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Examining Drivers of Urge to Purchase in Video Game Microtransactions

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Abstract. Video game companies can monetize their players in free-to-play and pay-to-play games. Mobile platforms alone could generate billions of dollars, where most of the revenue comes from the free-to-play category. Players spent most on the free one, instead of paying in advance. This study analyzed variables of urge to purchase for video game microtransactions. A survey of 166 gamers in Indonesia assessed impacts of hedonism, impulse buying tendency, emotions, enjoyment, and risks on urge to buy. Results showed hedonism, enjoyment, positive affect, and impulse buying tendency as prominent factors. Negative affect lowers urges. The findings provide granular insights for gaming firms to design sticky monetization strategies leveraging psychological triggers.

Keywords: urge to purchase, microtransaction, video games

1. Introduction

Video games are interactive applications that can be played through various devices such as computers, consoles, mobile phones, and tablets. Video games can be played by anyone, anytime, and anywhere. Video game presence has entertained many families from arcades to mobile phones. The development of technology can make it easier for players to access the internet, so that people can access video games. Lately, people's needs regarding video games have been increased. Reporting from We Are Social in 2022, Indonesia has become the country with the third largest video game enthusiast in the world. As many as 94.5% of internet users between the ages of 16-64 years have played video games (Dihni, 2022).

Video games can be played by anyone, anytime, and anyplace. When internet services are available nearby, the users have access to video games just by surfing on the website, whether it's free-to-play (F2P) or pay-to-play (P2P) games. Players are likely to play F2P games because it's free. It can be played from the beginning until the end without spending a single dime. Many game developers have a strategy that could turn F2P players into paying items in-game without them noticing or feeling guilty.

There are free games with no gimmick or completely free. Many games like this are gaining revenue from ads that are displayed on their screen for a certain duration, usually 15-30 seconds. Once the ad is done, players can continue the game, or obtain gifts in-game to make the players play easier. Other methods of F2P games are microtransactions. It is a transaction in the in-game store to buy digital goods.

In 2022, the mobile game industry will lead the gaming market overall. According to Statista, mobile platforms had generated the most revenue reaching $92.2 billion which will hit the $100 billion mark in 2023 (Clement, 2023b). The portion total of revenue, which is $78.74 billion to be exact, was generated by F2P games (Clement, 2023a). The statistics are then followed by console games, downloaded PC games, and lastly by browser PC games. In 2019, battle-royale game Fortnite by Epic Games had the most revenue reaching $1.8 billion (Thomas, 2020). According to a survey in 2014, only 1.5% of F2P games do microtransactions. The 10% of those F2P microtransactions players generate 50% of total revenue. These players could be identified as "whales" with mostly young adult (Tomić, 2019).

This paper gathered many other works, news, and articles regarding technology usage, impulsive buying, microtransaction, and video games. Simone et al. conducted a study about mobile phone usage as a tool for shopping preparation in physical stores. The result was consumers felt less urge to purchase, leading to less impulsive buying (Aiolfi et al., 2022). Additionally, Silvia et al. investigated consumers were now fully prepared to shop physically which led to less urge to purchase (Bellini et al., 2017). This knowledge provides valuable insight into the current situation where consumers now have access to digital information in physical stores.

There are also consumers that went fully online or digitally to buy physical goods. Natasha et al. analyze the effect of social shopping that influences impulse purchase behavior in Indonesia (A. & O., 2021). On a different location, Yalin & Liang conducted research about factors that influence online impulse purchase behavior in China (Chen & Zhang, 2015). On the other hand, Ricardo research about main driver for impulse purchase in mobile games applications and finds 5$ or 5€ price increase will lead to less impulse purchase (Caetano, 2017).

The research conducted by Lee et al. (2023) discussed about factors that were influencing impulse purchase for Generation Y and Generation Z while using e-wallet in Malaysia. On their literature review, cashless payment influence consumer impulse buying behavior. It influences the customer to make direct purchases. In conclusion, the payment method influences consumers to impulse purchase.

With several cases above, we want to explore the urge to purchase in different sectors. The most discussed sector is usually the electronic marketplace, shops, and electronic wallet. Therefore, the main research question is "What are the leading factors that players have an urge to buy digital goods the most?". It is to identify which factor that led consumer having an urge to buy digital goods the most between hedonism, impulse buying tendency, perceived risk, shopping enjoyment, positive affect, and

negative affect on video games across Indonesia.

This research paper consists of five sections. The first section mainly discusses background, problems, the purpose of the research and other related research regarding hedonic, impulsive buying, and urge to purchase. The second section talks about research model and hypothesis development for every variable that this research is going to breakdown. The third section talks about methodology, for example measurement of the data, questionnaire, data description validity testing, and hypothesis testing. Section fourth discusses mainly the result and discussion of this paper and talks about other paper's result. Lastly, Section fifth discusses the conclusion of this research paper and some future works.

2. Literature Review

2.1. Microtransaction

Microtransaction is a business model for applications, video games and programs to generate income. The use of this business model has changed the game in the entertainment sector. The change in the video game business model started from product development and delivery to "game as a service" (Tomić, 2019; M. Toyama et al., 2019). It allows game developers to have sustain revenue beyond initial game purchases. However, microtransaction is usually associated with F2P games. Video game developers can release games in full version with some additional expansion such as Downloadable Content (DLC), cosmetics, and expansions. Microtransactions are divided into three: cosmetics, additional content, and pay-to-win (P2W) (Chua et al., 2019).

There are three types of microtransactions (Zendle et al., 2020) namely: cosmetic microtransaction; a transaction purely for cosmetics. Players need to spend real money for aesthetic purposes like hats, masks, shirts, pants, shoes, emote, and weapons. For example, Fortnite has an Item Shop where players could spend their in-game currency to purchase character skins, weapons, gliders pickaxes, and emotes. Fortnite in-game currency or V-Bucks could be obtained by spending real world money or completing certain missions. Please note that completing the mission would take enough time to obtain an item, hence the option buys with real money.

The second type of microtransaction is pay-to-win (P2W); a transaction that gives advantages to players who pay. The more the player spends, the easier it gets. It could make the game much easier and faster to finish. This type of game is not a fan favorite and brings controversies, because not all players would spend real world money to play on their games.

Lastly, loot boxes are items in-game that players can purchase with real money, but the item is randomly selected with different rarity and value. Loot box's content may contain one of the two types of microtransaction above. It could be cosmetics or P2W content. One of Valve's first-person shooter game Counter-Strike: Global Offensive which is now named Counter-Strike 2, has a cosmetics loot box system called "Case". The case can only be opened by purchasing a key that costs real money or trading with other players.

2.2. Urge to Purchase

Urge to purchase is an experience where consumers are unable to stop their shopping experience (Aiolfi et al., 2022; Bellini et al., 2017). It is an urge that arises from the consumer when shopping for a certain brand, item, or product (Utama et al., 2021). Urge to purchase is a spontaneous feeling when finding an item in store. It is a psychological state triggered by various factors like product features, situational cues, and promotional offers (Khan et al., 2022). It is a sudden, strong, and persistent desire to buy something right away, which can cause emotional conflict and occur with little consideration. Urge to purchase is a condition of want that is felt before to the actual purchase of products and services (Aragoncillo & Orús, 2018).

In the videogame microtransaction point-of-view, it can be influenced in several ways. Players may feel compelled to buy something if they think it would improve their performance in the game or make it

easier for them to go through the stages. Buying in-game material is a way to get over artificial restrictions or impediments put in place by game creators, making for a more seamless and pleasurable gaming experience. This relates to the need for uninterrupted play (Hamari et al., 2017). Wohn (2014) stated that low spender players that have the need to keep playing the game tend to make a purchase. This desire may be linked to purchasing consumable goods that are required to advance the game, lessen its difficulty, or improve the gameplay right away. The player's gaming milieu such as referrals from friends or admiring intriguing things on other players, can boost the success of microtransactions by influencing the desire to buy anything. Players may feel compelled to obtain comparable material when they see others using premium or advantageous in-game products (Tuovinen, 2013).

2.3. Negative Affect

Negative affect or negative emotion are categories of mood, emotion, and affect. It describes the subjective perception of a collection of unfavorable emotional states, including worry, guilt, shame, anger, jealousy, anxiety, depression, and stress (Leung & Lee, 2014). Based on the literature, the impact of negative emotions is not always evident. When it comes from retail environment, negative effects usually cause a customer to leave because it gives the impression that store could not fulfill their purpose for going there (Aiolfi et al., 2022; Bellini et al., 2017). In the context of microtransaction, negative affect can be triggered when they perceive the system as unfair or exploitative, making players to refuse purchases (Gibson et al., 2022). Based on the theory, the hypotheses can be created as follows:

H1: Negative Affect has direct impact towards Urge to Purchase

H2: Negative Affect has direct impact towards Perceived Risk.

2.4. Perceived Risk

The perceived risk is a consequence of a product when consumers purchase it. The risk itself can be the product itself or monetary loss. Jacoby and Kaplan (1972) stated that there are six types of perceived risk: financial risk, performance risk, physical risk, psychological risk, social risk, and overall perceived risk (Caetano, 2017).

Financial risk is a consequence regarding monetary loss. Performance risk is a consequence regarding the quality of a product. Physical risk is a consequence regarding the safety of a product. Psychological risk is a consequence regarding consumers' view from themselves. Social risk is a consequence regarding consumers' view from others. Lastly, overall perceived risk is a consequence regarding the overall risk level of a product.

The two main concerns connected to microtransactions are the risk of overpaying and the possibility of gaming taking over daily life (Jensen & Bengtsson, 2023). Players may be discouraged from making in-game purchases because of these risks, which may cause negative emotions like disappointment. Furthermore, players may be discouraged from participating in microtransactions if they believe there is a chance of addiction or excessive spending, especially if they believe the system is deceptive (Petrovskaya et al., 2022).

However, perceived risk might also have a positive impact on microtransactions. For instance, if they do not make in-game purchases, gamers can feel that they would lose out on exclusive material or gameplay advantages, which could encourage them to spend more (Ekeroth & Sandoff, 2023). Furthermore, players' decisions to engage in microtransactions may also be influenced by the social risk of falling behind friends or peers who are making in-game purchases (Jensen & Bengtsson, 2023). Therefore, the hypotheses can be built as:

H3: Perceived Risk has direct impact towards Urge to Purchase.

2.5. Impulse Buying Tendency

Impulse buying tendency is a tendency to make impulse purchases with no consideration of consequences (Aiolfi et al., 2022; Bellini et al., 2017). It is one of the factors of consumer traits that is

hard to resist when a consumer experiencing urge to purchase. In short, impulse buying tendency is a construct from consumer trait that act to give stimulus without considering the consequences (Corbishley et al., 2022). Impulse buying tendency may lead consumers into impulse buying. The tendency occurs before the urge to purchase experience.

Players may finish microtransactions quickly online and stay in the game they are playing, the ease of speedy internet transactions for in-game purchases may encourage impulsive buying behaviour. In-game purchases are frequently made available and simple to do following specific activities or when players are depleting their resources, thanks to the creative design employed by developers to increase the likelihood of such purchases. Furthermore, the fact that microtransactions frequently only require small sums of money can encourage players to make a purchase (Kloska, 2021). Therefore, the hypotheses can be concluded as:

H4: Impulse Buying Tendency has direct impact towards Urge to Purchase.

2.6. Positive Affect

Previous research stated that impulse buying is more likely to occur in a positive emotion than in negative ones. Around 85% of respondents felt that when they are in a good mood, they feel unrestrained and want to treat themselves. It also discovered a positive correlation between enjoyment and the chance of overspending when shopping. It also discovered a correlation between the desire to make impulsive purchase and positive affect (Aiolfi et al., 2022; Bellini et al., 2017).

In a F2P games, players showed favourable attitudes toward microtransactions since they promoted the growth of friendships and increased self-esteem in relation to in-game purchases (Gibson et al., 2023). Furthermore, a marginally positive association was discovered between in-game purchases and gaming experience, indicating that microtransactions may enhance users' pleasure of the game (Kloska, 2021). Therefore, the hypotheses can be concluded as:

H5: Positive Affect has direct impact towards Impulse Buying Tendency.

2.7. Hedonic Motivation

Hedonic motivation is a process of finding pleasurable where consumers not only find product by the price, but also from different element like fun or surprise (Corbishley et al., 2022). In other words, a behaviour to pursuit positive experiences and avoid negative experiences (Zeigler-Hill & Shackelford, 2020). The word “hedonic” comes from Greek mean “pleasure”.

One of the elements of hedonic is Social Shopping; a shopping experience with a social media network for consumers to like, comment, and share with their friends. Another element of hedonic is Value Shopping; a shopping experience regarding expenses and benefit after purchase (A. & O., 2021). Experiencing hedonic might lead consumers to purchase items impulsively. Hausman (2000) mentioned that customer purchasing process is not only for necessity and value, but also amusement and surprise. Customer will feel better after impulsively purchase a product; it feels like they are being rewarded.

Hedonic motivation could influence players to do microtransaction by providing an enhance gameplay experience such as enjoyment or satisfaction. Younger players may be more interested in curiosity, joy, and absorption (Barkman & Mattson, 2019). He also stated that the thrill of gambling for loot boxes were influenced by hedonism. Therefore, hedonic motivation hypotheses could be built as follows:

H6: Hedonic Motivation has direct impact towards Positive Affect

H7: Hedonic Motivation has direct impact towards Shopping Enjoyment

3. Methodology

3.1. Research Model

This section outlines the conceptual framework and methodological foundations that direct our study of urge to purchase. The research model provides clarity on the theoretical structures, linkages, and analytical methodologies used to fulfil the research objectives, acting as the framework upon which our study is constructed. This section attempts to provide a thorough review of the conceptual framework that guides the design, data collecting, and analysis of our study by clarifying the theoretical underpinnings and methodological approaches that guide our investigation. It aims to provide readers a thorough knowledge of the theoretical framework and methodological rigor supporting our examination into urge to purchase.

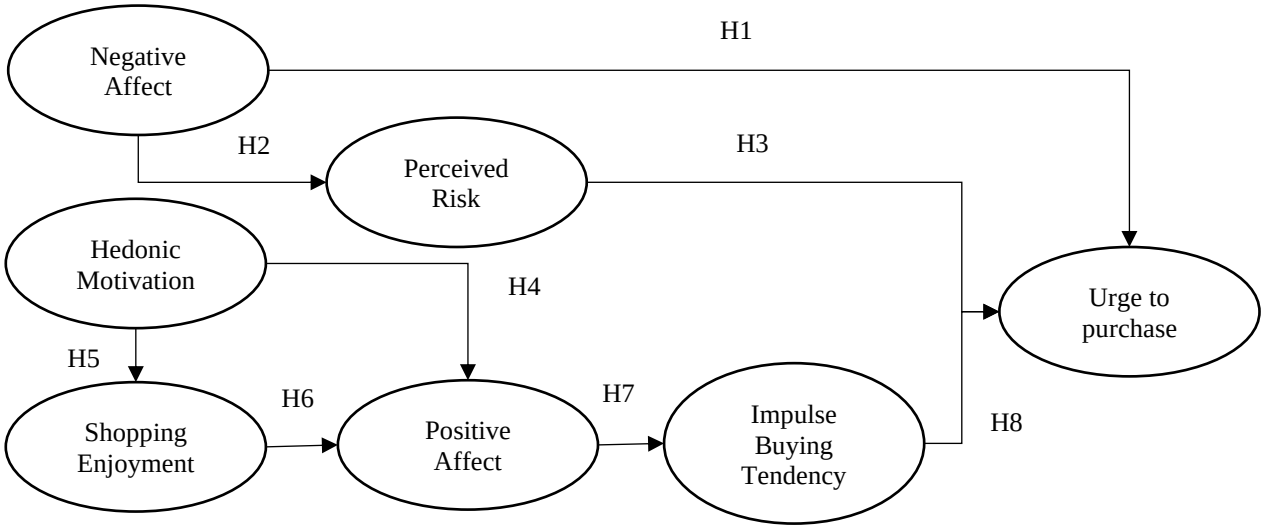

Fig.1: Research Framework.

3.2. Data Collection

The data was taken from citizen across Indonesia, where respondents fill the questionnaire in Google form. The respondents are gathered approximately two months ranging from May until June 2023. The questionnaire was distributed from author's social media. The respondents were asked to score their behavior to microtransactions in video games. For the sample size, authors use the "10-times rule method by Hair et al (2011). It stated that the number of inner or outer model linkages pointing at any latent variable in the model should not be less than 10 times the sample size (Kock & Hadaya, 2018). Because there are five latent variables, the calculation for samples is 50. However, this is the minimum number for sample in the analysis application, which will not be sufficient for generalization. Therefore, a total beyond that will be reasonable to gather for sufficient data.

A total of 175 respondents and 166 respondents were eligible for further tests. The video games that will be discussed are mainly free-to-play because many similar games use microtransaction as their main source of revenue. Pay-to-play games are also listed for using microtransaction, including but not limited to: FIFA franchise, NBA 2K franchise, Rainbow Six Siege, and Sea of Thieves.

3.3. Measurement

This study used close-ended question written in Bahasa Indonesia. The questions are modified from previous validated study based on 5-point Likert scales (1 = Strongly disagree, 5 = Strongly agree). Each question is related to certain variable and each variable contains three to five questions. Respondents must meet the following criteria: Had done purchasing in video games whether direct purchase or using third party payment. Table 1 shows each question for each variable:

Table 1: Variables and Indicators.

Variables / Questionnaires	*References*
Hedonic Motivation (HM)	
When I go to in-game stores, I buy thing that I do not want to buy. (IB1)	(A. & O., 2021; Amin Ul Haq & Abbasi, 2016; Corbishley et al., 2022; Hausman, 2000; Muruganantham & Bhakat, 2013)
I am a person that did not planned anything before or while shopping. (IB2)	(A. & O., 2021; Amin Ul Haq & Abbasi, 2016; Caetano, 2017; Corbishley et al., 2022; Hausman, 2000)
Buying spontaneously is fun. (IB3)	(Amin Ul Haq & Abbasi, 2016; Corbishley et al., 2022; Hausman, 2000)
When I see things that peak my interest, I will buy it without considering the consequences. (IB4)	(Amin Ul Haq & Abbasi, 2016; Muruganantham & Bhakat, 2013)
Impulse Buying Tendency (IB)	
When I go to in-game stores, I buy thing that I do not want to buy. (IB1)	(Aiolfi et al., 2022; Bellini et al., 2017; Cavazos-Arroyo & Máynez-Guaderrama, 2022; Febrilia & Warokka, 2021; Mohan et al., 2013)
I am a person that did not planned anything before or while shopping. (IB2)	(Aiolfi et al., 2022; Bellini et al., 2017; Cavazos-Arroyo & Máynez-Guaderrama, 2022; Febrilia & Warokka, 2021; Mohan et al., 2013)
Buying spontaneously is fun. (IB3)	(Aiolfi et al., 2022; Bellini et al., 2017; Corbishley et al., 2022; Mohan et al., 2013)
When I see things that peak my interest, I will buy it without considering the consequences. (IB4)	(Cavazos-Arroyo & Máynez-Guaderrama, 2022; Febrilia & Warokka, 2021; Mohan et al., 2013)
Negative Affect (NA)	
I feel bored while exploring the in-game shop. (NA1)	(Aiolfi et al., 2022; Bellini et al., 2017)
I feel lethargic when exploring the in-game shop. (NA2)	(Aiolfi et al., 2022; Bellini et al., 2017)
I felt disappointed while exploring the in-game store. (NA3)	(Aiolfi et al., 2022; Bellini et al., 2017)
Perceived Risk (PR)	
I'm worried that my financial records on the microtransaction shopping platform are not protected. (PR1)	(Caetano, 2017; Chen & Zhang, 2015; Lee et al., 2023; Utama et al., 2021)
I am concerned about financial transactions on microtransaction shopping platforms via the internet. (PR2)	(Chen & Zhang, 2015; Lee et al., 2023; Wu et al., 2020)
I'm worried about fraudulent transactions on the microtransaction shopping platform. (PR3)	(Caetano, 2017; Lee et al., 2023; Wu et al., 2020)
The item that I bought does not perform as expected. (PR4)	(Caetano, 2017; Chen & Zhang, 2015; Wu et al., 2020)
Positive Affect (PA)	
I feel excited when exploring the in-game store. (PA1)	(Aiolfi et al., 2022; Bellini et al., 2017; Corbishley et al., 2022)
I feel enthusiastic when exploring the in-game shop. (PA2)	(Aiolfi et al., 2022; Amin Ul Haq & Abbasi, 2016; Bellini et al., 2017)
I feel happy exploring the in-game shop. (PA3)	(Aiolfi et al., 2022; Amin Ul Haq & Abbasi, 2016; Bellini et al., 2017)
Shopping Enjoyment (SE)	
Exploring the in-game store is one of my favorite activities. (SE1)	(Aiolfi et al., 2022; Bellini et al., 2017; Febrilia & Warokka, 2021; Mohan et al., 2013)
Exploring the in-game store is a way I like to spend my free time. (SE2)	(Aiolfi et al., 2022; Bellini et al., 2017; Febrilia & Warokka, 2021)

Variables / Questionnaires	*References*
Exploring the in-game store satisfies me. (SE3)	(Bellini et al., 2017; Febrilia & Warokka, 2021; Mohan et al., 2013)
Browsing in-game store is a fun experience. (SE4)	(Febrilia & Warokka, 2021; Ganawati et al., 2018; Mohan et al., 2013)
Urge to Purchase (UP)	
I experienced several sudden urge to buy items that I'm not planned to. (UP1)	(Aiolfi et al., 2022; Bellini et al., 2017; Cavazos-Arroyo & Máynez-Guaderrama, 2022; Mohan et al., 2013)
I experienced strong urge to make unplanned purchase. (UP2)	(Aiolfi et al., 2022; Bellini et al., 2017; Cavazos-Arroyo & Máynez-Guaderrama, 2022; Mohan et al., 2013)
I had a desire to buy things that were not on my shopping list. (UP3)	(Aiolfi et al., 2022; Bellini et al., 2017; Cavazos-Arroyo & Máynez-Guaderrama, 2022; Mohan et al., 2013)
I see things that I want to buy when browsing, even not on my shopping list . (UP4)	(Cavazos-Arroyo & Máynez-Guaderrama, 2022; Mihić & Kursan Milaković, 2017; M. C. Toyama et al., 2019)

3.4. Data Analysis Method

This study used quantitative research methods to examining variables of urge to purchase in video game microtransaction. The data was analysed through Partial Least Squares Structural Equation Modelling (PLS-SEM) by using SmartPLS 3.0. The reason for this is to analyse the relationship between variables simultaneously. The questionnaire is divided into two parts: respondent's description information and research question. Respondent's description information contains ten questions about their identity such as age, gender, income, occupation, total expense per transaction, microtransaction experience, playtime per day, and gaming duration. For the research questions, it contains a total of 26 questions with each variable contains 3-5 questions. The variables were namely: Urge to Purchase (UP), Negative Affect (NA), Perceived Risk (PR), Impulse Buying Tendency (IB), Positive Affect (PA), and Hedonic Motivation (HM).

After gathering a survey, analysis was conducted. The first section for analysis were demographic result. It divides respondent identity by category, then interpreted by total responses and percentage. The second section were validity test. It interprets the accuracy of the data with maximum iterations of 300 and Stop Criterion of 7. The third section were reliability testing, which to see the consistency and dependability of the data. The result of the analysis must be the same if the study were repeated with the same conditions. Lastly, the hypothesis test will be conducted and will be testing the validity of the hypothesis. It will determine whether the result support or reject the hypothesis. In the hypothesis testing, it will use basic bootstrapping with 500 subsample, Bias-Corrected and Accelerated (BCa) bootstrapping, two-tailed test type with 95% confidence level.

4. Result and Discussion

4.1. Demographic Results

This section offers an analysis of the demographic characteristics observed within research's participant pool. Understanding the demographic makeup of our sample is pivotal for interpreting subsequent analyses concerning urge to purchase in video game microtransaction. For demographic results, see Table 2:

Table 2: Respondents' Demographic Results

Item	*Response*	*Percentage*
Gender		
Male	99	59.6
Female	67	40.4
Age		
<18	22	13.3
18-25	123	74.1
26-30	6	3.6
31-35	7	4.2
36-40	5	3
> 40	3	1.8
Occupation		
Student	126	75.9
Employee	21	12.7
Entrepreneur	9	5.4
Civil Servant	3	1.8
Professional (Doctor, Lawyer, Accountant, etc.)	2	1.2
Professional E-Sport Player	0	0
Unemployment	5	3
Income		
<Rp. 2 millions	99	59.6
Rp. 2 millions – <Rp. 3 millions	33	19.9
Rp. 3 millions – <Rp. 5 millions	12	7.2
Rp. 5 millions – <Rp. 7.5 millions	8	4.8
<Rp. 7.5 millions – <Rp. 10 millions	6	3.6
>= Rp. 10 millions	8	4.8
Expense per transaction		
<= Rp. 75,000	52	31.3
Rp. 75,001 - Rp. 150,000	60	36.1
Rp. 150,001 - Rp. 300,000	31	18.7
Rp. 300,001 - Rp. 600,000	13	7.8
>= 600,001	10	6
Playtime per day		
<= 1 hour	16	9.6
1 - 3 hours	83	50
3 - 6 hours	54	32.5
6 - 10 hours	8	4.8
>= 10 hours	5	3
Playtime frequent		
1 – 2 times a month	10	6
Once a week	18	10.8

Item	*Response*	*Percentage*
2 – 3 times a week	28	16.9
3 – 4 times a week	35	21.1
Everyday	75	45.2
Total playtime		
<= 1 year	20	12
1-3 years	51	30.7
3-5 years	23	13.9
>= 5 years	72	43.4
Total microtransaction experience		
<= 1 year	44	26.5
1-3 years	74	44.6
3-5 years	17	10.2
>= 5 years	31	18.7

4.2. Validity Testing

The Table 3 shows the validity of the test for further discussion. This test is using loading factor and Average Variance Extracted (AVE). In factor analysis, loading factors greater than 0.7 should be interpreted as indicating a high correlation between the observable variables and underlying latent components. Loading factors greater than 0.7 are considered positive results since they support the validity of our analysis by indicating the consistency of our measurement model. On the other hand, weaker connections can suggest problems with concept representation, thus it should reassess the validity and reliability of our measurement model if loading factors are less than 0.7.

Table 3: Validity Testing

Variables	**Indicator**	**Outer Loading**	*AVE*
Hedonic Motivation	HM1	0.814	0.657
	HM2	0.722	
	HM3	0.917	
	HM4	0.877	
Impulse Buying Tendency	IB1	0.844	0.685
	IB2	0.867	
	IB3	0.841	
	IB4	0.756	
Negative Affect	NA1	0.918	0.816
	NA2	0.884	
	NA3	0.909	
Perceived Risk	PR1	0.737	0.618
	PR2	0.864	
	PR3	0.764	
	PR4	0.773	
Positive Affect	PA1	0.949	0.914
	PA2	0.963	
	PA3	0.956	

Variables	Indicator	Outer Loading	*AVE*
Shopping Enjoyment	SE1	0.884	0.783
	SE2	0.859	
	SE3	0.917	
	SE4	0.877	
Urge to Purchase	UP1	0.900	0.778
	UP2	0.929	
	UP3	0.928	
	UP4	0.759	

All the outer loadings were above 0.7. For hedonic motivation variable, the highest outer loadings were HM3 for 0.917 and HM4 for 0.877. It shows that the indicators "I visited the in-game shop to satisfy my curiosity" and "I visited the in-game store to check out the new items available" represent the variable and have an impact to hedonic purchases. Hedonic motivation has a role in the urge to purchase during microtransaction.

For impulse buying tendency variable, the highest indicators were IB2 with 0.867 and IB1 with 0.844. It means that the two highest indicators represent the variable. The tendency to impulse purchase has a role in the urge to purchase in microtransaction.

For perceived negative affect variable, NA1 and NA3 represent the variable with 0.918 and 0.909 respectively. The bored and disappointed feeling from customers represents a negative effect on impulse buying. In which also means that negative affect is affecting impulsive purchase in microtransaction.

For perceived risk variable, PR2 has the highest value to represent its variable with 0.864. A concern about financial transaction and item expectation after purchase were affecting impulse buying. For positive affect variable, all the indicators have the highest outer loading among others, 0.963, 0.956, and 0.949. That means customer's enthusiasm, excitement, and happy moods represent positive affect towards urge to purchase.

For shopping enjoyment variables, the highest indicators were SE3 with 0.917 and SE1 with 0.884. Having a good shopping experience is causing customers to impulsively buy in video games. Lastly, the urge to purchase has UP2, UP3, and UP1 for the highest value with 0.929, 0.928, and 0.900. That means customers tend to have urges to purchase something that is not in their shopping list.

4.3. Reliability Testing

For the reliability testing, it contains Cronbach's Alpha and Composite Reliability (rho_c). The limit for Cronbach's Alpha is 0.6 to be considered acceptable. If the Cronbach Alpha was below 0.6, the variable was considered not reliable. It can be concluded that this model is acceptable because it has a good value. The table 4 shows the result for each variable:

Table 4: Reliability Testing

Variables	*Cronbach's Alpha*	*Composite Reliability*	*Reliable*
Hedonic Motivation	0.824	0.884	Reliable
Urge to purchase	0.846	0.897	Reliable
Negative Affect	0.888	0.930	Reliable
Perceived Risk	0.806	0.866	Reliable
Positive Affect	0.953	0.970	Reliable
Shopping Enjoyment	0.907	0.935	Reliable
Urge to Purchase	0.903	0.933	Reliable

4.4. Hypothesis Testing

After validity and reliability testing was concluded, the next step for this research is conducting hypotheses testing. The hypothesis testing was using SEM-PLS Bootstrapping process. Bootstrapping is a process to determine significant or probability from direct effect, indirect effect, and total effect. The hypothesis tests use the P Value as an indicator. The limit for p value must be below 0.05 to conclude that hypothesis is significant. If the value is above 0.05, then the hypothesis is not significant.

There is also another approach to determine whether the hypothesis is significant or not, which is using T Statistic. Usually, the limit for T statistic is above 1.96. If the T Statistic is below 1.96, that means the hypothesis is not significant (Hair Jr et al., 2021). However, this research will use the first approach. Table 5 shows hypothesis results for each hypothesis.

Table 5: Hypothesis Testing

Hypothesis	***P value***	***Path Coefficient***	***Result***
H1: Negative Affect → Urge to Purchase	0.002	-0.219	Supported
H2: Negative Affect → Perceived Risk	0.000	0.549	Supported
H3: Perceived Risk → Urge to Purchase	0.001	0.242	Supported
H4: Hedonic Motivation → Positive Affect	0.000	0.303	Supported
H5: Hedonic Motivation → Shopping Enjoyment	0.000	0.705	Supported
H6:Shopping Enjoyment → Positive Affect	0.000	0.556	Supported
H7: Positive Affect → Impulse Buying Tendency	0.000	0.546	Supported
H48: Impulse Buying Tendency → Urge to Purchase	0.000	0.624	Supported

Table 5 shows the P value and path coefficient of all hypotheses. It was concluded that all hypotheses were accepted with the lowest is 0.000 and highest with 0.002. That means the highest accuracy was 100% and the lowest one was 98%. The most significant hypotheses between each driver are H6 with 0.705 path coefficient. Followed by H4 with 0.624 path coefficient. H8, H2, and H3 has 0.556, 0.549, and 0.546 path coefficient respectively. While the least path coefficient value was H5 and H3 with 0.303 and 0.242 path coefficient.

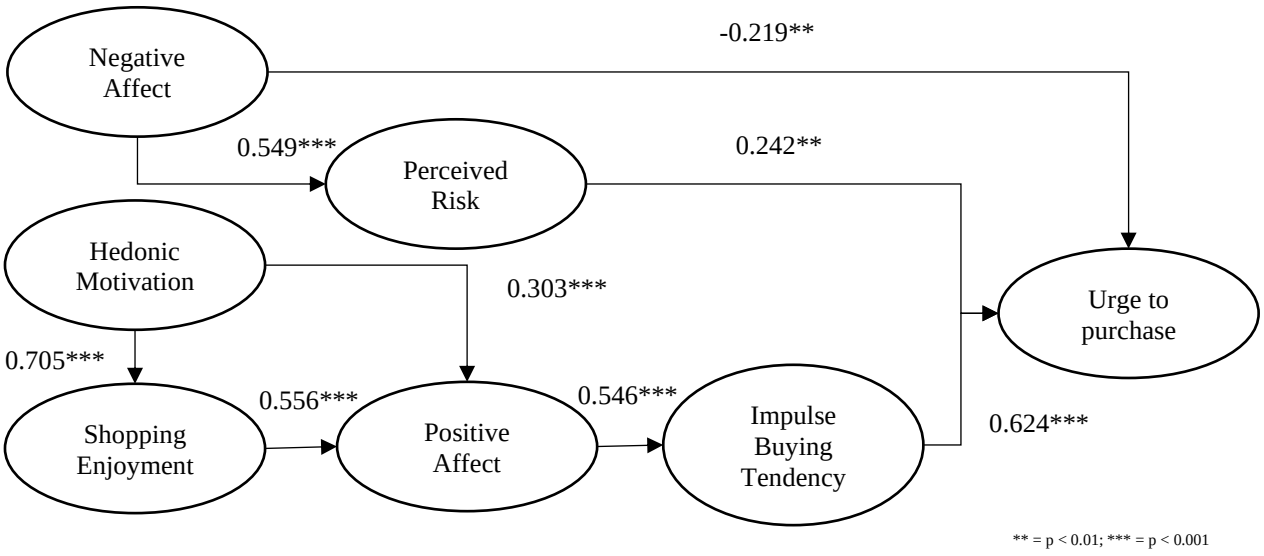

Fig.2: Bootstrapping Model.

For H1, it is an exception path coefficient because it had a negative score. While it still significant, the direction of the arrow was negative. That means, the bigger the negative affect, the smaller the urge to purchase had become. Players will be less likely to buy something from the store if they have negative emotions or feelings. For example, if they did not like the item or having a bad experience in the in-game store, they will not be considered to buy the digital goods.

The H2 result shows that negative affect has affecting perceived risk in microtransaction. H2 is accepted, which means that negative affect for perceived risk tends to have affect to microtransaction. While the players have negative emotions or experience from the in-game store, their feeling for perceiving a risk become higher.

H3 indicates that the higher their perceiving the risk, the high also for having an urge to purchase. When a player has a feeling about perceived risk; knows the provider, trusted developers, they will likely have an urge to purchase in the in-game store.

H4shows that hedonic motivation influences positive affect significantly. As stated by Zeigler (2020), hedonic motivation is a behaviour to pursuit positive experiences and avoid negative experiences. Experiencing hedonic might lead consumers to purchase items impulsively. Developers must keep the player base happy, therefore it will lead to positive emotions, ultimately players will have an urge to purchase in-game store.

H5 also discussing about hedonic motivation, while this time influences shopping enjoyment. It has the biggest effect compared to others. While hedonic is a behaviour of finding the element of fun and joy, it also effects the experience of players browsing in-game store. It gives players to have an excitement and eventually they will have an urge to purchase.

H6 indicates that higher shopping enjoyment also leads to higher positive affect. The players will have a happy feeling while browsing the store and they gradually have a positive emotion. The player will leave a good impression about the game and indirectly builds an urge to purchase.

H7 mainly talks about positive affect influencing impulse buying tendency. Meaning, the higher positive emotion has, the higher of players will make a tendency to impulse purchase. The main objective of the developers is to make players happy. Eventually, players will tend to impulsively buy the digital goods for support to the developers.

For the last hypotheses, H8 talks about impulse buying tendency influence urge to purchase. It tells that if the tendency is going high, the urge is also going high. Having the tendency to buy impulsively will generate the urge for purchasing the digital goods.

4.5. Theoretical Implications

In research paper by Aiolfi et al. (2022) and Bellini et al. (2017), negative affect has no direct significancy to urge to purchase. However, this paper indicates that negative affect has direct impact to urge to purchase. These papers conducted research for offline stores. Customers could feel, touch, and try the item that they want to buy rather than just looking at it as in online store. Organizations need to use an attractive and user-based layout to attract more customers.

Study by Wu et al. (2020) shows that shopping in electronic store generally had more risk than physical store. The customer's view for preventing a risk may lead to usefulness and satisfaction. This research implies that perceived risk has direct significance in feeling the urge to purchase. Organization may also include information about payment methods and wider options for customers to choose from.

On paper by Amin Ul Haq & Abbasi (2016) shows that hedonic motivation gave significant impact to impulse purchase because customers feel joy, pride, and amused when they feel new experience. It feels like exploring a new world. Hedonic motivation in this research also shows significant impact to urge to purchase. Organizations can show exciting items or cosmetics in the in-game store. It can boost customer happiness because of the hype.

4.6. Practical Implications

For the practical implication, this research found that hedonic motivation and shopping enjoyment affecting tendency to impulse purchase, ultimately affecting urge to purchase. Perceiving a risk also affects the customer's urge to purchase. Having customers a tendency to unplanned purchases is a good thing for businesses, from a shopping enjoyment and hedonic perspective, a good in-game store design, a positive atmosphere, and helpful information on a product or store might increase the intention of urge to purchase (Mohan et al., 2013). Game developers need to think about how they will monetize their players. In perceived risk perspective, having a trusted vendor for payment method and faster purchase process are one of the ways to gain customer's trust. Having a player retention for players like subscription-based, discounts, events, and returning player microtransactions will give a feeling of mandatory to have login into the video game. Developers might also need to discuss about market research. Some question like "How old are the player base?", "What is the usual value player spent", "What date or time does usually player spend?", etc.

5. Conclusion

The research offers empirical evidence on specific factors driving microtransaction purchases. Firstly, all variables and indicators are considered passed the criteria for further test. There are no errors during the test. Secondly, all the hypotheses were accepted after conducting a test. This means that each of the variables are affecting one to another, which in the end affects customer to urge to purchase in video games. However, the Indonesia-only focus limits generalizability.

After conducting the analysis, it was discovered that all the factors are affecting consumers to have urges to purchase in online video games. Urging purchases is important for businesses and developers because F2P games also need to earn revenue by spending more items from customers. With players having the urge to buy, it will support the developers to update their games. Eventually, having a happy customer makes them want to spend more money.

Further studies across contexts using longitudinal data and interviews can provide more nuanced understanding. The video game categories should be limited by free-to-play or pay-to-pay only to make the research more detailed. It can also limit the device of respondent could answer like PC, mobile, or console only. Overall, the analysis carries valuable inputs for academic advancement and practical strategies to convert free users through targeted in-game offerings.

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