Brand image, the mental associations linked to a brand, is a critical factor in consumer decisions (Patterson, 1999). Strong brand images enhance trust, perceived quality, and purchase intentions, especially in competitive markets (Limanto et al., 2018).

H11: Brand image positively influences purchase intention.

Figure 1 describes the research model and hypotheses of this study.

Figure 1: Research model

Method

Based on a positivist stance, this study adopts a deductive research approach and employs a survey strategy to target Chinese players aged 18 and above, focusing on the world's largest mobile game market, which accounts for one-third of global consumption annually (Bao, 2022). The research centres on Genshin Impact, a globally successful freemium game that generated $245 million within 30 days of its 2019 launch (Zhao et al., 2022). Its large player base, especially in China, and high engagement with in-game purchases make it an ideal subject for exploring consumer behaviour in freemium mobile games. Convenience sampling was considered as the most expedient way to obtain samples for this study. The questionnaire is distributed through the Qualtrics platform. To ensure a diverse sample, the questionnaire link was shared on Weibo, Bilibili, and NGA Player Forum, targeting both casual and hardcore gamers. A total of 465 responses were collected, with 360 valid after excluding incomplete or ineligible entries. The questionnaire included demographic data (e.g., age, gender, income, gaming habits) and measurements for key variables using 30 items on a 5-point Likert scale, adapted from validated instruments. Designed in Chinese and English, it underwent translation-back translation and pre-testing with 10 players. Data were analysed using descriptive statistics and Partial Least Squares Structural Equation Modelling (PLS-SEM).

Results

Descriptive statistical analysis

Males dominate the sample, comprising 238 (66.2%) respondents, with females at 93 (25.8%) and 29 (8.0%) opting not to disclose gender. The largest age group is 22–25 years (40.3%), followed by 18–21 (25.0%), 26–29 (18.6%), and 30+ (16.1%). Respondents aged 18–29 make up 83.9% of the sample, highlighting freemium games' appeal among younger players. Most participants (64.4%) spend 90 minutes or more daily gaming, with heavy players (120+ minutes) accounting for 24.4%. Notably, 89.2% reported making at least one in-game purchase, while only 10.8% had never spent money.

Measurement model assessment

All constructs in this study have Cronbach's Alpha values above 0.7, ranging from 0.796 to 0.908, demonstrating strong internal consistency. Perceived enjoyment, brand image, and economic value exhibit particularly high consistency with α values exceeding 0.87. AVE values for the seven constructs range from 0.613 to 0.784, meeting the required threshold of 0.5. The constructs perceived enjoyment and economic value perform best, with AVE values of 0.784 and 0.748, respectively. Each construct's AVE square root is greater than its correlation with other constructs, confirming discriminant validity.

Structural model assessment

Brand image strongly influences purchase intention ($\beta = 0.262$, $p < 0.001$), followed by enjoyment's effects on brand image ($\beta = 0.208$, $p < 0.001$) and purchase intention ($\beta = 0.155$, $p < 0.01$). Quality value significantly impacts brand image ($\beta = 0.436$, $p < 0.001$) but not purchase intention ($\beta = 0.030$, $p > 0.05$). Economic value influences brand image ($\beta = 0.151$, $p < 0.01$) but marginally affects purchase intention ($\beta = 0.143$, $p = 0.058$). Perceived unobstructedness significantly impacts both purchase intention ($\beta = 0.141$, $p < 0.05$) and brand image ($\beta = 0.115$, $p < 0.01$). Social value has minimal and non-significant effects. Total effects indicate brand image and perceived enjoyment have the strongest impacts on in-game purchase intention.

Discussions

Perceived enjoyment emerged as the strongest predictor of in-game purchase intention, underscoring that players are likely to extend pleasurable experiences by purchasing virtual items or premium features. This highlights the rising importance of emotional value in freemium mobile games, making it the most crucial dimension. Conversely, the direct influence of economic and quality values has diminished, with economic value approaching insignificance and quality value relying heavily on indirect effects through brand image.

Surprisingly, perceived unobstructedness positively impacted purchase intention contrary to studies like Mäntymäki et al. (2019), which suggest obstructed gameplay drives payments. Our findings indicate that low game fluency reduces willingness to pay, as players may switch games instead. Fluency fosters engagement and time investment, indirectly increasing payment likelihood. Notably, social value, often irreplaceable in digital products, showed no impact on purchase intention in this context. This significant finding cautions against overestimating its importance without explicit empirical research, particularly in single-player games like Genshin Impact, where social interactions are less critical. Brand image plays a dual role, directly promoting in-game purchase intention and mediating other dimensions of perceived value. For quality value, brand image serves as an almost complete mediator, reinforcing the importance of game quality in shaping brand perception.

Theoretical contributions and practical implications

The perceived value theory has been widely used to predict consumer behaviour, yet its application in the freemium mobile game context remains limited. This study innovatively introduces brand image as a mediating variable, assessing its role alongside perceived value dimensions and perceived unobstructedness. Results confirm brand image as a critical factor, showing the strongest path coefficient to purchase intention while mediating the effects of quality value, perceived enjoyment, and economic value. This expands the theoretical understanding of purchase behaviours in freemium gaming environments. The findings offer actionable insights for game developers and marketers, aiding in designing engaging games and crafting effective strategies to enhance purchase intention.

Limitations and future research

This study focuses on the Chinese market, and cultural bias may influence the results, suggesting the need for replication in other regions. Future research could combine qualitative methods, such as interviews and experiments, with quantitative data to provide a more comprehensive understanding of consumer behaviour. Additionally, exploring different game types would offer broader insights.

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