



## Gamer's loyalty: the role of co-creation value

**Rivaldi Arissaputra<sup>1</sup>, Ratih Hurrriyati<sup>2</sup>, Puspo Dewi Dirgantari<sup>3</sup>**

<sup>1</sup>Universitas Aisyiyah Bandung

<sup>2,3</sup>Universitas Pendidikan Indonesia

<sup>1</sup>[rivaldiarissaputra@upi.edu](mailto:rivaldiarissaputra@upi.edu), <sup>2</sup>[ratih@upi.edu](mailto:ratih@upi.edu), <sup>3</sup>[puspodewi@upi.edu](mailto:puspodewi@upi.edu)

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### ABSTRACT

This study is a type of investigation into the impact of co-creation value on gamer loyalty. This study aimed to analyze the effect of co-creation value on gamers' loyalty in Indonesia. This case study focuses on the Mobile Legend game players in Indonesia. The survey technique used in data collection was a questionnaire with the measurement using an interval scale. The data collection technique used was purposive sampling, with a total of 345 respondents. The analytical method used in this study was carried out using structural equation modeling (SEM) and partial least squares (PLS) with the help of SmartPLS 3.0 software. The findings show that the co-creation value variable affects gamers' loyalty.



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## INTRODUCTION

The spread of technology and information has entered all sectors, including the economy, society, culture, and society (Wicaksono et al., 2018). Today's highly developed technology makes the Internet a necessity that cannot be separated in the life of modern society. The Internet is often used as a means of seeking information. The growing competition caused by the Internet is also an opportunity to earn income. Digital applications can provide solutions (Rachmawati et al., 2018), one of which is an application in e-sports. Electronic sports, abbreviated as e-sports, often experience controversy about whether e-sports can be called a sport because it uses games as their main competitive field. This is the basis for the central concept of sports: playing to entertain oneself. It is this rationale that makes playing games classifiable as a sports activity. In practice, e-sports and gaming are two different things. In the career workshop agenda held at Yogyakarta State University on Thursday, 24 May 2018, Dedy Irvan, a gaming and e-sport observer, said that playing games are only recreation. Still, e-sport is a profession (Pertiwi, 2018). For this reason, players worldwide are competing to be the best to get high income and become famous. Technological advances have also made it easy for players because e-sports, synonymous with sophisticated computer devices, can now also be in demand in the form of mobile e-sports. E-sport activities are activities that compete with skill, starting from the abilities possessed by players, the strategies used, making the right decisions, and skill in playing. In practice, an e-sport match can be carried out individually or in groups/teams. Of course, e-sport is a new sport that has been inaugurated in various parts of the world.

Indonesia, a developing country where the need for fast internet has been fulfilled, has yet to escape interest in e-sports, especially mobile e-sports. The influence of e-sport is not only on the pleasure stage of playing it but when watching it too. Generally, e-sport players will buy devices suitable for the e-sport games they play, such as monitors, CPUs, hard disks, earphones, laptops, smartphones, and fast internet access. In practice, e-sport players don't just play games; e-sport players are a profession that is quite promising. In Indonesia, many companies are already engaged in e-sports and recruiting reliable players to compete in national and international events. Mobile e-sport touches almost all levels of society, from children to adults. This can be realized because of the easy access to mobile e-sport games. Many game companies offer various kinds of mobile e-sport games in Indonesia, but there is one game that is very trending throughout 2017 and 2018: Mobile Legend. The rapid development of information technology in the current digital era has led to creative ideas for business

development, including building startup companies (Sentika & Arissaputra, 2021). Moonstone, through its product Mobile Legend, is a startup in the field of mobile e-sport games with the MOBA (Multiplayer Online Battle Arena) genre, which requires strategy and teamwork to achieve victory. As of August 21, 2018, it was recorded that Mobile Legend already had 104,699,845 registered players from Indonesia, considering that this Mobile Legend is present in 144 countries with their primary focus on dominating the e-sport market in Asian countries (<https://www.mobilelegends.com/>). As with the implementation of e-sports in the world, Mobile Legend recently also held an official tournament/competition that presented top-class teams from various countries in Southeast Asia. The official MSC (Mobile Legend Southeast Asia Cup) 2018 was held in Jakarta with a total prize pool of IDR 1.4 billion. Moonton Country Manager (the company in charge of Mobile Legend) Cayayan revealed that Indonesian players have the highest interest in Southeast Asia (Widiartanto, 2018). This interest is, of course, obtained from the company's ability to involve players who are their customers in the company's activities.

A good brand is key to achieving sales targets (Susanto et al., 2019). Moonton, through the Mobile Legend platform, involves players in game development to produce a good brand. The company often does this so that later the game development results are in accordance with what the players want. To build loyalty through two-way communication, one of which can be measured by the co-creation value variable. In general, value co-creation is a form of consumer involvement related to value creation that is carried out through collaboration between companies and customers that is carried out dynamically, interactively, and based on various sources. Companies are increasingly using technology platforms, such as online communities, to enable a broad base of individuals to engage with each other companies to generate ideas and innovate (Bosch-Sijtsema & Bosch, 2015). In forming co-creation values, as defined by Ramaswamy & Ozcan (2014), developing offerings must be through ongoing collaboration with customers, employees, managers, and other stakeholders. This process implies collaboration among all stakeholders through an engagement platform referred to as the co-creation paradigm (Ramaswamy & Ozcan, 2014). This new view of the value co-creation process implies a shift from a resource-based view of the company to a creation-based view, resources shared among multiple stakeholders, allocation of resources, including supplier and customer resources, to create overall enterprise value (Ramaswamy & Ozcan, 2014).

Co-creation is an activity that leads to value creation through close interaction between companies and consumers (Islam et al., 2015). The concept of co-creation value is a relatively new domain in research. Most research focuses on developing concepts and scales for co-creation value creation. Several studies have explored the concept of co-creation value in the marketing domain (Dijk et al., 2014; Vargo et al., 2008), information systems (Steinger, 2019), market innovation and service science (Maglio & Spohrer, 2008; Perks et al., 2012; Wu & Wu, 2010) and virtual communities (Harwood & Garry, 2014). However, several recent studies have considered certain aspects of the co-creation value of consumers in social media brand communities. Several empirical studies have shown the effect of social networks on purchase/consuming intentions and the impact of consumer co-creation value on brands (Rillo & Giner, 2015). Understanding the logic of the business environment and ecosystems that display co-creation values is a prerequisite that enables companies to compete competitively. To capture this phenomenon, co-creation value has become a key concept in service marketing and business management (Saarijärvi et al., 2013). Co-creation value is, of course, no longer seen only as a proper value in the manufacturing process but as something that consumers regulate in the context of their consumption (Grönroos & Gummerus, 2014). Consumers are not passive targets of marketing actions but are considered more as active resources that ultimately define and create value. In various value-creation processes, companies and customers can change their function from consumer to contributor and value creation (Tapscott & Williams in Barbosa et al., 2013). Despite the shared understanding of the more active role of the customer, and the subjective nature of customer value, theoretical discussions adopt a more controversial characteristic, shifting from value creation towards value co-creation.

The new wave marketing era is where companies can be creative with consumers, which in co-creation product development practices are dynamic, interactive, and based on multiple sources. There are quality, cost, and delivery processes, but they must be done in collaboration. Product quality, market conditions, selection of target customers, and the right time determine a new product's success. In the product development process in the new wave marketing era, the company tries to co-create with experts who can identify and create quality products. Prahalad and Ramaswamy in Islam et al., 2015

say that a company with good co-creation experience results in the value of the product being better than the product it produces.

Co-creation value gives consumers the freedom to work with the resources provided by the company to produce its value offering. Active participation from consumers can have a positive impact on the company. A smart company can embrace and strive to manage change by giving consumers the freedom to leverage their productive abilities to build the company. In the contemporary business world, co-creation value is a new reference for the value-creation process. It is based on the idea that companies are no longer the sole determinant of value. In this case, consumers also take a significant and increasingly active role in creating value for themselves and the company. Furthermore, companies and customers continue to work together to innovate and increase productivity. Adopting a collaborative approach like this requires a fundamental change in business thinking that wants to enable consumers to contribute value to the company. Instead of simply considering the customer as the ultimate consumer, companies should actively seek relationships that engage consumers and mutually benefit them by enabling and empowering them to be creative collaborators in the production process.

These ideas put companies and consumers in the lead because now customers' value is co-created by expressing their requirements, sharing their knowledge, and even actively participating in company activities. The company's role, in this case, is to provide resources that support the customer's participation. The combination of various factors, such as technological advances, rapidly growing and changing market industries, widespread information dissemination, and high consumer demands, have changed many aspects of the business world. Consumers and companies are now partners in the marketplace. Companies that recognize this co-creation relationship will achieve superior organizational performance by increasing customer engagement and satisfaction. Co-creation is based on ongoing dialogue, and consumers need access to information about the various options open to them. By placing pre-owned information and resources into the hands of consumers, companies enable consumers to engage in effective dialogue, often outside the company's scope.

Of course, various obstacles can be encountered in implementing co-creation value activities, both internal and external to the company. The marketing challenge posed by co-creation value lies in what a company can offer to entice consumers to work together to help them. An arbitrary consumer response can boomerang for the company, causing the process of creating this collaborative value to be biased. In value co-creation activities, we see how the value generated by companies enables consumers to produce and share technical, social, and cultural knowledge through their actions. This is achieved by creating a robust experiential environment where consumers can indulge their creative, practical, hedonic, or any other side they prefer, as they act as innovators and idea generators. What they receive in return for their money, effort, and work is more suited to their particular needs and wants because they played a part in producing it. Co-creation value encourages consumers to work and enables companies to grow and solve their problems.

Co-creation value also allows companies to maintain control and is the primary key to controlling the market. The ever-changing postmodern consumer today becomes a partner in the value-creation process. Consumer interactions with companies and other consumers are centered around the company's offerings meaning that they are becoming increasingly intimately connected in creating sustainable value relationships. The values created are continuous as long as some customers and companies constantly interact with each other in value creation. For this reason, a company must create an open communication environment where consumers are encouraged to be fun, sociable, and creative. Consumers can effectively apply and improve their knowledge for the benefit of everyone, including companies engaged in e-sports.

Through interaction with consumers, companies boldly embedded their offerings into consumers' lives and made the most of them. The market becomes a platform for participating in a culture of exchange, where companies offer consumers the resources to create and where consumers offer companies ways to adapt to changing demands. Several cases and studies mentioned in the background indicate the influence of co-creation value on loyalty. However, no one has implemented co-creation values in mobile e-sports, especially in Indonesia, and this research is still very rare. In its business, the Moonton company, which creates Mobile Legend game products, applies co-creation value as the main key to its competitive strength to lead the market share of Mobile e-sport games in Indonesia. Even in the field of e-sport, co-creation values have been implemented, and it is very

interesting to know what kind of loyalty will be created from players who become consumers of mobile e-sport games in Indonesia.

## RESEARCH METHODS

This research will use a quantitative approach through explanatory survey research. An explanatory survey is a method used to analyze how one or more variables affect other variables and also analyzes the causal relationship between the variables described and the research hypothesis. The data collection tool used is a questionnaire. In addition, this study is also intended to test the hypotheses formulated previously to explain the causal relationship between variables through hypothesis testing. The subjects of this research are Indonesian people, both men, and women. There are also the objects in this study as independent variables are customer engagement and co-creation value. Then, the dependent variable, namely the variable that is affected or the result, because the independent variable is consumer loyalty. The unit of analysis in this study is the mobile esports game, namely Mobile Legend, and the respondents in this study are Mobile Legend game players in Indonesia.

This study used a cross-sectional method. According to (Karthikeyan et al., 2013) the cross-sectional method is a research method that can be collected only once, perhaps during daily, weekly, or monthly periods, to answer research questions. Data collection techniques used to obtain data are Field Research and questionnaires. The steps taken in collecting research data were conducting licensing requirements, identifying respondents, preparing questionnaires according to research needs, distributing questionnaires directly or using social media, and collecting data on the questionnaire results. In this study, the population taken was large, and the size was not known with certainty. In determining the sample if the population is large and the number is uncertain, (Loehlin & Nichols, 2012) states that the minimum sample to be used in research is 200 people, which is needed to reduce bias in all SEM estimates. Descriptive statistical analysis and verification are used in this study. The descriptive analysis describes the respondents' answers about the variables studied. The results of the respondents' responses will later be used to enrich the discussion because the condition of each variable indicator being studied is obtained from the description of the respondent's response data.

While the verification analysis in this study used the Structural Equation Modeling (SEM) analysis tool using the partial least squares (PLS) program with the SmartPLS version 3.0 application. According to (Ferdinand, 2006; Hidayat & Firdaus, 2016), SEM is a confirmatory technique used to test either a newly developed theory or a theory that previous researchers have long developed. SEM is one of the multivariate analysis techniques used to test theories regarding a set of relationships between several variables simultaneously or simultaneously. SEM can also simultaneously estimate multiple regression equations that stand independently but are interdependent on one another in the form of a structural model. Partial least squares (PLS) is a component-based approach for testing structural equation models or SEM. PLS is a predictive model; that is, it can be used to explain whether or not there is a relationship between variables and can simultaneously analyze constructs formed with reflective and formative indicators. PLS is based on two iterative procedures using least squares estimation for single and multi-component models. PLS applies an algorithmic procedure that minimizes the variance of all dependent variables. The purpose of PLS is to help researchers to get variable values for prediction purposes. PLS is divided into measurement and structural models (Hair et al., 2017). PLS recognizes two components in the causal model: the measurement model and the structural model. The structural model consists of two latent constructs that cannot be observed: first-order and second-order. At the same time, the measurement model consists of indicators that can be observed. This test also estimates the path coefficients, identifying the strength of the relationship between the independent and dependent variables. The measurement model consists of the relationship between observable variable indicators and the first-order construct measured by these indicators. Furthermore, the second-order construct is measured by the first-order construct as an indicator. In this research, convergent Validity is used to measure the magnitude of the correlation between constructs and latent variables. Convergent Validity can be seen from the loading factor for each construct indicator. The rule of thumb usually used to assess Convergent Validity is a loading factor of more than 0.7 for confirmatory research and a loading factor between 0.6 – 0.7 for exploratory research. The average variance extracted (AVE) value must be greater than 0.5. However, for research in the early stages of developing a size scale, a factor loading value of 0.5 – 0.6 is still acceptable (Ghazali, 2015). Discriminant Validity is done by looking at the root value of the Average Variance Extracted

(AVE). Good Discriminant Validity is shown from the square root of AVE for each construct which is greater than the correlation between constructs in the model. Composite Reliability, namely the composite reliability limit value of 0.70 for confirmatory research and 0.60 – 0.70, is still acceptable for exploratory research. Cronbach Alpha, namely in PLS, the reliability test is strengthened by the presence of Cronbach Alpha, where the consistency of each answer is tested. Cronbach's alpha is said to be good if  $\alpha > 0.60$ . R-square is used to evaluate the structural model of the dependent construct. Besides looking at the R-square value, the PLS model is also evaluated with Q-squared predictive relevance to measuring how good the observed value is. A Q-square value greater than 0 (zero) indicates that the model has a predictive relevance value. In contrast, a Q-square value less than 0 (zero) indicates that the model has less predictive relevance. The goodness of fit is used to validate the model as a whole. The goodness of fit index is a single measure used to validate the combined performance of the measurement and structural models. The criteria for the goodness of fit are obtained from the results of the average path coefficient (APC), average R-squared (ARS), and average variance inflation factor (AVIF) values.

## **RESULTS AND DISCUSSION**

### **Mobile Legend Players In Indonesia**

In 2018, the number of legendary mobile game players in the world reached 200 million. This has increased six times when viewed in 2016, but this game is still only played by 30 million people. Based on the 200 million players who are registered globally, 170 million of them are active players. Meanwhile, 70 million of them are Indonesian players. Based on data from Moonton as the developer, the number of legendary mobile game players in Indonesia who are registered is 104,698,455 as of August 21, 2018, and the number of active players per month is around 50 million. According to the Moonton company, active users of Mobile Legend games in Indonesia are the biggest compared to other countries. The magnitude of this enthusiasm is what made Moonton open a branch office in Indonesia in order to provide maximum service to the legendary mobile game players from Indonesia. This was done by Moonton as a form of gratitude for the contribution of legendary mobile game players in Indonesia.

The level of participation of players from Indonesia is very high in the development of legendary mobile games, such as helping in the creation of heroes and their characteristics, costume heroes and skins, the latest gameplay trials, and participating in national and international official competitions. With the inauguration of e-sports as one of the official sports in Indonesia by the Ministry of Youth and Sports, As a result, Indonesia is currently preparing its e-sport athletes to compete on the international stage via the Mobile Legend game, such as in preparation for the 2019 SEA Games, which includes the Mobile Legend game as one of the competing sports. In this study, the author surveyed 345 legendary mobile game players in Indonesia, 257 of whom were men and 88 of whom were women. The majority of respondents were mobile legend game players aged 15 to 25, in high school, and in S1.

### **Mobile Legend Game Players Value Co-creation**

The value co-creation process is a form of positive cooperation between Mobile Legends game players and Moonton company developers to create new value in the form of advertisements, products, ideas, and so on. Mobile Legend Game Development is now done horizontally rather than vertically, by providing as many opportunities for players to be actively involved in creating new company value as possible. This means that the product is a co-creation between the Moonton company and game players. The level of co-creation value can be assessed by the level of information seeking, sharing, and helping that is felt by Mobile Legend game players.

### **Seeking Information for Mobile Legend Game Players**

Searching for information about the Mobile Legend game is often done by players. The quality of the information obtained is also a point that players pay attention to. Increased Information Seeking can reveal how frequently the players do this.

**Table 1 Level Information Seeking Mobile Legend Game Players**

	Statement	% Score	Category
Information Seeking	Levels follow the most recent information.	62,0%	Simply follow information
	Level of follow factual information	61,4%	Simply follow information
	Level of follow reliable information	64,2%	Simply follow information

When looking for information on the Mobile Legend game, users are simply looking for factual, up-to-date, and reliable information. The factual information below is an incident that actually occurred regarding any information on the Mobile Legends game that was not in the news, such as game development information from time to time, and so on. Furthermore, there are events that are now taking place and being discussed among players, such as the heroes that were released this month or the events that are currently taking place.

Finally, credible information implies that information regarding the Mobile Legends game is collected from trustworthy sources. Trusted sources are influencers designated directly by the producers, such as Jess No Limit and Blue Panda, or top players who analyze any new features made in Mobile Legend titles, such as VY Gaming, Hororochan, Kimi Hime, and many more. They frequently review games with new heroes, new skins and costumes, new game modes, new events, and a variety of other things. These influencers use YouTube media to spread their message. Accessing the official Mobile Legends website, <https://m.mobilelegends.com/id>, can also provide reliable information.

#### **Level of Information Sharing for Mobile Legend Game Players**

The dissemination of the information obtained is, of course, carried out by the players to be notified to other people. Information sharing is used by the author to be able to see the level of dissemination of mobile legend game information carried out by players.

**Table 2 Level of Sharing Information for Mobile Legend Game Players**

	Statement	% Score	Category
Information Sharing	The level of disseminating information through social media	60,2%	Simply spread information.
	The level of disseminating information through word of mouth	63,1%	Simply spread information.
	Level of sharing information with families	50,8%	Simply spread information.
	Level of sharing information with friends	64,4%	Simply spread information.

The mobile legend game players are enough to spread information on their social media, such as WhatsApp, Facebook, Instagram, Line, and so forth. Information that is distributed through social media is more personal, namely awards obtained by players such as "get MVP," "5-Time Win Streak," "Epic Comeback," "Achievement of Ranking Higher," "Buy Hero/Skin," and so forth. They are also enough to spread information through word of mouth, which is the highest level, by telling them firsthand their opinions about the Mobile Legend game in order to get recognition.

In terms of sharing information, the players simply share information with their friends, such as their responses and opinions about the Mobile Legend game, but it is different if they share with their family. The players choose not to share information with the family because they feel sharing information about the Mobile Legend game with the family is not important. evidenced by the results of player responses at this level.

### Level of Providing Feedback for Mobile Legend Game Players

In order to improve a Mobile Legend game, opinions and suggestions from the game's players are required, because they are the people who best understand and are aware of the game's flaws. As a result, the level of providing feedback carried out by the players is shown in the table below.

**Table 3 Level of Providing Feedback Mobile Legend Game Players**

	<b>Statement</b>	<b>% Score</b>	<b>Category</b>
Providing Feedback	The level of giving good responses in the form of an impression on the quality of the company's games	63,2%	Enough to Give Good Response
	The level of providing appropriate responses in the form of messages is determined by the quality of the company's games.	70,1%	Give good response
	Rates give good feedback through ratings on the quality of the company's games.	60,3%	Enough to Give Good Response

The highest level can be seen from the results, which stated that Mobile Legend game players gave good responses in the form of messages about the quality of the games that had been developed by Moonton as the developer. To contact officials in the Mobile Legends game, messages can be delivered via email or message features. The game players also give good feedback, which can be conveyed in the form of a perceived impression of the quality of the game in the same way. In giving a rating for the quality of the Mobile Legend game, the players gave enough good responses. Rating for this game is done on Google Play and the App Store. On Google Play, Mobile Legend has a rating of 4.5 out of 10,401,355 players. The rating obtained by Mobile Legend on the App Store is the same at 4.5 out of 286.926 players.

### Level of Helping Mobile Legend Game Players

Helping is a situation where the players voluntarily help the Mobile Legend game development company develop and become even better in the hope of increasing the quality of the Mobile Legend game.

**Table 4 Level of Helping Mobile Legend Game Players**

	<b>Statement</b>	<b>% Score</b>	<b>Category</b>
Helping	The level of participation indicates the game's features.	54,6%	Enough to Participate
	The level of participation provides a solution to the company's problems.	64,2%	Enough to Participate
	The level of involvement in the company survey activities	59,2%	Enough to Participate
	Rate of participation in corporate event activities	65,0%	Enough to Participate
	The proportion of people who distribute advertisements through personal social media.	53,7%	Enough to Participate
	The rate of participation spreads the ad to others.	54,0%	Enough to Participate
	Participation in product development in game mode	53,7%	Enough to Participate

Statement	% Score	Category
Participation in the creation of new heroes and characters in the game at the product development level	54,8%	Enough to Participate
The level of product development participation in the creation of new skins and clothes for the game's heroes and characters.	54,6%	Enough to Participate

The players made significant contributions to the development of the Mobile Legends game. The players merely contribute ideas for game additions and sufficiently contribute to delivering solutions to Moonton's challenges as a developer. Players' participation can take the form of testing features on the advanced server. Moonton's group categorizes Mobile Legend gaming servers into two types: advance servers and original servers. On the advanced server, there is a server dedicated to testing the most recent features, such as new hero trials, new game types, and searching for flaws and faults in the game, among other things. The original server, on the other hand, is a server that is used officially, therefore there are no longer any issues with playing the game because all issues have been discovered and handled on the advance server.

Players can also just participate in the Mobile Legends game by taking part in surveys and events. This game always runs surveys to get player feedback, beginning with questions regarding which heroes will be published next, skin surveys, and so on. Almost every month, the gamers are treated to more interesting occasions such as Valentine's Day, Halloween, the New Year, Christmas, and many more. The MPL (Mobile Legend: Bang Bang Professional League), which is the major league featuring teams fighting amongst countries, is the event that all Mobile Legend players have been waiting for. Respondents indicated that Mobile Legend game players are sufficiently interested to promote commercials on their personal social media and to others. The content supplied here is not about the specific content of the players, but rather the complete distribution of advertising content by players to promote the Mobile Legends game.

In terms of product development, players simply help to create new game modes. All game development is done to ensure that players do not become bored with the same game mode. In order to determine whether a new game mode is viable or not, a new game mode is constructed that requires the participation of participants. They just take part in the creation of new heroes, characters, skins, and costumes. Voting on the hero or skin that will be issued demonstrates player participation. The developer will present a selection of heroes and skins to be released, and the players will be asked to select their preferred hero and skin. The most popular heroes and skins will be released by the developer.

### Gamers' Loyalty to the Mobile Legend Game

Game players' loyalty differs from consumer loyalty in general. If repeated purchases of a product or service exhibit loyalty, then loyalty in Mobile Legend game players can be demonstrated by how frequently they play the Mobile Legend game at one time. The level of loyalty of the gamers can be determined by their priority, inclination, repurchase, and referral.

**Table 5 Gamer's Loyalty yang Dirasakan Terhadap Game Mobile Legend**

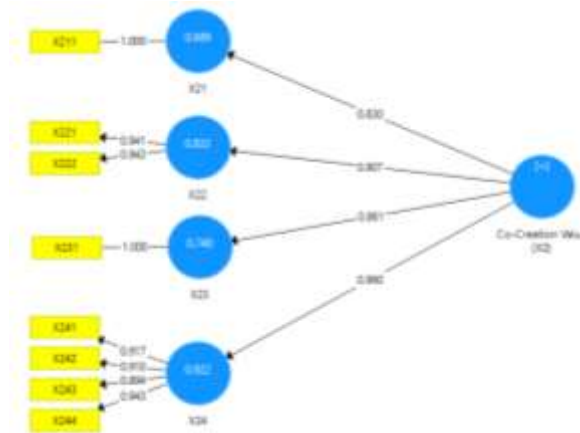
	Statement	% Score	Category
Priority	Priority level select games	61,0%	Enough priority
Tendency	Game play intensity level	66,7%	Quite Intensive
Repurchase	The frequency of repeat purchases of in-game products	53,6%	Often Enough
	Tendency to say positive things to others	62,5%	Quite Likely to Say
Recommend	Tendency to recommend to others	64,6%	Simply Inclined to Recommend



Players simply prefer the Mobile Legend game over other games on their smartphone. In their spare time, the gamers are also incredibly dedicated to playing the Mobile Legend game. Because the players enjoy the Mobile Legend game, they are more likely to say great things about it and to promote it to others. When making purchases, the smallest indicator is frequently in the category.

### Measurement Stage for Gamer's Loyalty

The process to find out whether each indicator on the co-creation value variable meets the criteria for data processing



**Figure 1. Loading Factor Dimensi Co-Creation Value (X<sub>1</sub>)**

Based on the calculation results above, it is known that all loading factor values are above 0.7, so all observed variables can be used in the next analysis.

### Convergent Validity

Model evaluation can be done using convergent validity in the reflexive model by looking at the loading factor value. Each observed variable is declared valid if the loading factor value is above 0.7. The following is a loading factor value for each observed variable.

**Table 6. Evaluation of Convergent Validity Co-Creation Value**

Validity	Hasil Uji		Test Criteria > 0.70
	Pengaruh	Loading Factor	
<b>Convergent Validity</b>	X211 <- X21	1,000	Valid
	X221 <- X22	0,941	Valid
	X222 <- X22	0,943	Valid
	X231 <- X23	1,000	Valid
	X241 <- X24	0,917	Valid
	X242 <- X24	0,910	Valid
	X243 <- X24	0,894	Valid
	X244 <- X24	0,943	Valid
	X211 <- X21	1,000	Valid

Based on the above results, it can be seen that all observed variable loading factor values are greater than 0.7, which means that all observed variables can be used in the model.

### Discriminant Validity

Indicator variables can also be measured by evaluating the results of cross-loading (discriminant validity), which shows that the dimensional correlation values in the same variable are better than the dimensions of other variables, for all constructs shown as follows:

**Table 7. Cross Loading Co-Creation Value**

	<b>X21</b>	<b>X22</b>	<b>X23</b>	<b>X24</b>
X211	<b>1,000</b>	0,769	0,667	0,715
X221	0,746	<b>0,941</b>	0,683	0,725
X222	0,704	<b>0,943</b>	0,697	0,758
X231	0,667	0,732	<b>1,000</b>	0,791
X241	0,642	0,725	0,770	<b>0,917</b>
X242	0,684	0,682	0,734	<b>0,910</b>
X243	0,644	0,740	0,676	<b>0,894</b>
X244	0,651	0,737	0,719	<b>0,943</b>

### Average Variance Extracted (AVE) Evaluation

The following is a table showing the average variance extracted (AVE) obtained from the calculation.

**Table 8. Average Variance Extracted (AVE) Co-Creation Value**

	<b>Average Variance Extracted (AVE)</b>	<b>Test Criteria &gt; 0,5</b>
Co-creation Value (X1)	0,748	Valid
X21	1,000	Valid
X22	0,888	Valid
X23	1,000	Valid
X24	0,839	Valid

According to regulations, the AVE value must be above 0.5. In the calculation results of the Average Variance Extracted (AVE), it is known that all latent variables have an AVE value above 0.5. so that further tests can be carried out.

### Composite Reliability

Composite reliability measures internal consistency, and the value must be above 0.6. The following is the result of calculating the composite reliability:

**Table 9. Composite Reliability Co-Creation Value**

	<b>Composite Reliability</b>	<b>Test Criteria &gt; 0,6</b>
Co-creation Value (X1)	0,960	Valid
X21	1,000	Valid
X22	0,941	Valid
X23	1,000	Valid
X24	0,954	Valid

According to the provisions, the value of composite reliability must be above 0.6. In the calculation of composite reliability, it is known that all latent variables have a composite reliability value above 0.6. so that the next test can be done.

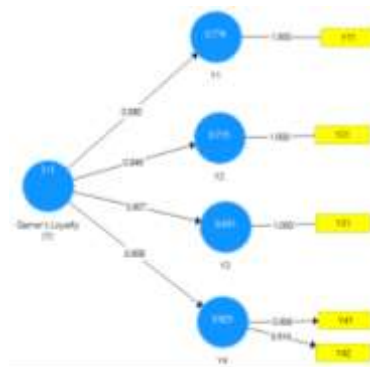
### Cronbach Alpha

The reliability test is strengthened by Cronbach's alpha, where the expected value is > 0.7 for all constructs.

**Table 10. Cronbach Alpha Co-Creation Value**

	Cronbach Alpha	Test Criteria > 0,7
Co-creation Value (X1)	0,952	Valid
X21	1,000	Valid
X22	0,874	Valid
X23	1,000	Valid
X24	0,936	Valid

According to the provisions, the Cronbach alpha value must be above 0.7. In the results of Cronbach alpha calculations, it is known that all latent variables have Cronbach alpha values above 0.7. so that further tests can be carried out.



**Figure 2.**

Based on the calculation results above, it is known that all loading factor values are above 0.7, so all observed variables can be used in the next analysis.

### Convergent Validity

Model evaluation can be done using convergent validity on reflexive models by looking at the loading factor values. Each observed variable is declared valid if the loading factor value is above 0.7. The following is the loading factor value of each observed variable:

**Table 11 Evaluation of Convergent Validity Gamer's Loyalty**

	Hasil Uji		Test Criteria > 0.70
	Pengaruh	Loading Factor	
<b>Validity</b>	Y11 <- Y1	1,000	Valid
	Y21 <- Y2	1,000	Valid
	Y31 <- Y3	1,000	Valid
	Y41 <- Y4	0,906	Valid
	Y42 <- Y4	0,916	Valid

Based on the above results, it can be seen that all observed variable loading factor values are greater than 0.7, which means that all observed variables can be used in the model

### Average Variance Extracted (AVE) Evaluation

The following is a table showing the average variance extracted (AVE) obtained from the calculation

**Table 12 Average Variance Extracted (AVE) Gamer's Loyalty**

	<b>Average Variance Extracted (AVE)</b>	<b>Test Criteria &gt; 0,5</b>
Gamer's Loyalty (Y)	0,702	Valid
Y1	1,000	Valid
Y2	1,000	Valid
Y3	1,000	Valid
Y4	0,830	Valid

According to regulations, the AVE value must be above 0.5. In the calculation results of the Average Variance Extracted (AVE), it is known that all latent variables have an AVE value above 0.5. so that further tests can be carried out.

### **Composite Reliability**

Composite reliability measures internal consistency, and the value must be above 0.6. The following is the result of calculating the composite reliability:

**Table 13 Composite Reliability Gamer's Loyalty**

	<b>Composite Reliability</b>	<b>Test Criteria &gt; 0,6</b>
Gamer's Loyalty (Y)	0,922	Valid
Y1	1,000	Valid
Y2	1,000	Valid
Y3	1,000	Valid
Y4	0,907	Valid

According to the provisions, the value of composite reliability must be above 0.6. In the calculation of composite reliability, it is known that all latent variables have a composite reliability value above 0.6. so that the next test can be done.

### **Cronbach Alpha**

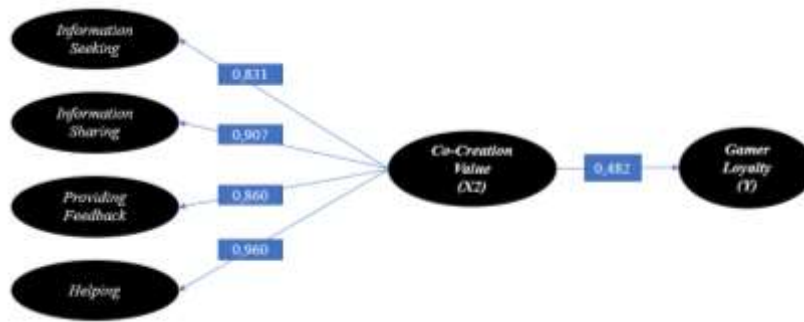
The reliability test is strengthened by Cronbach's alpha, where the expected value is > 0.7 for all constructs.

**Table 14 Cronbach Alpha Gamer's Loyalty**

	<b>Cronbach Alpha</b>	<b>Test Criteria &gt; 0,7</b>
Gamer's Loyalty (Y)	0,894	Valid
Y1	1,000	Valid
Y2	1,000	Valid
Y3	1,000	Valid
Y4	0,795	Valid

According to the provisions, the Cronbach alpha value must be above 0.7. In the results of Cronbach alpha calculations, it is known that all latent variables have Cronbach alpha values above 0.7. so that further tests can be carried out.

### Co - Creation Value Terhadap Mobile E-sport Gamer’s Loyalty



**Figure 3. Effect of Co-Creation Value (X1) On Mobile E-sport Gamer’s Loyalty (Y)**

The Value Co-creation process is a form of positive cooperation between Mobile Legend Game players and Moonton company developers to create new value in the form of advertisements, products, ideas, and so on. Mobile Legend Game Development is no longer carried out vertically but horizontally by providing as many opportunities as possible for players to create new company value actively. This means the product is a co-creation between the Moonton company and game players. The level of Co-creation Value can be assessed from the level of information seeking, information sharing, and helping Mobile Legend game players feel that. The results of other studies show that the Co-Creation Value of Mobile Legend game players significantly affects their Gamer's Loyalty because the T-Statistic value of 7.572 indicates greater than 1.96. The influence that occurs between Co-Creation Value and Gamer Loyalty is positive. Based on the analysis results, the effect of Co-Creation Value on Gamers' Loyalty shows a significant positive effect, so an increase in Co-Creation Value will increase Gamer's Loyalty. These results show that the better the Co-Creation Value felt by Mobile Legend game players, the higher Gamer Loyalty they feel.

The effect of Co-Creation Value on Mobile E-sport Gamer's Loyalty is 0.482. The author concludes that the influence is very high because the coefficient of the relationship owned by the dimensions that make up the Co-Creation Value, when averaged, is in a very strong category with a value of 0.889. Based on the results of successive calculations, the dimensions that most influence Co-Creation Value are helping, information sharing, providing feedback, and finally information seeking, which has the smallest effect. This research explains that Mobile Legend game players are happy to help developers to develop Mobile Legend games, as evidenced by the helping dimension, which has the most significant influence on Co-Creation Value. So that the quality of the game becomes better, the players are willing to share their ideas, follow all company activities, and help in spreading advertisements. The players do this as a form of contribution to creating new value with the Mobile Legend game. Even though the players are willing to help the company, the fact is that they are not interested in following information about the Mobile Legend game. Players take information for granted and pay little attention to factual and actual information. If seen from the results of the calculations, information seeking indeed strongly influences the formation of Co-Creation Value. However, compared to the other dimensions, the effect is considered the smallest.

### Testing the Second Hypothesis

**Table 18 Path Coefficients Effect of Co-Creation Value (X1) on Mobile E-Sport Gamers' Loyalty (Y)**

Variabel	Original Sample (O)	t- Statistics	H <sub>0</sub>	Kesimpulan
Pengaruh Co-creation Value (X1) terhadap Gamer’s Loyalty (Y)	0,482	7,572	Ditolak	Signifikan

The results of other studies show that the co-creation value of Mobile Legend game players has a significant effect on their gamers' loyalty because the T-Statistic value of 7.572 indicates a greater value than 1.96. The influence that occurs between co-creation value and gamer loyalty is a positive influence. Based on the results of the analysis, the effect of co-creation value on gamers' loyalty shows that there is a significant positive effect, so that an increase in co-creation value will increase gamers' loyalty. These findings indicate that the higher the level of gamer loyalty felt by Mobile Legend game players, the higher their co-creation value.

## CONCLUSION

Based on the discussion above, it can be concluded that the Co-Creation Value has a moderate effect of 48.2% on mobile e-sport gamer loyalty. The main factor in the Co-Creation Value that has succeeded in forming the loyalty of Mobile Legend game players is the high level of genuine feelings of the players who want to help advance the company and disseminate information related to the Mobile Legend game. Co-Creation Value has a strong effect of 74.7% on mobile e-sport gamer's loyalty, while the remaining 25.3% is influenced by other factors not examined in this study

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