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Research Article

The Satisfaction of Grab Users in Parepare City Using The Structural Equation Model

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Abstract

The challenges faced by the city of Parepare, South Sulawesi, in providing adequate public transportation have led many residents to rely on online transportation services such as Grab. The purpose of this study was to analyze user satisfaction with Grab using Structural Equation Modeling (SEM) version 23. This quantitative research involved a sample of 247 Grab Bike users in Soreang District, with data collected through questionnaires. The analysis included validity and reliability tests as well as model fit assessment. The results indicated that the variables tangible, empathy, reliability, responsiveness, and price had a positive and significant effect on customer satisfaction, while assurance did not. The model fit test revealed that some indices met the criteria, but others did not, such as TLI, NFI, CFI, and RMSEA, which showed a poor fit.

Keywords: *Grab, satisfaction, AMOS, Parepare.*

1. INTRODUCTION

Parepare City, located in South Sulawesi province, has an area of 99.33 km² and a population of approximately 154,854 people. The city plays an important role as a center of trade, services, and education. However, it faces significant challenges in providing adequate public transportation. The lack of public transportation services has led many residents to rely on alternatives, such as the Grab online transportation service. This reliance on services like Grab is not just a convenience, but a necessity for people's mobility. Residents depend on these services for daily activities, such as commuting to work, shopping, and accessing education and healthcare. Grab helps fill the gap left by the lack of public transportation, enabling easier and more efficient movement throughout the city. As such, the service is a crucial element in supporting the smooth functioning of economic activities and daily life in Parepare City.

Ojek is a mode of transportation widely used by people in Indonesia, both in urban and rural areas. Ojek has several advantages over other modes of transport. These include higher speed and ability to overcome traffic congestion, and especially fast, flexible, and inexpensive mobility services (Hakzah et al., 2022). These advantages have led to the rapid development of ojek transportation services, including online ojek, which have become the primary choice for the community in meeting their daily transportation needs. Various modes of transportation, including motorcycles and cars, are used as ojek and are provided by online ojek services to accommodate diverse mobility needs.

In line with research (Risandra et al., 2023) that increasingly sophisticated technology makes the surrounding community need access that can facilitate mobilization from one place to another in a fast, and economical way.

Transportation company is one of the companies engaged in services (Della & Rachmannullah, 2021) Therefore, the company must have and implement good service quality standards for its customers. This is done by providing good service to consumers, by creating quality products or services according to consumers' desires. The satisfaction of a consumer/customer is a feeling of pleasure or dissatisfaction with the product after comparing the performance of the product with their expectations (Gelu et al., 2022).

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The purpose of this study was to determine the level of satisfaction of the respondents with Grab online transportation services in Parepare City based on the characteristics of the respondents using the Analysis Moment of Structure (AMOS) version 23 software.

Given the public's interest in using the service, this study analyzes the level of customer satisfaction with Grab's online transportation service using the structural equation modeling (SEM) method. According to (Nadi, 2018) transportation is the activity of moving or moving people and/or goods from one place to another using specific means for specific purposes.

Online transportation is the online-based transportation of people and goods. Transportation that uses private vehicles that are then connected to application software. The advantages of online transportation are easier and more practical use, where users do not have to approach the ojek base or wait on the side of the road to get conventional public transportation (Fakhriyah, 2020).

A Malaysian technology company founded in 2012 by Anthony Tan and Tan Hooi Ling that provides mobile-based services as a means of transportation via smartphones (Mongilala et al., 2020).

Satisfaction is a person's feeling about something in himself towards something after comparing the perceived performance or results with his expectations, so the level of satisfaction is a function of the comparison between perceived performance and expectations (Tsalisa et al., 2022).

(Ningrum et al., 2019) stated that SEM analysis shows that sustainability variables affect customer satisfaction, and customer satisfaction affects the decision to reuse ojek online services. Sustainability variables have a direct and indirect influence on the decision to reuse ojek online services for ITS students.

Service quality is the suitability of using the product in meeting consumer needs and satisfaction, service quality can be used as a benchmark. Price is the amount of money charged for a product or service, or the amount of value that customers exchange for the benefits of owning or using a product or service (Batu et al., 2020).

(Putri et al., 2018) show that Go-jek (Go-Ride) service users, trust has no effect on consumer loyalty. The suggestion in this study is that management is expected to conduct a survey to find out the needs of customers, and provide promotions related to their desired needs.

(Lestariningsih, 2021) shows that service quality has a significant positive effect on customer satisfaction and trust. Trust has no significant effect on customer satisfaction. Service quality has no significant effect on customer satisfaction with the moderation of trust. This research is to improve the service quality of online motorcycle taxi partners.

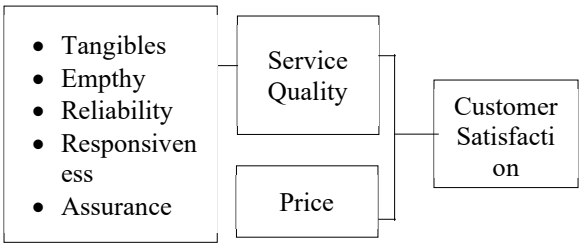

Figure 1. Indicators of measuring customer satisfaction (Source: Zeithaml et al (2010))

Structural equation modeling is used to determine the influence of each of these variables. SEM has three main characteristics. The first characteristic is that SEM cannot be measured directly. Second, SEM takes into account the potential for measurement error in the observed variable. Third, the SEM model is suitable for creating a correlation matrix (Wulandari et al., 2020).

Table 1. Goodness of fit index (Source: Ferdinand, 2002)

Goodness of fit index	*Cut-off Value*
X^2 – *Chi Square*	Small expected
Probability	≥ 0,05
RMSEA	≤ 0,08
GFI	≥ 0,90
AGFI	≥ 0,90
CMIN/DF	≤ 2,00
TLI	≥ 0,95
CFI	≥ 0,95

2. METHOD

This research is a type of quantitative research that aims to explain the relationship between variables. Data were collected through questionnaires and analyzed statistically to describe and test the hypotheses that were set. The research was conducted in Soreang Sub-district, Parepare City, South Sulawesi Province, from October 2022 to March 2023. The research stages include preparation, secondary data collection, and primary data collection. The population in this study comprises Grab Bike online transportation users in Soreang District, with a sample of 247 randomly selected respondents. The instruments used in this research include cameras and pens, while the materials used consist of books, survey forms, and Structural Equation Modeling (SEM) software for data processing. The use of SEM in this study allows researchers to examine the structural relationships between complex and diverse variables, providing a

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deeper understanding of the factors that influence Grab Bike user behavior. SEM facilitates more comprehensive data analysis by examining not only direct relationships between variables but also indirect relationships and mediation effects. The analysis technique used in this research is inferential statistics, which aims to determine the relationships between variables. The analysis process begins with problem formulation, followed by the determination of the theoretical basis, hypothesis formulation, data collection, data analysis, and concludes with drawing conclusions.

Respondents answered each question variable based on the response options provided using a Likert scale (strongly agree, agree, disagree, disagree, and strongly disagree) (Sugiono & Tobing, 2021).

H1: Tangibles affect customer satisfaction
H2: Empathy affects customer satisfaction
H3: Reliability affects customer satisfaction
H4: Responsiveness affects customer satisfaction
H5: Assurance affects customer satisfaction
H6: Price has an effect on customer satisfaction

3. RESULTS AND DISCUSSION

The test results are presented in several sections, namely (1) characteristics, (2) normality test, (3) confirmatory factor analysis validity test, (4) reliability test, (5) model fit test, (6) hypothesis testing, and (7) discussion.

Characteristics of Respondents

Table 2. Characteristics of respondents

Characteristics	Indicator	Total	Percentage (%)
Demography	Gender		
	Male	80	41,2
	Female	114	58,8
	Total	194	100,0
	Age		
	18-22	80	41,2
	23-29	114	58,8
	Total	194	100,0
	Occupation		
	Students	108	55,7
	Others	28	14,4
	Not working	26	13,4
	Enterpreneur	12	6,2
	Freelance	10	5,2
	SOE employees	6	3,1
	Private employee	4	2,1
	Total	194	100,0
Behavior of respondents	Monthly usage intensity		
	<3 times	132	68,0
	3-5 times	42	21,6
	6-9 times	12	6,2
	10-15 times	6	3,1
	>15 times	2	1,0
	Total	194	100,0
	Reasons for choosing services		
	Practical	80	41,2
	Multiple locations	50	25,2
	Affordable price	34	17,5
	Good services	14	7,2
	Recommendation	16	8,2
	Total	194	100,0

Normality Test

Structural Equation Modeling (SEM) using maximum likelihood estimation (MLE) assumes that the data are normally distributed. This normality test uses the multivariate critical ratio criterion of ± 2.58 (Wesli, 2015).

Table 3. Normality assumption test

Variable	min	max	skew	c.r.	kurtosis	c.r.
Y13	2.000	5.000	-,310	-1,762	,955	2,715
Y12	2.000	5.000	-,316	-1,797	1,081	3,074
Y11	3.000	5.000	-,010	-,058	-,305	-,867
X61	1.000	5.000	-,803	-4,564	1,441	4,096
X62	2.000	5.000	-,847	-4,816	1,355	3,853
X63	2.000	5.000	-,499	-2,838	,029	,081
X51	2.000	5.000	-,394	-2,241	-,074	,210
X52	1.000	5.000	,918	-5,223	3,210	9,126
X53	3.000	5.000	-,091	-,515	-,407	-1,156
X54	3.000	5.000	-,024	-,138	-,794	-2,257
X55	2.000	5.000	-,303	-1,723	-,050	-,143
X41	2.000	5.000	-,491	-2,791	,644	1,832
X42	3.000	5.000	-,071	-,406	-,557	-1,583
X43	2.000	5.000	-,345	-1,963	,670	1,906
X31	3.000	5.000	-,066	-,375	-,355	-1,008
X32	2.000	5.000	-,366	-2,082	1,153	3,278
X33	3.000	5.000	,128	,726	,077	,218
X34	3.000	5.000	,043	,242	,219	,624
X35	2.000	5.000	-,337	-1,914	,759	2,159
X21	1.000	5.000	-1,416	-8,050	3,369	9,579
X22	3.000	5.000	-,360	-2,045	-,686	-1,950
X23	2.000	5.000	-,251	-1,428	,269	,765
X24	3.000	5.000	-,027	-,153	-,367	-1,042
X25	1.000	5.000	-1,036	-5,893	4,228	12,020
X13	3.000	5.000	,006	-,034	-,216	-,614
X12	3.000	5.000	,007	,042	,128	,364
X11	3.000	5.000	,322	1,831	,362	,927
Multivariate					12,290	2,163

Based on the results of the analysis, the multivariate c.r. value is 2.163. This value is not greater than 2.58 and not less than -2.58, so it can be concluded that the data distribution used meets the criteria for normality.

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Confirmatory Factor Analysis Validity Test

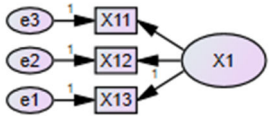

Figure 2. CFA of tangibles variable

Table 4. Tangibles variable test

			Estimate	S.E.	C.R.	P	Label
X11	<--	X1	1,000				P < 0,05 significant
X12	<--	X1	0,990	,042	23,348	0,00	P < 0,05 significant
X13	<--	X1	0,990	,042	23,333	0,00	P < 0,05 significant

Figure 2 and output from Table 4 show that the three indicators measuring the physical form variable have a p-value <0.05, so they can be declared significant.

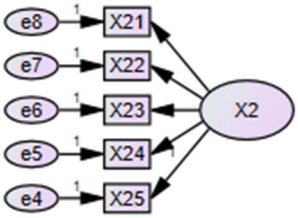

Figure 3. CFA of empathy variable

Table 5. Empathy variable test

			Estimate	S.E.	C.R.	P	Label
X25	<--	X2	1,000				P < 0,05 significant
X24	<--	X2	1,000	0,033	30,102	0,00	P < 0,05 significant
X23	<--	X2	1,019	0,030	33,542	0,00	P < 0,05 significant
X22	<--	X2	1,019	0,030	33,515	0,00	P < 0,05 significant
X21	<--	X2	1,015	0,031	32,758	0,00	P < 0,05 significant

Figure 3 and Table 5 output show that the five indicators measuring the empathy variable have a p-value <0.05, so they can be declared significant.

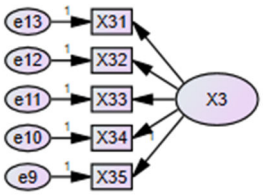

Figure 4. CFA of reliability variable

Table 6. Reliability variable test

			Estimate	S.E.	C.R.	P	Label
X35	<--	X3	1,000				P < 0,05 significant
X34	<--	X3	1,000	0,041	24,468	0,00	P < 0,05 significant
X33	<--	X3	1,019	0,041	24,468	0,00	P < 0,05 significant
X32	<--	X3	1,019	0,041	24,510	0,00	P < 0,05 significant
X31	<--	X3	1,015	0,041	24,510	0,00	P < 0,05 significant

Figure 4 and output Table 6 show that the five indicators to measure the reliability variable have a p-value <0.05, so they can be declared significant.

Figure 5. CFA of responsiveness variable

Table 7. Responsiveness variable test

			Estimate	S.E.	C.R.	P	Label
X43	<--	X4	1,000				P < 0,05 significant
X42	<--	X4	1,000	0,029	34,452	0,00	P < 0,05 significant
X41	<--	X4	1,000	0,029	34,457	0,00	P < 0,05 significant

Figure 5 and output Table 7 show that the three indicators to measure the responsiveness variable have a p-value <0.05 so that it can be declared significant.

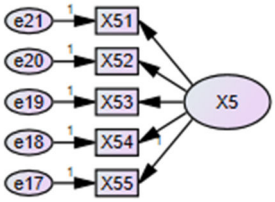

Figure 6. CFA of assurance variable

Table 8. Assurance variable test

			Estimate	S.E.	C.R.	P	Label
X55	<--	X4	1,000				P < 0,05 significant
X54	<--	X4	1,000	0,011	89,506	0,00	P < 0,05 significant
X53	<--	X4	1,000	0,011	89,518	0,00	P < 0,05 significant
X52	<--	X4	1,000	0,011	89,490	0,00	P < 0,05 significant
X51	<--	X4	1,000	0,011	89,496	0,00	P < 0,05 significant

Figure 6 and Table 8 output show that the five indicators measuring the assurance variable have a p-value <0.05, so they can be declared significant.

Figure 7. CFA of price variable

Table 9. Price variable test

			Estimate	S.E.	C.R.	P	Label
X63	<--	X6	1,000				P < 0,05 significant
X62	<--	X6	1,000	0,011	89,588	0,00	P < 0,05 significant
X61	<--	X6	1,000	0,011	88,927	0,00	P < 0,05 significant

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Figure 7 and Table 9 output show that the three indicators measuring the price variable have a p-value <0.05, so they can be declared significant.

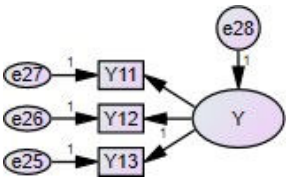

Figure 8. CFA of customer satisfaction variable

Table 10. Customer satisfaction variabel test

			Estimate	S.E.	C.R.	P	Label
Y11	<--	Y	1,000				P < 0,05 significant
Y12	<--	Y	1,005	0,031	32,3320,00		P < 0,05 significant
Y13	<--	Y	1,005	0,031	32,3440,00		P < 0,05 significant

Figure 8 and Table 10 output show that three indicators as a measure of customer satisfaction variables have a p-value <0.05, so they can be declared significant.

Reability Test

The recommended construct reliability and variance extracted values are above 0.70 and 0.50. (Ghozali, 2011) The following are the results of the reliability test that has been carried out:

Table 11. Reability test

Variable	Indicator	SFL	*SFL Kuadrat*	*Error*	*Construct Reliability*	*Variance Extracted*
	X11	0.924	0.85378	0.14622		
Tangibles (X1)	X12	0.924	0.85378	0.14622	0.94852	0.85997
	X13	0.934	0.87236	0.12764		
	X21	0.951	0.9044	0.0956		
	X22	0.951	0.9044	0.0956		
Empathy (X2)	X23	0.969	0.93896	0.06104	0.98372	0.92359
	X24	0.969	0.93896	0.06104		
	X25	0.965	0.93123	0.06878		
	X31	0.931	0.86676	0.13324		
	X32	0.931	0.86676	0.13324		
Reliability (X3)	X33	0.931	0.86676	0.13324	0.97017	0.86676
	X34	0.931	0.86676	0.13324		
	X35	0.931	0.86676	0.13324		
	X41	0.964	0.9293	0.07071		
Responsive (X4)	X42	0.964	0.9293	0.07071	0.95527	0.87684
	X43	0.964	0.9293	0.07071		
	X51	0.994	0.98804	0.01196		
	X52	0.994	0.98804	0.01196		
Assurance (X5)	X53	0.994	0.98804	0.01196	0.99759	0.98804
	X54	0.994	0.98804	0.01196		
	X55	0.994	0.98804	0.01196		
	X61	0.994	0.98804	0.01196		
Price (X6)	X62	0.994	0.98804	0.01196	0.99598	0.98804
	X63	0.994	0.98804	0.01196		
	Y11	0.959	0.91968	0.08032		
Customer satisfaction (Y)	Y12	0.959	0.91968	0.08032	0.97029	0.91586
	Y13	0.953	0.90821	0.09179		

The reliability test results in table 10 show reliable results because the construct reliability value is ≥ 0.70 and the variance extract value is also ≥ 0.50.

Model Fit Test

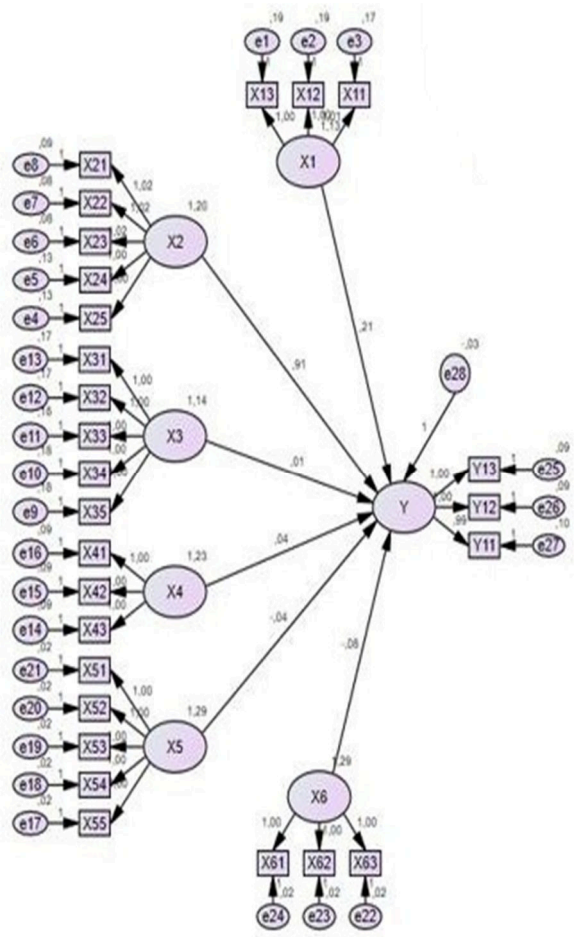

Figure 9. Model fit

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Goodness of Fit Index	Cut Off Value	Result	Model Evaluation
Chi-Square	Small expected	4641,446	*Good Fit*
Probability	≥ 0,05	0,015	*Good Fit*
GFI	≥ 0,90	0,932	*Good Fit*
AGFI	≥ 0,90	0,892	*Marginal Fit*
TLI	≥ 0,95	0,679	*Poor Fit*
NFI	≥ 0,95	0,695	*Poor Fit*
CFI	≥ 0,95	0,710	*Poor Fit*
RMSEA	≤ 0,08	0,265	*Poor Fit*

Table 12. Goodness of fit results comprehensively

Model fit testing in Figure 9 and Table 12 show that the indices for Chi-Square, probability and GFI meet the cut off value, this can be interpreted that the model in the figure above has been confirmed by the data or in other words, the data used in this study have been able to describe the phenomena in the field. Different from AGFI of 0.892 which is smaller than 0.90, it can be said to be marginal fit because it still meets the 0.80 criteria. While TLI 0.679, NFI 0.695, CFI 0.710, and RMSEA 0.265, each of which does not meet the cut off value or is in the poor fit ratio. However, it can be concluded that if there are one or more results from the goodness of fit criteria that meet the cut off value, then the model can be declared fit as a whole (Aryani & Rosinta, 2011).

Hypothesis Test

Hypothesis testing aims to answer questions in this study and analyze the structural relationship of the model. Hypothesis data analysis is carried out by looking at the Standardized Regression value.

Weights which is the coefficient of influence between variables. Based on the results of data processing, it is obtained that there is a positive relationship between variables if C.R shows a value > 1.960 and a p-value <0.05.

Table 13. Hypothesis test

Relations	*Estimate*	S. E	C.R	*P-value*	Label
Y ← X1	0,206	0,012	17,692	0,000	Significant
Y ← X2	0.081	0,009	8,813	0,000	Significant
Y ← X3	0.037	0,009	4,121	0,000	Significant
Y ← X4	0,044	0,009	4,636	0,000	Significant
Y ← X5	0,011	0,010	1,149	0,251	Insignificant
Y ← X6	0,905	0,028	32,617	0,000	Significant

Table 13 shows that the variables of physical form, care, reliability, responsiveness and price have a positive and significant effect with the C.R value showing a value > 1.960 and p-value <0.05, while the insurance variable is not significant, this is supported by a probability of 0.251.

4. CONCLUSION

This research shows that Grab online transportation services play an important role in supporting the mobility of residents in Parepare City, especially considering the limited public transportation services available. With an area of 99.33 km² and a population of approximately 154,854 people, Parepare faces great challenges in providing adequate public transportation. This limitation causes many residents to rely on alternative services such as Grab for their daily mobility needs.

Based on the results of the research conducted Tangibles, Empathy, Reliability, Responsiveness, and Price have a positive and significant influence on customer satisfaction. This means that the physical aspects of the service, attention to customers, reliability, responsiveness, and price of the service directly affect the level of satisfaction of Grab users. However, Assurance did not show a significant effect on customer satisfaction, which may indicate that the assurance or trust aspect has not sufficiently influenced customer perceptions in this context.

Grab service in Parepare is an important solution for people's daily mobility needs, therefore, service quality in various aspects such as reliability, responsiveness, and price is crucial to increase customer satisfaction. Online transportation companies such as Grab need to continue to improve service aspects that have a significant influence on customer satisfaction to retain and attract users.

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