



The Effect of Addiction Online Game Factor by Private High School Students in Padang City

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Abstract

Online Game is a game that entertain which is by connected by a network, so that it can be played between one player and another player in different places. As a matter of fact, Online Game can have a negative impact, that is an addiction. Students who are addicted to play online game have been influenced by several factors, the factor of facility, individual factors, family factors, social factors, and the online game itself. An analysis that can be used to look at the factors that influence addiction online game in private senior high school students in the city of Padang is a logistic regression analysis.

This type of research is experimental research and the population in this study are private senior high school students in Padang City who play online game on a smartphone. The sample in this research are about to 96 respondents and the sampling technique used was technique non probability sampling with the sampling method accidental sampling and using a questionnaire. Based on the research results, we obtained the factors that influence it and factors that significantly influence addiction online game in students private SMA is a facility, family, and types game online.

Keywords: Addiction, online game, Logistic Regression Analysis.

1. Introduction

The internet is one of the technological advances in the current era of globalization (Wortmann and Flüchter, 2015). Share activities that can be done by internet users are such as fun activities, entertainment, and increasing knowledge. Online game is one of the activities that use the internet network. However, the bigger users of this online gaming activity are senior high school students. Actually, playing Online Game can be fun for its users. Hence, playing online game can also have a negative impact, it is called addiction. Addiction is a very strong feeling of something you want. Students who are addicted to Online Game will become lazy to learn and also often wasted time to play Online Games, time to study and chores hours at home which is will be lost due to playing games. Thus, Online game addiction can be concluded as a condition where a person is bound to a very strong habit and cannot escape playing Online Game (Felszeghy et al., 2019; Lee and Kim, 2017; Choi et al., 2018; Chen and Oong, 2018).

Online Game addiction can be caused by several factors. According to (Karaer and Akdemir, 2019), one of the factors that causes children to become addicted to Online Game is because they feel less attention from their closest people, including parents. Meanwhile, according to Xu et al. (2012), the factors that influence Online Game addiction are the provision of internet facilities, individual factors, age groups, and reasons for playing Online Games. Based on the above opinion, it can be concluded that the factors that influence Online Games addiction are facility factors, individual factors, family factors, social factors, and Online Games type factors.

2. Research Methods

This type of research is experimental research, which is applying a problem into everyday life which begins with theoretical analysis and is followed by data collection. The type of data used in this study is primary data. Respondents in this study were private senior high school students in Padang who were playing Online Games on

their smartphones. The population in this study were all private senior high school students in the city of Padang who were playing Online Game on smartphones. The sampling technique in this study used a nonprobability sampling technique with accidental sampling method. Non-probability sampling technique is a sampling method that provides different opportunities for each member of the population to be selected as a sample due to certain considerations

The data collection tool in this study was a questionnaire prepared using a Likert scale. Questionnaire is a number of written statements that are used to obtain information from respondents in the sense of reports about their personalities, or things they know (Toussaint et al., 2020). The questionnaire that has been compiled is then carried out first to validate the questionnaire. Questionnaire validation is a procedure to ascertain whether the questionnaire to be used to measure research variables is valid or not. Valid facility that the questionnaire can be used to measure what you want to measure. Some of the questionnaires are standardized, because their validity and reliability have been tested, but many are not standardized. If we use a standardized questionnaire, there is no need to test the validity again, while the non-standard questionnaire needs to be validated.

A valid questionnaire used in the study. The research was conducted by distributing questionnaires. In the research, the activities carried out are data collection. The data obtained during the next research will be analyzed. The analysis technique used in this research is Logistic Regression Analysis (Austin and Merlo, 2012). Logistic regression analysis is a regression method that can be used to describe the relationship of the dependent variable (Y) which is categorical with one or more independent variables (X) which are continuous, categorical or a combination of both. This logistic regression analysis is a regression analysis that can be used if the dependent variable has only two possible values, for example success and failure (Montgomery et al., 2021). If $Y = 1$ states that the success of an event, $Y = 0$ indicates that the event failed so that the probability of each possibility can be stated as follows:

$$\begin{aligned} P(Y_i = 0) &= 1 - \pi_i \\ P(Y_i = 1) &= \pi_i \end{aligned} \quad (1)$$

The form of the general logistic regression equation according to Montgomery et al. (2021) is as follows:

$$\pi(X) = \frac{\exp(\beta_0 + \beta_1 X)}{1 + \exp(\beta_0 + \beta_1 X)} \quad (2)$$

The steps in this logistic regression analysis are as follows:

2.1. Estimator of Logistic Regression Model Parameters

The Maximum Likelihood Estimator (MLE) method is used to estimate the parameters in logistic regression (Duarte et al., 2021; Li et al., 2017). Basically, this method provides an estimated value of β by maximizing its likelihood function. The likelihood function in logistic regression is as follows.

$$L(\beta) = \sum_{i=1}^n \{ y_i \ln P(x_i) + (1 - y_i) \ln [1 - P(x_i)] \} \quad (3)$$

Maximum likelihood is a maximizing the log likelihood function. By differentiating the log form likelihood against $\beta_1, \beta_2, \dots, \beta_k$ and equates to zero, so we get:

$$\begin{aligned} \frac{\partial L(\beta)}{\partial \beta_i} &= 0; \quad i = 0, 1, \dots, k \\ \frac{\partial}{\partial \beta_i} L(\beta) &= \sum_{i=1}^n [y_i \ln P(x_i) + (1 - y_i) \ln (1 - P(x_i))] = 0 \end{aligned} \quad (4)$$

So that the estimator equation for the logistic regression parameters is as follows.

$$\begin{aligned} \frac{\partial L(\beta)}{\partial \beta_i} &= \sum_{i=1}^n [y_i - P(x_i)] \\ \frac{\partial L(\beta)}{\partial \beta_i} &= \sum_{i=1}^n x_i [y_i - P(x_i)] = 0; \quad i = 1, 2, \dots, k \end{aligned} \quad (5)$$

2.2. Testing the Significance of Logistic Regression Model

The significant model testing is useful for checking whether the explanatory variables have a real effect on the model (Iniesta-Bonillo et al., 2016). The significant test used in logistic regression is the G test. The G test is a likelihood ratio test which aims to test the role of the explanatory variables in the model together. The hypothesis in this test is:

$$H_0: \beta_1 = \beta_2 = \dots = \beta_j = 0$$

$$H_1: \text{there is at least one } \beta_i \neq 0, \text{ for } i = 1, 2, 3, \dots, k$$

With test statistics

$$G = 2 \ln \left[\frac{\text{likelihood without explanatory variables}}{\text{Likelihood with explanatory variables}} \right]$$

or

$$G = 2 \{ \sum_{i=1}^n [y_i \ln(\hat{p}_i) + (1 - y_i) \ln(1 - \hat{p}_i)] [n_1 \ln(n_1) + n_0 \ln(n_0) - n \ln(n)] \} \quad (6)$$

Where:

n_0 = a lot y_i which is worth 0

n_1 = a lot y_i which is worth 1

n = lots y_i

G test statistics follows the distribution χ^2 with the degrees of freedom is k (number of independent variables). With the test criteria, if the significance value is smaller from the real level used, H_0 reject or $G > \chi_{a,k}^2$ or its significance value less than α , then reject H_0 which facility that in the regression model there is at least one parameter estimator that is not equal to zero. In other words, this model may be suggested, but the model is not the best model and the analysis can be continued by finding the best model.

2.3. Significant Testing of Logistic Regression Parameters

To compare the maximum likelihood estimator value against the value parameter β_j which is used to test the logistic regression model separately used Wald test. General Wald test formula for logistic regression:

$$W_j = \frac{\hat{\beta}_k}{SE(\hat{\beta}_k)} \quad ; j = 0, 1, 2, \dots, k \text{ with: } SE(\hat{\beta}_j) = [var(\hat{\beta}_j)]^{1/2} \quad (7)$$

Where:

$\hat{\beta}_j$ = parameter estimator

$SE(\hat{\beta}_j)$ = standard error of the parameter estimator

The ratios are generated from the test statistic, under the hypothesis H_0 will follow the standard normal spread. So that to obtain a decision, a comparison is made with the standard normal distribution (Z).

The hypothesis to be tested:

$$H_0: \beta_j = 0, \text{ to } j = 1, 2, \dots, k \text{ (variable } X_j \text{ no real impact)}$$

$$H_1: \beta_j \neq 0 \text{ (variable } X_j \text{ have a real impact)}$$

2.4. Selection of the Best Model

The method used in selecting the best model in this study is the step back method (backward method). Independent variables were entered into the model one by one and their significance was calculated based on Wald statistics. Choose a variable with a significance level that is smaller than the chance for each variable that is included in the model, then update the model using new independent variables which have a small significant value.

2.5. Interpretation of Parameter Coefficients

In logistic regression the interpretation of the coefficients is done by looking at the value odds ratio which aims to see the risk of the independent variable having an effect on the dependent variable. If the independent variable is

categorical with two categories, then the interpretation is done by comparing the values odds of the variable value which is the reference. Score odds ratio is defined as follows:

$$\Psi = \frac{\frac{\pi(1)}{[1-\pi(1)]}}{\frac{\pi(0)}{[1-\pi(0)]}} = \frac{\pi(1)([1-\pi(0)])}{\pi(0)([1-\pi(1)])} = \frac{e^{\beta_0+\beta_1}}{e^{\beta_0}} = e^{\beta_1} \quad (8)$$

While the log value odd ratio is:

$$\ln \Psi = \frac{\frac{\pi(1)}{[1-\pi(1)]}}{\frac{\pi(0)}{[1-\pi(0)]}} = \ln \left[\frac{\pi(1)}{[1-\pi(1)]} \right] - \ln \left[\frac{\pi(0)}{[1-\pi(0)]} \right] = g(1) - g(0) \quad (9)$$

If the coefficient β_j in the logistic regression model equation is worth 0, then odds ratio is $\Psi = e^{\beta_j} = 1$, meaning that the independent variable (X) has no effect in determining the choice of the dependent variable (Y) or there is no relationship between the independent variable (X) and dependent variable (Y). If $\beta_j > 0$, then $\Psi = e^{\beta_j} > 1$, facility that the independent variable (X) with category 1 has a greater chance of choice than the independent variable (X) with category 0. If $\beta_j < 0$, then $\Psi = e^{\beta_j} < 1$, facility that the independent variable (X) with category 0 has a chance of choosing the dependent variable (Y) = 1, which is greater than the group variable (X) with category 1.

3. Results and Discussion

After doing this research and obtaining the data, and the data is ready to be analyzed by the researcher. The analysis technique used is logistic regression analysis. After analyzing the data, the following results were obtained.

3.1. Description of Data

The data used in this study are primary data that obtained from distributing questionnaires to private high school students in Padang City. The data obtained first described based on each variable with a sample size of 96 respondents. From the results of the questionnaires that have been filled in by the respondents, the following data are obtained:

3.1.1. Addiction Variable Data Tabulation Online game (Y)

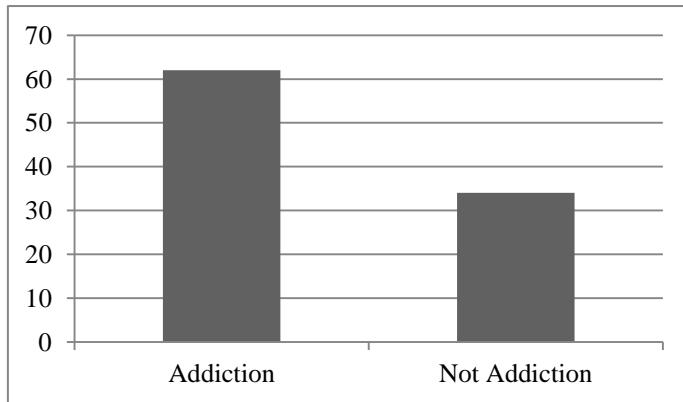


Figure 1. Graph of the Variable Online Game Addiction

Based on the Figure 1, it can be seen that of the 96 students in all private senior high schools in Padang City, there are 62 students or 64.58% of students who experience addiction online game and 34 students or 35.42% students who did not experience addiction online game.

3.1.2. Tabulation of Data on Variable Factors in Affecting Online Game Addiction (X)

a. Facility of Variable Data Tabulation (X_1)

Based on the Table 1, it can be seen that the facility variable (X_1) there are 6 statements. In the first statement, the highest number of students who agreed were 35 students or 36.46%, while the least stated strongly disagreed were 16

students or 16.66%. In the second statement, the highest number of students who disagreed were 34 students or 35.42%, while the fewest students strongly disagreed were 5 students or 5.21%.

Table 1. Facility Variable Data Tabulation

No	Variable Statement Facility (X ₁)	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed	Total
1	Used of cell phones or laptop to play online game	21 21.88%	35 36.46%	24 25%	16 16.66%	96
2	Home facilities can help in playing online game	29 30.21%	28 29.12%	34 35.42%	5 5.21%	96
3	Availability of internet network (<i>wifi</i>) in school makes it easy for me to played online game while at school	15 15.63%	39 40.63%	35 36.48%	7 7.30%	96
4	The number of internet cafes or game center which I can visit to play online game	24 25%	38 39.58%	27 28.12%	7 7.30%	96
5	The internet connection network or bad network making me lazy played online game	46 47.91%	39 40.62%	11 11.45%	0 0	96
6	I have money to play online game at an internet cafe or game center	42 43.75%	45 46.87%	9 9.37%	0 0	96
Amount		177	224	140	35	
Average		29.5	37.3	23.3	5.8	

In the third statement, the highest number of students who agreed were 39 students or 40.63%, while the least stated strongly disagreed were 7 students or 7.30%. In the fourth statement, the most students who agreed, were 38 students or 39.58%, while at least expressed strongly disagree, were as many as 7 students or 7.30%.

In the fifth statement, the most students who strongly agreed were 46 students or 47.91%, while there were no students who strongly disagreed in the fifth statement. In the sixth statement, the most students who agreed, were 45 students or 46.87%, while there were no students who strongly disagreed of the sixth statement.

b. Individual Variable Data Tabulation (X₂)

Based on the Table 2, it can be seen that the individual variable (X₂) there are 6 statements. In the first statement, the most students who strongly agreed were 45 students or 46.87%, while the fewest students strongly disagreed were 2 students or 2.08%. In the second statement, the highest number of students who agreed were 46 students or 47.91%, while the least expressed strongly disagreed, was 1 student or 1.04%.

In the third statement, the most students who strongly agreed were 43 students or 44.79%, while there were no students who strongly disagreed in the third statement. In the fourth statement, the highest number of students who agreed were 37 students or 38.54%, while the least stated strongly disagreed, was 1 student or 1.04%.

In the fifth statement, the highest number of students who agreed were 46 students or 47.91%, while the least stated strongly disagreed, was 1 student or 1.04%. In the sixth statement, the most students who strongly agreed were 45 students or 44.79%, while there were no students who strongly disagreed in the sixth statement.

Table 2. Individual Variable Data Tabulation

No	Variable Statement Individual (X ₂)	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed	Total
1	I will play online game when I feel bored	45 46.87%	37 38.54%	12 12.5%	2 2.08%	96

2	I play online game to relieve stress	30 31.25%	46 47.91%	19 19.79%	1 1.04%	96
3	When I have free time, I will play online game	43 44.79%	36 37.5%	17 17.70%	0 0	96
4	I will play online game every time I have a problem	34 35.41%	37 38.54%	24 25%	1 1.04%	96
5	I feel restless when I'm not playing online game in a day	30 31.25%	46 47.91%	19 19.79%	1 1.04%	96
6	I feel calm when I play online game	43 44.79%	36 37.5%	17 17.70%	0 0	96
Amount		225	238	108	5	
Average		37.5	39.7	18	0.8	

c. Family Variable Data Tabulation (X_3)

Table 3. Family Variable Data Tabulation

No	Variable of Family Statement (X_3)	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed	Total
1	Parents gave me freedom of action toward activities that I enjoy	23 23.95%	46 47.91%	21 21.87%	6 6.25%	96
2	Parents are always watching and paying attention to all activities that I do	25 26.04%	47 48.95%	19 19.79%	5 5.02%	96
3	I can forget problems at home if I play online game	37 38.54%	41 42.70%	16 16.66%	2 2.08%	96
4	Parents give support to me to do activities that I like	42 43.75%	36 37.5%	13 13.51%	5 5.02%	96
5	The busyness of my parents made me play more and more online game	15 15.63%	39 40.63%	35 36.48%	7 7.30%	96
Amount		142	209	104	25	
Average		28.4	41.8	20.8	5	

Based on the Table 3, it can be seen that the family variable (X_3) there are 5 statements. In the first statement, the highest number of students who agreed, were 46 students or 47.91%, while the least stated strongly disagreed, were 6 students or 6.25%. In the second statement, the highest number of students who agreed was 47 students or 48.95%, while the least stated strongly disagreed, were 5 students or 5.02%.

In the third statement, the highest number of students who agreed was 41 students or 42.70%, while the least stated strongly disagreed, were 2 students or 2.08%. In the fourth statement, the most students who strongly agreed were 42 students or 43.75%, while the fewest students strongly disagreed were 5 students or 5.02%. In the fifth statement, the most students who agreed, were 39 students or 40.63%, while the least stated strongly disagreed, namely as many as 7 students or 7.30%.

d. Social Variable Data Tabulation (X_4)

Based on the Table 4, it can be seen that the social variable (X_4) there are 9 statements. In the first statement, most students are stated agree that as many as 41 students or 42.70%, while at least stated strongly disagree, were as many as 2 students or 2.08%. In the second statement, the most students who agreed, were 43 students or 44.79%, while there were no students who strongly disagreed in the second statement. In the third statement, the most students who agreed, were 45 students or 46.87%, while the least expressed strongly disagree, were 2 students or 2.08%.

Table 4. Social Variable Data Tabulation

No	Variable Statement Social (X_4)	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed	Total
1	I play online game because I was invited by friends	34 35.41%	41 42.70%	19 19.79%	2 2.08%	96
2	Always watching other people play online game or listen to people's stories other about experiences in play online game, makes me interested in trying to play game online	29 30.20%	43 44.79%	24 25%	0 0	96
3	I play games on line so as not to be left behind with other friends	36 37.5%	45 46.87%	13 13.54%	2 2.08%	96
4	I play online game so that I am not out of date or updated.	34 35.41%	47 48.95%	14 14.58%	1 1.04%	96
5	I like playing online game with my friends	37 38.4%	41 42.70%	16 16.66%	2 2.08%	96
6	I like to tell my problem is on friends through online game	42 43.75%	36 37.5%	13 13.51%	5 5.02%	96
7	I'm trying to be game online game I am better than my friends	25 26.04%	47 48.95%	19 19.79%	5 5.02%	96
8	Because of my skills in play online game, I often invite my friends to play online game together	23 23.95%	46 47.91%	21 21.87%	6 6.25%	96
9	I joined community games which I enjoy doing	25 26.04%	47 48.95%	19 19.79%	5 5.02%	96
Amount		285	393	158	28	
Average		31.7	43.7	17.6	3.2	

In the fourth statement, the highest number of students who agreed was 47 students or 48.95%, while the least stated strongly disagreed, was 1 student or 1.04%. In the fifth statement, the most students who agreed, were 41 students or 42.70%, while at least 2 students or 2.08% strongly disagreed. In the sixth statement, the most students who strongly agreed were 42 students or 43.75%, while the fewest students strongly disagreed were 5 students or 5.02%.

In the seventh statement, the highest number of students who agreed was 47 students or 48.95%, while the least stated strongly disagreed, namely 5 students or 5.02%. In the eighth statement, the highest number of students who agreed was 46 students or 47.91%, while the least stated strongly disagreed, namely 6 students or 6.25%. In the ninth statement, the most students who agreed, were 47 students or 48.95%, while the least stated strongly disagree, namely 5 students or 5.02%.

e. Online Game Type Variable Data Tabulation (X_5)

Based on the Table 5, it can be seen that the social variable (X_4) there were 9 statements. In the first statement, most students stated agree that as many as 41 students or 42.70%, while at least stated strongly disagree, namely as many as 2 students or 2.08%. In the second statement, the most students who agreed, were 43 students or 44.79%, while there were no students who strongly disagreed in the second statement. In the third statement, the most students who agreed, were 45 students or 46.87%, while the least expressed strongly disagree, were 2 students or 2.08%.

In the fourth statement, the highest number of students who agreed was 47 students or 48.95%, while the least stated strongly disagreed, was 1 student or 1.04%. In the fifth statement, the most students who agreed, were 41 students or 42.70%, while at least 2 students or 2.08% strongly disagreed. In the sixth statement, the most students who strongly agreed were 42 students or 43.75%, while the fewest students strongly disagreed were 5 students or 5.02%.

In the seventh statement, the highest number of students who agreed was 47 students or 48.95%, while the least stated strongly disagreed, was 5 students or 5.02%. In the eighth statement, the highest number of students who agreed was 46 students or 47.91%, while the least stated strongly disagreed, were 6 students or 6.25%. In the ninth statement, the most students who agreed, were 47 students or 48.95%, while the least stated strongly disagree, were 5 students or 5.02%.

Table 5. Social Variable of Data Tabulation

No	Variable Statement Type Online game (X_5)	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed	Total
1	Many types of online game available delivers self-satisfaction	31 32.29%	46 46.87%	19 19.79%	0 0	96
2	Online game which challenges make me to continue to play it	28 29.16%	54 56.25%	14 14.58%	0 0	96
3	Online game can be a facility of income for me	46 47.91%	39 40.62%	11 11.45%	0 0	96
4	The target to level up and win allows me to continue playing online game	42 43.75%	45 46.87%	9 9.37%	0 0	96
5	I'm interested in playing online game because in terms of quality, image, sound and character	28 29.16%	54 56.25%	14 14.58%	0 0	96
Amount		175	238	67	0	
Average		35	47.6	13.4	0	

3.2. Data Analysis

3.2.1. Estimation of Logistic Regression Model Parameters

The logistic regression model was formed after estimating the logistic regression parameters first. The results of the logistic regression model parameter estimation can be seen as follows.

Table 6. Estimating the Logistic Regression Parameters

Independent Variable	B
Facility (X_1)	0.866
Individual (X_2)	-0.931
Family (X_3)	0.731
Social (X_4)	0.525
Type Online game (X_5)	1.883
Constant	-9.644

Based on the Table 6, the regression model is obtained as follows.

$$\pi(x) = \frac{e^{(-9,644+0,866X_1-0,931X_2+0,731X_3+0,525X_4+1,883X_5)}}{1 + e^{(-9,644+0,866X_1-0,931X_2+0,731X_3+0,525X_4+1,883X_5)}}$$

Then do a logit transformation of $\pi(x)$. This is so that the linear nature can be fulfill, the model produces the following logit.

$$\text{Logit}(\pi(x)) = -9,644 + 0,866X_1 - 0,931X_2 + 0,731X_3 + 0,525X_4 + 1,883X_5$$

This model needs to be reconsidered so it is necessary to test the significance of the logistic regression model.

3.2.2. Logistic regression model significance testing

The significance testing of the model is carried out using the G test with the following hypotheses.

$$H_0: \beta_1 = \beta_2 = \dots = \beta_j = 0$$

$$H_1: \text{there is at least one } \beta_j \neq 0$$

Table 7. G Test

	Chi-Square	Sig.
Logistic Regression Model	30.330	.000

Based on the table above, it can be seen that the G test obtained the calculated G value, namely $30.330 > \text{Chi-Square value tabel is } \chi^2_{0.05;5} = 11.070$. Can be seen also from the table that the significance value is $0.00 < \alpha$ that is 0.05. So that it can be drawn conclusion that H_0 rejected. This facility that there is at least one non-zero parameter estimator from the obtained model. In other words, the model can be used but it is not necessarily the best model. So, to find the best model, it can be done by reducing the independent variables from the model.

3.2.3. Significance of logistic regression parameters

Testing the significance test on the model is carried out using the Wald test to see the influence of each independent variable on the dependent variable.

Table 8. Wald Test

Independent Variable	B	Wald	Sig.
Facility (X_1)	0.866	5.989	0.014
Individual (X_2)	-0.931	2.781	0.095
Family (X_3)	0.731	4.547	0.033
Social (X_4)	0.525	1.037	0.309
Type Online game (X_5)	1.883	13.199	0.000

Constant	-9.644	10.038	0.002
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Based on the Table 8, it can be seen that there were only 3 independent variables which significance value is smaller than α that is 0,05. The variables are Facility (X_1), Family (X_3), and Types online game (X_5). While the other two variables, were Individual (X_2), and Social (X_4) has a significance value greater than α that is 0,05. However, from these results it cannot be determined that the best model value, so logistic regression models must be reduced to all variables freedom to get the variable that actually has a significance value that is less than α that is 0,05.

3.2.4. Selection of the Best Logistic Regression Model

To reduce the independent variable is done by using the backward step method (backward method). Backward method is a simplification of the model by removing one by one the independent variable (X) which has a significant value greater than α that is 0.05. So that we get a logistic regression model that describes the factors that influence addiction Online Game in students.

Table 9. Significance Test of Reduced Variables

Independent Variable	Sig. All Model	Sig. Reduction I	Sig. Reduction II
Facility (X_1)	0.014	0.002	0.003
Individual (X_2)	0.095	0.122	-
Family (X_3)	0.033	0.037	0.050
Social (X_4)	0.309	-	-
Type Online game (X_5)	0.000	0.000	0.000
Constant	0.002	0.003	0.000

Based on the Table 9, it can be seen that there are two independent variables that have a greater significance value of 0.05, then in the first reduction, the independent variable which has the greatest significance value is excluded. Social Variable (X_4) is a variable that has the highest significance value, is 0.309. Therefore, this variable is issued first. Next is the variable with the second highest significance value, namely Individual Variable (X_2) with a significance value of 0.122. Thus, this variable is also issued on the second reduction. The procedure is discontinued if there are no more variables that have a significance value greater than 0.05.

Based on the Table 10, it can be seen that the variable facility (X_1), family (X_3), and the type of online game (X_5) has a small significance value of 0.05 so that it becomes the independent variable for the best model in this study. So, the model simplification is carried out only involving the variables of facility (X_1), family (X_3), and types of online games (X_5) so that the best model is obtained.

To see the effect of the independent variables involved in the reduced model, the G test is repeated and the following results are obtained.

Table 10. G test of the Reduced Model

	Chi-Square	Sig.
Logistic Regression Model	26.707	.000

Based on the Table 10, the calculated G value of the reduction results is 26.707 and the significance value is 0.000. This facility that the reduction model obtained is as good as the model involving all independent variables. So that the reduction result model can also be obtained as follows.

Table 11. Test Wald of the Reduced Model

Independent Variable	B	Wald	Sig
Facility (X ₁)	0.920	8.812	0.003
Family (X ₃)	0.676	3.790	0.050
Type Online game (X ₅)	1.795	14.300	0.000
Constant	-10.799	15.694	0.000

Based on the Table 11, the best logistic regression model is obtained as follows.

$$\pi(x) = \frac{e^{(-10,799+0,920X_1+0,676X_3+1,795X_5)}}{1 + e^{(-10,799+0,920X_1+0,676X_3+1,795X_5)}}$$

By transforming the best logistic regression model above in order to fulfill linear characteristics, the model is in the form of a linear equation is like in this the following formula

$$\text{logit } \pi(x) = -10,799 + 0,920(X_1) + 0,676(X_3) + 1,795(X_5)$$

where: X₁ = Facility

X₃ = Family

X₅ = Types Online Game

Based on the model above, it can be seen that the variables that affect addiction online game for senior high school students in Padang City is a facility variable (X₁), family (X₃), and types online game (X₅). This can be seen based on the significance value of each variable that is under the value $\alpha = 0.05$.

3.2.5. Interpretation of The Coefficients

To interpret how much influence facility, family and type online game can be seen from the value odds ratio. Here's the value odds ratio of the logistic regression model.

Table 12. Logistic Regression Model Odds Ratio Value

Independent Variable	Exp(β)
Facility (X ₁)	2.509
Family (X ₃)	1.966
Type Online game (X ₅)	6.021
Constant	0.000

The Table 12 explains that:

- The odds ratio for the facility variable is 2.509. This is meaningful that addiction to online games in students which category of addicted as much 2.509 times greater than the non- addicted category.
- The odds ratio value for the family variable is 1.966. This facility that online game addiction in students which category of addicted as much 1.966 times greater than students who are not addicted.
- The odds ratio value for the online game type variable is 6.021. This facility that online game addiction in students those in the addicted category were 6.021 times greater than students with the non- addicted category.

4. Conclusion

This study aims to look at the factors that influence addiction to playing online games in private high school. The best logistic regression model to describe the factors that influence addiction online game in private senior high school students in the city of Padang are as follows.

$$\pi(x) = \frac{e^{(-10,799+0,920X_1+0,676X_3+1,795X_5)}}{1 + e^{(-10,799+0,920X_1+0,676X_3+1,795X_5)}}$$

Factors that influence online game addiction in student senior Private High school in the city of Padang is facility, family, type of the online game.

The influence of the factors that influence addiction online game in students Private senior high schools in Padang, that:

- The odds ratio of the facility variable is 2.509. This facility that online game addiction in students with as many addicted categories 2.509 times greater than the non- addicted category.
- The odds ratio value for the family variable is 1.966. This facility that online game addiction in students with as many addicted categories 1.966 times greater than students who are not addicted.

The odds ratio value for the online game type variable is 6.021. This facility that online game addiction in students with the addicted category as much as 6.021 times greater than students with the non- addicted category.

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