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From play to pay: The moderating role of self-efficacy in the psychological and social drivers of virtual item purchases in online video games

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Abstract

This study examines the moderating effect of self-efficacy on the factors that affect consumers' purchasing intentions toward virtual items from computer online video games. It explores how these factors (Enjoyment, flow, continuous playing gaming intention, and peer influence) impact the purchase intention of customers, having self-efficacy as the moderating effect. This study uses a quantitative approach. It was conducted via an online survey distributed to 600 respondents from the Philippines who are active players of computer online video games. The results reveal that all factors significantly impact purchase intentions, with self-efficacy moderating each factor's relationship. The positive effect of Enjoyment and Flow on purchase intention is amplified by high levels of self-efficacy while alleviating peer pressure's effect on purchase intention. Continuous Playing Intention's relationship with self-efficacy holds across all levels, with higher levels showing consistently strong purchase intentions. This study underscores decision-making in digital consumerism by focusing on Filipino gamers, which offers culturally relevant insights that contribute to the expansion of gaming behaviors globally. Further, the insights gained from this research could offer marketers and game developers directions on enhancing their games' overall experience and profitability.

Keywords: Purchase intention; Online gaming; Consumer behavior; Gaming industry; Digital consumerism

1. Introduction

The online gaming industry has grown into a multibillion-dollar global phenomenon, accelerated by the COVID-19 pandemic, which forced people indoors and increased reliance on digital platforms for entertainment and socialization (Billewar et al., 2021; Erfani & Bahrami, 2022). Beyond recreation, gaming now serves as a tool for stress relief and social interaction, driving demand for virtual goods like cosmetic items and power-ups, which enhance gameplay and status (Melodia et al., 2020; Coe & Yang, 2021). Markets such as the Philippines have seen a notable surge in gamers, contributing to a global industry projected to exceed 347 billion with mobile gaming generating 248 billion (Guillermo 2021; Chen, 2022).

Key factors influencing in-game purchases include enjoyment, flow (a state of deep immersion), and peer influence. Enjoyment and flow boost engagement, encouraging players to invest time and money, while social pressure drives purchases to emulate peers or gain recognition (Yang & Gong, 2021; L. Wang, 2021). Self-efficacy—players' belief in

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their gaming skills—further impacts behavior, as confident gamers are more persistent and likely to buy virtual items to enhance performance (Ratan et al., 2020; Zhang et al., 2019). Emotional regulation and problem-solving in games also reinforce self-efficacy, linking competence to spending habits (Sharma et al., 2020).

Despite existing research, conflicting findings persist on the primary drivers of purchase intention, with studies highlighting enjoyment, flow, continuous play, or peer influence (Susilo et al., 2024; Hamari et al., 2019). Additionally, most studies lack regional focus on markets like the Philippines, and the moderating role of self-efficacy remains underexplored (San-Martin et al., 2019). This study addresses these gaps by quantifying the influence of these factors and examining how self-efficacy moderates their impact, aiming to guide developers and marketers in optimizing game design and engagement strategies to boost profitability (Cheah et al., 2021; Hamann et al., 2023).

2. Review of related literature and hypothesis development

2.1. Purchase intention

The purchase intention of consumers is a prerequisite for the occurrence of purchase behavior (Zhang et, al, 2022). Understanding the factors that influence consumers' purchase intentions in the realm of gaming is critical for comprehending the dynamics of gaming consumerism. Zhang et al. (2022) emphasize that purchase intention is a key precursor to actual buying behaviour, highlighting the need to explore various motivators that impact this intention. For instance, Ghazali et al. (2023) explored player behaviors in Dota 2, revealing that social influence and perceived enjoyment are crucial drivers of purchasing intentions. Similarly, the Theory of Planned Behavior demonstrates that attitudes, subjective norms, and perceived behavioral control significantly shape gamers' intentions to purchase virtual items. These findings suggest that both intrinsic enjoyment and external social dynamics play essential roles in consumer decision-making within gaming environments.

In addition, marketing strategies such as in-game advertising have been shown to impact purchase intentions significantly. The employment of Stimulus-Organism-Response (SOR) framework to illustrate how effective advertising within games can enhance brand purchase intentions, indicating the importance of contextual marketing in shaping consumer behavior. Moreover, highlighted the effects of flow experiences and user satisfaction on in-game purchase intentions, asserting that a heightened sense of immersion and positive gameplay experiences correlate with an increased likelihood of purchasing virtual items. Lastly, Dhahak and Huseynov (2020) found that perceived enjoyment and trust are pivotal predictors of purchase intentions in gamified contexts, underscoring the importance of emotional engagement and credibility in driving consumer behavior.

2.2. Self-Efficacy

Self-efficacy is the belief a person has in one's ability to perform and complete jobs or to attain goals (Farmer et al., 2021; Hamann et al., 2023). Self-efficacy influences the way a person resolves problems, the persistence a person exerts if obstacles are perceived, and the effort a person applies to activities (Shiau et al., 2020; Liu et al., 2020; Farmer et al., 2021; Hamann et al., 2023). Individuals who have a low perception of self-efficacy avoid challenges tend to easily give up once they meet challenges (Hassan & Moradifar, 2021). Those people having a high perception of self-efficacy like to view challenges as tasks to be mastered (Yang et al., 2021; Weber & Harzer, 2022). Self-efficacy is quite important for behavior and motivation when applied in the settings of education, employment, and personal development (Fathi et al., 2021; Shiau et al., 2020; Liu et al., 2020;). Self-efficacy is likely to influence decisions, feelings, or even coping mechanisms (C. Yang, 2021; Ding & Hong, 2023; Farmer et al., 2021; Hamann et al., 2023).

Self-efficacy has been coined to describe the confidence of a player as regards his or her ability to win a particular game or to accomplish a given gaming task (Sharma et al., 2020; San-Martin et al., 2019). It involves the confidence of a player in being able to learn the principles of games, complete levels, achieve objectives, and overcome obstacles in playing (Zou et al., 2021; Ellison et al., 2020). While low self-efficacy players may be easily offended by failure and avoid tougher tasks or quit easily, high gaming self-efficacy players are likely to take up challenging tasks, test different solutions, and persist under challenging conditions (Lu & Lien, 2019). Experience and successful gameplay, game feedback, and other players support were likely to be some instruments of self-efficacy, which would affect motivation, involvement, and enjoyment in the overall gaming (Zou et al., 2021; Wang & Zheng, 2020; Ellison et al., 2020).

2.3. Enjoyment

There have been quite some studies on the importance of enjoying factors to drive purchase intentions and engagement within gamified environments. Continuous engagement is strongly driven by enjoyment or the intrinsic pleasure or satisfaction gamers find from doing something. It's rooted in the experience of positive emotion associated with

interaction, like success in playing, the trance of immersion, or the pleasure of social bonding. This built-in pleasure leads players to stick to the game or gamified marketing content because they want to repeat the good experiences. It's the desire to continue experiencing these positive feelings that leads to both the act of engaging and purchasing behavior (Erol & Çirak, 2020). More particularly, in the context of online gaming, playing a game increases enjoyment and significantly contributes to entering a flow state, which can result in deeper immersion that may lead to higher purchase intentions for in-game items (Ghazali et al., 2023). Likewise, perceived enjoyment further increases consumers' attitudes toward participating in gamified activities and increases the probability of the consumers participating in the playground and forming a positive purchase intention (Dhahak & Huseynov, 2020). Enjoyment therefore becomes the driving force both for sustained engagement in gamified settings and for purchasing inclinations.

The desire of players to engage with mobile and computer games has often been dictated by a complex relationship between motivation, flow, and enjoyment to affect behavioural intention. Gaming enjoyment leads to feeling immersed in the game and feeling that time flows freely so that they don't want to quit gaming. The more they are absorbed, the larger the drive to hold or increase their pleasure level. In other words, this desire for sustained enjoyment makes many players do microtransactions to augment their gaming experience to ensure that the 'fun' stays (Cheah et al., 2021; Hou et al., 2021). In other words, the primary purpose of these in-game purchases becomes what can be described as a quest to get a richer and more fulfilling gaming experience, meaning the cord that pulls gamers back into the game is constantly fed by the same fuel of engagement.

2.4. Flow

Flow, a psychological state characterized by complete immersion and engagement in an activity, plays a crucial role in enhancing user experiences in gaming environments (Leung, 2019). This optimal state occurs when a player's skill level is well-aligned with the challenge presented by the game, fostering intense focus and enjoyment (Lemmens & Von Münchhausen, 2022). Oliveira et al. (2022) explored the impact of personalized gamification on students' flow experiences, revealing that personalization did not significantly affect flow but highlighted that certain gamer types exhibited varying flow experiences based on the gaming context. The nine dimensions of flow, as identified by Csikszentmihalyi (2000), including challenge-skill balance, concentration, and a sense of control, remain essential for understanding how flow influences gameplay and user engagement (Erkan et al., 2023).

The implications of flow extend beyond engagement, influencing purchasing decisions and overall gaming behavior. Chou et al. (2023) found that while flow can inhibit in-game purchases for casual gamers, it significantly enhances purchase intentions among hardcore gamers, particularly in PC gaming environments. Further emphasizes the dual nature of flow, distinguishing between hedonistic flow, driven by enjoyment, and eudaimonistic flow, associated with escapism. This distinction suggests that gamers engage in play for various reasons, which can influence their flow experiences and subsequent purchasing behaviors. Thus, understanding the multifaceted nature of flow is crucial for game developers seeking to enhance player engagement and encourage in-game spending.

2.5. Peer Influence

Peer influence plays a huge role in gaming as it dictates how people play games and determines how much they spend on virtual goods. Miranda et al. (2024) found that players move from group dynamics and are compelled to upgrade their skills in an attempt to keep pace with others' skills in multiplayer environments by following techniques or playing styles based upon their peers. Gamers often come under peer pressure from gaming groups to emulate their behavior, gaming skills, and buying in-game products to improve the quality of their gaming experience (Harrigan et. al., 2021; Lingappa et al., 2020; Abe & Chikoko, 2020). Viral games or popular trends spread quickly within peer groups, players must depend on recommendations from their peers as they decide which game to play (Huang et al., 2024).

Cheah et al. (2021) further implies the importance of social interactions as one of the six motivational themes of the global digital gaming industry. Copeland & Zhao (2020) discovered that the influence of peers, specifically social media use and perception, is an important factor in the customers' purchase intention. In the context of online video games, Wang et al. (2022) saw that peer influences significantly anticipates the purchase intention of players. Social values addressed to virtual games are positively correlated with game use intention (Yu & Huang 2022). Social comparison is important since virtual commodities like skins, rare weapons, or exclusive material are status indicators. One would be forced to keep up by purchasing similar items if friends or teammates purchased these items (Reza et al., 2022).

2.6. Continuous Playing Game Intention

Continuous playing game intention pertains to the player's willingness to keep up playing a particular game due to its entertaining factors (Lee et al., 2020; Sharma et al., 2020). Amusement, challenge, leaderboards, and social interactions

are the attributes that influence players to continuously play a game (Ghosh, T., S, S., & Dwivedi, Y. K. 2021; Harrigan et. al., 2021). Patzer et al. (2020) found that players who have a positive gaming experience become more involved in online games and allow gaming businesses to improve their games.

Continuous gameplay significantly influences players' decisions to purchase virtual items on gaming platforms (Wang et al., 2020; Yu et al., 2021; Sharma et al., 2020; Patzer et al., 2020). Player motivation varies among individuals, manifesting different motives while playing games. Studies also found that continuous playing game intentions are closely linked to players' satisfaction levels, which drives their purchasing behavior for virtual items (Sharma et al., 2020; Patzer et al., 2020). Players who are more inclined to continue gaming are also those who engage in in-game purchases, as their satisfaction and experiences contribute to this behavior (Bitrián et al., 2021; Hamari et al., 2019; Wang et al., 2020; Yu et al., 2021). Employed structural equation modeling to analyze the impact of continuous playing intentions on purchase intentions in free-to-play (F2P) games. Their findings revealed a strong positive relationship, demonstrating that gamers who intend to continue playing are more likely to engage in monetization processes within the game (Wang et al., 2020; Yu et al., 2021; Sharma et al., 2020; Patzer et al., 2020).

2.6.1. Hypothesis Development

Enjoyment is a key driver of player engagement and satisfaction, often leading to purchase decisions in gaming. Emphasizing that the intrinsic joy derived from gameplay significantly increases a player's likelihood to invest in virtual items. This relationship is further supported by Erol and Çirak (2020), who found that enjoyable gaming experiences enhance the perceived value of virtual items, motivating players to make purchases to sustain their enjoyment. As players derive enjoyment from the game, they are more likely to engage with its monetization features, such as purchasing virtual goods, to enhance their experience.

- H1: High levels of game enjoyment positively influence the purchase intention of virtual items in online video games.

Flow, a state of deep immersion and concentration during gameplay, is closely linked to purchase intention. Chou et al. (2023) found that players experiencing flow are more likely to buy virtual items as these purchases enhance their engagement and immersion. Oliveira et al. (2022) further noted that flow creates a seamless gaming experience, increasing the likelihood of spending on in-game enhancements.

- H2: A high state of flow during gameplay positively affects the purchase intention of virtual items in online video games.

Continuous playing intention reflects a player’s commitment to a game, which strongly correlates with purchase behavior. Numerous studies have highlighted that players intending to continue gaming are more likely to invest in virtual items to enhance their long-term gameplay (Bitrián et al., 2021; Hamari et al., 2019; Wang et al., 2020; Yu et al., 2021). Additionally, the players' general enjoyment and immersion in the game strengthen the relationship between continuous playing intention and purchase intention (Hussain & Ali, 2023). This ongoing engagement fosters a cycle of satisfaction and spending, reinforcing their connection to the game.

- H3: Players with a greater intention to continue playing are more likely to exhibit higher purchase intentions for virtual items in online video games.

Peer influence significantly shapes player behavior and spending habits. Wang (2021) and Harrigan et al. (2021) emphasize that social interactions, such as recommendations and group dynamics, encourage players to purchase virtual items to align with their peers or enhance their social status within the gaming community.

- H4: Players who receive high levels of peer support are more likely to exhibit increased purchase intentions for virtual items in online video games

Studies have indeed indicated that self-efficacy, the belief in one’s skill to accomplish specific gaming goals, affects improving gaming experiences. Thus, Gamers who show high self-efficacy do not approach the in-game challenge less diligently and thus tend to immerse themselves more and still enjoy the game more (Tisza et al., 2021). This capability makes players feel capable, and therefore, in turn, makes for a more fulfilling gaming experience since producers of the game seem to better cater their game to that player. This causes a positive cycle whereby increased self-efficacy encourages further motivation and enjoyment in gameplay strengthening the players’ skills and immersion (Chung et al., 2020).

Gamers' self-efficacy has significant effects on gamers' enjoyment and intention to pay for veterans in a virtual world. Players tend to find more fun and more content in a game when they believe they can find their way around the challenge and win it (C. Wang et al., 2022). This is because the successful overcoming of obstacles leads to a positive feedback loop, and as a result, strengthens their confidence and offers them further joy (Alhaq et al., 2020). The more the player enjoys the game, the higher the probability of players being engaged with the game's monetization elements like purchase of the virtual goods. These purchases are commonly perceived as enhancing one's gameplay experience, for example, enhancing how a player plays his character or enhancing his character's performance (Tan & Yang, 2022). Thus, increased self-efficacy not only strengthens the bond with the game but leads the players to spend on virtual items that will improve their experience and engagement with the game.

- H5: There is a positive relationship between Self-Efficacy and Enjoyment. Players who has higher levels of self-efficacy are more likely to experience greater enjoyment during gameplay.

Self-efficacy is the perception that a particular person can do something or overcome obstacles (Lin & Hou, 2022; X. Wang et al., 2022). In the gaming world, it represents a player's confidence in their skills to achieve in-game objectives such as clearing enemies, solving puzzles, or completing levels (Perlwitz & Stemmann, 2022). A high self-efficacy player believes he/she can overcome challenges in a game (Dumblekar et al., 2021). Motivation and interest play a major role in a gamer's mind. An experienced player will pay closer attention to the challenging parts of a game and be pleased with the experience it provides (Caro & Popovac, 2020).

Players tend to be in flow most of the time at which they are performing at their best and hence, raise their self-efficacy about their skills (Chung & Pan, 2023; Buzady et al., 2022). Self-efficacy among players rises as they manage to overcome challenges within the flow since they internalize victory and become more capable (Perlwitz & Stemmann, 2022; Buzady et al., 2022; Lin & Hou, 2023; Dumblekar et al., 2021). The probability of flow experience is higher for players with a high level of self-efficacy because they can feel sure of handling the game and meeting its demands (Stavrou et al., 2022). With self-efficacy, one can enjoy higher enjoyment and immersion because one has a feeling of confidence in handling the game and one is confident of meeting its demands (Chung & Pan, 2023; Lin & Hou, 2022; X. Wang et al., 2022).

- H6:Players with higher levels of self-efficacy experience an increased state of flow during gameplay. The more they feel confident in their skills, the more likely they are to enter a state of deep focus and immersion.

Self-efficacy is someone's belief in his ability to undertake specific actions that will result in certain outcomes (Ister, 2020). Belief in one's ability to succeed in circumstances, has a strong influence on whether players will continue to play a game. Various psychological constructs, including self-efficacy, enjoyment, and social dynamics, play significant roles in this process (Gao et al., 2022; Khan et al., 2022; Li et al., 2022). Playing games for health has shown to invoke positive feelings and improve self-efficacy (Haring, 2022). Higher levels of self-efficacy can improve players' confidence, allowing them to deal with problems and increase their chances of continued engagement (Zhang et al., 2020). This ongoing engagement frequently results in a higher desire to purchase virtual items, as players who feel capable and successful are more likely to invest in their gaming experience (Huang et al., 2023; Gao et al., 2022). Furthermore, players who feel a sense of authority over their gaming environment are more likely to express an interest to continue playing (Li et al., 2022; Khan et al., 2022).

In addition, the players' general enjoyment and immersion in the game strengthen the relationship between continuous playing intention and purchase intention (Hussain & Ali, 2023). When players are in flow—a state of profound immersion-they are more likely to develop a positive attitude toward the game, which increases their desire to continue playing (Gao & Makhdoom, 2022; Zhang et al., 2023). This satisfaction is strongly related to their desire to spend on virtual items, as players strive to improve their experience through purchases (Khan et al., 2022; Huang et al., 2023). Self-efficacy not only impacts continuous playing intention but also acts as a significant factor influencing purchase intentions, establishing it as a vital construct in gaming consumerism. (Zhang et al., 2020; Gao et al., 2022; Khan et al., 2022; Li et al., 2022).

- H7: Higher self-efficacy levels induce stronger intentions to continue playing games. Players who possess confidence in their abilities enhance their motivation to continue playing and sustain engagement.

Self-efficacy serves as a crucial moderating variable in the context of peer influence, significantly affecting how individuals respond to social interactions and support from their peers. Schunk and DiBenedetto (2020) emphasize that individuals with high self-efficacy are more likely to interpret peer influence positively, leveraging it to enhance their motivation and performance. This relationship is further supported by Zou et al. (2023), who found that adolescents with stronger self-efficacy levels are more receptive to peer support, ultimately leading to better exercise adherence. In

an academic context, Pawestri and Moesarofah (2024) revealed that students with higher self-efficacy exhibit less academic procrastination in the presence of peer support, suggesting that self-efficacy empowers individuals to utilize peer influence effectively in achieving academic goals. Additionally, Ismayilova and Klassen (2019) highlighted the importance of self-efficacy, indicating that faculty members with strong self-efficacy are more likely to seek and benefit from peer collaboration, thereby enhancing their professional development. While these studies primarily focus on academic settings, they suggest that self-efficacy not only influences individual motivation but also moderates the effects of peer influence. This dynamic likely extends to online gaming, where self-efficacy could shape how players engage with peers and utilize social support in their gaming experiences. Oh et al. (2022) emphasize this connection by demonstrating that social interactions in the metaverse can enhance social self-efficacy among players, allowing them to feel more competent in their gaming and social skills. Within such a supportive environment, a sense of belonging is fostered, encouraging players with higher self-efficacy to engage more deeply with their gaming communities and enhance their skills (Oh et al., 2022). Together, these findings illustrate the interplay between self-efficacy and peer influence, which highlights the importance of social dynamics in shaping players' experiences and motivations.

H8: Players with higher self-efficacy levels are more open to being influenced by their peers.

2.7. Conceptual Framework

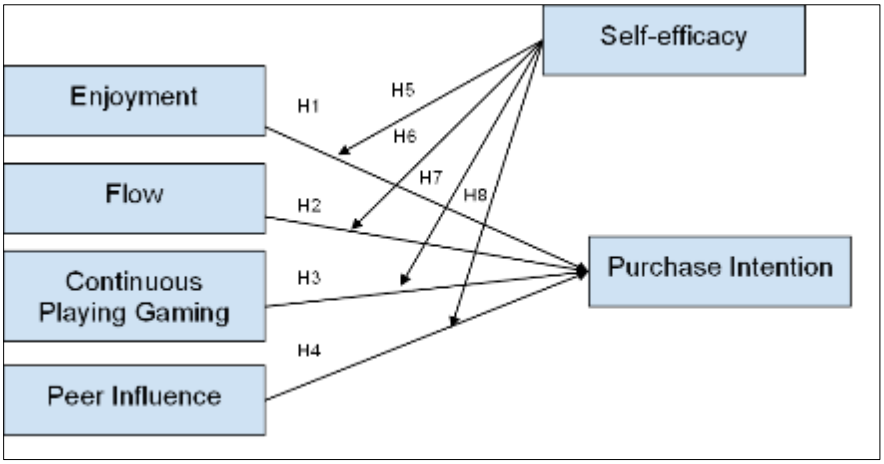

Figure 1 Conceptual Framework

3. Methodology

3.1. Research Population, Sampling, and Time Frame

This study examines gaming consumerism by gathering data from a nationwide sample of Filipino consumers aged 18 and above who actively play online games and purchase virtual items. Gaming consumerism involves players' purchasing behaviors driven by enjoyment, social status, and enhanced gaming experiences (Hussain et al., 2023; Jeong et al., 2022; Tan et al., 2023; Lee et al., 2021). To ensure comprehensive insights, respondents from various regions in the Philippines will be surveyed. The data collection will primarily involve quantitative surveys distributed through online gaming communities, social media platforms, and gaming forums, supplemented by industry reports and academic studies (Smith et al., 2023; Lee et al., 2021).

The study employs a purposive sampling method to ensure that only active gamers who have purchased virtual items participate (Campbell et al., 2020; Pace, 2021; Iliyasu, 2021). This approach aligns with the research objectives by targeting individuals with relevant experiences. A sample size of 384 respondents is determined using a 95% confidence level to ensure statistical reliability. This method enhances the study's validity while maintaining efficiency in data collection (Lohr, 2021; Vozzi et al., 2021).

The research began in August 2024, with data collection scheduled for November 2024. The entire study spans four months, concluding by December 2024, ensuring sufficient time for data gathering, analysis, and interpretation.

3.2. Statistical Analysis of the Data

This study employs multiple linear regression with moderation analysis to examine the factors influencing consumer purchasing decisions in online gaming. The independent variables—Enjoyment, Flow, Continuous Playing Game Intention, and Peer Influence—will be analyzed for their direct impact on the dependent variable, Purchase Intention, using multiple linear regression. This approach allows for assessing the extent to which each factor contributes to consumers' likelihood of purchasing virtual items. Additionally, moderation analysis will determine the role of Self-Efficacy in modifying these relationships, providing insights into how a consumer's confidence in their gaming skills influences the strength of these effects

4. Results and discussion

Table 1 Moderation Estimates of Self-Efficacy between Enjoyment and Purchase Intention

	Estimate	**SE**	**Z**	**p**
Enjoyment	0.6481	0.0522	12.42	<.001
Self-Efficacy	0.3938	0.0407	9.67	<.001
Enjoyment ✻ Self-Efficacy	0.0804	0.0285	2.82	0.005

The table represents the relationship between enjoyment (ENJOY) and self-efficacy (SELF). The estimate of 0.6481 with a p-value of less than 0.001 indicates a strong positive effect of enjoyment on self-efficacy. This suggests that as individuals derive more pleasure from gaming, their confidence in their gaming abilities increases significantly. This connection has important implications for gaming consumerism, as players who feel more competent are more likely to invest in gaming products, enhancing their engagement and driving continued spending on games or related services.

Table 2 Moderation Estimates of Self-Efficacy between Flow and Purchase Intention

	Estimate	**SE**	**Z**	**p**
Flow	0.1926	0.048	4.01	<.001
Self-Efficacy	0.5926	0.044	13.48	<.001
Flow ✻ Self-Efficacy	0.0382	0.0284	1.35	0.178

Table 2 shows the interaction between flow (FLOW) and self-efficacy (SELF). The estimate of 0.1926, accompanied by a significant p-value of less than 0.001, suggests that the experience of flow where players become fully immersed in the gaming experience, positively influences their self-efficacy. Players who enter a state of flow are likely to feel more capable and confident in their abilities, which may drive them to continue playing games and spending on products that support those experiences. However, the table also explicates that the interaction term between flow and self-efficacy is not significant (p = 0.178), meaning that flow influences self-efficacy directly without any moderation effect from self-efficacy itself.

Table 3 Moderation Estimates of Self-Efficacy between Continuous Playing and Purchase Intention

	Estimate	**SE**	**Z**	**p**
Continuous Playing	0.314	0.0519	6.05	<.001
Self-Efficacy	0.5014	0.0436	11.51	<.001
Continuous Playing ✻ Self-Efficacy	0.0331	0.0289	1.15	0.252

Table 3 demonstrates the continuous playing game intention (CONTI) and its impact on self-efficacy (SELF). The positive estimate of 0.314 and the significant p-value (less than 0.001) highlight that players who express a strong intention to play games regularly also tend to have higher self-efficacy. This suggests that those committed to continuous gaming are more likely to believe in their abilities to succeed in games, which could foster long-term engagement and a greater propensity to make investments in gaming. The table also shows that the interaction between continuous playing game

intention and self-efficacy (CONTI ✻ SELF) is not significant, indicating that self-efficacy enhances this relationship in a straightforward, direct manner without any additional moderating factors.

Table 4 Moderation Estimates of Self-Efficacy between Peer Influence and Purchase Intention

	Estimate	**SE**	**Z**	**p**
Peer Influence	0.1947	0.0355	5.48	<.001
Self-Efficacy	0.5567	0.0436	12.77	<.001
Peer Influence ✻ Self-Efficacy	-0.028	0.0249	-1.12	0.262

Table 4 explicates the role of peer influence (PEER) on self-efficacy (SELF). With an estimate of 0.1947 and a p-value of less than 0.001, peer influence has a significant positive effect on self-efficacy, meaning that social validation from peers boosts players' confidence in their gaming abilities. This is crucial for understanding gaming consumerism because players who receive encouragement or affirmation from their social circles are more likely to continue engaging with gaming, leading to increased consumption. However, the interaction term between peer influence and self-efficacy (PEER ✻ SELF) is not significant (p = 0.262), which implies that peer influence acts independently of self-efficacy in shaping player behavior. As a result, these tables reveal how factors such as enjoyment, flow, continuous playing game intention, and peer influence positively influence self-efficacy, which in turn can drive gaming consumerism. Players who feel more competent and confident in their gaming abilities are more likely to engage in and invest in gaming experiences, reinforcing the cycle of gaming consumption. These insights are valuable for game developers and marketers seeking to create their strategies and increase player engagement and long-term investment in the gaming industry.

Table 5 Moderated Multiple Regression Model Coefficients

Predictor	**Estimate**	**SE**	**t**	**p**
Intercept	0.35658	0.7384	0.4829	0.629
ENJOY	0.36148	0.2295	1.5749	0.116
FLOW	- 0.34074	0.2079	-1.6388	0.102
CONTI	0.04133	0.2237	0.1848	0.853
PEER	0.75391	0.1505	5.01	< .001
SELF	-0.1956	0.1711	-1.1429	0.254
ENJOY ✻ SELF	0.06621	0.0461	1.4368	0.151
FLOW ✻ SELF	0.06987	0.0406	1.7206	0.086
CONTI ✻ SELF	- 0.00191	0.0457	-0.0419	0.967
PEER ✻ SELF	- 0.10271	0.0271	-3.7935	< .001

Note: R = 0.658; R2 = 0.433

Table 5 shows the linear regression analysis which reveals insights into the factors influencing Purchase Intention. Higher peer influence considerably increases the likelihood of acquiring virtual things, according to the most significant and statistically significant factor among the predictors (Estimate = 0.75391, p < 0.001). In contrast, Enjoyment (Estimate = 0.36148, p = 0.116), Flow (Estimate = -0.34074, p = 0.102), and Continuous Playing Intention (Estimate = 0.04133, p = 0.853) have no statistically significant effects on purchase intention, though enjoyment shows a positive trend. The moderating variable, Self-efficacy, also has an insignificant main effect (Estimate = -0.19560, p = 0.254). However, there is a significant interaction between self-efficacy and peer influence (Estimate = -0.10271, p < 0.001), indicating that self-efficacy lessens the effect of peer influence on purchase intention. Other interactions, such as Enjoyment ✻ Self-efficacy (Estimate = 0.06621, p = 0.151) and Flow ✻ Self-efficacy (Estimate = 0.06987, p = 0.086), shows positive trends but is not statistically significant. These findings demonstrate the strong influence of peers in determining buying decisions, with self-efficacy acting as a key moderator in this relationship, especially when it comes to lowering vulnerability to peer-driven behaviors.

4.1. Estimated Marginal Means (Slope Analysis)

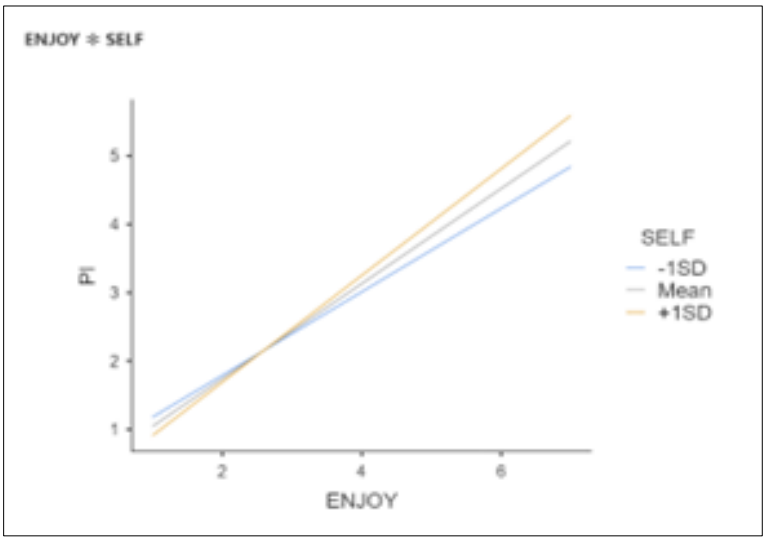

Figure 2 Marginal Means Plot of Enjoyment

The graph between Enjoyment (ENJOY) and Self-efficacy (SELF) highlights the significant moderating role of self-efficacy in influencing purchase intention (PI) for virtual items in online video games. Gamers with high self-efficacy (+1SD) exhibit a strong positive relationship between enjoyment and purchase intention, indicating that their confidence enhances the impact of enjoyment on their purchasing decisions. On the other hand, individuals with low self-efficacy (-1SD) show a weaker relationship, suggesting that while they may enjoy the gaming experience, their lack of confidence reduces the likelihood of translating that enjoyment into purchases. This finding suggests that boosting self-efficacy could amplify the effect of enjoyment on purchasing behavior.

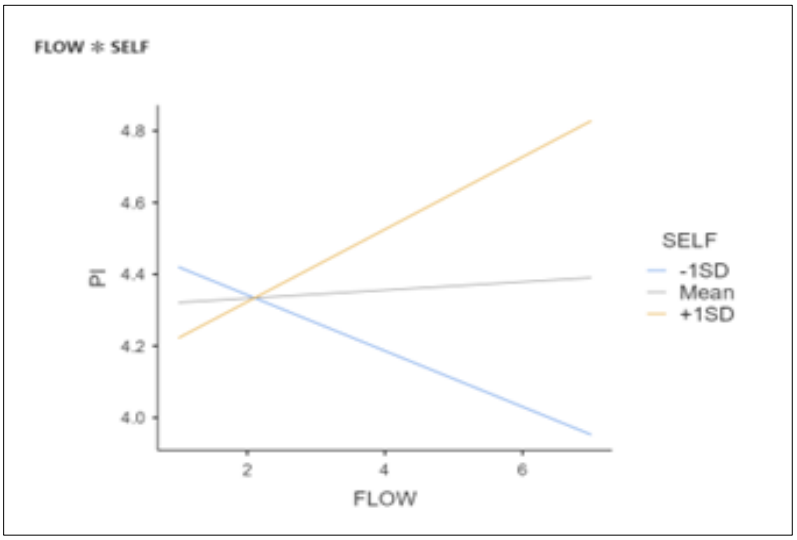

Figure 3 Marginal Means Plot of Flow

The graph between Flow (FLOW) and Self-efficacy (SELF) demonstrates a more nuanced relationship with purchase intention (PI). Gamers with high self-efficacy (+1SD) show a positive relationship between flow and purchase intention, as heightened immersion appears to strengthen their likelihood of making purchases. However, for gamers with low self-efficacy (-1SD), the relationship is negative, suggesting that increased flow may feel overwhelming or disengaging, thereby reducing their intent to purchase. Meanwhile, gamers with average self-efficacy (mean) experience minimal changes in purchase intention as flow increases. These results emphasize the importance of balancing flow states and self-efficacy to ensure that the immersive gaming experience positively influences purchasing behavior across different consumer profiles.

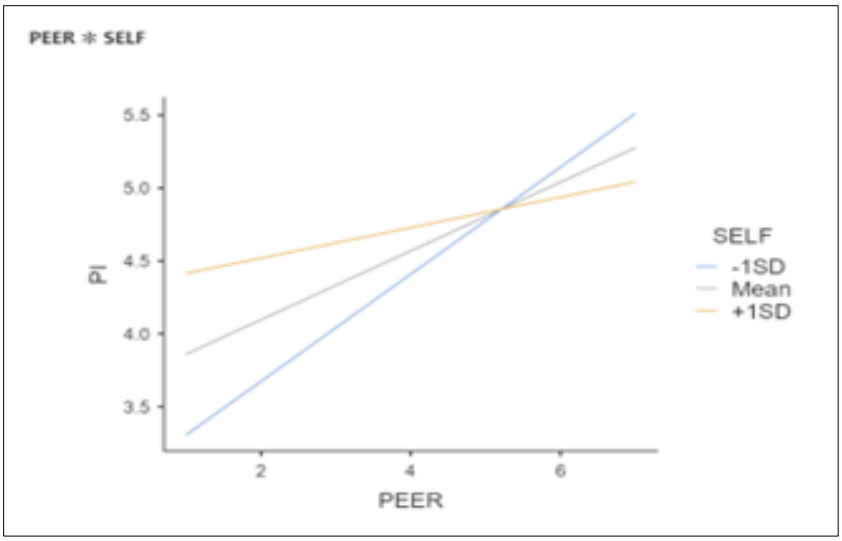

Figure 4 Marginal Means Plot of Peer Influence

The graph plot illustrates how Self-efficacy (SELF) moderates the relationship between Peer Influence (PEER) and Purchase Intention (PI). The graph shows three lines representing different levels of self-efficacy: low (-1 SD), average (mean), and high (+1 SD). Peer influence and purchase intention are strongly positively correlated, as evidenced by the steep slope of the line for those with poor self-efficacy (-1 SD). As a result, while deciding what to buy, people with lower self-efficacy are more swayed by what their peers think. Individuals with strong self-efficacy (+1 SD) have a flatter slope, implying a lesser link between peer influence and purchase intention. This suggests that people with strong self-efficacy are less likely to be affected by peer pressure. The interaction demonstrates that self-efficacy acts as a buffer, reducing the effect of peer influence on purchase intention as self-efficacy increases.

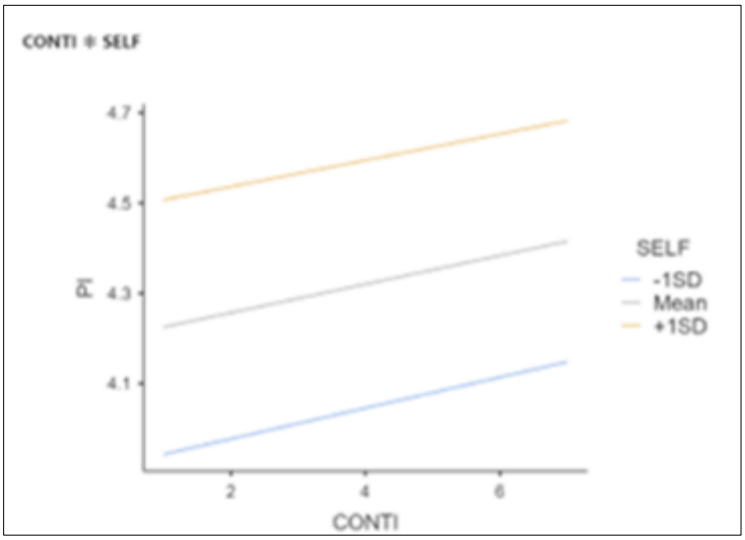

Figure 5 Marginal Means Plot of Continuous Playing Game Intention

The graph plot shows how Self-efficacy (SELF) moderates the relationship between Continuous Playing Intention (CONTI) and Purchase Intention (PI). The graph displays three lines representing different levels of self-efficacy: low (-1 SD), average (mean), and high (+1 SD). Across all levels of self-efficacy, there is a positive relationship between continuous playing intention and purchase intention, as evidenced by the upward slopes of the lines. However, the strength of this relationship differs depending on self-efficacy. For individuals with higher self-efficacy (+1 SD), the line is higher overall, indicating that purchase intention is consistently stronger regardless of continuous playing intention. Conversely, for individuals with lower self-efficacy (-1 SD), purchase intention starts lower but increases as continuous playing intention rises. This suggests that while self-efficacy does not dramatically alter the slope of the relationship, individuals with higher self-efficacy tend to have a greater overall purchase intention compared to those with lower self-efficacy at any given level of continuous playing intention.

5. Conclusion, theoretical implications, limitations and recommendation

5.1. Conclusion

The results provide robust evidence supporting the hypotheses. Each factor—enjoyment, flow, continuous playing intention, and peer influence—was shown to significantly impact purchase intention, with self-efficacy moderating these relationships. The descriptive and statistical analyses revealed interesting nuances, such as demographic variations in how these factors influence behavior. For example, younger respondents and those in lower-income brackets showed higher engagement and purchase intention, offering valuable insights for targeted marketing strategies. The study reveals a comprehensive understanding of the factors influencing consumer decisions to purchase virtual items in online games, emphasizing the interplay between personal motivations and social dynamics. Among these factors, enjoyment emerges as the most significant driver, demonstrating that the intrinsic pleasure and emotional satisfaction derived from gaming play a pivotal role in encouraging players to spend.

The findings address the specific problem of understanding what drives purchase intentions in online video games and offer actionable insights for game developers and marketers. By identifying and ranking the most influential factors, the study provides a framework for optimizing game design and marketing strategies to increase player engagement and revenue.

5.2. Implications of the Study

5.2.1. Theoretical Implications

The findings confirm the hypothesis that high levels of enjoyment positively influence purchase intentions, especially for players with high self-efficacy. This aligns with studies by Ghazali et al. (2023) and Dhahak & Huseynov, (2020), which emphasize the critical role of intrinsic enjoyment in driving consumer behavior. Respondents with higher enjoyment levels reported increased purchase intentions, validating the correlation between positive gaming experiences and spending behavior. However, the statistical analysis revealed that enjoyment alone is insufficient for low self-efficacy players, indicating that confidence amplifies the effect of enjoyment on purchase decisions.

The hypothesis that a high state of flow during gameplay enhances purchase intention is supported by the results, particularly for players with high self-efficacy. Similar to the conclusions of Chou et al. (2023) and Oliveira et al. (2022), the data reveals that immersion strengthens purchase intentions. However, for low self-efficacy gamers, deeper immersion can feel overwhelming, reducing their intent to purchase. This suggests a nuanced relationship between flow and purchase intentions.

The hypothesis that sustained gameplay intentions correlate with higher purchase intentions is strongly supported. The findings align with previous research, demonstrating that players motivated to continue gaming are more inclined to make purchases (Bitrián et al., 2021; Hamari et al., 2019; Patzer et al., 2020; Sharma et al., 2020; Wang et al., 2020; Yu et al., 2021). The statistical analysis further highlights that this relationship holds across all levels of self-efficacy, with high self-efficacy gamers exhibiting consistently stronger purchase intentions.

The results confirm that peer influence significantly impacts purchase intentions, especially for low self-efficacy players. This finding aligns with previous research, who highlight the role of social dynamics in driving consumer behavior (Harrigan et. al., 2021; Lingappa et al., 2020; Abe & Chikoko, 2020). High self-efficacy players, however, are less susceptible to peer pressure, indicating that self-efficacy acts as a buffer against social influence.

The statistical analysis reinforces the moderating role of self-efficacy across enjoyment, flow, and peer influence. Players with high self-efficacy amplify the positive effects of enjoyment and flow on purchase intentions while mitigating the effects of peer pressure. These findings underscore the critical role of self-efficacy in shaping consumer behavior in gaming environments.

5.2.2. Practical Implications

The findings provide actionable strategies for game developers and marketers to optimize user engagement and monetization. Developers can enhance game design by incorporating scalable challenges, social dynamics, and reward systems that sustain flow and enjoyment. Marketers can leverage peer-driven campaigns, culturally relevant advertising, and emotion-centric messaging to resonate with target audiences. Personalization, such as skill-based onboarding and adaptive feedback systems, can boost players' confidence and increase their willingness to make in-game purchases, further enhancing profitability.

5.2.3. Societal Implications

The study emphasizes how the gaming sector in the Philippines has the potential to be a major economic engine with tactics that can boost earnings while fostering satisfying user experiences. Through encouraging cooperation and interpersonal relationships among users, gaming platforms also act as venues for community development. But the results also highlight moral issues, such as the capacity of peer pressure to encourage hasty purchasing. Regulating microtransactions for transparency, implementing educational programs on responsible gaming, and implementing steps to prevent exploitative monetization tactics are some ways that policymakers, advocacy organizations, and developers might allay these worries.

5.2.4. Limitations of the Study

This study provides valuable insights into gaming consumerism; however, several limitations must be acknowledged. The study focuses on active online gamers who buy virtual things, limiting the implications of the results to casual gamers or non-spending users. Future research should look into how consumer habits differ across different types of gamers, such as those who play for free or as a non-competitive hobby.

The study's sample consists of respondents obtained using online platforms such as gaming forums and social media, which may unintentionally exclude people who do not have strong digital access or do not participate in these areas. This limitation may result in a sample that does not accurately reflect the diversity of the gaming population in terms of socioeconomic status, regional variances, or gaming preferences. Expanding future studies to include people from more diverse channels or underserved places would provide a broader perspective on gaming consumerism in the Philippines.

The cross-sectional method of this study collects data at a single point in time, making it difficult to examine how gaming practices or purchasing intentions change over time. Long-term studies could assist in identifying trends and provide a more dynamic overview of customer behavior in the gaming business.

Finally, while this study highlights self-efficacy as a moderating variable between factors like enjoyment, flow, peer influence, and purchase intention, it does not explore other potentially significant variables. Brand loyalty, price strategy, and game design excellence can all impact purchasing decisions. Future research could look into these additional variables to gain a more complete picture of the factors that influence consumer decisions in the gaming industry.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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