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Perceived values and purchase behavior of online game attribute products: Gender overview

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Abstract

Game-oriented business development is growing quickly and this encourages the digital economy in Indonesia. This research aims to examine the role of perceived value on the purchase behavior of online game attributes in Indonesia based on gender groups. Samples were taken from several online gaming communities in Indonesia. The variables in this study consist of perceived value variables, namely emotional, quality, social and economic value, which are antecedents for the online game attribute purchase intention and purchase behavior variables. Data were analyzed using Structural Equation Modeling. The research results show an influence on purchase intentions of perceived value which consists of emotional, quality, social and economic value and ultimately shapes the buying behavior of online game product attributes. There is a difference in each component of perceived value on purchase intention between male and female groups. Emotional and quality values do not affect the female group's pursuit intent, while social values do not significantly affect the male group.

Keywords: digital product, cyber consumer, e-business, gender effect, e-sport

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Introduction

The development of online game products has received significant attention in the digital business. Data from the Google Play store dated August 24, 2020, shows top charts with the top free category of "Among Us," "Mobile Legends: Bang Bang," and "Cube Surfer!" Game top charts with the top-grossing category consist of "Garena Free Fire: BOOYAH Day," "Mobile Legends: Bang Bang," and "Genshin Impact." During the late 1970s and early 1980s, arcade competitions became increasingly organized and sanctioned as public contests, with title sponsorship, audience, and media coverage [1]. Online games in their development are recognized as sports category games, often called e-sports. The origins of e-sports are said to hinge heavily on the launch of the world-wide web (www) in 1989 and the early 1990s, software and hardware technology with network and multiplayer functionality. In the early 1990s, the history of e-sports started, and it became increasingly popular during this decade; the number of players increased rapidly [2]. YouTube has had an essential role as a means of advertising game products. The similarity between the video and the advertised product or brand must be considered when producing ads included in YouTube e-sports videos [3]. This e-sport event is a means to promote media platforms and sports, as well as related technologies [4].

The position of competitive gaming as a mix of sport, media and technology makes it an ideal case study of a virtual spectacle of an economic experience. An e-sports event can be considered a hyper-experiential product, a "post-experience experience," in that a consumer product based on initial experience is gameplay provided by the publisher. The secondary consumption phase begins through viewing familiar games as a commodity and the viewer is considered in conjunction with the e-sports tournament audience [1]. As one of the innovative digital products, online games have contributed to the growth of the digital economy [5]. Online games are also recognized as one of the successful forms of the digital industry that has a major contribution to the growth of a country's digital economy [6]. The development of online game products is growing rapidly in several countries such as Japan, Korea, China [7], Philippines, and Indonesia. For example, e-sports has competed in Indonesia's 2018 Asian Games competition and the 2019 SEA Games in Manila, Philippines. Based on survey data from Agate Studio, a game company in Indonesia, the three most popular games in Indonesia were RPG (Role Playing Games), Strategy, and FPS (First Person Shooter) in 2012. These results also show that most people (70%) pay less than IDR 100 000 (approx. $11). 25% of respondents spend between IDR 100 000 – IDR 500 000 per month ($11 – $55). About 40% of respondents spend their money on virtual goods.

The rapid growth of the online game industry has consequences for game development companies to observe online game consumer behavior and determine the right strategy and product development. The phenomenon of the growth of online games being recognized as e-sports has become a research attraction for academics. Analysis of consumer behavior related to attributes or items of a game is essential for game companies [8]. Several existing studies have proved the importance of understanding the perceived value aspect for game companies. The consumption value theory explains that game users consider multiple values such as quality emotions such as pleasure, social and economy in purchasing decisions [9]. Park and Lee [8] state that in online games, if users can perceive items or attributes as valuable, there will be an increased tendency to make purchases. Understanding the appropriate value of consumers is a competitive advantage or source of competitive advantage for the company [10].

Perceived value influences purchase intention, especially for digital products [11]. Several previous studies confirm the role of perceived value on online game buying behavior, such as emotional [12, 13], quality or competence [13, 14], social [12, 14] and economics or monetary [12, 13]. Some of the findings also showed different results [15, 16] and the limitations of research that have not involved elements of personal characteristics in existing research. Some research is also limited to the study of behavioral intentions [11]. One of the demographic elements that impact online game use is gender. The role of gender and its phenomena related to online games still needs to be explored further [17]. Participants are only differentiated based on biological differences [18, 19]. There have not been many studies on gender differences based on social norms and expectations [14].

1. Motivation and research rationale

This research examines the role of perceived value on online game attributes' buying behavior and this behavior model based on gender overviews. Understanding users' perceived values and characteristics are expected to consider the development of user-based product innovation and determine competitive advantage strategies. The gender aspect is an essential demographic element related to information technology [20]. Islam [21] emphasize the differences in attitudes between men and women interacting online. Although online games are cross-gender digital products, their use characteristics have different attitudes [22]. Based on the motivational aspect, males and females tend to use online games with different motives. Yee [22] found that males tend to be achievement-oriented even though both have a social orientation. Regarding social orientation, females play games to maintain relationships or social interactions with others [23]. The consequences of gender roles related to information technology have also been emphasized by several researchers [24, 25]. This difference causes marketers or game development companies to adjust the value differences in-game attributes marketed based on demographic patterns. Several studies have tried to examine differences between in-game users based on demographic characteristics such as user age [22, 26], but there are indications that differences are based on cross-gender [17].

2. Literature review related to existing models

Perceived value involves customer perceptions of the reciprocal nature of things issued and received by customers [27]. The perceived value is also defined as assessing the entire use of goods or services determined from the consumer's view of the goods or services received with what is given. Customers make sacrifices to get something they want. The sacrifice can be in time, money or energy. Perceived value occurs when customers compare their perception of an item with their sacrifices and benefits. If customers get product benefits commensurate with or even exceeding the perceptions and sacrifices, the product has a positive perceived value. Conversely, if the product benefits have a lower value than the perceptions and sacrifices made by customers, the product has a negative perceived value. Perceived value can be increased by increasing the benefits or reducing the costs incurred [28].

Sweeney and Soutar [29] designed the value component to measure perceived value: emotional, social, economic, monetary and quality. This model is more comprehensive than others and is most widely used in communication studies and social media research [30, 31]. Emotional value is assessing the feelings or affective individuals in consuming the product. Social value refers to the assessment that comes from the ability of a product

to improve the social life of the individual or user. Economic or monetary value is an assessment from the built-in perception comparing the price offered and the costs incurred. The quality value measures the assessment obtained from product users' perceived quality and performance expectations. Users of the perceived value game will encourage individuals to make purchase decisions [9, 16].

There are gender differences in behavioral constructs regarding the information system responding to information [32]. Psychologically there are differences between women and men in processing messages and information, so the built-in attitudes will also be different [33]. Male and females have differences in interpreting something, including in processing information. Males tend to perceive things according to cognitive aspects, while females tend to involve affective aspects [34], so the perceived values will also differ. Social Role Theory explains that women are more focused on interactive activities than men from a social point of view [35]. Females process information based on intuition, subjectivity and emotion [36]. Salomon [37] explains that females are more sensitive in processing information, so abstract values are easier to understand than with males. The female consumers' purchase intention is more closely related to experience, affective and social identity than in the case of male groups [38]. Females and males have differences in perceiving values which will cause differences in attitudes and behavior in making decisions related to online games.

2.1. Emotional value

The emotional value is an assessment based on feelings or emotions from mobile games [39]. Emotional value in online games tends to lead to aspects of perceived playfulness. According to Hsiao and Chen [16], perceived playfulness is a feeling of joy or pleasure from users while playing games. The feeling of joy that is obtained encourages individuals to continue to get the same thing to encourage purchase intentions for the game product in question. Emotional value shows the benefits obtained based on feelings or affective aspects of online games [39]. The affective aspect that produces a sense of comfort is obtained based on joy when interacting with other people in the game world. Based on this positive attitude, the impulse or motive will stimulate a payment intention [40, 41]. Previous research also supports this emotional relationship with purchase intention on mobile products [41, 42]. The joy obtained based on the experience of playing online games impacts the purchase intention [43]. The proposed hypothesis is as follows:

H1: The higher the perceived emotional value, the higher the intention to buy online game product attributes.

2.2. Quality value

Quality or performance value refers to the player's perception of performance with the quality obtained from online games [44]. Quality value refers to the perceived access flexibility obtained by game users. Wei and Lu [41] stated that perceived access flexibility is the freedom of time and control of players in playing games. Players can freely determine the time and place to play. The form of freedom obtained is a value of control over behavior. Research conducted by Hsiao and Chen [16] state that quality value positively affects purchase intention. The game is designed with a platform that is easy to access and related to the platform's quality. Aspects of availability and flexibility of time and place of access are important factors that play a role in using the platform [44]. The value of the quality of a website will increase the intention to purchase the web [45]. The proposed hypothesis is:

H2: The higher the perceived quality value, the higher the intention to buy online game product attributes.

2.3. Social value

Social value refers to the benefits derived from mobile games through social interaction between players [39]. Connectedness is a significant component of interacting online. Zhao and Lu [46] stated that connectedness is a connection between individuals through mobile games. Positive feelings between players in a game team can be formed when the team tries to achieve a synergistic or partial victory. The interactive game process will form a communication network and encourage the social involvement of fellow players. Online game players can learn from each other's game tactics and gain experience from the games they run [47]. The research results conducted by Lu and Hsiao [44] show that perceived connectedness has a positive effect on purchase intention. Experiences gained from individuals through convenience and connectedness will form positive social relationships. Users who feel the fulfillment of social interaction needs in online games will encourage them to buy products and their attributes. The proposed hypothesis is:

H3: The higher the perceived social value, the higher the intention to buy online game product attributes.

2.4. Economic value

Economic value refers to the way individuals assess the value of a product based on the quality obtained versus the sacrifice given [39]. Economic or monetary value has parts or components in the form of perceived reasonable price and perceived reward. Perceived reasonable price is a component to measure the level of individual sacrifice in getting the desired goods or services. Lu and Hsiao [39] stated that perceived good reward refers to gifts received by players when playing games. In some games, the longer the time spent playing, the greater the player's reward. Additional prizes can motivate players to play. Economic value refers to the price representing the value that the user must sacrifice. Users in playing games consider the suitability of the monetary cost incurred with the satisfaction obtained [11]. If the user feels that what is obtained follows what is sought, this will bring up the intention or urge to consume [39]. Several studies, such as Yi & Jeon [48], Lu & Hsiao [39], and Hsiao [49], stated that perceived reward has a positive effect on purchase intention. The proposed hypothesis is:

H4: The higher the perceived economic value, the higher the intention to buy online game product attributes.

2.5. Purchase intention

The theory of planned behavior conceptually explains that intention is the best predictor of behavior. The intention is also the closest intermediary to behavior. Purchase intentions contribute positively to online buying behavior [50]. Bae [51] explained that intention is a good intermediary for various antecedents in explaining behavioral mechanisms for game products. The intention is also a good antecedent for the behavior of buying virtual products across generations [52]. The theory of planned behavior explains that intention is an intermediary for several motivational factors to behave [53, 54]. Users who have the intention to buy will have a great tendency to buy game products. The proposed hypothesis is:

H5: The higher the purchase intention, the higher the buying behavior of online game product attributes.

The relationship between variables in the study that includes a schematic relationship between emotional, quality, social and economic value variables with purchase intention and purchase behavior is shown in the research model. A research model that includes the entire hypothesis is shown in *Fig. 1*.

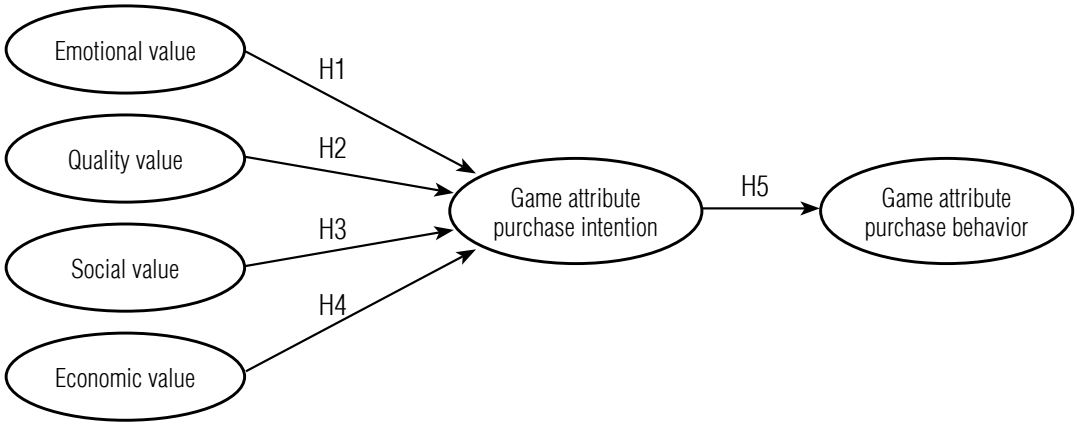

Fig. 1. Research model.

3. Methodology

This research uses a post-positivistic paradigm or hypothesis testing. We use a survey design in data collection and correlational research that relates the independent and dependent variables. The sample in this study is several online game users grouped by gender. Samples were taken from several online gaming communities in Indonesia, involving 426 respondents. The variables in this study consisted of perceived value variables, namely emotional, quality, social, and economic value as determinant factors for game attribute purchase intention and purchase behavior. Perceived value variables were measured by a questionnaire adopted by Lu and Hsiao [39]. The emotional value is an assessment based on feelings or emotions from mobile games [39]. Emotional value in online games refers to the aspect of perceived playfulness. Quality or performance value is defined as the player's perception of performance with the quality obtained from mobile games [39]. Quality value refers to the perceived access flexibility obtained by game users. The social value variable is defined as the benefits obtained from mobile games through social interaction between players [39]. Connectedness is a proxy for social value in interacting online. According to Lu and Hsiao [39], economic value refers to the way individuals assess the value of a product based on the quality obtained versus the sacrifices given. Economic value has a proxy that reflects this value in perceived reasonable price and perceived reward. The perceived good price variable is a component to measure the level of individual sacrifice in getting the desired goods or services. At the same time, the perceived reward is a reward the user obtains. Purchase intention is a person's purchase intention that can change due to the individual's perception of the product [55]. The buying behavior variable is buying a product or a form of actual purchase. Data was collected in a survey using a Likert scale adapted by several researchers. Instruments regarding the variables of purchase intention and purchase behavior were adopted from Hsu & Lin [55], Hsiao & Chen [16], and Davis [56]. Data were analyzed using Structural Equation Modeling. The analysis was carried out based on the analysis of the model in the male and female groups.

4. Results and discussion

4.1. Demographics

The total number of respondents in this study amounted to 426 respondents. The characteristics of respondents are categorized in terms of

gender, age, habit, and game experience. The following is a summary of the description of the characteristics of respondents based on gender, age, habit, and experience, which is presented in *Table 1*.

Based on the data, we found that there were 224 or 53% male, while females were as many as 202 or 47%. Based on age category, most respondents were 17–23 years, as many as 192 or 45%. Based on the habit or playing habits seen from the duration of time per day, most respondents played for 1–3 hours per day, which was 152 or 36%. Based on the experience aspect, it is known that most respondents are at the 3–5 year level, namely 143 or 34%.

4.2. Validity and reliability

The results of the validity and reliability tests using factor analysis and composite reliability are presented in *Table 2*. The value of standardized loading of each indicator (λ_i) and the value of the error variance associated with each indicator (ε_i) are used to determine the value of composite reliability and variant extraction per variable.

Based on *Table 2*, it can be seen that the factor loading coefficient of each indicator of each variable is valid. Decision-making regarding the suitability between the latent and observed variables is determined by the

Table 1.

Characteristics of respondents

Characteristics	Item	Frequency	%
Gender	Male	224	53
	Female	202	47
Age (Years)	<17	118	28
	17–23	192	45
	24–29	69	16
	30–35	37	9
	> 35	10	2
Habit (play time per day)	< 1 h	98	23
	1–3 h	152	36
	3–5 h	89	21
	> 5 h	87	20
Experience (mobile game per year)	< 1	93	22
	1–3	116	27
	3–5	143	34
	> 5	74	17

Table 2.

Composite reliability and variant extraction

Variable	λ_i	ε_i	Composite reliability	Variant extraction
Emotional value			0.93	0.81
Convenience	0.91	0.83		
Happiness	0.89	0.79		
Calm	0.87	0.76		
Playfulness	0.93	0.86		
Quality value			0.95	0.85
Performance	0.92	0.85		
Flexible	0.93	0.86		
Accessibility	0.91	0.83		
Functionality	0.92	0.85		
Social value			0.93	0.82
Interaction	0.89	0.79		
Communication	0.87	0.76		
Connectedness	0.93	0.86		
Social value	0.92	0.85		
Economic value			0.90	0.76
Suitability	0.87	0.76		
Affordability	0.86	0.74		
Appropriate rewards	0.91	0.83		
Fairness	0.84	0.71		
Online game attribute purchase intention			0.94	0.83
Desire to use	0.88	0.77		
Desire to find information	0.93	0.86		
Urge to buy	0.94	0.88		
Plan to buy	0.9	0.81		
Online game attribute purchase behavior			0.95	0.84
Decision	0.93	0.86		
Actual purchase	0.96	0.92		
Intensity of buying	0.91	0.83		

criteria for the minimum factor loading value of 0.5. Composite reliability for each variable ranges from 0.90–0.95; it is above the acceptance value of the reliability limit of 0.7. The variance extraction value is at the level of the acceptance limit, which is a minimum value of 0.5. Variations of values ranged from 0.76–0.85.

4.3. Goodness of fit results

The research model was tested based on the goodness of fit test using chi-square, CMIN/DF, GFI, AGFI, RMSEA, TLI, CFI, and ECVI. The overall model test results are summarized in *Table 3*.

Table 3 shows that the overall research model is fit. The Chi-square value with a probability > 0.05 indicates the overall goodness-of-fit model. The recommended level of significant acceptance is $p = 0.05$, which means that the actual and predicted input matrices are not statistically different or fit. In addition, the results are reasonable criteria after testing the suitability of the RMSEA, GFI, AGFI, TLI, CFI, and ECVI values compared to the cut-off value of the structural model equation.

The causality test of the model in this study was grouped into two parts, namely causality in the male and female groups.

4.4. Model causality test – Gender group

Model analysis was carried out separately based on male and female groups. The results of the model causality test in the male group are graphically reflected in *Fig. 2*. The results of the regression weights between latent variables, often referred to as estimated loading factors or lambda values, can be used to analyse variable causality tests. Based on the significance of the *t*-value or CR (Critical Ratio) with a probability value $p = 0.05$. The results of the causality test regression weights for the male group are summarized in *Table 4*.

Table 3.

Goodness of fit

Index	Cut off Value	Result (male)	Result (female)	Model Evaluation
Chi square	Close to 0	92.832	91.221	Good
Probability	≥ 0.05	0.102	0.098	Good
CMIN/DF	≤ 2.00	1.112	1.003	Good
GFI	≥ 0.90	0.932	0.921	Good
AGFI	≥ 0.90	0.952	0.935	Good
RMSEA	≤ 0.08	0.023	0.034	Good
TLI	≥ 0.90	0.977	0.963	Good
CFI	≥ 0.90	0.972	0.952	Good
ECVI	*Default model < saturated model*	0.811 < 1.216	0.716 < 1.241	Good

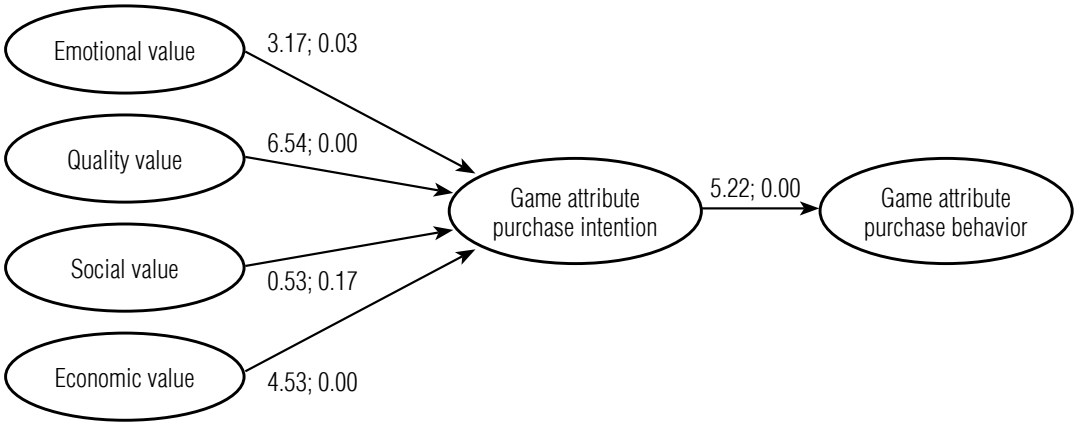

Fig. 2. Path Model – Male.

Table 4.

Evaluation of regression weights – Male group

Hypothesis	Variable	Estimation	CR	P	Conclusion
H1	Emotional value → Purchase intention	0.212	3.17	0.03	Supported
H2	Quality value → Purchase intention	0.477	6.54	0.00	Supported
H3	Social value → Purchase intention	0.018	0.53	0.17	Unsupported
H4	Economic value → Purchase intention	0.319	4.53	0.00	Supported
H5	Purchase intention → Purchase behavior	0.451	5.22	0.00	Supported

Based on the evaluation of the regression weights in *Table 4*, it can be explained that for the male group, there is an influence of emotional value variables on the purchase intention of online game attribute products with a coefficient of 0.212 and a probability of 0.03, which means H1 is supported. The quality value variable significantly affects purchase intention with a coefficient of 0.477 and a probability of 0.00, which means H2 is supported. The social value variable has no significant effect on purchase intention of online game attribute products with a coefficient of 0.018 and a probability of 0.53, which means H3 is not supported. Economic value influences purchase intention of online game attribute products with a coefficient of 0.319 and a probability of 0.00, which means H4 is supported. The purchase intention variable significantly influences purchase behavior with a coefficient of 0.451 and a probability of 0.00, which means H5 is supported.

The results of the causality test model showing the relationship of emotional, quality, social and economic value in the female group are graphically shown in *Fig. 3*. The results of the causality test regression weights which consist of estimated values, critical ratios, and probability for the male group summarized in *Table 5*.

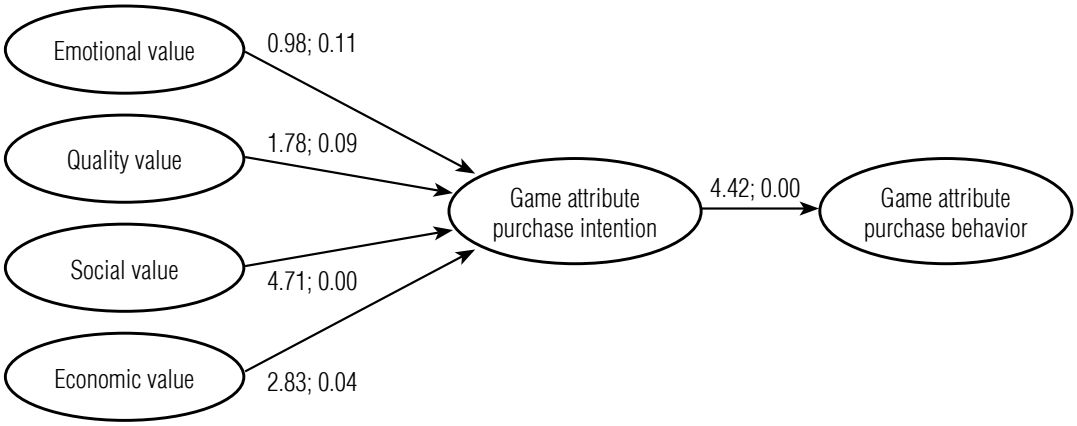

Fig. 3. Path Model – Female.

Based on the model test for the female group in *Table 5*, it can be seen that the emotional value variable has no significant effect on the purchase intention of online game attribute products with a coefficient of 0.086 and a probability of 0.98, which means H1 is not supported. The quality value variable has no significant effect on purchase intention in the female group with a coefficient of 0.091 and a probability of 0.09, which means H2 is not supported. The social value variable significantly affects the purchase intention of online game attribute products with a coefficient of 0.322 and a probability of 0.00, which means H3 is supported. Economic value significantly affects the purchase intention of online game attribute products with a coefficient of 0.127 and a probability of 0.04, which means H4 is supported. The purchase intention variable significantly influences purchase behavior with a coefficient of 0.403 and a probability of 0.00, which means H5 is supported.

Based on the study of the two models between males and females, it can be seen that in the male group there is only one hypothesis that is not supported: the role of social values is different from the female group, which prioritizes this aspect. There are two unsupported hypotheses in the female model, namely the role of emotionality and quality value on purchase intention, which differ from the male

Table 5.

Evaluation of regression weights – Female group

Hypothesis	Variable	Estimation	CR	P	Conclusion
H1	Emotional value → Purchase intention	0.086	0.98	0.11	Unsupported
H2	Quality value → Purchase intention	0.091	1.78	0.09	Unsupported
H3	Social value → Purchase intention	0.322	4.71	0.00	Supported
H4	Economic value → Purchase intention	0.127	2.83	0.04	Supported
H5	Purchase intention → Purchase behavior	0.403	4.42	0.00	Supported

group. The female users prioritized social values in buying online game attributes compared to males.

4.5. Discussion

Perceived value has a significant role in a company's competitiveness. Put another way, perceived value can be considered a source of competitive advantage [10]. Management of perceived value can be part of the consideration to influence consumer decisions. Perceived value follows its benefits as consumers perceive value regarding the benefits of the products used [16, 39]. Lovelock and Wirtz [28] state that perceived value is the value customers get by comparing perceived benefits with perceived costs. Perceived value can positively correlate with the benefits or by reducing required sacrifices [57]. If the perceived value is positive, it will encourage customers to feel the value obtained is better [58]. An increase in perceived value is when consumers want to benefit from the product. Higher perceived value can influence consumers to make purchase intentions in the future. The descriptive data also shows that respondents are dominated by respondents who have a long enough time spent, implying that consumers feel profoundly benefited by playing games online.

Emotionally, the value obtained by consumers, especially in online games, can be a sense of comfort. In online games, male consumers prioritize this aspect more than women [59]. The joy when interacting with other people in the game world is a strong impetus for men to pay for intention. The role of comfort in the intention to buy game products is reinforced by the findings of Lee [53]. Value-based on comfort is a reason that can partially explain why males are more interested in online games than females [60].

In general, Snoj [61] stated that the benefits could be measured from the quality perceived by consumers to feel more satisfied if the quality perceived by consumers is higher than expectations. Consumers who feel quality suitability will intend and are willing to pay or encourage an actual purchase. Wei and Lu [41] stated that players could freely determine the time and place to play so that it is a value that is considered in playing the game. The form of freedom obtained is a value of control over behavior. Hsiao and Chen [16] found that quality value positively affects purchase intention. The online games are designed with an easy-to-access platform related to the quality of the platform. The value of quality proxied through freedom of access is preferred by male buying game attributes. These findings are based on the consideration that men attach importance to aspects of freedom [62] from the aspect of time and access, so males tend to be more aggressive than females towards online games [63].

Schiffman and Wisenblit [64] reveal that social value encouraged being accepted in the environment and appreciated socially. Gounaris [65] explains that social motivation encourages purchasing a product to increase social values such as image, give a good impression, and provide social approval. Social motivation is formed because of the desire to be more accepted and appreciated in an unfulfilled environment. Interaction is a basic need, especially for females, so this value tends to be prioritized over men. According to gender socialization theory, females respond to something [66] and prioritize social identity more than males [38].

The customer's perceived value depends on the suitability of the price with consumer expectations. The magnitude of the economic value can affect the customer's perception of the economic value of the product obtained and the price to be paid. Price assessment is relative or depends on the customer's perception of receiving the product, so there is no definite benchmark in the level of consumer acceptance that brings consequences to pur-

chases [64]. Male and female consumers have the same perception of this economic value in purchasing online game attribute products. The primary consideration of users in playing games is the suitability of the monetary costs incurred with the satisfaction obtained [67] to encourage purchases [41].

5. Conclusion and suggestion

Determining online games' competitive advantage and product development can consider differences in values based on gender characteristics. The resistance to technological product innovation is highly dependent on the perceived value [68, 69]; therefore, understanding users' perceived value is expected to overcome the barriers to digital product innovation. Overall, this research finds that perceived value which consists of emotional, quality, social and economic value, influences purchase intention and ultimately shapes the buying behavior of online game product attributes. There is a difference in each component of perceived value on purchase intention between male and female groups. There are differences in emotional, quality, and social value on purchase intention between male and female groups. Emotional and quality values do not affect the female group's pursuit intent, while social values do not significantly affect the male group. This finding emphasizes the need for in-game treatment attributes between males and females. Socially, women are more concerned with social values in interacting online so that the specific interactive level of women's groups can be considered better. The male group enjoys a comfortable atmosphere while playing online games and likes the freedom to access online games, so online game developers can consider this aspect, such as product attributes that support comfort during playing. This research is also inseparable from several limitations, such as samples taken only in Indonesia, which has a different cultural perspective from other countries. Culture is also part of game behavior [70]. Hashimoto [71] explains that culture has a role in shaping gamers' attitudes. Future research can expand the sample and examine cultural aspects to enrich these findings. ■

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