

# A Preliminary Survey of Game Developer's Perception on Game Clone (Case Study: GameDevID)

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**Abstract**— If a developer uses trademarked content from other game such as images and music, it will be illegal. But it is fine for the developer to copy the gameplay and make innovative changes to improve the game. This is a good practice that boosts innovation in the video game industry that relies on creativity. The problem is when a developer decided to use the legality to simply copy other works with no spirit of innovation. This act of legal plagiarism is called video game clone. We need to have a more understanding of Indonesia game developer's perception toward game cloning and plagiarism. Based on the survey, it can be concluded that Indonesia game developer, in general, has no problem with the act of game cloning. Although, more effort and focus could be given to protecting both creators and consumers from the negative intent of using game clone legality.

**Keywords**— game clone, game development, game industry.

## I. INTRODUCTION

According to Hermann Maurer et al (2016), plagiarism is known to be a serious misconduct in the field of academic [1]. It has been a problem ever since humans have produced work of art and research [1]. Plagiarism is derived from the Latin word "plagiarius" which means kidnapper [1]. In general, plagiarism is defined as "the passing off of another person's work as if it were one's own, by claiming credit for something that was actually done by someone else" [1].

There are many cases of plagiarism that has become prominent in Indonesia. Not only undergraduate student, even professor has been caught plagiarizing papers or article. One notable case of plagiarism is when Prof. Anak Agung Banyu Perwita caught plagiarizing his article in The Jakarta Post from a published journal [2]. The university where he teaches started an investigation and concluded that he had three other articles in The Jakarta Post that's also plagiarized [2].

Even though plagiarism is commonly associated with an academic's field. The creative industry is also affected by an act of plagiarism. Recently, with the wide use of Internet and search engine. Indonesian can easily check or confirm whether a content is plagiarized or not. As easy as they check the content, with social media, Indonesian can also easily share their finding and eventually reach the media. One of many examples is the case of Atta Halilintar, a youtuber who has apologized for plagiarizing video content from another youtuber [3]. The second example is Rabbit Town a tourist

attraction that is caught copied many famous international landmarks without any acknowledgment [4].

Video game industry is a bit different. If a developer uses trademarked content from other game such as images and music, it will be illegal. But it is fine for the developer to copy the gameplay even though it is frowned upon. The reasoning is similar to academic research paper where mostly one research is built upon previous research [1], a video game also mostly a derivation of the previous game.

Based on Drew S. Dean (2016) law review, a video game is rife with the copying, recycling, and redevelopment of other game ideas [5]. His research also shows that such act is a good practice that boosts innovation in the video game industry that relies on creativity [5]. There is no game developer that can claim a gameplay, this is the reason why major franchises such as Halo, Battlefield, and Call of Duty can coexist in the marketplace without mutually disadvantageous litigation of being first-person shooter video game [5]. Tom Phillips (2015) added in his paper that the problem in the process is when a developer decided to use the legality to simply copy other works with no spirit of innovation [6]. This act of legal plagiarism is called video game clone [6].

Indonesia game industry has an immense potential with 43.7 million gamers with USD 879.7 million revenues [7]. Indonesia game market also ranked #16 for the mobile game market in the world [7]. Indonesia game developer has already been established in early 2000 with the founding of Matahari Studios and developing game has become easier to develop because of the free tools that developer can use [8].

Despite the potential and the easily accessible tools, Indonesia game developer still left behind with its neighboring country. it is even hard for Indonesia developer to grab the huge chunk of their own market. Regarding the video game clone and plagiarism, there are sparks of debate toward the practice of it. Some said it will eventually lead to innovation while others said that not only it has no use, it will also lead to "piracy is fine" mindset that has already plaguing Indonesia market.

We need to have a more understanding of Indonesia game developer's perception toward game cloning and plagiarism. By having this understanding, another key player such as

government and educational institution can have a meaningful step in order to help the game developer and the industry. Ranging from creating law and legal protection that suited with the need of the industry to creating curriculum content that suited with the way the industry grows.

## II. GAME CLONE AND PLAGIARISM

In general, all registered video games are protected by copyright law. The underlying problem with the current video game copyright law is that there is a thin barrier on how you can say that a video game is illegally copying another video game. Similar with other product of art and in the spirit of innovation, only elements of original expression may be protected, while ideas—such as game rules and mechanics—must be allowed to propagate freely [5].

Unfortunately, the spirit of innovation is hindered because some developers use the excuse derivative innovation to copy innovative games while changing artwork, text, and titles just enough to avoid infringing copyright law [6]. This act is what is called to be the practice of video game clone [6]. Video game cloning may have flourished in Indonesia because similar with the US, Indonesia Law has the same view that Ideas of the game is not protected by the law even though it still protects the moral and economic right [9].

Despite being legal, the act of cloning is frowned upon. But it does not stop big and small developer to do it. The biggest example of the booming of video game clone is the success of Flappy Bird. Ever since the game release, mobile store such as AppStore and Google PlayStore is flooded with more than 800 Flappy Bird clones [10]. The public doesn't seem to mind with the clones, but a group of developers thinks that some of the clones are a direct rip off that may hinder the development of the industry. To make it even worse, developers are also scared that it will normalize cloning.

The problem starts to plague beyond the casual game. China's game publishers have now specifically targeting successful game and launch a cloned version of the game. One example is Player Unknown: Battleground which has been cloned effectively and successfully launched for mobile in Asia. One notable clone, Knives Out, even have a bigger player number of 100 million players compared to Player Unknown: Battleground who has 30 million players [11].

Because of China big publisher's movement, the big game company is starting to find ways to protect their game. Mobile Legend: Bang Bank has been sued by Riot Games for infringing their game, League of Legends. Similarly, previously mentioned Player Unknown: Battleground and Blizzard has also started a lawsuit to defend their game.

There's an argument to start a stricter IP law to protect the game industry in the US [5]. But the problem is not only a small game developer have no capital to start a lawsuit but also the law will hinder their creativity. It's hard to create a balance between stricter laws and creativity [5].

## III. RESEARCH METHOD

The purpose of the survey is to gather opinion to have a more understanding of Indonesia game developer's perception toward game cloning and plagiarism.

### A. Population

The research is conducted in a prominent online game developer community in Indonesia, GameDevID. The community has been created since the early 2000 and grows to become the biggest game developer community with more than 10.000 members registered. Simple Random Sampling will be used to gather the needed data. Since little is known about the population demography, simple random sampling is a common design choice.

### B. Questionnaire Design

The statements are developed based on the base opinion of experts and media regarding video game clone and plagiarism. The summary of opinions is listed in Table I.

Table I. List of questionnaire statements

No.	Statements	Experts/Critics
1	Game clone is fine as long as the developer has an attempt to improve the game idea without infringing any trademark.	Simon Hill, AndroidAuthority.com [12]
2	Game clone is fine as long as it is used as educational purpose.	Megan, Odinlaw.com [13]
3	Game clone should not commercially affect the original game.	Joey Davidson, Technobuffalo [14]
4.	Game clone and other game development process should be educated to the public in order to increase their literacy regarding it so they can appreciate more about game they played.	Jamin Warren, Kill Screen Magazine [15]
5	Game clone is fine because it supports creative innovation in the industry.	Jamin Warren, Kill Screen Magazine [15]
6	Game clone is fine if we credit the originator within the game.	Jamin Warren, Kill Screen Magazine [15]
7	Regulator\government and industry should define standards of game clone and create a body that monitor it.	Tom Phillips, University of East Anglia [6]
8	Game clone may not be addressed in court but should've been publicly shamed by the community and industry.	Tom Phillips, University of East Anglia [6]
9	Game platform (Steam, Google PlayStore or Apple AppStore) should have a clone detection as part as certification before the game released.	Nicolas Murfet, Harbottle & Lewis Law Firm [16]
10	Game clone is fine but more effort and focus could be given to protecting both creators and consumers.	Rob Fahey, GameIndustry.biz [17]

In general, the questionnaire will be constructed with a Likert scale. According to Sugiyono [18], Likert Scale is

used to measure attitudes, opinions, and perceptions of a person or group of people [18]. By using the Likert Scale, the variables to be measured are translated into indicators. The indicators are used as a starting point to arrange statements that need to be agreed by the respondents [18].

The scale of response will be modified using 4 Likert-like scales to get a clearer picture of the respondent opinion. According to James T. Croasmun and Lee Ostrom, the 4 Likert-like is appropriate for a similar attitude research survey which has yielded high internal consistency [19].

C. Survey Result Testing

After the survey has been conducted, it will go through a test of validity testing by using Pearson Correlation (Product Moment). It is a technique made by Karl Pearson to count coefficient correlation to find a correlation between the independent and dependent variable in the form of interval and ratio [20]. While Cronbach's Alpha will be used to assess the reliability of the survey. Dixon's Q test also will be used to determine whether there is an outlier within the data [21].

IV. RESULT AND ANALYSIS

A survey conducted has successfully gathered 37 respondents. We have also gathered information regarding respondent identity to make sure there is no double submission. Upon checking we had a respondent who answered twice, so we picked one of the answers and remove the other. After the data is sorted out, we had a total of 36 respondents. We are now ready for the next phase to make sure that the data is validated, reliable and has no outlier.

A. Pearson Correlation Validation Test

In the Pearson correlation validation test, the condition for the data to be considered valid is when the T-Stat is bigger than the T-table. As shown in Table II, statement number 1 and number 5 considered to be not valid. For such reason, we are going to remove statement 1 and statement 5 before we start our reliability test.

Table II. Pearson correlation calculation

Statement	Calculation			Validity
	Pearson	T-Stat	T-table	
S1	0.24	1.33	1,68	Not Valid
S2	0.52	3.23		Valid
S3	0.52	3.23		Valid
S4	0.65	4.50		Valid
S5	0.16	0.89		Not Valid
S6	0.60	3.93		Valid
S7	0.67	4.78		Valid
S8	0.54	3.45		Valid
S9	0.37	2.14		Valid
S10	0.56	3.59		Valid

B. Cronbach's Alpha Reliability Test

Based on the calculation of Table III, the value of Cronbach's Alpha is 0.71. The alpha value shows to be greater than 0.71 which considered being reliable [22].

Table III. Cronbach's alpha calculation

Calculation	Value
Total statements	10
Total VAR items	7.85
VAR total	20.98
Alpha Value (Reliability)	0.71

C. Dixon's Q – Data Outlier Test

We are now ready to test whether the data had an outlier. Before we proceed we need to calculate the Mean, Standard Deviation and the T table. The calculation needed is shown on Table IV.

Table IV. Cronbach's alpha calculation

Calculation	Value
MEAN	27.05
Standard Deviation	4.73
T Table	1.68
T Table x Standard Deviation	7.98
Number of respondents	36

After we had the calculation data, we will compare T Table x Standard Deviation with the Delta calculation to determine whether the data is an outlier or not. The result is shown in Table V.

Table V. Outlier data

Respondent		Outlier	Respondent		Outlier
No	Delta		No	Delta	
1	4,06	NO	19	1,94	NO
2	5,06	NO	20	2,94	NO
3	6,06	NO	21	3,94	NO
4	5,06	NO	22	4,06	NO
5	3,06	NO	23	2,94	NO
6	1,94	NO	24	3,06	NO
7	5,94	NO	25	3,94	NO
8	2,06	NO	26	4,06	NO
9	0,94	NO	27	8,94	YES
10	5,06	NO	28	3,94	NO
11	0,06	NO	29	4,94	NO
12	1,94	NO	30	7,94	NO
13	0,94	NO	31	0,94	NO
14	0,94	NO	32	1,94	NO
15	3,94	NO	33	4,06	NO
16	0,06	NO	34	3,94	NO
17	5,06	NO	35	11,6	YES
18	5,94	NO	36	9,06	YES

Based on Table IV, we can conclude that there are 3 respondents that have become an outlier. We will exclude the three respondents when we discuss the analysis of the survey result.

D. Survey Analysis

Based on the previous testing, 2 statements and 3 respondents have been removed to have a valid and reliable analysis. Statement number 1 and 5 will be removed but the numbering for statement discussed in this paper will not be reset. It is done to avoid confusion when comparing the

statement finding from the introduction. As for the 3 respondents, it will be removed entirely from the data without any consideration. The summary of data based on the 33 valid respondents and 8 valid statements is shown on Table VI.

Table VI. Survey result summary

Statements	Strongly Disagree	Agree	Disagree	Strongly Disagree
S1	4	5	1	1
S2	3	4	1	1
S3	2	5	2	0
S4	3	5	1	0
S5	3	3	2	1
S6	3	2	1	2
S7	5	2	1	0
S8	0	1	3	4
S9	3	4	0	1
S10	2	4	2	1

Statement 2 is “Game clone is fine as long as it is used for an educational purpose”. With 49% agree and 27% strongly agree with the response, respondents are generally agreeing with statement 2. The result is illustrated in the form of a pie chart in Figure I.

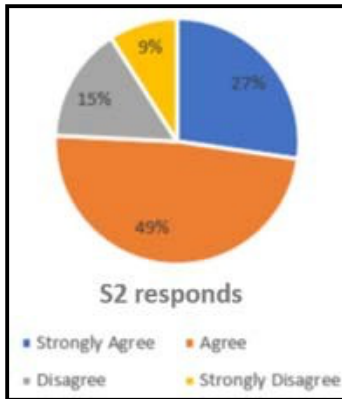


Figure I. Statement 2 survey result

Statement 2 has a similar understanding of fair use doctrine where copyrighted material can be used without acquiring permission from the copyright holder. It is valid as long as the purpose and character of the use, is for nonprofit educational purposes.

Statement 3 is “Game clone should not commercially affect the original game”. With 37% agree and 27% strongly agree with the response, respondents are generally agreeing with statement 3. The result is illustrated in the form of a pie chart in Figure II.

Statement 3 strengthen the statement 2. The game should not only use for no commercial purpose but also does not become a free substitute of the original game that may affect the original game sales. One case that can be used as an example is when a game titled “Threes” is cloned by a game titled “2048” [14]. The game has a different business model where 2048 is free while Threes is a premium paid game.

Even if 2048 doesn’t have ads, it had hurt the sale of Threes because the game is available for free.

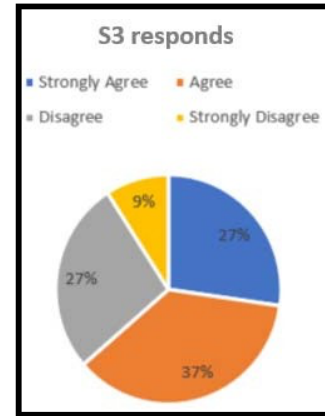


Figure II. Statement 3 survey result

Statement 4 is “Game clone and other game development process should be educated to the public in order to increase their literacy regarding it so they can appreciate more about the game they played.” With 46% agree and 42% strongly agree on response, respondents are mostly agreeing with statement 4. The result is illustrated in the form of a pie chart in Figure III.

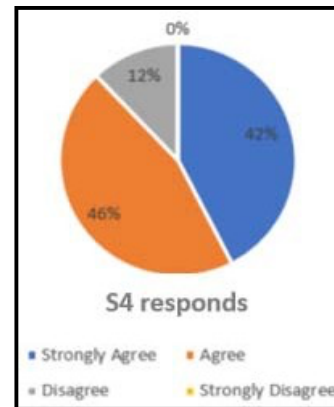


Figure III. Statement 4 survey result

Surprisingly, many respondents overwhelmingly agreed with the statement. Jamin Warren thought that literacy around games is paramount to dealing with cloners [15]. An informed public is a powerful public is the only way to stop clones. But that conversation only works if all who play games are onboard, not just those that make them [15].

Statement 6 is “Game clone is fine if we credit the originator within the game.” With 27% agree, 28% strongly agree, 24% disagree and 21% strongly disagree response, respondents are generally mixed with statement 6. The result is illustrated in the form of a pie chart in Figure IV.

In general, the survey result is a bit mixed. It is an understandable response, it is rare to see game developer acknowledges the game that it’s inspired within the game credit. Even though in public the developer admits if the game is a clone of the previous game. As Jamin Warren said, it

is probably better if the industry targeting the institutions that enhance the public's understanding of what games are and how they work [15]. Those are the places where "credit" is handed out: that means schools, museums, and media organizations that often don't have a passing knowledge of how games are even made [15].

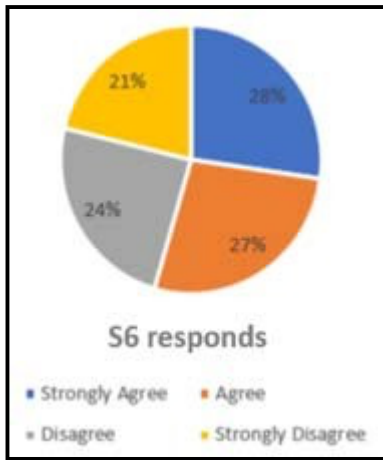


Figure IV. Statement 6 survey result

Statement 7 is "Regulator/government and industry should define standards of game clone and create a body that monitors it." With 31% agree and 24% strongly agree respondents are generally agreeing with statement 7. The result is illustrated in the form of a pie chart in Figure V.

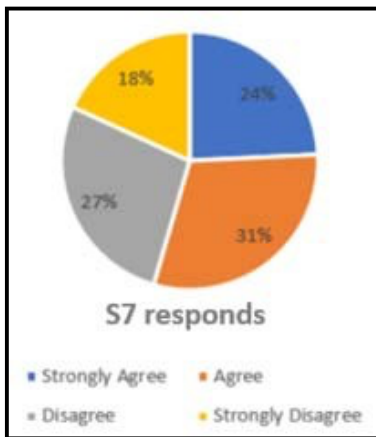


Figure V. Statement 7 survey result

Hopefully with BEKRAF (Indonesia Creative Economy Agency) will respond accordingly with what developer needs. It's a challenging duty because BEKRAF needs to find the balance of making sure that no one is harmed with the act of cloning while making sure innovation persist within the industry.

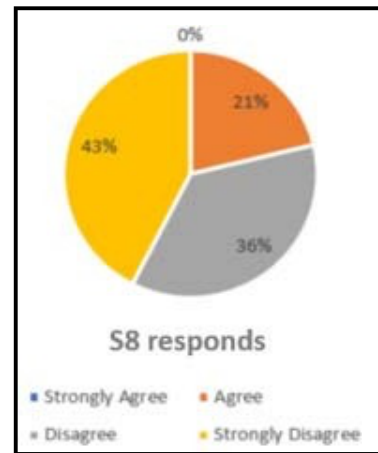


Figure VI. Statement 8 survey result

Statement 8 is "Game clone may not be addressed in court but should've been publicly shamed by the community and industry." With 36% disagree and 43% strongly disagree response, respondents are generally agreeing with statement 8. The result is illustrated in the form of a pie chart in Figure VI.

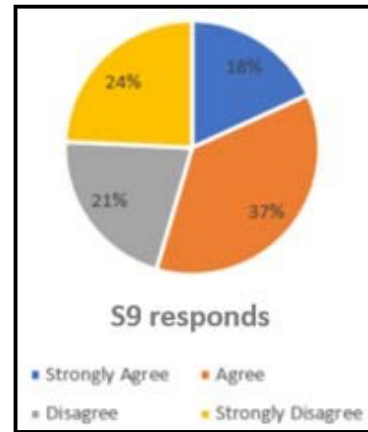


Figure VII. Statement 9 survey result

Statement 9 is "Game platform (Steam, Google PlayStore or Apple AppStore) should have a clone detection as part of certification before the game released." With 37% agree and 18% strongly agree on the response, respondents are generally agreeing with statement 9. The result is illustrated in the form of a pie chart in Figure VII.

It shows that Indonesia developer thinks that application and game platform provider should also take part in protecting the game developer from the practice of game clone. Currently, the platform provider uses a more passive approach relying on the developer report to determine whether the game has illegally used a copyrighted material or not.

Statement 10 is "Game clone is fine, but more effort and focus could be given to protecting both creators and consumers." With 40% agree and 27% strongly agree on response, respondents are generally agreeing with statement 10. The result is illustrated in the form of a pie chart in Figure VIII.

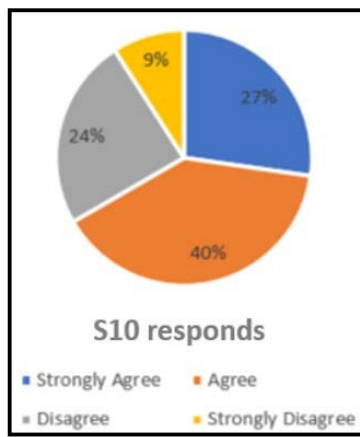


Figure VIII. Statement 10 survey result

From this statement, we can see that the majority of developers has an express concern regarding game clone in general. They might not know what the solution is needed, but most developers thought that more effort is needed in order to lower the negative effect of game cloning.

## V. RESULT AND ANALYSIS

Based on the survey that has been conducted, with 40% agree and 27% strongly agree responds it can be concluded that within Gamedev community, Indonesia Game Developer has no problem with the act of game cloning. Especially the purpose the game clone does not affect the sales of the original game or for nonprofit and educational purposes. Although, Indonesia's developers still have a concern with a game clone that more effort and focus could be given to protecting both creators and consumers. The survey shows a mix responds when dealing with government and have more confident for the platform owner to help them vetting game clone.

In the future, there is more research needs to be conducted. FGD or another survey needs to be conducted to understand the motivation of game cloning. Investigation of what criteria that a game can be categorized as a clone or plagiarized is needed, so government and industry can start moving on creating law or process that can make game clone less harmful but still support innovation.

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