

Design of The Proposed Improvement to OVO's Electronic Money Payment Services in Grab Online Transportation Services

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Abstract. *The advancement of science and technology in the world has brought many influences to the changes in people's behaviour and habits, one of that is the technology payment system adopted as an electronic payment system. As an electronic payment instrument, OVO cooperates with one of the online-based transportation services, Grab. However, the success of a company can be seen from the quality of service in meeting the satisfaction of the community or customers. The success of the company in providing quality services can be determined by the Service Quality (Servqual) approach, that is a method used to measure service quality from the attributes of each dimension so that a gap value will be obtained that is the difference between consumers' perceptions of services that have been received in the hope that will be accepted. The objective to be achieved is to propose a design in the form of alternative solutions for the priority of improving the quality of electronic money OVO services in Grab applications. Data were collected through a questionnaire using non-probability sampling techniques with a total sample of 140 respondents. The study found the main problems, namely in the dimensions of compensation, responsiveness, and Privacy/Security.*

Keywords: *service quality, mobile payment, servqual, SEM PLS*

I. INTRODUCTION

According to Boer and De Boer (2010) in Mawarrini, et al. (2017), payment (mobile payment) is also interpreted as a payment (transfer of funds in exchange for goods and services) in which the mobile device is used as a medium of payment initiation. Meanwhile, according to Ondrus and Pigneur (2007) and (Alliance, 2008), payment (mobile payment) is defined as payments made by at least one mobile device. Currently, Indonesia is developing a payment instrument known as electronic money. The existence of electronic money is expected to promote the establishment of a cashless society or community that can run the economy without having to use physical cash or

cash (whether paper or metal) to perform various transactions or payments.

OVO is one of the most popular brands of mobile payment or electronic money. Quoted from the OVO official website, OVO is a smart application that makes it easy to transact through OVO Cash and collect points in many places through OVO Points. Many transactions can be done through OVO without the need to carry some money in cash, just by using a smartphone can already do a variety of transactions. Transactions that can be done include paying for online transportation needs, topping up credit, and paying for groceries. Not only that, but OVO also provides various other attractive offers such as special price discounts for customers who use OVO and various other promotions, which later become a special attraction for the public to use OVO (Wiranti, 2018).

As a mobile payment instrument, OVO also cooperates with one of the online-based transportation services, Grab. OVO is familiar to Grab users. Grab users were familiar with GrabPay, but now it has changed to OVO. OVO launches as one of the electronic or non-cash payment features at Grab, since early June 2018. The OVO electronic money feature contained in the Grab application is a non-cash payment

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instrument option that can be used by consumers, in addition to other non-cash payments, namely through debit cards or other digital wallet platforms. Grab joins OVO, to facilitate users in terms of payment or commonly called GrabPay. With this collaboration, both provide a variety of attractive promotions and services offered to attract other consumers to use these services.

However, the success of a company can be seen from the quality of service in meeting the satisfaction of the community or customers. In this case, there are still many report complaints from Grab users about the quality of OVO services at GrabPay. There are reports of customer complaints such as, OVO payment services in the Grab application that cannot be used suddenly, OVO balance that suddenly becomes IDR 0 in the Grab application, slow customer service in responding to service interruption complaints, OVO balance the Grab application disappears during peak hours, the balance does not increase after topping up, the length of time handling customer complaints (Consumer Media, 2018). Similar problems also occur in other electronic money applications such as those that occur in Go-pay, one of which is the constraints on system development that result in the Go-pay balance not increasing (CNN Indonesia, 2018). However, OVO is a relatively new application among electronic money applications, but it has attracted many users.

The problem of service quality is an important part. It needs serious attention for every company to survive in the business environment because service quality will have a direct impact on consumers' perceptions and behaviour, which will then influence purchasing decisions. The company's success in providing quality service can be determined by the Service Quality (Servqual) approach developed by Parasuraman, Berry, and Zeithaml in (Ribeiro, 2019).

Quality measurement with the Servqual method approach is a method used to measure service quality from the attributes of each dimension so that a gap value will be obtained. This is the difference between consumers'

perceptions of services that have been received with expectations of what will be received. In this study, a service quality measurement method with ten dimensions was developed, adapted from various dimensions that are considered important for OVO service quality in Grab applications. By considering three variables, namely E-Servqual, E-Recovery Servqual, and E-Satisfaction.

II. RESEARCH METHOD

The method used to measure service quality in this study is the Servqual Method. Servqual method measures service quality from the attributes of each dimension so that a gap value will be obtained, which is the difference between consumers' perceptions of services that have been received with expectations of what will be received. The measurement of this method is by measuring the quality of service from the attributes of each dimension so that a gap value will be obtained, which is the difference between consumers' perceptions of services received with consumer expectations of services to be received. However, in general, there is no uniformity of boundaries regarding the concept of quality service (Ho and Lee, 2007)

Then to test the correlation between variables using the SEM PLS method. Sholiha and Salamah (2015) explained that Structural Equation Modeling (SEM) is a multivariate analysis method that can be used to describe the simultaneous relationship between linear variables between indicators (indicators) and variables that cannot be measured directly (latent variables). Latent variables are unobserved or unmeasured directly but must be measured through several indicators. Partial Least Square (PLS) is a powerful analysis method due to the lack of dependence on the measurement scale (i.e., measurements that require interval or ratio scales), sample size, and the distribution of residuals. Indicators on PLS can be formed with a reflexive or formative type (Sholiha and Salamah, 2015).

Identification of dimensions and attributes of service quality, especially internet-based services,

is done by mapping the dimensions and attributes of previous research, namely Utami (2017), Singh (2017), and Lorena (2016). The methods that have been developed and used for measuring the quality of internet-based services are understood and mapped into the variables Servqual, E-Servqual, E-Recovery Servqual, and E-Satisfaction. Tangible dimensions, reliability, responsiveness, assurance, empathy, Information Quality, Security, Website Functionality, Customer Relationship, fulfillment, Compensation, Contact, Usefulness, Enjoyment, Past Experience, Decision, Efficiency, Privacy, System Availability, Trust, Complementary & Customer Service, Ease to use, Web design is used as a reference when mapping. The dimensions used for various methods of measuring internet-based service quality are grouped and compared with other dimensions. Then for the attributes that exist in various methods of measuring service quality, each attribute is assessed and included as part of one dimension.

Variables that match the quality of internet-based services, especially OVO electronic money services in the Grab online transportation service sector, namely E-Servqual, E-Recovery Servqual, and E-Satisfaction. These variables are mapped to select dimensions that are considered important in measuring the quality of OVO electronic money services in the Grab application. From these dimensions can be measured from the indicators that have been determined in each dimension to determine attributes based on literature.

There are five dimensions of E-Servqual variables, namely System Availability, Information Quality, Ease of use, Privacy/Security, and Trust dimensions, with 16 attributes/questions. For the E-Recovery Servqual variable, there are two dimensions, namely the Responsiveness dimension and the Compensation dimension with 4 attributes/questions. For the E-Satisfaction Variable, there are 3 dimensions, namely the dimension of Usefulness, Service/Cost features, and Decision with 10 attributes/questions.

The population in this study are users of Grab online transportation service applications and OVO electronic money users in Surakarta.

The sampling method uses non-probability sampling techniques because every element contained in the population does not have the same opportunity or opportunity to be selected as a sample (Siregar, 2013). The number of samples in this study is unknown, so the technique used to determine the sample size is based on the Isac Michel approach, which states the minimum number of samples to be taken is 57 people (Siregar, 2013). Based on this theory, the number of samples used by researchers is 140 respondents.

The questionnaire was made from attributes that had been sorted based on the results of the mapping. Use a Likert scale of 1 - 5 to assess respondents' perceptions and expectations about OVO electronic money services in the Grab application that has been provided. Scale 1 is used to express strongly disagree, scale 2 states disagree, scale 3 states neutral, scale 4 states agree, and scale 5 states strongly agree. Questionnaires are based on the mapping of indicators for each dimension. Dimensions are adjusted to the type of quality of OVO electronic money services in the Grab application. The questionnaire was made in the servqual method model, which is to find out how big is the difference in judgment between expectations (Expectations) and experience (Perceptions) of respondents to the OVO electronic money service on the Grab application. The questionnaire was created using the Google form. Google form is a facility from Google that can be used to do surveys online, is public, and can be accessed free with a Google account.

III. RESULT AND DISCUSSION

Characteristics of Respondents

Characteristics of respondents comprised of gender, age, occupation, length of use of the Grab application, and the number of OVO uses in the Grab application in a week.

Based on the results of 140 respondents, it can be seen from Figure 1 that the percentage of women is greater than men. A total of 93 respondents (66.4%) were women, and 47 respondents (33.6%) were men.

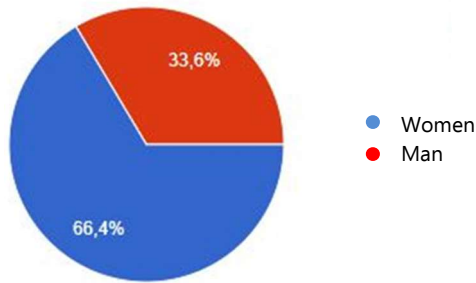


Figure 1. The percentage of respondents by gender

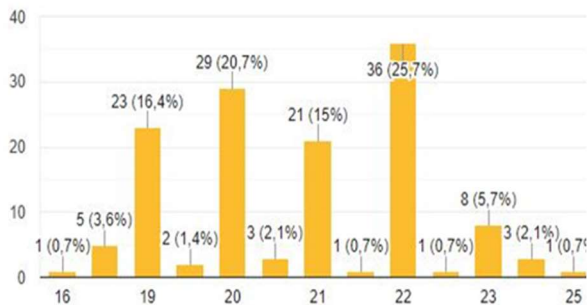


Figure 2. The percentage of respondents by age

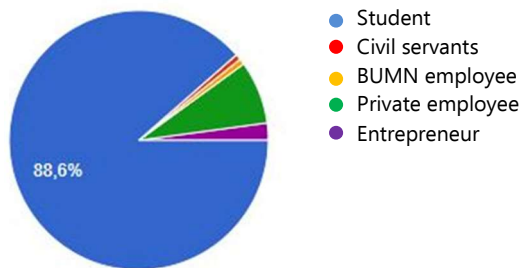


Figure 3. The percentage of respondents by job

Figure 2 shows that the highest percentage is respondents with the age of 22 years as many as 36 people (25.7%). The lowest is respondents with the age of 16 years, 25 years, 26 years, 28 years, 29 years and 30 years, namely 1 person each (0.7%), respondents aged 18 years were 5 people (3.6%), respondents 19 years old were 23 (16.4%), respondents with the age of 20 years were 29 people (20.7%), respondents with the age of 21 were 21 people (15%), respondents with the age of 23 were 8 people (5.7%), respondents with the age of 24 were 3 people (2.1%), respondents aged 25 years were 1 person (0.7%).

Based on the results of 140 respondents, it can be seen from Figure 3 that the most significant percentage are respondents who are still students, as many as 124 people (88.6%) and then respondents with the type of work of Private Employees as many as 11 people (7.9%). Respondents to the kind of civil servant work are 1 person (0.7%), respondents with the type of BUMN work are 1 person (0.7%), and respondents to the kind of entrepreneurial work are 3 people (2.1%).

The period of Grab application usage

Based on the results of 140 respondents, it can be seen from Figure 4 that the most percentage is respondents with the use of the Grab application for more than 1 year, as many as 70 people (50.4%). Respondents with a Grab application use period of more than 3 months are 56 people (40.3%), and respondents with a Grab application use period of more than 1 month are 13 people (9.4%).

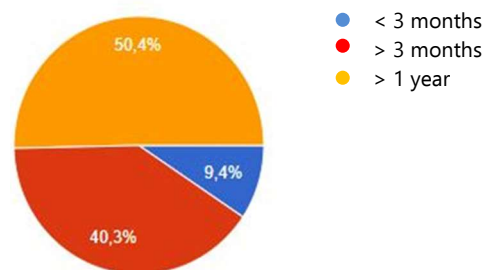


Figure 4. The percentage of respondents based on past usage Grab application

Total use of OVO in the Grab application in a week

Based on the results of 140 respondents, it can be seen from Figure 5 that the highest percentage is respondents with more than 3 times the use of OVO electronic money services in the Grab application, which is 78 people (56.1%). The number of respondents using the OVO electronic money service in Grab applications less than 3 times a week is 61 people (43.9%).

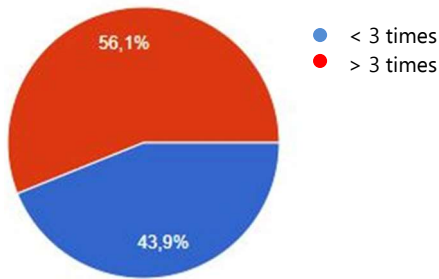


Figure 5. The percentage of respondents based on the amount of use the Grab application OVO in a week

Validity and Reliability Test

Validity and reliability tests are carried out before being distributed to respondents. The validity test of the questionnaire is carried out to guarantee that the questionnaire used can be trusted. In contrast, the reliability test is carried out to ensure that the questionnaire used for research has reliability, so that if it is done anytime. By anyone, the results will be the same. A total of 30 randomly selected samples were asked to fill in the questionnaire. The item

validity test correlates the score of items with a total score of all existing items, while the reliability test was carried out with the Cronbach's Alpha statistical test.

SPSS software helps to analyze the results of validity and reliability. The validity test in this study used a sample of 30 respondents, so the r_{table} was 0.361. In this study, the correlation value of each attribute on quality as a whole is greater than 0.361, so it can be concluded that the instrument is valid.

In the reliability test, a variable is said to be reliable or unreliable, if: α results are more than 0.60 = reliable, α results are less than 0.60 = not reliable (Sugiyono, 2012). The Cronbach Alpha (α) reliability value is 0.982, so it can be said that the questionnaire is reliable (see Table 1).

Table 1. Reliability test results

Reliability Statistics	
Cronbach's Alpha	N of items
0,982	60

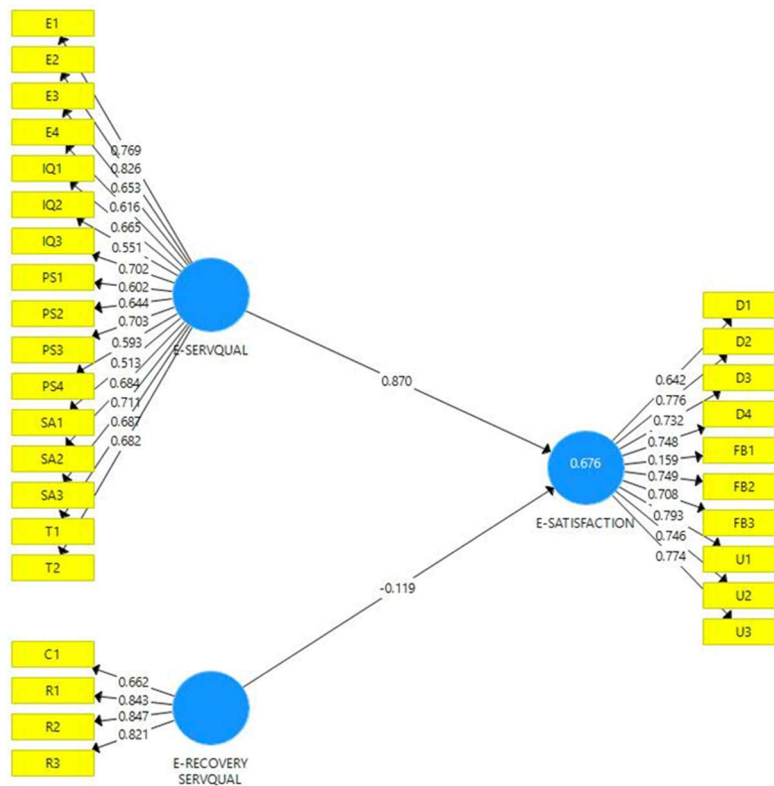


Figure 6. Path model regression analysis results (coefficients)

Testing Variable Correlation

Variable correlation testing is assisted by using the Smart PLS version 3 programs. The running process is carried out with the Running Bootstrapping stage. PLS Bootstrapping functions to display multiple regression tests by displaying the output t and coefficient values, respectively.

The results of the coefficient value output in the regression model after the data running process can be seen in Figure 6.

After the output coefficient value is obtained in the regression analysis model above, the PLS Bootstrapping results are obtained to display the

regression analysis test by displaying the t-test output, as shown in Figure 7.

With a significance level (α) used by 5% (0.05). The results of the correlation analysis test for the significance value (P-Value) can be seen in Table 2.

Regression Equations as follows:

$$Y = 0.676 + -0.119x_1 + -0.870x_2 + e$$

Based on the above table, the results of the hypothesis on the E-Recovery Servqual variable against E-Satisfaction produce a t_{count} value of 2.230 higher than t_{table} 1.966 with a significant value of 0,000 less than 0.05. Thus, the E-Recovery Servqual variable has a significant effect

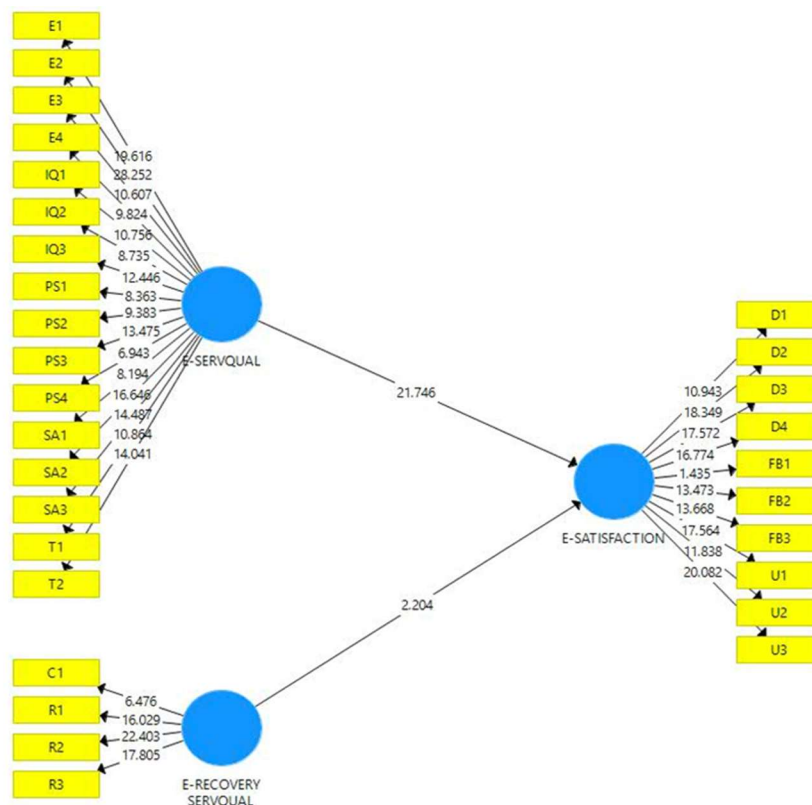


Figure 7. Path model regression analysis results (T-Test)

Table 2. The result of the correlation analysis of variables

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
E-Recovery Servqual -> E-Satisfaction	-0.119	-0.114	0.054	2.230	0.026
E-Servqual -> E-Satisfaction	0.870	0.869	0.042	20.627	0.000

on E-Satisfaction. Then the E-service quality variable against E-Satisfaction produces a t-value of 20.662 higher than t-table 1.966 with a significant value of 0.000 less than 0.05. Thus, the variable E-service quality has a significant effect on E-Satisfaction.

After getting the regression results obtained, R² (coefficient of determination) in this study was 0.671. This means that the independent variable's ability to explain the variance of the dependent variable is 67.1%. So 32.9% of the variance of the dependent variable (customer satisfaction) is defined by other factors. It can be seen in Table 3.

Table 3. The result of the correlation analysis of variables

	R Square	R Square Adjustable
E-Satisfaction	0.676	0.671

Gap Value Calculation

From this table, it can be seen that there are negative gaps in all OVO electronic money service attributes in the Grab application. The average gap in the System Availability dimension is -0.38. The Information Quality dimension is -0.37, the Ease of Use dimension is -0.29, the Trust dimension is -0.32, the Privacy / Security dimension is -0.39, the Compensation dimension is -0.72, the Responsiveness dimension of -0.65, the dimension of Usefulness of -0.11, the dimension of Service / Fee features of -0.27 and, the Decision dimension of -0.15. The negative gap value indicates that respondents are still not fully satisfied with the Grab application's OVO electronic money service.

In the Grab application, respondents' assessments about the expectations (expectations) and perceptions (experience) of OVO electronic money services can be seen in Tables 4 and 5.

Priorities determine Repair

In this study, determining the priority of improvement is based on the highest negative gap value determined using the Pareto Diagram.

Table 4. Data assessing the gap

Dimension	Attribute Symbol	Expectation	Perception	Gap	Ave. Gap
Sistem Availablity	SA1	4.19	3.61	-0.57	
	SA2	4.30	4.08	-0.22	-0.36
	SA3	4.24	3.94	-0.30	
Information Quality	IQ1	4.24	3.89	-0.36	
	IQ2	4.23	3.76	-0.46	-0.35
	IQ3	4.31	4.08	-0.23	
Ease of Use	E1	4.30	4.18	-0.12	
	E2	4.31	4.11	-0.20	
	E3	4.31	4.02	-0.29	-0.28
	E4	4.29	3.76	-0.52	
Trust	T1	4.13	3.74	-0.39	
	T2	4.24	4.00	-0.24	-0.31
Privacy/ Security	PS1	4.14	3.73	-0.41	
	PS2	4.19	3.79	-0.39	
	PS3	4.22	3.96	-0.26	-0.38
	PS4	4.07	3.63	-0.44	
Compensation	C1	4.11	3.41	-0.70	-0.70
Responsive-ness	R1	4.03	3.37	-0.66	
	R2	4.04	3.39	-0.66	-0.63
	R3	3.99	3.40	-0.59	
Usefulness	U1	4.47	4.41	-0.06	
	U2	4.45	4.39	-0.06	-0.11
	U3	4.30	4.09	-0.21	
Feature Services/ Fees	F1	3.74	3.34	-0.39	
	F2	4.46	4.31	-0.16	-0.27
	F3	4.23	3.96	-0.26	
Decision	D1	4.12	3.99	-0.13	
	D2	4.44	4.37	-0.07	
	D3	4.23	4.04	-0.19	-0.14
	D4	4.23	4.08	-0.15	

Table 5. The average gap for each dimension

Dimension	Average	Percentage	Kum
Compensation	-0.70	19%	19%
Responsiveness	0.65	18%	37%
Privacy / Security	-0.39	11%	48%
System Availability information	-0.38	10%	58%
Quality	-0.37	10%	69%
Trust	-0.32	9%	78%
Ease of Use	-0.29	8%	86%
Features Services / Fees	-0.27	8%	93%
decision	-0.15	4%	97%
Usefulness	-0.11	3%	100%
TOTAL	-3.63	100%	

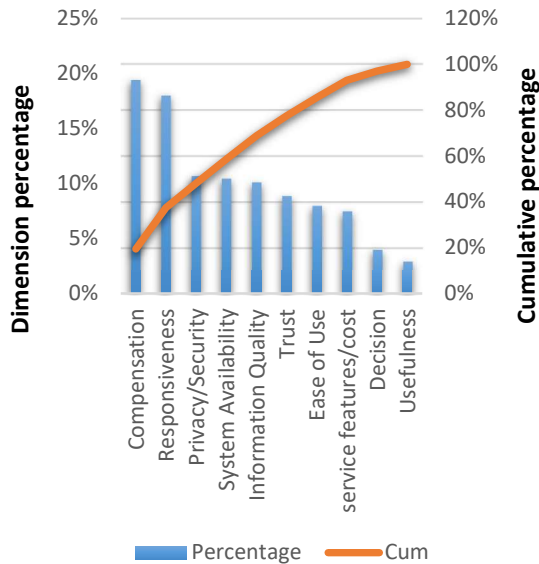


Figure 8. Pareto diagram

The diagram above shows that the 3 highest negative gap values, the most significant negative gap exist in the Compensation dimension which means that the OVO and Grab parties have not provided compensation in the event of a financial loss to the customer, so far there has been no statement from the OVO or Grab that compensation will be given if unexpected losses occur to customers. Followed by the Responsiveness dimension, both OVO and Grab in responding to problems that occur are still slow, such as customer complaints about OVO and Grab Customer Service services that do not provide solutions to problems experienced by customers. The third highest dimension is the Privacy/Security dimension, which means the customer feels that the security of the customer's data is still lacking.

In this study, determining the priority of improvement is based on the highest negative gap value determined using the Pareto Diagram, namely the Compensation dimension. Compensation is a dimension of the E-Recovery Servqual (Recovery Service) variable, which means service recovery. Service recovery occurs when the service or service received is perceived as not by following customer expectations (Zeithamal et al., 2006 in Pratama, 2012). Compensation itself is the primary goal of a

customer complaint. Compensation, in this case, is compensation received by the user in the event of a financial loss, provided by the OVO electronic money service or Grab online transportation service.

Draft Proposed Improvements

Based on the author's analysis of financial losses often caused by problems on OVO balances that suddenly disappear in the Grab application or losses caused by fraud from Grab rogue drivers and compensation managers that are relatively long, 2 months. So the company should pay attention or improve the system in handling complaints or service recovery. Service recovery (recovery of service) must be carried out appropriately and quickly, so that customer satisfaction with the services provided is maintained. So that in this study focuses on improving service recovery handling complaints, especially on compensation. In the case of compensation that must be corrected, it should be a means or access to report customer complaints so that every customer who experiences a claim for losses is easy to report and get compensation.

Kau and Loh (2006) stated that service recovery, in general, can be realized in three ways: distributive justice, procedural justice, and interaction justice. In this study to resolve the compensation issues that exist in the OVO service and the Grab service, the authors provide recommendations for improvement based on the

Table 6. The design of the proposed improvement

Improvement	Indicator
Procedural Justice	Access to report complaints
	Flexibility
	Supervision decision
Distributive Justice	Free time
	Giving free replacement services
	Discount
	Coupon
	Return

opinion of Ah & Wan (2006) in Primary (2012) by way of Procedural Justice and Distributive Justice (see in Table 6).

By providing a proposal design that is the form of Website and SOP handling of OVOGRAB complaints. While utilizing distributive justice provides proposals in the form of offering free replacement services, coupons, discounts, and returns.

IV. CONCLUSION

The conclusion that can be drawn is that of the 10 dimensions studied, and all dimensions get negative gap values. The negative gap value indicates that the respondent is still not fully satisfied with the OVO electronic money service in the Grab application. Of the 10 dimensions with the highest negative gap value, namely the Compensation dimension with a dimension score of -0.72 or a percentage of 20%. In this study, the priority of improvement was carried out at the highest negative gap value, namely the compensation dimension using two methods, namely Procedural Justice and Distributive Justice. Then the SEM PLS method used in this study is to test the correlation or influence between variables, namely the variable E-service quality, E-recovery Service quality, and E-satisfaction. From the results, it can be concluded that the E-Recovery Servqual variable has a significant effect on E-Satisfaction. Then the E-service quality variable against E-Satisfaction produces a t -value of 20.662 more than t -table 1.966 with a significant value of 0.000 less than 0.05. Thus the variable E-service quality has a significant effect on E-Satisfaction.

REFERENCES

- Ah, K.K.; Wan, Y. L. (2006). The effect of service recovery on customer satisfaction: A comparison between complainants and non-complainants. *Journal of Service Marketing*, 20(2), 101-111.
- Alliance, S.C. (2008). *Proximity Mobile Payments Business Scenarios: Research Report on Stakeholder Perspective*. A Smart Card Alliance Contactless Payments Council White Paper. Princeton Junction, NJ.
- Boer, R.; de Boer, T. (2010). *Mobile Payments 2010*. (C. Liezenberg & E. Achterberg, Eds.). Innopay.
- Ho, C.I.; Lee, P. L. (2007). Are blogs still effective to maintain customer relationship? An empirical study on the travel industry. *Journal of Hospitality & Tourism Technology*, 6 (1), 5-25. <https://doi.org/10.1108/JHTT-01-2015-0005>.
- Lorena, S. (2016). *Pengaruh E-Service Quality Terhadap E-Satisfaction yang Berdampak Pada E-Loyalty*. Manajemen Ekonomi dan Bisnis Universitas Lampung.
- Mawarrini, R.I. (2017). Identifikasi Pembayaran Bergerak (Mobile Payment) yang Mengganggu (Disruptive) di Indonesia. *Perisai: Islamic Banking and Finance Journal*, 1(3), 215-226.
- Ondrus, J.; Pigneur, J. (2007). *An Assessment of NFC for Future Mobile Payment Systems*. Department of Information Systems University of Lausanne, Switzerland.
- Pratama, A. (2012). *Pengaruh Kompensasi Lingkungan Kerja dan Beban Kerja Terhadap Loyalitas Karyawan Melalui Kepuasan kerja (Studi kasus Pada Karyawan PT Kawasan Berikat Nusantara Persero Jakarta)*. Universitas Indonesia.
- Ribeiro, M.A.; Prayag, G. (2019). Perceived quality and service experience: mediating effects of positive and negative emotions. *Journal of Hospitality Marketing & Management*, 28(3), 285-305.
- Septiani, A. (2016). *Pengaruh Brand Image dan E-Service Quality Terhadap Customer Satisfaction Bukalapak*. Fakultas Ekonomi dan Bisnis UIN Syarif Hidayatullah
- Singh, B.P. (2017). *Quality in Mobile Payment Service in India*. Department of management Studies. Indian Institute of Technology Delhi: India
- Wiranti, A.I. (2018). *Analisis Pengaruh Trust Terhadap Attitude yang Mempengaruhi Intention to Use Mahasiswa Terhadap OVO*. Universitas Multimedia Nusantara, Tangerang.
- Zeithaml, V.A.; Bitner, M.J.; Gremler, D.D.; Pandit, A. (2006). *Services Marketing: Integrating Customer Focus Across the Firm*. Boston, MA McGraw-Hill/Irwin.