

INNOVATION ADOPTION PROCESS IN CREATING CUSTOMER VALUE PT.PLN

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ABSTRACT

The consumer adoption process is a process in which consumers assimilate information, use it, and verify what has been done. The many innovations implemented in the PT. PLN company will certainly have an impact that has value in front of customers. In carrying out the process of consumer adoption of schemes or innovations imposed by PT. PLN. With the innovation carried out by PLN, namely the use of the PLN mobile application, will there be a problem between the previous habit becoming a new habit, of course PLN customers must get used to adapting to this habit. This research certainly wants knowledge between the researchers' assumptions namely product quality, product design and product benefits in the adoption process of the PLN influencing customer assessment. Correlational Research Methods where researchers change qualitative data into quantitative data by using primary data and using the slovin method as a sample data selection. The analysis technique using structural equation modeling rather obtains accurate hypothesis results and uses validity and reliability tests using variance extract and construct reliability. As well as this research confirms the model suitability test by using the Goodness of fit test and finally the researcher gets the results of the regression weight for the results of determining the hypothesis. The results obtained by the researchers in this study were that product quality had a significant and positive effect on customer ratings, while product design had no significant relationship with customer ratings and product benefits/usages also had no significant relationship at all with PLN product ratings.

Keywords: Product Quality, Product Design and Product Benefits, Product Attributes and Customer Value

ABSTRAK

Proses adopsi konsumen adalah Proses dimana konsumen mengasimilasi informasi, menggunakannya, dan memverifikasi apa yang telah dilakukan banyaknya inovasi yang diterapkan dalam perusahaan PT.PLN tentunya akan membawa dampak yang mempunyai nilai di hadapan pelanggan. Dalam pelaksanaannya proses adopsi konsumen terhadap skema atau inovasi yang diberlakukan oleh PT.PLN. Dengan adanya penginovasian yang dilakukan PLN ini yakni penggunaan aplikasi PLN mobile apakah akan menjadi suatu permasalahan antara kebiasaan sebelumnya menjadi kebiasaan baru yang tentunya pelanggan PLN harus terbiasa menyesuaikan diri terhadap kebiasaan tersebut. Penelitian ini tentunya mengingkan pengetahuan antara dugaan peneliti yakni Kualitas Produk, Desain Produk dan Manfaat Produk tersebut pada adoption proses PLN berpengaruh terhadap penilaian pelanggan. Metode Penelitian Korelasional dimana peneliti merubah data kualitatif menjadi data kuantitatif dengan penggunaan data primer dan menggunakan metode slovin sebagai pemilihan data sampel. Teknik analisa menggunakan structural equation modelling agak memperoleh hasil hipotesis yang akurat serta menggunakan uji validitas dan reabilitas menggunakan variance extract dan construct reliability. Serta penelitian ini memastikan uji kesesuaian model dengan menggunakan uji Goodness of fit dan akhirnya peneliti mendapatkan hasil regression weight untuk hasil penentuan hipotesis. Hasil yang didapatkan oleh peneliti dalam penelitian ini bahwa kualitas produk berpengaruh signifikan dan positif terhadap penilaian pelanggan sedangkan design produk tidak mempunyai hubungan signifikan dengan penilaian pelanggan dan manfaat/kegunaan produk juga sama sekali tidak mempunyai hubungan signifikan terhadap penilaian produk PLN.

Kata Kunci: Kualitas Produk, Design Produk dan Manfaat Produk, Atribut Produk dan Nilai Pelanggan

INTRODUCTION

One of the State-Owned Enterprises (BUMN) which plays an important role in providing

public services related to meeting the electricity needs of the community is PT. PLN (Persero). Electrical energy is a very

important requirement for human survival. Without electricity, humans cannot carry out their activities perfectly. Therefore, PT. PLN

(Persero) focuses on providing public services related to meeting electricity needs in each city (1).

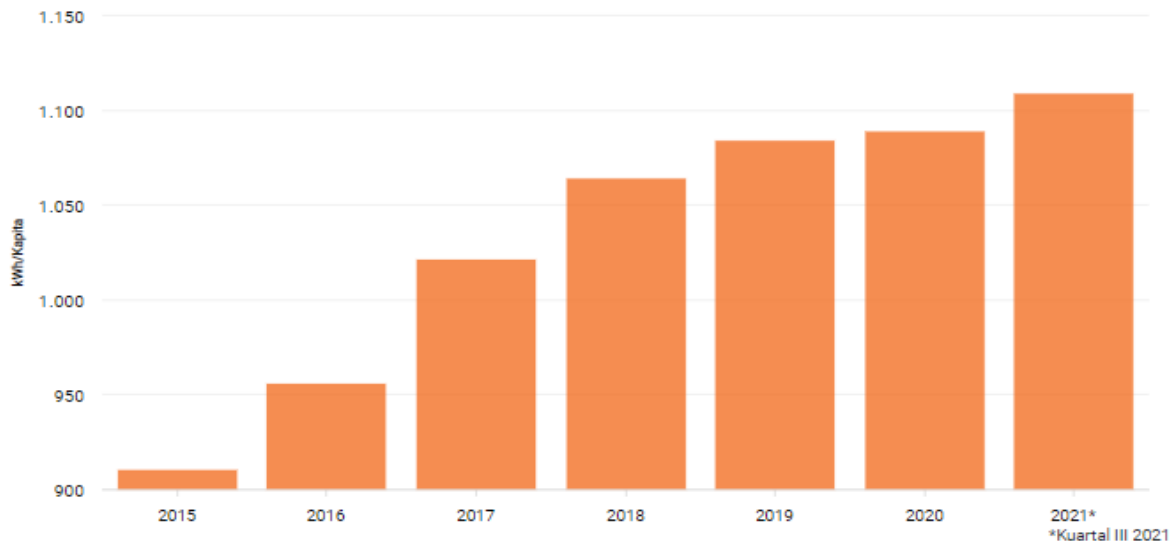


Figure 1: Indonesian Electricity Consumption (2015-2021*)

Source: (2)

Indonesia's current electricity consumption is estimated to reach 1,109 kilowatt/hour (kWh) per capita in the third quarter of 2021. This is 92.2% of the 1,203 kWh per capita target set for 2021, according to the Ministry of Energy

and Natural Resources (ESDM). Since 2015, electricity consumption per capita in Indonesia has continued to increase. The highest growth rate was 6.8% in 2017 and the lowest growth rate in 2020 was 0.4% (3).

Table 1: KWh Increase Per Year

No	Years	Value /KWh/Capita
1	2015	910
2	2016	956
3	2017	1.021
4	2018	1.064
5	2019	1.084
6	2020	1.089
7	2021*	1.109

Source : (2)

The government has developed a number of strategies to create new demand by encouraging the use of electric vehicles and electric stoves, according to the Department of Energy and Natural Resources' electricity director. The number of SPKLU reached 187 units spread across 155 sites throughout Indonesia. Regarding the number of customers of 4,444 customers, the Department of Energy and Mineral Resources found that the number of electricity customers exceeded the target of 81,229 million customers in September 2021. This number is equivalent to 102.6 of our 2021 target of 79,187,000 subscribers, this means an increase in power consumption (2).

However, the current development of the electricity system is no longer able to keep up with the increasing demand for power. This causes an electricity crisis and the government needs to step in to solve this problem, it is the government that can make it happen (4).

As a state-owned enterprise, BUMN will become one of the country's foreign exchange-generating assets and public service institutions that play an important role in meeting the needs of its citizens. With the reform of SOEs, the government is expected to strengthen the role of SOEs as part of national development and make public services safer (5).

PT. PLN as the basis for providing electrical energy in Indonesia from January 25, 2017 to February 7, 2018 has received various awards

both nationally and internationally with various types of awards, ranging from the Award from the Ministry of State-Owned Enterprises (BUMN), PR Indonesia Award 2017, Indonesia Green Awards (IGA) 2017 (The La Tofi School of CSR), Asia Responsible Entrepreneurship Award (AREA) 2017 (Enterprise Asia) in Bangkok, Thailand, Occupational Safety and Health (K3) Award 2017 (Ministry of Manpower), Award from Presidential Working Unit for the Development of Pancasila Ideology (UKP-PIP), Social Business Innovation Award 2017 (Warta Ekonomi), Jamboree PR Indonesia (PR Indonesia Magazine), Nusantara CSR Awards 2017 (The La Tofi School of CSR), Indonesia Climate Change Forum & Expo 2017, Indonesia Business Development Expo 2017 (Ministry of SOEs), Asian Power Awards 2017 in Bangkok, Thailand, The 3rd ASEAN Coal Awards (ASEAN Center for Energy), Indonesia Corporate Public Relations Excellence Award 2017 (Warta Ekonomi), Nusantara Film Festival Award (FFN), Indonesia GCG Award –III- 2017 (IGCGA-II-2017), SOE Financial Transformation and Innovation Award 2017 (Ministry of BUMN), Media Humas Award 2017 (Public Relations Coordination Agency), Indonesian CSR Award 2017 (National Standardization Agency), Indonesia's Appreciation for BUMN 2017 (Warta Ekonomi), State Organizers Wealth Report Award (Corruption Eradication Commission), PLN Generator Wins 1 Gold

Proper And 15 Green Proper In 2017 (Ministry of Environment and Forestry), Indonesia Trusted Companies Good Corporate Governance Award 2017 (IICG and SWA Magazine), Public Information Disclosure Award (PIDA) (Central Information Commission), National Registration System for Climate Change Control (Ministry of Environment Life and Forestry), SMK3 & K3 (Ministry of Manpower) Field Awards and finally The 7th SPS Indonesia Inhouse Magazine Award (InMA) 2018 (6). Of course, all these awards are based on innovation implemented by PT. PLN in all kinds aspects of its business, so it is suspected that there will be very significant changes, especially for its customers (7).

With changes or innovations or better known as the transformation of services carried out by PT. PLN to customers, it will certainly affect the company's performance and even the reputation of the company will increase. However, the researcher's question is whether the many innovations implemented in the PT. PLN company will also have a good impact in the eyes of consumers, meaning that it has value in front of customers (8).

In practice, it means that there is a change in a process of consumer adoption of the scheme or innovation imposed by PT. PLN. (9) One of the innovations made by PLN is the use of the PLN mobile application, for services such as: New Connections, Changes in Power/Migration, Temporary Connections, Postpaid, Information (Customer Application

Status, Confirmation Code Entry, Bank Info) (6). So that there is a change in the administrative scheme that PLN does to customers from the conventional initial method to the digital method. In conclusion, the explanation above shows that there is a gap between previous habits and new habits, which of course PLN customers must get used to adapting to these habits, so that researchers identify the process of change in the customer's view. So the researcher intends to examine whether there is a positive change in the value of the customer towards the innovations carried out by PT. PLN (10).

METHOD

Primary data is research data obtained directly from the original source by using a developed questionnaire. The questionnaire used in this study consisted of two main parts. The first part discusses the social profile and identification of respondents and contains respondent data related to the identity of respondents. The highest social conditions such as age, occupation and education. The second part is based on the results and discussion, respondents' statements, in the form of answers according to field information obtained according to the distribution of field information to customers. The questions on the field information include the variables of Product Attributes, Product Benefits, Customer Ratings.

Population and Research Sample

The population in this study are PLN customers. Furthermore, the researcher uses

purposive sampling (Judgmental), which is a non-probability sample that conforms to certain criteria or characteristics.

Table 2: Variable Operation

Variable	Dimension	Indicator
Product attribute	X1 = Product quality X2 = Product and Packaging Design	X1.1. Performance
		X1.2. Durability Conformance to specifications
		X1.3. Features
		X1.4. Reliability
		X1.5. Aesthetics
		X1.6. Quality
		X1.7. Serviceability
Product Use	X3 = Benefits	X2.1. Self service
		X2.2. Consumer offluence.
		X2.3. Company and brand image
		X2.4. Inovational opportunity
Customer Rating	Y = Quality Value is proportional to Price	X3.1. Work more quickly
		X3.2. Makes job easier
		X3.3. Job performance
		X3.4. Increase productivity
Customer Rating	Y = Quality Value is proportional to Price	Y1.1. The value of the sacrifice compared to the money spent
		Y1.2. Value Quality and price with similar products

Source : (9)

Analysis Techniques

The primary data that has been collected which is qualitative in nature will be converted to quantitative, then tested for validity and reliability and then analyzed using Structural Equation Modeling (SEM) analysis techniques.

Data Analysis

Validity and Reliability Test

To test the validity and reliability of the data in the SEM analysis used Variace Extract and Construct Reliability. The results of the calculation are as follows:

Table 3: Construct Reliability & Variance Extrated

Variable	Indicator	Standar Loading (Loading Factor)	Standard Loading ²	Measuremen Error (1-Std Loading ²)	Consruct Reliability	Variace Extracted
Product quality	X1.1	0.744	0.554	0.446	0.918	0.590

Variable	Indicator	Standar Loading (Loading Factor)	Standard Loading ²	Measurement Error (1-Std Loading ²)	Construct Reliability	Variance Extracted
	X1.2	0.799	0.638	0.362	0.888	0.666
	X1.3	0.776	0.602	0.398		
	X1.4	0.444	0.197	0.803		
	X1.5	0.774	0.599	0.401		
	X1.6	0.846	0.716	0.284		
	X1.7	0.848	0.719	0.281		
	X1.8	0.833	0.694	0.306		
	Σ	6.064	4.719	3.281		
	Σ ²	36.772				
Design Produk	X2.1	0.851	0.724	0.276		
	X2.2	0.800	0.640	0.360		
	X2.3	0.861	0.741	0.259		
	X2.4	0.748	0.560	0.440		
	Σ	3.260	2.665	1.335		
	Σ ²	10.628				
Manfaat Produk	X3.1	0.845	0.714	0.286	0.927	0.761
	X3.2	0.928	0.861	0.139		
	X3.3	0.917	0.841	0.159		
	X3.4	0.792	0.627	0.373		
	Σ	3.482	3.043	0.957		
	Σ ²	12.124				

Variable	Indicator	Standar Loading (Loading Factor)	Standard Loading ²	Measurement Error (1-Std Loading ²)	Construct Reliability	Variance Extracted
Penilaian Pelanggan	Y1.1	0.759	0.576	0.424	0.755	0.606
	Y1.2	0.798	0.637	0.363		
	Σ	1.557	1.213	0.787		
	Σ^2	2.424				

Source: Processed Data

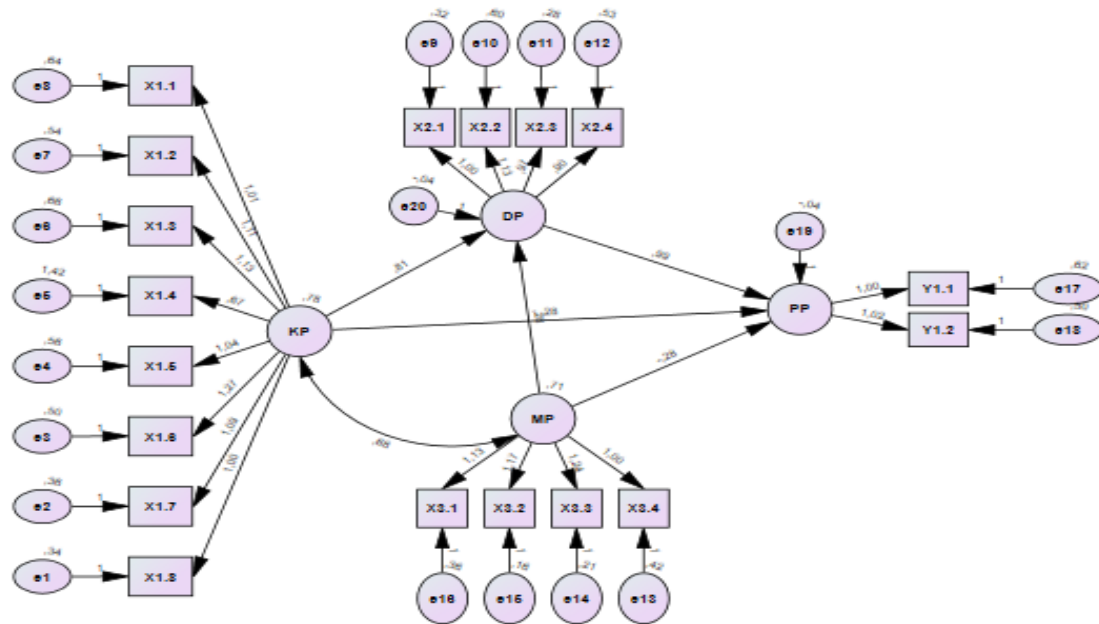
The results of the calculation of Variance Extract and Construct Reliability for each research variable indicate that the six variables studied have a reliability value of 0.7 and variance extracted 0.5 so it can be concluded that these variables meet the criteria of validity and reliability.

RESULTS AND DISCUSSION

Full Model Structural Equation Modeling (SEM) Analysis

Before Revision

Analysis of the results of data processing at the full stage of the SEM model was carried out by conducting conformity tests and statistical tests. The results of data processing for the full SEM model analysis are shown in Figure 2.



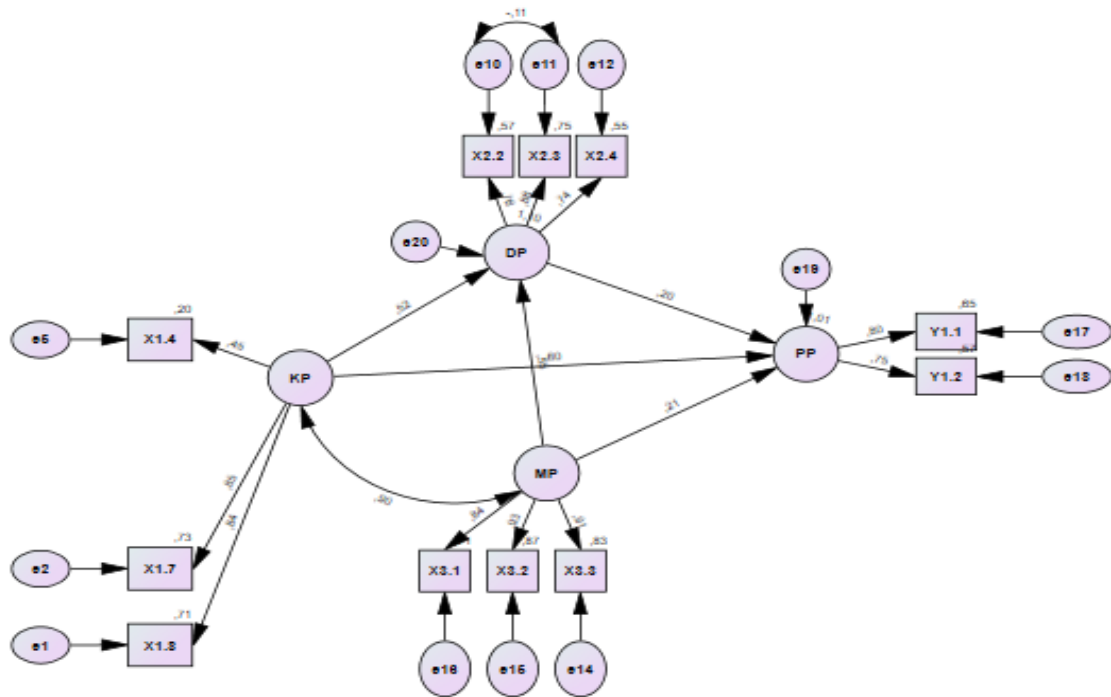
UJI MODEL PENGUKURAN
Unstandardized estimates
Chi-square = 294,708; df = 129; p = ,000; Cmin/df = 2,285
;RMSEA = ,114; RMR = ,074 ;AGFI = ,658; GFI = ,742; CFI = ,904; TLI = ,886

Figure 2: Full Model Analyst

After Revision

The results of data processing at the full stage of the SEM model were carried out by conducting conformity tests and statistical tests. The results of data processing for the full

analysis of the SEM model, the researchers think are not suitable in the discovery of the model, so it is necessary to improve the model and the results are as shown below:



UJI MODEL PENGUKURAN
Standardized estimates
Chi-square = 47,524; df = 37; p = ,115; Cmin/df = 1,284
;RMSEA = ,054; RMR = ,049 ;AGFI = ,856; GFI = ,919; CFI = ,988; TLI = ,983

Figure 3: Full Model Revision Analyst

Test the suitability of the Model Goodness of Fit Test

The model suitability indices used are the same as in the confirmatory factor analysis.

SEM model testing is intended to see the suitability of the model. The results of the processing carried out are presented in Table 4.

Table 4: Conformity test Model-Goodness of Fit Test

Statistic test	Before Revision		
	Mark	Test results	Criteria
Chi Square	47.524		Smaller
Degree of Freedom	37		
p-value	0.115	Fit	> 0.05
Cmin/DF	1.284	Fit	< 2.00
RMSEA	0.053	Fit	< 0.08
Goodness of Fit Index (GFI)	0.919	Fit	> 0.90
Adjusted Goodness of Fit (AGFI)	0.856	Unwell	> 0.90

Statistic test	Before Revision		
	Mark	Test results	Criteria
<i>Comparative Fit Index (CFI)</i>	0.988	Fit	> 0.90
<i>Tucker Lewis Index (TLI)</i>	0.983	Fit	> 0.90

Source: Processed

From the results of the Goodness of Fit test above, the majority of the GOF test scores meet the criteria. However, there is one criterion that does not fit, namely AGFI where the resulting value is < 0.90. According to Kusnendi, if the majority of the GOF criteria meet the Fit requirements, the model is considered to be suitable. So the revised model is used.

SEM Assumptions

Sample Size

The sample size that must be met is 100 and then uses a comparison of observations for each parameter estimate. In this research model there are. Based on PLN sources, PLN customers in West Java have around

15,450,000 customers. So that the population set in this study is $N = 15,450,000$, and the sample is taken with a determination of = 10%, then the researcher uses the Slovin formula to get the expected sample value, as follows:

$$n = \frac{N}{1+N(e)^2} \dots \dots \dots [1]$$

$$n = \frac{15.450.000}{1+15.450.000(10\%)^2}$$

$$n = 100$$

Normality Evaluation

The critical value set by the researcher is based on a significance level of 10%, to evaluate normality the researcher uses Kormogorov-Smirnov and Shapiro-Wilk, the results of the calculation are as follows:

Table 5: Normality Test

Var	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
X1.4	.164	100	.000	.899	100	.000
X1.7	.289	100	.000	.859	100	.000
X1.8	.207	100	.000	.900	100	.000
X2.2	.236	100	.000	.831	100	.000
X2.3	.216	100	.000	.892	100	.000
X2.4	.229	100	.000	.901	100	.000
X3.1	.234	100	.000	.893	100	.000
X3.2	.224	100	.000	.883	100	.000
X3.3	.223	100	.000	.894	100	.000
Y1.1	.212	100	.000	.893	100	.000
Y1.2	.206	100	.000	.886	100	.000

a. Lilliefors Significance Correction

Source: Data in Process

The results of the calculation of both Kormogorov-Smirnov and Shapiro-Wilk

produce a value of > 0.10 so that the data collected can be said to be normal.

Hypothesis Test

Table 6: Causality Hypothesis Test Regression Weight

			Estimate	S.E.	C.R.	P	Label
PP	<---	MP	,212	,316	,672	,502	par_8
PP	<---	KP	,659	,261	2,529	,011	par_9
PP	<---	DP	,198	,272	,730	,465	par_10
DP	<---	MP	,566	,161	3,502	***	par_12
DP	<---	KP	,574	,180	3,186	,001	par_13

Hypothesis Testing 1

Hypothesis 1 states that there is a significant positive relationship between product quality and customer value, where Prob. causality is 0.011 0.10 so that this hypothesis can be accepted, because the conceptual model is based on a strong theory in this study. This can be formed because of the interesting innovation features, the impression of the quality of service in the form of complete information and the speed/convenience provided by the innovations carried out by PLN. The existence of product quality in a product will shape people's perceptions, where different product quality in two products will cause different perceptions in the eyes of consumers. Two products have the same function in the eyes of producers, not necessarily the same in the eyes of consumers. Consumers will feel more satisfied with products that have certain product qualities that they consider more valuable. Thus,

product quality significantly affects customer value.

Hypothesis Testing 2

Hypothesis 2 states that there is an insignificant and positive relationship between product design and customer value, where Prob. causality is 0.465 0.10 so that this hypothesis cannot be accepted, because the conceptual model is based on a theory that is less strong and accurate. So that the product design on a product will not shape people's perceptions, before the product design can reflect the benefits and quality of the product. For example, two products have different functions in the eyes of producers, not necessarily different according to consumers' views. Consumers will not feel more satisfied with a product that has a product design that they deem to be of no value. Thus, product design does not significantly affect customer value.

Hypothesis Testing 3

Mention the insignificant and positive relationship between the usefulness or benefits of the product to customer value, where the causal probability is 0.502 0.10 so that this hypothesis cannot be accepted, because perhaps the conceptual model is not based on a strong theory in this study. The usefulness/benefit of a product/service refers to the ability of the product/service to meet consumer needs. Basically, the use/benefit of a product must reflect the benefits of the product, in accordance with what is expected by consumers. That high usability/benefit is one of the important factors to create high customer value. In other words, a high perception of product usefulness/benefit in the eyes of consumers is an indication of a high customer assessment of the product. Because the usability/benefit of the product is not one of the determinants of customer value, the high usability of the product will not directly result in high customer value.

CONCLUSION

The results of this study prove that the quality of the product empirically has a significant and positive effect on customer ratings. This shows the importance of manufacturers to improve the quality of their products by daring to innovate so that the value of customers increases as well. Empirically the product design cannot prove a significant and positive influence on this PLN company. Maybe customers don't pay too much attention to the designs formed by PLN which have the main goal of the company. Where the main goal is

to become an icon of electricity service providers in Indonesia, but in fact there is no similar business in the field. This is because PLN has a monopoly on the industry in its field so it has no value in the eyes of customers. Finally, empirically, the benefits of PLN's products cannot be proven to have a significant and positive effect. Researchers suspect this is because the benefits are general, and must/absolutely be used for daily needs, where the need for electricity feels like there is no more benefit. In addition, researchers suspect that there is a high value/price for the purchase of electricity, so that the benefits seem to be forced because it is based on needs.

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