

Gamers Intention Towards Purchasing Game Items in Virtual Community: Extending the Theory of Planned Behavior

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Abstract—Virtual communities serve as bustling marketplaces where gamers engage in transactions for in-game items, driving the digital economy's expansion. This research aims to illuminate the determinants of steering users' decisions within these online environments. Focusing on the constructs of Attitude, Subjective Norms, and Perceived Behavioral Control derived from the Theory of Planned Behavior (TPB), we investigate the factors shaping purchasing intentions. Employing structural equation modeling (SEM) on a robust dataset of 300 validated respondents, our analysis unveils insights into user motivations. Notably, the amalgamation of Attitude, Subjective Norms, and Perceived Behavioral Control explains 84% of the drivers guiding in-game item transactions within virtual communities. Our findings underscore the significance of certain attributes. Specifically, the perceived wisdom inherent in these transactions, the constructive influence of community discussions, and the ease of communication and negotiation channels within virtual realms emerge as pivotal determinants influencing user behavior. This study not only contributes to understanding user behavior in virtual spaces but also holds practical implications for scholars and industry stakeholders. By shedding light on these influential factors, this research informs strategies and interactions within virtual communities, offering valuable insights into the dynamics of the digital marketplace.

Keywords—Theory of planned behavior; in-game items; purchasing intention; virtual community

I. INTRODUCTION

In the ever-evolving landscape of online gaming, virtual communities have emerged as dynamic and immersive spaces where players come together to share experiences, strategies, and a deep passion for their favorite games. Virtual communities often house bustling marketplaces where in-game items and assets are bought, sold, and traded amongst players. The allure of acquiring unique items or enhancing gaming experience has fueled the growth of the digital economy. According to Statista report, Global wide game revenue stands at USD 249.60 billion in 2023 and is projected to grow at a CAGR of 9.32% through 2028, reaching USD 389.70 billion [1].

Virtual communities take shape when a collective of individuals congregate to foster social connections through interactive communication within the digital realm [2]. The success and sustainability of an online community are

contingent upon the willingness of its members to openly express their perspectives, engage in meaningful dialogues with fellow members, and make substantive contributions to the community's vitality by generating valuable content [3]. The ease and flexibility offered by this environment enhance communication among users, attracting gamers who frequent virtual communities for discussions and in-game item exchanges.

The quality of the virtual community significantly influences the perception of trust. Trust within an online environment plays a pivotal role in shaping users' intentions when it comes to transactions [4]. In the context of digital in-game items, trustworthiness holds particular significance, as these products are transmitted and utilized in a purely digital format. Building trust relies on user contributions within virtual communities, often through leveraging user reputation systems. The main purpose of user reputation systems is to establish trust between unknown parties [5].

Purchase intention in purchasing in-game items within virtual community can be analyzed on internal and external factors. In mobile games, the intention to purchase in-game items is driven by several factors such as progress in playing, competition, frequency of purchases and amount of spending [6]. Essential elements on internal factor of the purchase intentions of virtual in-games are enjoyment, skills, challenge, telepresence, and flow [7]. Previous research did not cover external factors, such as player behavior and motivation, which influenced purchase intentions. This study aims to explore these factors impacting players' behaviors and motivations in purchasing in-game items within virtual communities. Analyzing these aspects in purchase intention helps understand the driving forces behind a user's decision, providing valuable insights into their motivations within specific contexts.

This research explores the interesting phenomenon of game players' intentions regarding purchasing in-game items in virtual communities. It explores the complex interactions between psychological factors, social influences, and perceived control that guide individuals in their decisions to engage in these virtual markets. In doing so, it extends the renowned Theory of Planned Behavior to explain the motivations and intentions that drive these unique economic interactions.

The Theory of Planned Behavior (TPB) is an extension model of the theory of reasoned action and one of the most widespread models for social psychologists to predict behavioral intentions [8]. The theory of planned behavior (TPB) is one of the most widely researched frameworks for predicting behavioral intentions [9]. This theory investigates the factors that influence a person's behavior and how attitudes, subjective norms, and perceived behavioral control can influence a person's intention to engage in a particular action. By extending the Theory of Planned Behavior to the realm of virtual communities, this research seeks to uncover the unique variables that shape game players' intentions regarding the purchase of in-game items.

II. THEORETICAL BACKGROUND

A. In-game Items

In-game items is virtual goods that can be defined as entities within the online gaming environment, which include characters, items, virtual currency, and tokens. Virtual goods refer to the subset of the virtual asset that can be mass-produced, bought, and sold live conventional consumer products, including items, characters, and currencies of games. Very often, three attributes of such virtual goods would drive players to purchase: functional, hedonic, and social [10].

In-game items are often associated with delivering hedonic value to users, prioritizing emotional gratification over practical utility. Hedonic products, in this context, tend to carry symbolic significance. Users invest in these items, receiving in return emotional satisfaction and pleasure as part of the benefits [11].

Gamers are inclined to acquire in-game items when these items enhance their gaming strength, add to their enjoyment, and enable them to showcase themselves to fellow players, especially when these items are reasonably priced. Consequently, within the realm of online gaming, a gamer's perception of an item's value significantly heightens the likelihood of them making a purchase.

B. Related Research

Guo and Yue developed a model that blends new constructs with established theories, drawing from frameworks such as the Theory of Planned Behavior (TPB), the Technology Acceptance Model (TAM), trust theory, and the Unified Theory of Acceptance and Use of Technology (UTAUT). Their research seeks to elucidate the factors behind consumers' decisions to purchase virtual items within virtual worlds [12]. The model highlights various components that bolster behavioral intentions, including trust, social influence, and perceived enjoyment. These elements are interconnected within the virtual community, specifically facilitating the trade of in-game items.

Ezlika conducted an examination of the determinants affecting players' purchase intentions regarding specific in-game virtual items. Additionally, the study explored the impact of the state of "flow" on these purchase intentions. The findings of this research unveiled that factors such as enjoyment, skill, challenge, and telepresence positively contribute to the experience of flow. Moreover, the study

established a significant and positive association between the state of flow and players' purchase intentions [7]. Enjoyment, skill, challenge, and telepresence contribute significantly to the gaming experience, shaping gamers' purchasing behavior concerning in-game items. While gaming experience encapsulates an Attitude, it's imperative to quantify and assess these additional components for a comprehensive understanding.

In various fields, the Theory of Planned Behavior has been applied to analyze consumer intentions regarding product purchases in developing nations. Research conducted by Rambalak Yadav has demonstrated that Theory of Planned Behavior is effective in predicting consumers' intentions to purchase products [13]. Building upon prior research to discern the determinants of user purchase intention within virtual communities, the research employs the Theory of Planned Behavior. This theory helps identify several external factors, specifically centered around attitudes, subjective norms, and perceived behavioral control.

C. The Theory of Planned Behavior (TPB)

The Theory of Planned Behavior, initially developed by Ajzen in 1985, provides a well-established framework for understanding human behavior and decision-making across a spectrum of contexts, with intentions influenced by three main constructs [8].

1) *Attitude*: This construct reflects an individual's overall evaluation of the behavior, including the perceived outcomes and the subjective assessment of the behavior's desirability. In the context of buying in-game items, attitude encompasses players' beliefs about the consequences of such purchases, including how it enhances or affects their gaming experiences [13].

2) *Subjective norms*: Subjective norms refer to the perceived social pressure or influence from significant others, such as friends, family, and the gaming community, regarding the behavior in question. In the context of in-game item purchases, subjective norms encompass the influence of fellow gamers and the broader gaming culture on an individual's decision [13].

3) *Perceived behavioral control*: This construct pertains to the perceived ease or difficulty of performing the behavior and reflects the individual's perception of their ability to exercise control over it. In the context of virtual community transactions, perceived behavioral control includes factors like financial means, accessibility, and gaming expertise [13].

Extending the Theory of Planned Behavior to the realm of virtual community transactions is essential to unravel the complex motivations and intentions that underlie game player behavior.

D. Hypothesis Development

This research aims to apply the Theory of Planned Behavior as an analytical framework to investigate and understand the intentions of game players regarding the purchase of in-game items within virtual communities.

We have identified certain limitations in the purchasing process in virtual communities, most notably the vulnerability of some virtual community's users to scam and fraud when acquiring products [14]. Scams and fraudulent activities continue to occur in virtual communities due to the lack of transactional features. Instead, we have identified the main advantages associated with purchasing in virtual communities, including aspects of simplicity, speed, and convenience. Additionally, users are incentivized to place trust in fellow community members, as forums offer an important space for discussion, access to reviews, informative content, and valuable feedback, all of which significantly influence their purchasing decisions [12]. With the limitations and benefits complementing each other, the existence of virtual communities persists. The discussion leads to following hypotheses:

H1. Game players' attitudes shaped by willingness purchase which has an impact on gaming experiences.

Player's attitude towards making in-game purchases could affect how they engage with the game.

H2. Subjective norms can encompass the influence of peers within the virtual community.

Virtual communities, especially gaming ones, peer influence plays a significant role. What others in the community do or say might shape an individual's beliefs about what is normal or acceptable behavior within that community.

H3. Perceived behavioral control includes consideration of financial resources, technical proficiency, and security concerns within the virtual community.

In virtual communities, various factors can affect how individuals navigate and participate. Financial resources might determine the extent to which someone can engage in certain activities or make purchases. Technical proficiency and security concerns also impact how comfortably and confidently someone can interact within that online space.

By exploring the interplay of attitudes, subjective norms, and perceived behavioral control, this study endeavors to contribute to a more comprehensive understanding of the motivations that guide players' purchase decisions within the virtual community, explains the complex relationships underlying the virtual economy of online games.

Having established the theoretical foundations that shape our understanding of purchase intention within virtual community. The following section delves into the methodology applied, explaining the systematic approach taken to empirically explore and validate the previously proposed hypotheses. The methodology section outlines the research design, data collection methods, and analytical framework used to investigate the complex dynamics in purchase intention within virtual community, bridging theory with practical implementation.

III. RESEARCH METHODOLOGY

This section describes the research methodology adopted for investigating game player intentions regarding the purchase of in-game items within virtual communities.

A. Research Instrument

This study employs a quantitative research design supported by the Theory of Planned Behavior (TPB) as the guiding framework. The research aims to explain the relationships between Theory of Planned Behavior constructs and game player intentions. Data collected through a structured survey questionnaire using a 5-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). The 5-point scale stands out for its simplicity, benefit for respondents due to its ease of comprehension and usage. In comparison to scales with more points, it offers a quicker and less demanding completion process.

To accomplish the objective of the study, all the constructs were adopted from the relevant literature. The present study showed the attitude towards virtual goods and the perceptions of peers' attitudes significantly bolster the inclination to engage in virtual goods procurement [15]. Constructing and measuring items were based on the scope of prior research that has empirically tested and enhanced the predictive capacity of the Theory of Planned Behavior [13]. The construct's significance in shaping behavioral intentions has been thoroughly tested. To align purchase intentions within virtual communities, constructs and measurement items were meticulously developed and tailored to fit the research specific context. Table I presents an overview of all the constructs referred to in this research.

TABLE I. CONSTRUCTS AND MEASURING ITEMS

Code	Constructs and Measuring Items
ATT	Attitude
ATT1	For me, buying in-game items via virtual communities is a good decision
ATT2	Purchasing in-game items from other users in virtual communities can enhance the gaming experience
ATT3	For me, buying in-game items via virtual communities is very fun
ATT4	For me, buying in-game items via virtual communities is a wise decision
ATT5	I believe that purchasing in-game items from other users in virtual communities is a worthwhile investment
ATT6	I feel satisfied when purchasing in-game items through virtual communities
SN	Subjective Norms
SN1	Community members and people I know in virtual communities encourage me to buy in-game items
SN2	Discussions in virtual communities have a positive impact on my decision to purchase in-game items
SN3	I trust the opinions and recommendations of other users in virtual communities regarding purchasing in-game items
PBC	Perceived Behavioral Control
PBC1	I have the virtual currency, time, and resources to make purchases of in-game items in virtual communities
PBC2	I can easily communicate and negotiate with other users in virtual communities regarding game item transactions
PBC3	I feel confident in my ability to purchase in-game items safely and securely in virtual communities
PI	Purchase Intentions
PI1	I intend to purchase in-game items from other users in virtual communities soon
PI2	I actively seek opportunities to purchase in-game items from fellow virtual community members
PI3	I plan to allocate part of my gaming budget to purchasing in-game items in virtual communities

B. Data Collection

Quantitative data collected through the distribution of survey questionnaires. The surveys administered online to a diverse sample of game players actively engaged in virtual communities. Active engagement within the virtual community defines gamers who consistently trade in-game items via forums or similar platforms. This segment actively participates in discussions and frequently engages in the exchange of in-game items. The questionnaire includes Likert-scale items designed to assess attitudes, subjective norms, perceived behavioral control, and intentions, according to the Theory of Planned Behavior framework.

Data pertaining to in-game items within virtual communities is predominantly collected from sources such as relevant discussion forums and other online community platforms [15]. Unexplainably, the pre-filtered data contained approximately 1,412 partially incomplete responses. Our investigation led us to the conclusion that this anomaly was a result of the survey software retaining incompletely filled questionnaires, despite being configured to exclusively accept fully completed ones. Fortunately, this software issue does not seem to have impacted the integrity of the collected data.

To address this issue, we employ Excel to filter the data before conducting our analysis using the Partial Least Squares Structural Equation Modeling (PLS SEM). The filtered dataset exclusively comprises questionnaires completed by respondents, ensuring a focused and relevant dataset for our analysis.

C. Data Analysis

Data analysis conducted using Partial Least Squares Structural Equation Modeling. This technique is suitable for examining complex relationships within the Theory of Planned Behavior framework and provides a robust method for assessing the structural model's fit to the data. The Partial Least Squares Structural Equation Modeling can be used for evaluation of the measurement model, evaluation of the structural model, goodness of fit estimation and hypothesis testing [16].

Partial Least Squares Structural Equation Modeling is a statistical methodology primarily employed for confirmatory purposes, validating hypotheses, and dissecting a structural theory that encompasses various phenomena within a specific environment. It serves as a powerful tool to test and confirm relationships between observed and latent variables, offering insights into the complex interplay among multiple factors within a given context or system. [17]. The stages in Partial Least Squares Structural Equation Modeling analysis encompass model specification, assessment of the outer (measurement) model, evaluation of the inner (structural) model, and ultimately, the examination of moderating variables to analyze their effects. This sequential process allows for a comprehensive understanding of relationships between constructs and potential moderating influences within the model under study [18].

Partial Least Squares Structural Equation Modeling used to validate the measurement model, ensuring that the survey items accurately capture the Theory of Planned Behavior

constructs. This step involves assessing the reliability of factor loading (Cronbach's Alpha), composite reliability, average variance extracted (AVE), convergent validity and discriminant validity were examined. Cronbach Alpha and Composite Reliability prove that the research model has good reliability. Cronbach alpha measures the internal consistency of a variable. The construct scores must be greater than 0.7 should be considered reliable [18]. Average variance extracted is a metric for determining convergent validity, Average variance extracted values is at least 0.5 and the square root of the Average variance extracted should be higher than correlation between one construct and the other constructs items [16].

The structural model examines the relationships between Theory of Planned Behavior constructs (attitude, subjective norms, and perceived behavioral control) and game player intentions. Partial Least Squares Structural Equation Modeling is particularly suited for research aiming to explore and predict relationships between latent variables, especially in situations where the underlying theory might be underdeveloped or relatively weak. It's an effective method for modeling complex relationships, making it valuable when theoretical frameworks are still evolving or when there's a need to explore and validate relationships between constructs that lack established theoretical foundations.

IV. RESULTS AND DISCUSSION

Data was gathered from gamers in Indonesia who actively participate in trading within virtual communities through an online survey distribution. While a total of 1,412 responses were received from the distributed questionnaires, the final sample included 300 respondents who completed the survey in its entirety.

A. Demographics

Demographic characteristics of the respondents indicate that the largest portion, comprising 42%, falls within the 15 to 20 age group, while 35% belong to the age group below 15 and 23% above 20 age groups. Furthermore, a majority of the respondents, accounting for 50%, reported actively participating in trading within virtual communities for less than one year, with an additional 23% having between one to two years and 27% above two years of experience in game trading within virtual community.

B. Results

The study's findings were analyzed through the application of structural equation modeling, encompassing both the evaluation of the measurement model and the structural model analysis.

1) *Measurement model assessment:* We assess the measurement model's validity and reliability, which includes:

a) *Validity analysis:* Our validity analysis confirms the convergent validity, as all constructs exhibit outer loadings exceeding the established baseline of 0.7. Consequently, we have retained all constructs for further analysis. In the ATT construct, ATT4 stands out with the highest loading at 0.916, while in the SN construct, SN3 leads the way with an impressive 0.961. Within the PBC construct, PBC2 scores

notably with a loading of 0.941, and in the PI construct, PI2 matches that value at 0.941.

Moreover, the Average Variance Extracted (AVE) values for each construct are all above 0.5, signifying the robustness and strong correlations within and across constructs. Specifically, ATT registers an AVE of 0.774, SN achieves 0.875, PBC attains 0.855, and PI maintains a solid 0.836. This observation highlights the substantial correlations within each construct and among different constructs.

In terms of discriminant validity, cross-loadings reveal that all factor correlations are below 0.8, signifying that adequate discriminant validity is maintained. Table II presents an overview of the validity analysis.

TABLE II. VALIDITY ANALYSIS

Code	Convergent Validity		Discriminant Validity			
	Outer Loading	AVE	Cross Loading			
			ATT	SN	PBC	PI
ATT1	0.830	0.774	0.830	0.695	0.705	0.656
ATT2	0.894		0.894	0.748	0.751	0.760
ATT3	0.903		0.903	0.815	0.791	0.757
ATT4	0.916		0.916	0.766	0.802	0.819
ATT5	0.848		0.848	0.755	0.778	0.840
ATT6	0.884		0.884	0.849	0.798	0.839
SN1	0.915	0.875	0.807	0.778	0.814	0.915
SN2	0.961		0.862	0.856	0.830	0.961
SN3	0.929		0.819	0.825	0.805	0.929
PBC1	0.915	0.855	0.815	0.915	0.805	0.810
PBC2	0.941		0.824	0.941	0.852	0.852
PBC3	0.919		0.797	0.919	0.813	0.770
PI1	0.895	0.836	0.783	0.817	0.895	0.758
PI2	0.941		0.863	0.845	0.941	0.822
PI3	0.907		0.758	0.780	0.907	0.814

b) Reliability analysis: In our Reliability Analysis, we assessed both Cronbach's Alpha (CA) and Composite Reliability (CR). In the field of social psychology research, CA and CR values above 0.7 are generally considered acceptable as a measure of internal consistency between items.

Cronbach's Alpha was employed to gauge the internal consistency of the items, and the study revealed that the values ranged from 0.902 to 0.941 within each construct. This range underscores the high degree of consistency within each construct.

In addition, construct reliability was assessed using Composite Reliability, with the study indicating values ranging from 0.904 to 0.943. These results clearly demonstrate that all values exceed the recommended threshold of 0.7 and are notably higher, underscoring the adequacy of the reliability of the constructs. Table III presents an overview of the reliability analysis.

TABLE III. RELIABILITY ANALYSIS

Code	Cronbach Alpha	Composite Reliability
ATT	0.941	0.943
SN	0.928	0.929
PBC	0.915	0.917
PI	0.902	0.904

2) Structural model analysis: The model analysis includes hypothesis testing, the assessment of path coefficients, and R-squared values.

a) Hypotheses testing: The analysis confirmed that the proposed theoretical framework successfully met the criteria for both reliability and validity. The results demonstrate that the proposed framework aligns well as a model fit. The visual representation illustrates the outcomes related to the postulated hypotheses.

Significantly, all the variables associated with the Theory of Planned Behavior - Attitude (value = 0.287, $p < 0.01$), confirming hypothesis H1 that customers are inclined to purchase items that enhance their gaming experience; Subjective Norm (value = 0.254, $p < 0.01$), substantiating hypothesis H2 that the decision to purchase in-game items is influenced by discussions and peer interactions within the virtual community; and Perceived Behavioral Control (value = 0.415, $p < 0.01$), supporting hypothesis H3 that factors like financial resources, technical proficiency, and security concerns play a role in the decision to purchase in-game items within the virtual community - demonstrated substantial relationships with gamers' intentions to acquire in-game items within a virtual community.

All the hypotheses have been confirmed by the findings, and the predicted values align with expectations. The graphical representation of the TPB model is displayed in Fig. 1.

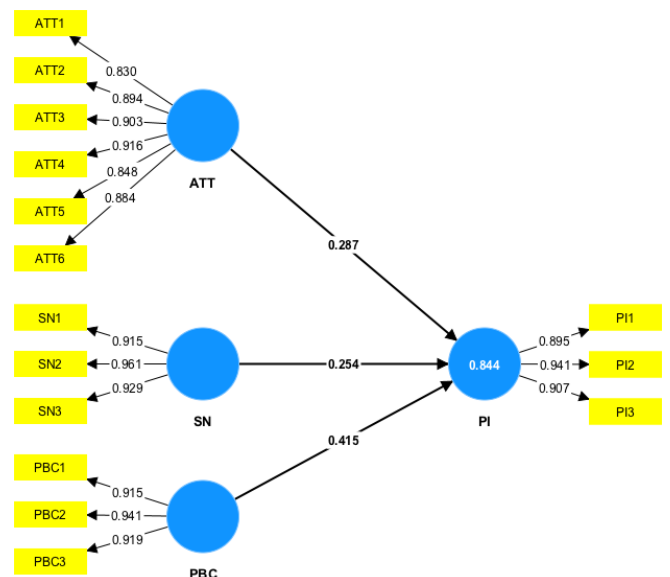


Fig. 1. Model Analysis.

b) Path coefficients: To support a research hypothesis, it's essential that the coefficient or direction of the variable relationship aligns with the hypothesized outcome, and the probability value (p-value) is less than 0.05 or 5%. In the study, the variables of the Theory of Planned Behavior (TBP) met this criterion, with Attitude (p -value = 0.005), Subjective Norm (p -value = 0.0001), and Perceived Behavioral Control (p -value = 0.013) all indicating values below the established threshold. This suggests that these variables are statistically

significant and support the research hypothesis. Table IV presents an overview of the probability value.

TABLE IV. PROBABILITY VALUE

Code	P Value
ATT => PI	0.005
SN => PI	0.0001
PBC => PI	0.013

c) *R-squared values:* The R-Square value of 0.844 suggests that approximately 84.4% of the variation in the dependent variable (represented by Purchase Intention) can be explained by the independent variable included in the research model. The remaining variation, about 15.6%, is attributed to factors or independent variables that were not considered in this study.

C. Discussion

In exploring the implications of the relationships identified between the Theory of Planned Behavior constructs and gamer intentions within virtual community transactions. The discussion delves into the significance findings in the context of online gaming and virtual economies. Understanding the factors that influence purchase intentions in virtual communities has broader implications for consumer behavior in online environments.

The observed connections between attitude, subjective norms, perceived behavioral control, and purchase intentions resonate with the hypothesis and models, which underscores that the application of this framework in understanding gamer's behavior in the context of virtual environment is very appropriate.

In earlier research within the same domain, it was found that the enjoyment of the game tended to decrease the willingness to acquire virtual goods. On the contrary, a positive attitude toward virtual goods and beliefs about peers' attitudes had a strong positive influence on the inclination to purchase such items [15]. Additionally, previous studies have indicated that internal factors like enjoyment, skill, challenge, and telepresence play a constructive role in establishing a significant connection between the state of "flow" and a player's intention to make in-game purchases [7]. While internal factors like enjoyment and challenge remain pivotal, external factors, specifically engagement within virtual communities and seamless communication channels, emerge as critical determinants shaping purchasing decisions.

This research extends the previous study by exploring influential external factors within virtual communities that drive purchase intentions for in-game items. The findings suggest that engagement within virtual communities has a positive impact on the decision to purchase in-game items within virtual community. Furthermore, the ease of communication and negotiation with fellow users within the same virtual community emerges as a driving force behind purchase intentions.

D. Implications

These findings carry significant implications that could assist game developers and entrepreneurs in formulating

effective strategies for the sale of in-game items within virtual communities. Based on these findings, it is advisable for entrepreneurs engaged in selling in-game items within virtual communities to offer comprehensive information to prospective buyers.

The content generated within these virtual communities, including discussions that give rise to opinions and recommendations, can foster a sense of trust among customers, ultimately influencing their decisions to make a purchase. Virtual communities should focus on fostering discussions and interactions among users. The positive impact of discussions, as shown in the study, suggests that strategies aimed at enhancing community engagement can be particularly effective.

Consistent with The Theory of Planned Behavior, it was observed that attitude, subjective norms, and perceived behavioral control emerged as notable and positively correlated predictors of the purchase of in-game items within virtual communities. The empirical results further indicated that subjective norms exhibited a more pronounced impact on the intention to purchase in-game items compared to attitude and perceived behavioral control. Lastly, attitude exerted a greater influence than perceived behavioral control, suggesting that purchasing in-game items in virtual communities is driven by considerations of simplicity, speed, and convenience for the customers.

V. CONCLUSION

This paper synthesizes the key findings that explain intricacies of gamer intentions within virtual communities regarding in-game item purchases. These insights bear significant implications for stakeholders in the gaming industry, laying the groundwork for enhancing user experiences, community engagement, and refining strategies for in-game items transactions.

The study's findings reveal that the intention to purchase in-game items within virtual communities is significantly influenced by three key factors: Attitude, Subjective Norms, and Perceived Behavioral Control. Together, these variables account for a substantial 84% of the reasons why users opt to purchase in-game items within forums or virtual communities.

Among these variables, Attitude numbers 4 (ATT4) within the Attitude construct stands out, suggesting that buying in-game items through virtual communities is seen as a prudent choice. Additionally, Subjective Norms numbers 2 (SN2) indicates that discussions in virtual communities positively impact the decision to purchase in-game items, while Perceived Behavioral Control numbers 2 (PBC2) highlights the ease of communication and negotiation with other users in virtual communities regarding game item transactions. These findings shed valuable light on the driving forces behind user behaviors in this context.

Moving forward, stakeholders in the gaming industry can leverage these insights to transform user experiences and optimize strategies. Developers can prioritize mechanisms that facilitate informed and transparent transactions, enriching user perceptions of these virtual communities as trustworthy marketplaces. Community managers, armed with an

understanding of the positive influence of discussions, can foster engaging dialogues to augment user interactions and retention. Entrepreneurs can capitalize on the importance of seamless communication by enhancing platforms that facilitate easy and efficient exchanges among users.

Furthermore, this research represents a distinctive contribution to existing literature by delving deeper into the interplay of ATT4, SN2, and PBC2, offering specific insights into their roles within the context of in-game item transactions in virtual communities. This nuanced exploration expands the understanding of gamer intentions, providing granular insights into the multifaceted drivers shaping user behaviors.

Future research can explore how these factors and purchase intentions evolve over time. Longitudinal studies can provide a deeper understanding of the dynamics within virtual communities. Complementary to the Theory of Planned Behavior, incorporating additional variables and constructs may further enrich our comprehension of user behaviors in these environments, presenting promising paths for comprehensive investigations.

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