The Influence of User Experience towards User Satisfaction of E-Government Service: a Case Study of GAMPIL Application

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Abstract- In 2016, the number of Internet users in Indonesia was 132.7 million users or about 51.5% of the total Indonesian population, and around 63.1 million internet usage came from smartphone users. Cities in Indonesia are experiencing many positive changes and Indonesia is implementing Smart City. Bandung is one of the Smart City. One of innovative application of Bandung Smart City is made an application to help business actors in Bandung city to facilitate in doing business licensing by using an application called GAMPIL. GAMPIL Application user has user experience and user satisfaction with the average value of moderate category in the continuum line of research. User experience towards user satisfaction of GAMPIL Application users have a positive and significant relationship with a value of 99,2% and the remaining 0,8% are influenced by other variables.

Index Terms- GAMPIL Application, Smart City, User Experience, User Satisfaction.

I. INTRODUCTION

The number of Internet users Indonesia in 2016 was 132.7 million users or about 51.5% of the total Indonesian population of 256.2 million. Most Internet users are on the island of Java with a total of 86,339,350 users or about 65% of the total use of the Internet. This encourages the Government of Bandung, as a city with higher growth requires a more qualified urban system with the utilization of media and technology. For that, in this digital era, the ability of supervision from the local government also needs to be upgraded. With the real city monitoring in order to solve the problem effectively and efficiently [1].

With the increasing number of Micro Small and Medium Enterprises (MSMEs) spread throughout Bandung City with various types of businesses [2]. The perpetrators of MSMEs is facilitated by the Government of Bandung in developing its business. Beginning with the launch of (GAMPIL) Gadgets Mobile Application License application) which is mobile application that allows the citizens of Bandung / MSMEs to get licensing business easily and quickly.

All efforts owned by the government to realize the reform of good service through the online system also is not always running well and without obstacles. In its implementation to the citizen, there are still challenges and obstacles that approach the *DPMPTSP (Dinas Penanaman Modal dan Perizinan Terpadu Satu Pintu)* in carrying out the service by using the online system.

User experience is often interpreted as the achievement of a product or service that is considered successful or failed by its users. Can be interpreted, successful or failure of a product or service according to user experience reflects the satisfaction or not perceived by the customer. [3]

The phenomenon of user experience has been growing. According to Dobrota, Nikodijevic, and Mihailovic (2012), who conducted research on the Influence of The Customer Experience on Satisfaction with Mobile Phones, the results show that the market considers the needs of customers that make the user experience has a positive value that impact on customer satisfaction.

Another research on Understanding Customer Satisfaction and Loyalty: Empirical Study of Mobile Instant Messages in China was conducted by Deng, et al (2010), the results show that the Functionality, Trust, Emotional, and Service Quality perceived by users significantly influence customer satisfaction.

Then the Government of Bandung should be able to ensure that the services provided are in accordance with the expectations and desires of the citizens. In essence the Bandung City Government should seek and develop ways to maintain and satisfy the public.

Based on the description above the author will conduct research on the influence of user experience to user satisfaction toward GAMPIL Application users.

II. LITERATURE REVIEW

A. User Experience

The user experience is the experience of a product or service created for someone who uses it in the real world. When the product or service is developed, people pay much attention to the product or service [4].

B. Elements of User Experience

The user experience is widely depicted on all aspects of the interaction between users and products. The UX concept varies in terms of the scope, object, or element under consideration [5].

1. Functionality

Functionality as tools and features that enable users to complete task and achieve their goals [6].

2. Trust

Trust is a privacy protection that allows users to choose how their personal information is used. Furthermore, he states that

trust is the user's perception of the competence and knowledge of the provider of the expected behavior, namely integrity [7].

3. Emotional

The emotional value is the utility derived from the feelings or affective states that a product generates [8]. The play or fun gained by using the service for its own sake is related to emotional value [9].

4. Service Quality

Service Quality (ServQual) is the expected level of excellence and control over the level of excellence to meet user desires [10].

C. User Satisfaction

Satisfaction is expressed as the level of feeling in which how one feels good pleasure or disappointment that describes the results of comparisons of perceived and expected perceived product / service performance [11].

D. The relationship between variables X and Y

Building a user experience for a user satisfaction company should provide a user experience about the products / services offered. So, users can use and instantly feel the experience of a product / service. The user's perceived experience will be different, the similarity lies in the way it works that there is often a difference between successful and unsuccessful products / services (Garret, 2011). According to (Deng & et, 2010), Understanding Customer Satisfaction and Loyalty: An Empirical Study of Mobile Instant Messages in China suggests that user experience involvement with user satisfaction is based on how the user's perspective on functionality, trust, emotional and service quality which is prolonged.

Based on the exposure put forward by previous research, it can be concluded that user satisfaction or dissatisfaction can be felt if the user has felt or use (user experience) a product / service when someone has bought or used the product / service.

E. Research Framework

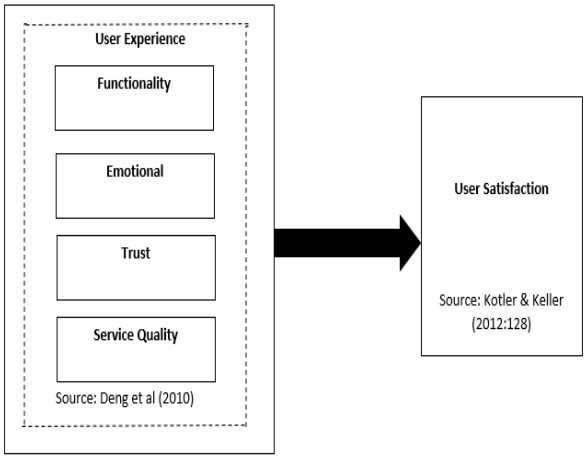

Fig.1. Research Framework

F. Research Hypotheses

H_0: User Experience do not significantly affect User Satisfaction of GAMPIL Application.

H_1: User Experience have significant affect User Satisfaction of GAMPIL Application.

III. RESEARCH METHODOLOGY

A. Research Characteristics

This research uses quantitative research approach. The type of research used in this research is descriptive and causal.

B. Measurement Scale

Scale used in this study is ordinal scale with the aim to provide information in the form of value on the answer. For each option the answer is scored, the respondent should describe, support the statement (positive) or not support the statement (negative).

C. Research Stage

Stages of research is a description of the process in conducting research. Stages of research in this study are described in the flow below:

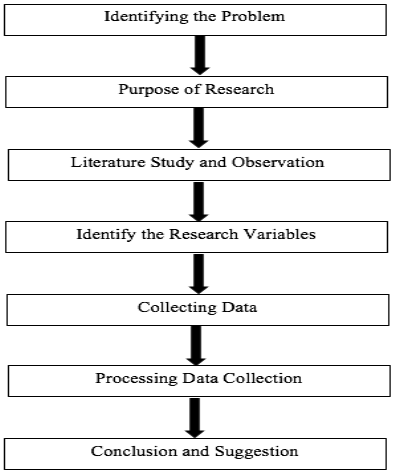

Fig.2. Research Stage

D. Population and Sample

The population in this study is the user of GAMPIL application. Sampling technique used in this research is purposive sampling. Samples taken in this study were 398 respondents.

E. Data Testing Technique

The data testing technique used is the validity and reliability test which is one important aspect that must be considered in arranging the questionnaire. To facilitate the calculation of validity and reliability in order to obtain accurate data and minimize errors, data processing is done with the help of Statistical Programs of Science Software (SPSS) for Windows.

IV. RESEARCH RESULTS AND DISCUSSION

A. Validity and Reliability Test

1. Validity Test

Validity means the extent to which precision and accuracy of a particular measuring instrument performs its function size. Validity test is a measuring tool used to get the data is valid. Valid means the instrument can be used to measure what should be measured [11].

The value of validity is essentially a correlation value. Therefore. to test the validity is done by the total item correlation technique which is the basis of the pearson correlation.

Table 1. Validity Test Results

Variable	Sub Variable	Items	Correlated Coefficient	Significant Level
User Experience (x)	Functionality	1	0,537	0,361
		2	0,732	0,361
		3	0,561	0,361
	Emotional	4	0,547	0,361
		5	0,568	0,361

		6	0,519	0,361
	Trust	7	0,564	0,361
		8	0,572	0,361
		9	0,724	0,361
		10	0,545	0,361
	Service Quality	11	0,635	0,361
		12	0,549	0,361
		13	0,730	0,361
		14	0,560	0,361
		15	0,700	0,361
User Satisfaction (Y)		16	0,561	0,361
		17	0,519	0,361
		18	0,715	0,361
		19	0,608	0,361

After calculation using Statistical Program of Science Software (SPSS) for Windows, obtained information that all statement submitted for User Experience variable and User Satisfaction has the value of validity coefficient> r table (0.361) then all statements are declared valid.

2. Reliability Test

Reliability shows the level of confidence in the results of a measurement. Measurements that have high reliability means that measuring instruments used can provide reliable results (reliable). To indicate whether a variable is reliable or not, the reliability value received is at least 0.70 [13]. To test the reliability of the instruments used in this study, pre-test conducted on 30 respondents.

Table 2. Reliability Test Results

Variable	Sub Variable	Cronbach Alpha	N of Items
User Satisfaction (X)	Functionality	0,772	3
	Emotional	0,724	3
	Trust	0,789	4
	Service Quality	0,795	4
User Satisfaction (Y)		0,825	5

After calculation using Statistical Program of Science Software (SPSS) for Windows, it is found that all data has been declared reliable. From the table that the value of r count> 0.70, it can be concluded that the questionnaire has good reliability.

B. Data Analysis Technique and Hypothesis Testing

For methods Quantitative analysis data continuum into two parts of them:

1. User Experience Variable X

Based on the percentage of the overall score of respondents' answers on Service Quality, obtained an average value of 62,1%. If illustrated, then it looks as follows:

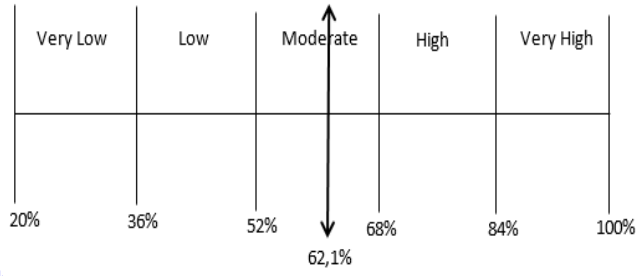

Fig.2. Continuum Line of User Experience

Based on the picture above, it is known that the percentage of respondents scores on the User Experience included in the moderate category, is at intervals (52% - 68%). Thus, it can be concluded that the User Experience classified moderate.

2. User Satisfaction Variable (Y)

Based on the percentage of the overall score of respondents' answers about User Satisfaction, obtained an average value of 62%. If illustrated, then it looks as follows:

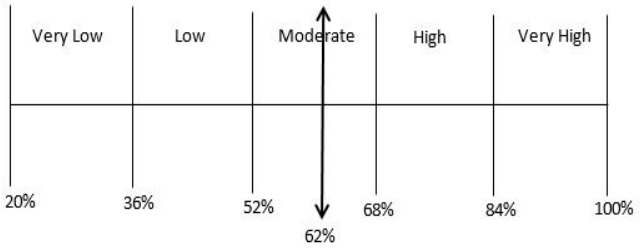

Fig.3. Continuum Line of User Satisfaction

Based on the picture above, it is known that the percentage of respondents score on User Satisfaction included in the moderate category, is at intervals (52% - 68%). Thus, it can be concluded that User Satisfaction classified moderate.

C. Methods Successive Interval (MSI)

Because the data generated by the measurement is ordinal and to convert it into an interval scale, data intervalization is required by using the Methods Successive Interval (MSI).

D. Classical Assumption Test

In simple linear regression, there is a classical assumption test consisting of normality test and heteroscedasticity test. Here are the results of both tests:

1. Normality Test

Normality test aims to test the independent variables (X) and the dependent variable data (Y) on the resulting regression equation, whether it is normally distributed or not normally distributed. In this study using the Kolmogorov- Smirnov normality test at the level of significance is 0,05. If a significance value greater than 0,05 means normal distribution, the following table 3 is the result of the normality test:

Table 3. The Result of Normality Test using Kolmogorov-Smirnov

One-Sample Kolmogorov-Smirnov Test

	Unstandardized Residual
N	398
Normal Parameters[a,b]	
Mean	,0000000
Std.Deviation	,38443933
Most Extreme Differences	
Absolute	,040
Positive	,038
Negative	-,040
Test Statistic	,040
Asymp. Sig. (2-tailed)	,136[c]

a. Test distribution is Normal
b. Calculated from data
c. Lilliefors Significance Correction
d. This is a lower bound of the true significance.
Source: data that have been processed by the author

Figure 4. Graph of Normality Test Result

Based on the results of normality test Kolmogorov-Smirnov in table 3 above can be seen that the value of significance greater than 0,05, that is 0,136 indicating that the data is normally distributed. In addition, Figure 4.9 also shows that the data is spread out around the diagonal line which means that the data is normally distributed.

2. Heteroscedasticity Test

Heteroscedasticity test is used to know whether or not there is deviation of classical assumption of heteroscedasticity that is existence of variant inequality of residual for all observation in regression model. The prerequisite that must be fulfilled in the regression model is the absence of symptoms of heteroscedasticity. In this research, the test method used is Glesjer test. The Glejser test is performed by regressing the independent variable with its residual absolute value (ABS_RES). If the value of significance between independent variables with absolute residual is more than 0.05 then there is no problem of heteroscedasticity. From the result, it can be seen that the value of significance of independent variables is more than 0.05. Thus, it can be concluded that there is no problem of heteroscedasticity on regression model. For the results can be seen in the following table 4 below:

Table 4. The Result Heteroscedasticity Test

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-226	,042		5,331	,000
User Experience	,002	,001	,087	1,730	,084

a. Dependent Variable: ABS_RES

E. Simple Linear Regression

In this study, the authors use simple linear regression analysis, where in simple linear regression express the causality relationship between two variables and estimates the value of the dependent variable based on the value of the independent variable. Table 1 is the result of the linearity test:

Table 5. The Result of Simple Linear Regression Test

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients
	B	Std. Error	Beta
1 (Constant)	-1,058	,067	
User Experience	,376	,002	,996

a. Dependent Variable: User Experience
Source: data that have been processed by the author

Based on regression output in table 1 can be presented the research regression equation as follows:

Y = -1,056 + 0,376X

Here is the explanation of the above equation:

1) The value of is the constant value of the User Satisfaction (Y), where there is no other variable affect the value of α. Its value is -1,056.
2) The value of X is the value of the User Experience (X). If there is an increase of one variable unit of User Experience, then the value of Y will increase by 0,376 or 37,6%. Because the value of the regression coefficient is positive (+), then it can be said that the influence of user experience (X) have a positive effect on user satisfaction (Y).

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1,056	,067		-15,816	,000
User Experience	,376	,002	,996	222,835	,000

F. Hypothesis Testing

1. T Test

Table 6. The Result of T Test

Coefficients[a]

a. Dependent Variable: USER SATISFACTION
Source: data that have been processed by the author

The t_{count} for user experience is 222,835 with t_{table} 1,966 then 222,835 > 1,966 shows that user experience has significant effect on user satisfaction. The coefficient regression has positive way that show user experience has positive significant affect towards user satisfaction. This result means hypothesis 1 is accepted.

2. Coefficient of Determination (R^2)

Table 7. The Result of R Square

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,996[a]	0,992	0,992	0,38492

a. Predictors: (Constant), User Experience

b. Dependent Variable: User satisfaction

Source: data that have been processed by the author

Table 7 above shows R value of 0,996 or 99,6%, this table shows the correlation/ relationship between variable X and variable Y, where the number included in the very high category (Indrawati, 2015). Furthermore, in table 4.6 above can also be seen the value of R Square (R2) is equal to 0,992 or 99,2%, this means user experience has an effect of 99,2% to user satisfaction, while the remaining amount of 0,8% is influenced by other factors not researched in this study.

G. Discussion of Research Result

The result of respondent characteristic analysis shows that male respondents more dominant, where male respondents of 236 people with 59%, while female respondents of 162 people with 41%. On the age characteristics of respondents found that the age of respondents dominated by respondents with the range 17-25 years as many as 196 people with a percentage of 49%, then on the characteristic of respondents based on the level of education can be seen that the majority of GAMPIL Application users has the latest education Bachelor degree, which is as many as 182 respondents with the percentage of 46%. Characteristics of respondents based on region that the majority in Center of Bandung with 121 respondents of 31%. Then the last, the characteristics of respondents based on kind of business found that the majority is *TDUK (Tanda Daftar Usaha Kecil*) with capital around 50 - 500 million with 220 respondents and the percentage 55%.

The result of quantitative analysis data continuum of user experience variable (X) on the continuum line shows the average percentage of 62,1%, which indicates that the level of user experience of GAMPIL Application users is categorized as moderate category. Based on the analysis of the quantitative analysis data continuum in the variable X can also be known that among the 14 statements describing the user experience factors, statement number 1 (GAMPIL Applications is reliable) has the highest percentage, which is 65,1% which belongs to moderate category. This means a sense of user experience of GAMPIL Application users mostly arises because they know GAMPIL Applications is reliable, therefore using GAMPIL Application feels easily because of GAMPIL Application is reliable who successful to provide the services. Meanwhile, the smallest percentage of 58,5% belonging to moderate category, there is statement number 10 (GAMPIL Application keeps their promises), this is because GAMPIL Application users is not satisfied with the promise that given by GAMPIL Application.

Meanwhile, the quantitative analysis data continuum of user satisfaction variable (Y) on the continuum line shows the average percentage of 62%, where the numbers indicate that the level of user satisfaction of GAMPIL Application users is categorized as the moderate category. The statement that has the largest percentage among the 5 statements that describes the user satisfaction is the statements number of 17 (GAMPIL Applications is successful), with the percentage of 62,5% which included in the moderate category. This means that the user satisfaction of GAMPIL Application users will be high if they feel GAMPIL Application is successful provide the services. Meanwhile, the smallest percentage is found in statements number 19 (I feel pleased with my overall experience of using GAMPIL Applications) with the percentage of 62%. The statement indicates that the GAMPIL Application users have not felt pleased with the overall experience of using GAMPIL Application.

Furthermore, for simple linear regression, the equation is Y = -1,056 + 0,376X. For the minus constant (Y), a negative estimate for the coefficient associated with a constant is not intrinsically a bad thing"[14]. Meanwhile, for the result of T test produce $t_{count} > t_{table}$ (222,835 > 1,966) thus obtained the result where H0 is rejected. So, it can be concluded that the user experience has a significant affect towards user satisfaction on GAMPIL Application. Then, to find out how much influence of user experience towards user satisfaction of GAMPIL Application users can be determined by calculating Coefficient of Determination value (R^2). Results of data processing found that the value of (R^2) is 0,992 with the percentage of 99,2%, this means that user experience has an influence 99,2% towards user satisfaction of GAMPIL Application users, while the remaining amount of 0,8% influenced by other factors outside this research.

V. CONCLUSION AND SUGGESTION

A. Conclusion

Based on the results of research on the influence of user experience towards user satisfaction of GAMPIL Application users, then the conclusions obtained are as follows:

1. GAMPIL Application users have enough user experience, such as those in continuum line with the average percentage of user experience equal to 62,1% which is in the moderate category. That is the average of GAMPIL Application users has been quite satisfied both in the aspect of the functionality, emotional, trust, and service quality.
2. GAMPIL Application users have enough user satisfaction level, as in the continuum line with the average percentage of user satisfaction of 62% which is in the moderate category. That is the average GAMPIL Application users has good enough satisfaction by providing a good service.
3. Based on the coefficient of determination (R2), user experience has an effect of 99,2% user satisfaction of GAMPIL Application users and the remaining of 0,8% influenced by other factors not examined in this study.

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