

## **The Influence of the Prepaid Electricity Program Effectiveness on the Society Satisfaction (A Study on the Prepaid Electricity Customers in Malang)**

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**Abstract:** A service basically is one of the functions of the state or government apparatus. A professional and a high quality service is a responsibility that must be provided by the government. The service effectiveness toward the customer's satisfaction is a necessity. The effectiveness emphasizes and shows the progress of the result achievement of the target that has been decided formerly by an organization. Society satisfaction is a very important factor and it determines the success of a business or a company, since, the society is the consumers of the products. Prepaid electricity is one form of the government services for the society. This prepaid electricity program is also one of the State Electricity Company (PLN) program in order to increase its service toward the society and to fulfill the customer's satisfaction. This prepaid electricity program is expected to be able to overcome the former system problems such as misreading the meters and uncontrolled usage. It is also expected to lighten the burden of the State Electricity Company (PLN) to reduce the electricity payment arrears and to ease the use of electricity that is suitable for the customer's financial capability. In addition, society satisfaction is the purpose of this prepaid electricity program. This research analyzes the existence of the influence of prepaid electricity effectiveness on the society satisfaction as the electricity customers in Malang, East Java, Indonesia. This research is conducted using explanatory type of research with quantitative approach. The result of this research shows that the prepaid electricity effectiveness does not give influence on the society satisfaction significantly.

**Key words:** Effectiveness, society satisfaction, prepaid electricity, electricity company, financial capability, customer's

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### **INTRODUCTION**

Service basically is one of the functions of the state or government apparatus. Based on the development of the academic context the conception of public service at first is based on sociology perspective which emphasizes that public service is an activity the governor are obligated to provide for the interest of those governed (Matei and Matei, 2010). Public service as the governor's obligation actualization in order to fulfill the interest of the governed party is very urgent because this activity is necessary for the achievement and development of the social independence (Anonymous, 2013).

A professional and a high quality service is the main responsibility that needs to be fulfilled by the government. It is based on the Constitution No. 25, 2009 about public service which states that public service is an activity or an activity chain of the service needs fulfillment based on the legislation applied for every

citizen on properties, services and administrative services which are provided by the public service administrator. The public service administrator includes every state administrator institutions, corporations, independent organization that is founded based on the constitution for public service and other legal institutions that are founded merely for the public service activities.

As the public administrator, government is demanded to be able to increase the quality of its services. It is also supported by the rapid development of technology and information current that stimulates every company and public organization to produce products or service innovation which eventually can increase their service. As Matei and Dinu (2010) stated that innovation could also be defined as a new product or service a new technology or manufacturing process a new structure or administrative system or a new plan regarding the members of an organization (Navimipour and Soltani, 2016).

Innovation in producing service product that can give satisfaction towards the consumers can be actualized with a program. A program is the entire steps or activities that depend on each other in order to reach the purposes that have been set. A good program is a program that can run effectively. Thus, the appraisal on the effectiveness of a program is very important to be conducted.

In general, effectiveness emphasizes and shows the progress of the result achievement of the target that has been decided formerly by an organization. One of the programs that need to be measured is the prepaid electricity service innovation program that is launched by the State Electricity Company (PLN). In order to be able to fulfill and increase the electricity provision service, hence, the headquarters of State Electricity Company (PLN) issued a circular number 01178/532/DITBMR/2010 about the implementation of prepaid electricity program. Prepaid electricity system is a new system or innovation from the State Electricity Company (PLN). One of the areas that has applied prepaid electricity is Malang city including 5 districts they are: Malang city, Blimbing, Dinoyo, Ngantang and Kebonagung (Anonymous, 2014).

This prepaid system has been chosen by the State Electricity Company (PLN) because this prepaid electricity system gives a lot of benefits comparing to the postpaid system that still causes problems for the State Electricity Program (PLN) Malang. The problems are the high rates of arrears that reaches 4.9 billion rupiahs in 2012 (Jawa Post) meters misreading that occurs frequently, the State Electricity Company (PLN) has to do power cut in the customer's houses when they are late to pay the electricity bills for more than three months, etc. The effort of the State Electricity Company (PLN) to overcome those problems is creating the prepaid electricity system that can minimize or overcome the problems. Prepaid electricity is the use of electricity where the customers have to pay or purchase the power first (token purchase) when they want to use the electricity. Besides, the program of this prepaid electricity system is applied in order to give satisfaction for the society because the society satisfaction eventually determines the success of the program that is made.

Based on the explanation above the researchers are interested in investigating "The influence of the prepaid electricity program effectiveness on the society satisfaction (A study on the prepaid electricity customers in Lowokwaru District, Malang)".

## **MATERIALS AND METHODS**

**Program effectiveness:** In general, effectiveness emphasizes and shows the progress of the result

achievement of the target that has been decided formerly by an organization. Miller stated that effectiveness be defined as the degree to which a social system achieve its goals. Effectiveness must be distinguished from efficiency. Efficiency is mainly concerned with goal attainment (Tangkilisan, 2005).

Effectiveness basically shows the achievement degree. Effectiveness is frequently or always associated with the definition of efficiency whereas there is a difference between them. Effectiveness emphasizes on the result that is achieved while efficiency tends to see the way how to achieve the result by comparing the input and the output (Siagian, 2001).

According to Siagian (2001) effectiveness is the use of resources, facilities and infrastructures in a certain amount that is intentionally set beforehand in order to produce some amount of properties or services of the activities. Effectiveness shows the success from the point of view whether the goals that have been set are achieved or not. The closer the activities result to the goals the higher the effectiveness is. Effectiveness is related to the implementation of all main tasks, goals achievement, punctuality and active participation from all members. Effectiveness is the relation between the goals and the results that have been set and it also shows the compatibility degree between the goals that have been set and the results that are achieved.

Thus, from that definition, it can be concluded that effectiveness is an act to reach a goal or target that has been set formerly. If a program can give a result that is compatible with the goal that has been set it means that the program is an effective one. To measure effectiveness it needs an indicator which is used later as a measurement reference. As stated by Sutrisno (2017) it includes as follows:

- Program comprehension
- Precise target
- Punctuality
- Goals achievement
- Real change

**Society satisfaction:** Society satisfaction is an important factor and it determines the success of a business firm because the society is the consumers of the products. It is supported by the statement by Hoffinah and Baeson that said that without customers the service firm has no reason to exist (Mote, 2008). Therefore, a business firm has to be able to fulfill the society needs from time to time based on the development, so that, they can give satisfaction to the society and eventually there will be more society that uses those products.

**Table 1: Variables and indicators research**

Variables/Indicators	Items
<b>Effectiveness</b>	
Program comprehension	Information sources/prepaid electricity program socialization Socialization from the State Electricity Company (PLN) party Respondent's comprehension after getting information about the prepaid electricity program
Goals achievement	The use of electricity power (kWh) is controllable Easy to optimize the electricity consumption Overcome the postpaid electricity problems
Real change	The comfort level of the society The use of electricity is compatible with the budget
<b>Society satisfaction</b>	
Service procedures	Service SOP
Requirements	Terms of service requirements
Finishing time	Service finishing time
Service fee	Service fee transparency
Service product is compatible with the provision	Service product
Implementer competency	Service provider capacity
Implementer behavior	Service provider ethics
Service declaration	Service appointment
Complaint handling	Service suggestions and criticisms
Researchers processing result (2016)	

The measurement of the society satisfaction is an important element in the process of public service where the final purpose that is going to be reached is providing a better more efficient and more effective service based on the society needs. A service can be considered as a satisfaction when the service is able to fulfill the needs and the expectations of the service users. The society satisfaction can also be the reference for the success of a program implementation that is applied on a public service institution.

There are 9 indicators based on Permenpan-RB (Regulation of the Minister of State Apparatus Utilization-Bureaucracy Reformation) No. 16, 2014 about society satisfaction survey on the implementation of public service that can be used to measure whether the society is satisfied with the service or not. Those indicators are:

- Requirements
- Procedures
- Service timing
- Fee/fare
- Service product specification
- Implementer competency
- Implementer behavior
- Service declaration
- Complaint, suggestion and input handling

**Hypothesis:**

- $H_0$ : effectiveness does not give influence on the society satisfaction significantly (Table 1)
- $H_1$ : effectiveness gives influence on the society satisfaction significantly

**Research methods:** This research uses explanatory type of research with the quantitative approach. Masri and

Sofian (2012) stated “Explanatory is used to explain the causal relation among the variables through a hypothesis test”. Furthermore, the objective of an explanatory research is to explain the causal relation and the test on the hypothesis. This research is located in Malang city with a consideration that Malang is an area that applies the prepaid electricity system successfully.

The variable of operational definition in this research is as follows: independent variable (X1) while the dependent variable (Y) is the society satisfaction. The operational definition in this research is as follows. The measurement scale in this research uses likert scale. Likert scale is used to manage behavior, opinion and perception of a person or a group of people about a social phenomenon (Sugiyono, 2012). In this research, the researchers give some alternative answers with the interval 1-4 (Very disagree (1), disagree (2), agree (3) and very agree (4)).

This research population is entirely prepaid electricity users in Malang. The research sampling uses non probability sampling technique. It is a sampling technique that does not give the same chance or opportunity to every element or population member and it is done in the way of incidental sampling which means the sampling is based on a chance. Any person who accidentally meets the researcher can be used as a sample if they are considered suitable as a data source (Sugiyono, 2012). The data collection technique in this research is questioner and observation. The research instruments are the questionnaires before the validity and the reliability are tested.

In the validity test, the research result is valid when there is a similarity between the collected data with the real data that occurs in the researched objects. Whether an instrument item is considered as valid or not can be seen by comparing the correlation index of prepaid

**Table 2: Validity test**

Variables	r-count	r-table	Explanation
X1.1.1	0.549	0.2512	Valid
X1.1.2	0.426	0.2512	Valid
X1.1.3	0.524	0.2512	Valid
X1.2.1	0.687	0.2512	Valid
X1.2.2	0.524	0.2512	Valid
X1.2.3	0.679	0.2512	Valid
X1.3.1	0.425	0.2512	Valid
X1.3.2	0.478	0.2512	Valid
Y1.1	0.518	0.2512	Valid
Y1.2	0.460	0.2512	Valid
Y1.3	0.457	0.2512	Valid
Y1.4	0.549	0.2512	Valid
Y1.5	0.262	0.2512	Valid
Y1.6	0.333	0.2512	Valid
Y1.7	0.544	0.2512	Valid
Y1.8	0.348	0.2512	Valid
Y1.9	0.593	0.2512	Valid

**Table 3: Realibility values**

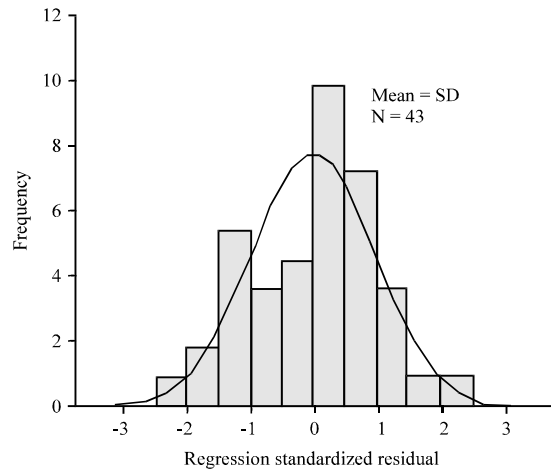
Alpha	No. of item	Explanation
0.778	14	Reliable

Researchers processing result (2016)

electricity program with the significance level 5%. Table 2 is the validity test where the data of corrected item total correlation and “r”-table are obtained from the process of SPSS 21. A statement is considered valid if r count >r-table otherwise if r table <r-count it is considered that the item used is not valid.

In the reliability test a research result is reliable when there is a data similarity at different time. One of the ways to seek the reliability for all items can be done by using the alpha Cronbach coefficient. Based on the reliability at Table 3 it can be concluded that the research instrument that is questionnaires is considered reliable. It can be seen from the alpha number that is >0.6.

In the data analysis technique, the researchers use classic assumption including: first, normality test which is used to test the residual variable probability has normal distribution in the regression model because F-test and t-test assumes that the residual grade follows the normal distribution, consequently, if it is violated the statistical test becomes invalid for small amount samples. Second, the heteroscedasticity test is intended to test the occurrence of residual variance dissimilarity from one observation to another observation in the regression model. If the points spread randomly and are spread well above or below number 0 on Y axis it means heteroscedasticity on the regression model does not occur, so, it is proper to predict the attached variable based on the free variable input. Third, autocorrelation test is aimed to test the correlation between the disturber errors in period t with the disturber errors in period t in the linier regression model (Imam, 2013). The second is the simple regression analysis and the third is hypothesis testing.



**Fig. 1: Histogram dependent variable (Research processing results, 2016)**

**RESULTS AND DISCUSSION**

**Respondents overview:** The respondents in this research are the society of Malang city that uses prepaid electricity. The number of the respondents is 43 peoples by using incidental sampling technique. The respondents are classified based on the gender, districts and the types of electricity use. The respondent’s characteristic based on the gender is dominated by women. There are 28 womens and 15 mens.

The respondent’s characteristic based on the districts are: there are 9 people in Lowokwaru District, 9 peoples in Blimbing District, 9 peoples in Klojen District, 8 peoples in Sukun District and 8 peoples in Kedungkandang District. And the respondent’s characteristic based on the type of electricity use is dominated by the use for household of 37 peoples and for business of 7 peoples.

**Respondents answers distribution overview (Table 4)**

**Classic assumption**

**Normality test:** Normality test is meant to know whether the researched residual distributes normally or not. The method used for the normality is Kolmograv-Smirnov test. Based on the normality curve on the histogram above it can be concluded that the program effectiveness has a normal distribution. It is shown by the curve shape that is similar with a bell (Fig. 1).

Based on Table 5 it can be seen that the significance grade is 0.289 higher than 0.05, so, it can be concluded that the data distributes normally.

**Autocorrelation test:** Autocorrelation test aims to see whether in the linier regression model there is a correlation between one period t with the previous period t-1

Table 4: Respondents answers

Items	Frequency			
	VDA	DA	A	VA
X1.1.2	1	17	25	1
X1.2.1	1	11	22	10
X1.2.2	0	7	25	12
X1.2.3	0	8	27	9
X1.3.1	0	9	32	3
X1.3.2	0	3	29	12
Y1.1	1	7	33	3
Y1.2	0	11	31	2
Y1.3	0	12	29	2
Y1.4	1	17	23	3
Y1.6	0	5	35	4
Y1.7	0	8	30	6
Y1.8	0	4	36	4
Y1.9	4	15	22	3

Researchers processing result (2016)

Table 5: One-sample Kolmogorov-Smirnov test

Variables	Unstandardized residual
N	43.0
Normal; mean	0.000000
Parameters <sup>a,b</sup> ; SD	2.26136607
Most; absolute	0.150
Extreme; positive	0.084
Differences; negative	0.-1.50
Kolmogorov-Smirnov Z	0.983
Asymp. Sig. (2-tailed)	0.289

<sup>a,b</sup>Researchers processing result (2016)

Table 6: Runs test

Variables	Unstandardized residual
Test value <sup>a</sup>	0.39306
Cases <Test value	19.0
Cases >= Test value	24.0
Total cases	43.0
Number of runs	25.0
Z	0.717
Asymp. Sig. (2-tailed)	0.473

<sup>a,b</sup>Researchers processing result (2016)

(previous). If there is a correlation, it means that there is an autocorrelation problem. This autocorrelation test uses runs test. The runs test result shows that the sig grade >0.05 which means zero hypothesis is failed/rejected. Therefore, the data used is random enough, so, there will be no autocorrelation problem (Table 6).

**Heteroscedasticity test:** It is conducted in order to know whether in a regression model, residual variance dissimilarity occurs from one observation to another observation. Based on Fig. 2 scatterplots graphic it can be seen that the points are spread randomly and well above or below the number 0 on Y axis. It can be concluded that heteroscedasticity on the model does not occur, hence, the regression model is properly used to predict the society satisfaction based on the variable input of the program effectiveness.

**Simple regression analysis:** Simple regression analysis is used to count the influence between the free variable

Table 7: Output model summary<sup>b</sup>

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	SE of the estimate
1	0.460 <sup>a</sup>	0.212	0.192	2.28878

Table 8: Mean square, F and Sig

Model	Sum of squares	df	Mean square	F-values	Sig.1
Regression	57.687	1	57.687	11.012	0.002 <sup>b</sup>
Residual	214.779	41	5.239		
Total	272.465	42			

Table 9: Coefficients<sup>a</sup>

Model (1)	Unstandardized coefficients		Standard coefficients	
	B	SE	Beta	t-values Sig.
(Constant)	13.629	2.672		5.102 0.000
X1	0.499	0.150	0.460	3.318 0.002

<sup>a,b</sup>Researchers processing result (2016)

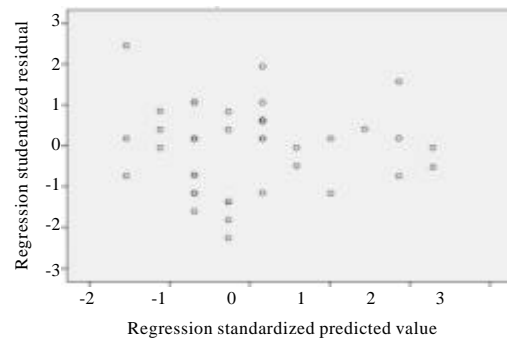


Fig. 2: Scatterplots graphic (Dependant variable Y1)

that is effectiveness (X1) on the attached variable that is society satisfaction (Y). This count is conducted by using SPSS for Windows 21.00. Next, it is obtained a regression model as.

Based on the output above, it can be seen that the correlation/relation grade (R) is 0.460 and the coefficient determination (R<sup>2</sup>) is 0.212 which means that the influence of the free variable on the attached variable is 2.12% (Table 7).

Based on the output result, it is known that the influence of the free variable (X) on the attached variable (Y) is seen that F count = 11.012 with the significance/probability level is 0.002<0.05, so that, the regression can be used to predict the variable of effectiveness (Table 8).

On the coefficient Table 9, the constanta (a) is 13.629 while the trust grade is (b) 0.499. So that, the regression equation can be formulated as Y = a+bx or 13.629+0.499X. Based on the output above, it can be explained as follows: the society satisfaction will increase as much as 0.499 if the prepaid electricity program is effective.

Based on the interpretation above, it can be concluded that the effectiveness of the prepaid electricity

Table 10: The of t test

Model (1)	t-table	t-count	Sig.
Constant		5.102	0.000
X1	1.685	3.318	0.002

Researchers processing result (2016)

program has a positive influence on the society satisfaction. From the simple linier regression test above, it can be concluded that if a program is effective it will give satisfaction toward the society. As what has been explained in the previous chapter that the effectiveness/success can be seen from the society as the product consumers. When the society is satisfied, the program will be considered successful/effective.

#### Hypothesis test:

- If t count <t-table, so,  $H_0$  is accepted and  $H_1$  is rejected
- If t count >t-table, so,  $H_0$  is rejected and  $H_1$  is accepted
- If grade sig >real level (0.05) so,  $H_0$  is accepted and  $H_1$  is rejected
- If grade sig <real level (0.05) so,  $H_0$  is rejected and  $H_1$  is accepted

Based on the result above it shows that the grade of t-count (effectiveness) is 3.328 higher than the t-table 1.685 with significance level is 0.002 smaller than the real level (0.05). Based on those two comparisons,  $H_0$  is rejected and  $H_1$  is accepted which means “The effectiveness of prepaid electricity program influences significantly on the society satisfaction (Y)”.

As what has been explained in the theory chapter that when an organization or a corporation can reach the goals that have been set formerly it will increase the service quality. A high quality service will give satisfaction toward the society as the service receiver. Therefore, in this case the prepaid electricity program has been effective. It can be seen from the tests that have been conducted that this program effectiveness can give satisfaction toward the society (Table 10).

### CONCLUSION

This research is conducted to know the variable that has influence on the society satisfaction. The free variable that is used in this research is the effectiveness (X1) while the attached variable is the society satisfaction (Y). Based on the count of simple linier regression analysis it can be known that. The influence of the free variable on the attached variable is conducted with t-test. The result of the simple linier regression analysis shows that t count is 3.318 while the t-table is 1.686, so,  $H_0$  is rejected and  $H_1$  is accepted. Thus, it can be concluded that the test on the hypothesis states that “The program effectiveness influences significantly on the society satisfaction”.

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