

# ANALYZING TECHNICAL COMPETENCY, RELATIONAL CAPABILITIES AND COGNITIVE ABILITIES ON CUSTOMER SATISFACTION AT DISTRIBUTOR COMPANIES IN INDONESIA

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## ABSTRACT

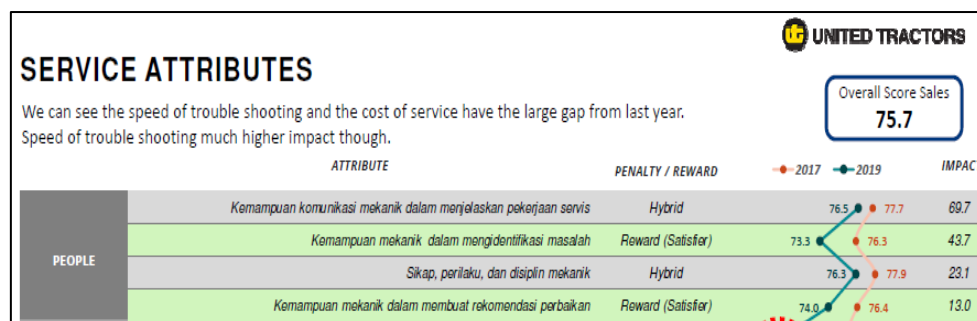
*In the current era of globalization, business competition is getting tougher and as a market leader, companies must always maintain their performance and improve their performance, so that customer satisfaction is always maintained. Especially the performance of mechanical services to customers whose performance must be maintained. Main problem faced by PT United Tractors heavy equipment service division is a decrease in customer satisfaction. The decrease in satisfaction is thought to be caused by a decrease in mechanics technical competence, the lack of mechanical ability to maintain good relationships (relational capability) with customers and the ability to identify problems (cognitive abilities) faced by customers. The purpose of this research is to analyze the impact of technical competency, relational capability and cognitive ability toward customer satisfaction and to analyse the impact of customer satisfaction toward customer loyalty. As a quantitative research, the study distributed questionnaires to 200 respondents who are customers who used mechanics services, so that it can be seen what variables have a significant impact on customer satisfaction. The findings of this study are that cognitive ability and technical competency have a significant impact on customer satisfaction, while relational capability has no significant impact on customer satisfaction. The influence of customer satisfaction on customer loyalty has a significant impact.*

**Keyword:** Cognitive Abilities, Customer Loyalty and Dynamic Capability, Customer Satisfaction, Relational Capabilities, Technical Competency

## 1. Introduction

In the current era of globalization, business competition is getting tougher and as a market leader, companies must always maintain their performance and improve their performance, so that customer satisfaction is always maintained. To maintain and improve performance according to the times, the company's ability must also be adjusted based on customer satisfaction. According to Ilieska (2013), customer satisfaction results or customer satisfaction index (CSI) can help to identify important

customer requirements. Identification of the specific customer requirements for achieving satisfaction is useful at a very fundamental level. Every 2 years PT United Tractor's customer satisfaction is measured using the services of an independent agency and the measurement results become a reference for the service division in improving its quality of mechanics. The phenomena in terms of service quality of Mechanics on the Customer Satisfaction Index (CSI) in 2019 compared to 2017 survey, the results tend to decrease.



**Figure 1.** Customer Satisfaction Study 2019  
Source: Ipsos, PT United Tractors CSI Study 2019

According to Ngo and Nguyen (2016), One of the important antecedents in customer loyalty is customer satisfaction, besides that customer satisfaction also mediates the effect of service quality on customer loyalty. Good service quality will make customers satisfied and customers will be loyal to the product provider. This good service quality needs to be explored more deeply what dimensions or indicators are appropriate to deal with in this era, given the dynamic character and perceptions of customers. So it is very important to know the dynamic capability of mechanics in providing the best service quality.

According to Flint et al. (2011), it is very possible that we need multiple interpretations of future customer needs, expectations, and requirements, and for mitigation we need anticipation capability or dynamic

capability. Based on the results of the hypothesis perceived customer value anticipation positively affects customer satisfaction.

According to Adner and Helfat (2003), it is very important to pay attention to dynamic managerial abilities, because they reflect human capital, managerial social capital, and managerial cognition. This is needed so that the organization always exists in business competition and faces changing external conditions. To deal with business growth and maintain customer satisfaction, it is necessary to review the appropriate abilities that are compatible with Dynamic Managerial Capabilities (DMC) will effect on customer satisfaction. Author tries to explore the appropriate variables with the DMC whether it can affect customer satisfaction.

Here are some of the variables that will be explored in relation to customer satisfaction:

1. Technical Competency (represents Managerial Human Capital in DMC).
2. Relational Capabilities (represents Managerial Social Capital in DMC).
3. Cognitive abilities (represent Managerial Cognition in DMC).

Based on the explanation information above, it is very clear that the main problem faced by PT United Tractors heavy equipment service division is a decrease in customer satisfaction index survey results. The decline in the survey results is a concern for service division to be followed up. The decrease in satisfaction is thought to be caused by a decrease in mechanics technical competence, the lack of mechanical ability to maintain good relationships (relational capability) with customers and the ability to identify problems (cognitive abilities) faced by customers. This condition will affect customer loyalty in the long term. In this heavy equipment service division, there has never been a measurement of the impact of a lack of mechanical competence and customer satisfaction on loyalty, so this needs to be done.

The goal of this study are to analyze the impact of technical competency toward customer satisfaction, to analyze the impact of relational capabilities mechanics toward customer satisfaction, to analyze the impact of cognitive abilities mechanics toward customer satisfaction and to analyze the impact of customer satisfaction toward customer loyalty.

## 2. Literature Review

### 2.1. Customer Satisfaction

From the three literatures ((Ajao et al., 2012), (Angelova and Zekiri, 2011), (Hamzah and Shamsudin, 2020)), it is summarized that definition of customer satisfaction is customer evaluation of a product or service in which there is service

quality to the response of customer fulfillment with the expected standard output in accordance with customer expectations or in other words, no complaints.

Based on the explanation above, the dimensions used in customer satisfaction consist of:

1. Less complaints: Conformity of the quality of goods and services with customer expectations.
2. Service quality: Service quality that is delivered can meet or exceed customer's expectations are mainly influenced by customer's prior expectations.
3. Fullfilment response: The act of completing the customer's will and know what the customer wants (expectation) and follow up on customer evaluation results.

### 2.2. Customer Loyalty

From the three literatures ((Bobâlcă et al., 2012), (Ngo and Nguyen, 2016), (Ajao et al., 2012)), it is summarized that the definition of customer loyalty is an emotional bond to a company for its experience with the company, which is shown in attitudes or behavior in the form of repeat orders, recommendations and retention.

Based on the explanation above, the dimensions used in customer loyalty consist of :

1. Repeat order: Customer to continue to buy products.
2. Recommendation: Customer saying positive things about the company to others, recommending the company or service to others.
3. Retention: Customer to continue to buy one company's products both with his commitment to the company.

### 2.3. Technical Competency

From the three literatures ((Lambert et al., 2014), (Yaman et al., 2015), (Khuzainey et al., 2020)), it is summarized that the

definition of technical competency is the complete ability to carry out work to produce the best service performance which includes skills, knowledge and work attitudes.

Based on the explanation above, the dimensions used in technical competency consist of :

1. Skill: Mechanics technical abilities in carrying out repair and maintenance of heavy equipment.
2. Knowledge: Theoretical mechanics knowledge regarding heavy equipment repair and maintenance.
3. Responsiveness: Mechanics abilities does something well when performing.

#### 2.4. Relational Capabilities

From the two literatures ((Smirnova *et al.*, 2011), (Ngugi *et al.*, 2010)), it is summarized that definition of relational capabilities is the ability to build relationships that can be done for one another that has an impact on benefits through the integration of knowledge, values and culture.

Based on the explanation above, the dimensions used in relational capabilities consist of :

1. Sharing knowledge: Interaction to sharing knowledge and expertise.
2. Sharing value: Interaction to sharing values.
3. Sharing culture: Interaction to sharing culture.

#### 2.5. Cognitive Abilities

From the three literatures ((Wang *et al.*, 2017), (Macnamara *et al.*, 2011), (Denis and Gilbert, 2012) ), it is summarized that the definition of cognitive abilities is an individual's capacity to understand something complex and analyze this information so that it is able to produce a relevant conclusion.

Based on the explanation above, the dimensions used in cognitive abilities consist of:

1. Level of understanding: Capacity to understand complex ideas.
2. Problem identification skill: Capacity to identification problem.
3. Capacity to learn: Capacity to get something new and adaptation to change.

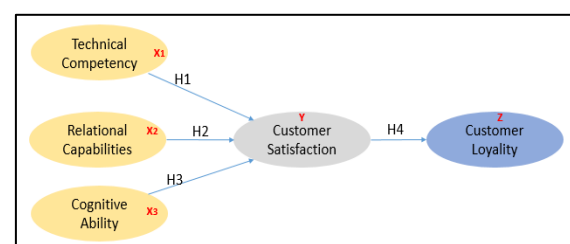
Formulation of the problem is used as the beginning of the formulation of hypotheses, both of which of course require literature so that the literature will facilitate understanding of the findings to be strengthened or understanding of principles (Toledo, Flikkema and Toledo-Pereyra, 2011). The authors suspect that :

*H<sub>1</sub>: Technical Competency has a significant impact on Customer Satisfaction*

*H<sub>2</sub>: Relational Capabilities has a significant impact on Customer Satisfaction*

*H<sub>3</sub>: Cognitive Ability has a significant impact on Customer Satisfaction*

*H<sub>4</sub>: Customer Satisfaction has a significant impact on Customer Loyalty*



**Figure 2.** Connection Variable

### 3. Research Method

The objective of a descriptive study is to obtain data that describes the topic of interest. Descriptive studies are often designed to collect data that describe characteristics of objects (such as persons, organizations, products, or brands), events, or situations. Descriptive research is either quantitative or qualitative in nature (Sekaran and Bougie, 2016).

The type of research method used is descriptive study. The author chose this method because it uses a factual, systematic, and accurate approach. This study describes the service quality provided by mechanics. The author wants to know more deeply about the phenomenon of the customer satisfaction impact caused by competency, relational capability and cognitive ability of mechanics. In this study, data collection was carried out using electronic survey sites such as survey application and this research using probability sampling which is simple random sampling. Random sampling or probability sampling means that each element in a population has an equal and independent chance of being selected in the sample. The selection or rejection of one element does not affect the inclusion or exclusion of another. The authors takes the sample size 200 respondents. The first part of the questionnaires consists with the demographic questions and the second part of the questionnaires consist with the research questions and using likert scale from one to five.

This research analyzed the data using SPSS to test the validity and reliability of each variable and Cross Tab Analysis. The validity test used the Pearson's product moment correlation method, while the reliability test used Cronbach's alpha. The author will use PLS - SEM as an application to see the relationship between variables, then the results of the relationship between these variables are analyzed using t-values for assessment one side 1,65 at the 0.05 significance level (Hair et al., 2014).

#### **4. Result and Discussion**

The majority of respondents come from the Mining sector as much as 70% and come from UT customers who have known UT

for 11 - 15 years, namely 27%. The majority of respondents come from UT customers who have an interval of using UT mechanics services once a month which is as much as 34% and type job of Troubleshooting as much as 42%. For Descriptive Statistic Analysis as showed figure 3, the results of the analysis on IBM SPSS Statistics version 25 show that most of the respondents rated Customer loyalty as having the highest value, especially for repeat orders for mechanics services with a mean of 4.58, while the comparison between recommendation and retention turned out to be that customers prefer to provide recommendations rather than retention with a mean 4.4 versus 4.3.

Relational Capability is an important concern, especially sharing value with a mean of 4.46, while sharing knowledge is the lowest rating from customers with a mean of 4.20. However, here there is respondent dissatisfaction with the knowledge sharing of UT mechanics, so they strongly disagree with the relational capability of UT mechanics. Customer Satisfaction which is the focus of respondents is on service quality compared to other indicators, namely with a mean of 4.43. Meanwhile, the lowest indicator is found in less complaints, with a mean of 4.35. It can also be interpreted that customers will feel more satisfied if the Cognitive Ability has a mean that is spread evenly across each indicator, while the highest mean is 4.44, namely Capacity to learn and the lowest is 4.33. For independent variable cognitive ability becomes the second priority after relational capability variable, but here the difference is the lowest rating between cognitive ability and relational capability 4.33 versus 4.20. It can be interpreted that cognitive ability is better than relational capability.

**Table 1.** Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Sum Statistic	Mean Statistic Std. Error		Std. Deviation Statistic	Variance Statistic
TC1	200	3	2	5	874	4.37	.043	.604	.365
TC2	200	3	2	5	882	4.41	.044	.628	.394
TC3	200	3	2	5	886	4.43	.041	.580	.337
TC4	200	3	2	5	882	4.41	.042	.595	.354
TC5	200	3	2	5	855	4.28	.051	.722	.522
TC6	200	3	2	5	872	4.36	.050	.702	.493
RC1	200	4	1	5	840	4.20	.058	.814	.663
RC2	200	4	1	5	861	4.31	.053	.745	.555
RC3	200	4	1	5	852	4.26	.057	.810	.656
RC4	200	3	2	5	893	4.46	.044	.617	.381
RC5	200	3	2	5	885	4.43	.047	.661	.437
RC6	200	3	2	5	877	4.39	.048	.685	.469
CA1	200	3	2	5	878	4.39	.043	.608	.370
CA2	200	4	1	5	867	4.33	.051	.718	.515
CA3	200	3	2	5	866	4.33	.047	.666	.443
CA4	200	4	1	5	869	4.35	.048	.677	.458
CA5	200	3	2	5	874	4.37	.049	.697	.486
CA6	200	3	2	5	887	4.44	.044	.623	.388
CS1	200	3	2	5	870	4.35	.046	.648	.420
CS2	200	3	2	5	875	4.38	.047	.668	.447
CS3	200	3	2	5	886	4.43	.050	.712	.508
CS4	200	3	2	5	877	4.38	.046	.647	.419
CS5	200	4	1	5	873	4.37	.050	.703	.494
CS6	200	4	1	5	873	4.37	.049	.696	.484
CL1	200	2	3	5	900	4.50	.041	.585	.342
CL2	200	3	2	5	916	4.58	.042	.588	.345
CL3	200	3	2	5	884	4.42	.046	.645	.416
CL4	200	3	2	5	886	4.43	.046	.654	.427
CL5	200	4	1	5	863	4.31	.055	.774	.599
CL6	200	3	2	5	868	4.34	.049	.690	.477
Valid N (listwise)	200								

### Validity and Reliability Test

Based on the result in Table 2, this study can be considered as valid and reliable because validity testing based on the value of the  $r$

Table used based on the number of  $N = 200$ , the value of the 5% significance level is 0.138 and for reliability test the result more than 0.9 for  $\alpha = 0.6$ .

**Table 2.** Result Test Validity and Reliability  
Source: Data Analysis using SPSS

Variable Name	Observed Variables		Validity* (Pearson's correlation Product Moment)			Reliability		
			r-value	r-table	Result	Cronbach's Alpha Result	$\alpha$	Result
Technical Competency	Skill	TC1	0,765	0,138	Valid	0,973	0,6	Reliable
		TC2	0,690		Valid	0,973		Reliable
	Knowledge	TC3	0,686		Valid	0,973		Reliable
		TC4	0,712		Valid	0,973		Reliable
	Responsiveness	TC5	0,762		Valid	0,973		Reliable
		TC6	0,720		Valid	0,973		Reliable
Relational Capabilities	Sharing Knowledge	RC1	0,770		Valid	0,973		Reliable
		RC2	0,800		Valid	0,973		Reliable
	Sharing Value	RC3	0,766		Valid	0,973		Reliable
		RC4	0,755		Valid	0,973		Reliable
	Sharing Culture	RC5	0,700		Valid	0,973		Reliable
		RC6	0,752		Valid	0,973		Reliable
Cognitive Ability	Level of understanding	CA1	0,751		Valid	0,973		Reliable
		CA2	0,787		Valid	0,973		Reliable
	Problem Identification Skill	CA3	0,828		Valid	0,972		Reliable
		CA4	0,788		Valid	0,973		Reliable
	Capacity to Learn	CA5	0,787		Valid	0,973		Reliable
		CA6	0,754		Valid	0,973		Reliable
Customer Satisfaction	Less Complaint	CS1	0,728		Valid	0,973		Reliable
		CS2	0,789		Valid	0,973		Reliable
	Service quality	CS3	0,843		Valid	0,972		Reliable
		CS4	0,782		Valid	0,973		Reliable
	Fullfilment response	CS5	0,799		Valid	0,973		Reliable
		CS6	0,756		Valid	0,973		Reliable
Customer Loyalty	Repeat order	CL1	0,756		Valid	0,973		Reliable
		CL2	0,612		Valid	0,973		Reliable
	Recomendation	CL3	0,746		Valid	0,973		Reliable
		CL4	0,757		Valid	0,974		Reliable
	Retention	CL5	0,778		Valid	0,973		Reliable
		CL6	0,709		Valid	0,973		Reliable



### Measurement Outer Model

In measuring the outer model using convergent validity with Average Varince Extracted (AVE > 0.5). For Realibility

using Composite Reliability and Cronbach Alpha >0.6. The results can be seen in the Table 3 below.

**Table 3.** Summary for Reflective Measurement Models  
Source: Smart PL

Latent Variable	Indicators	Internal Consistency Reliability		Convergent Validity		Discriminant Validity
		Composite Reliability	Cronbach Alpha	Loadings	AVE	HTMT confidence interval doesn't include 1
		>0.6	>0.6	>0.7	0.5	
Technical Competency	TC1	0.911	0.882	0.821	0.63	Yes
	TC2			0.786		Yes
	TC3			0.765		Yes
	TC4			0.792		Yes
	TC5			0.813		Yes
	TC6			0.784		Yes
Relational Capabilities	RC1	0.930	0.909	0.836	0.688	Yes
	RC2			0.869		Yes
	RC3			0.858		Yes
	RC4			0.819		Yes
	RC5			0.781		Yes
	RC6			0.810		Yes
Cognitive Ability	CA1	0.929	0.909	0.779	0.687	Yes
	CA2			0.823		Yes
	CA3			0.877		Yes
	CA4			0.837		Yes
	CA5			0.847		Yes
	CA6			0.807		Yes
Customer Satisfaction	CS1	0.934	0.915	0.764	0.703	Yes
	CS2			0.848		Yes
	CS3			0.893		Yes
	CS4			0.830		Yes
	CS5			0.870		Yes
	CS6			0.819		Yes
Customer Loyalty	CL1	0.923	0.900	0.801	0.668	Yes
	CL2			0.733		Yes
	CL3			0.844		Yes
	CL4			0.868		Yes
	CL5			0.867		Yes
	CL6			0.784		Yes



### Measurement Inner Model

The value of R Square on the endogenous construct is based on (Hair Jr. et al., 2017)  $R^2$ ,

with 0.75, 0.50, 0.25, respectively, describing substantial, moderate, or weak levels of predictive accuracy.

**Table 4.** R2 Value Result  
Source: Smart PLS

	R Square	R Square Adjusted	Remark
Customer Satisfaction	0.799	0.755	<b>Substantial</b>
Customer Loyalty	0.703	0.702	<b>Substantial</b>

### Hypothesis Testing Result & Analysis

The results of the relationship between these variables are analyzed using t-values for assesment one side 1.96 at the 0.05 significance level (Hair et al., 2014). For significant results the T-Statistics must be

above 1.96 and for significant levels it must be less than 0.05. The following Table 5 which is the result of hypothesis testing using Smart PLS with bootstrapping 500 sub samples.

**Table 5.** Final Results (Mean, STDEV, T-Values, P-Values)  
Source: Smart PLS

	Origina Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics  O/STDEV	P Values
Technical Competency -> Customer Satisfaction	0.190	0.196	0.068	2.810	<b>0.005</b>
Relational Capability -> Customer Satisfaction	0.111	0.115	0.081	1.369	<b>0.172</b>
Cognitive Ability -> Customer Satisfaction	0.619	0.612	0.080	7.715	<b>0.000</b>
Customer Satisfaction -> Customer Loyalty	0.839	0.840	0.025	33.365	<b>0.000</b>

### Hypothesis #1

*H0: Technical Competency has a not significant impact on Customer Satisfaction*

*H1: Technical Competency has a significant impact on Customer Satisfaction*

According to Table 5, it shown the impact between Technical Competency and Customer Satisfaction is significant impact. The results show the P Value or statistical research error is 0.005 ( $P < 0.05$  significant levels) and (T- statistics = 2.81)  $> 1.96$ . Compared to Relational Capability and

Cognitive Ability, Technical Competency has second priority in relation to its impact on customer satisfaction. The indicator that has the most impact on the Technical Competency variable is TC1 or Skill, while the lowest impact is Knowledge.

### Hypothesis #2

*H0: Relational Capabilities has a not significant impact on Customer Satisfaction*

*H1: Relational Capabilities has a significant impact on Customer Satisfaction*

Based on Table 5, it demonstrates the impact between Relational Capabilities and Customer Satisfaction is not significant effect but positive. The results show the P Value is 0.172 ( $P > 0.05$  significant levels) and (T- statistics = 1.36)  $< 1.96$ . Compared to other independent variables, it turns out that relational capability is the variable with the last priority. Although the impact on customer satisfaction is not significant, there is still a high assessment of the knowledge sharing indicator.

### Hypothesis #3

*H0: Cognitive Ability has a not significant impact on Customer Satisfaction*

*H1: Cognitive Ability has a significant impact on Customer Satisfaction*

According to Table 5, it shown the impact between Cognitive Ability and Customer Satisfaction is significant. The results show the P Value is 0.000 ( $P < 0.05$  significant levels) and (T- statistics = 7.71)  $> 1.96$ . Cognitive Ability is an independent variable that has the highest influence on customer satisfaction. Especially the capacity to learn indicator which has the highest score.

### Hypothesis #4

*H0: Customer Satisfaction has a not significant impact on Customer Loyalty*

*H1: Customer Satisfaction has a significant impact on Customer Loyalty*

According to Table 5, it shown the impact between Customer Satisfaction and Customer Loyalty is significant. The results show the P Value is 0.000 ( $P < 0.05$  significant levels) and (T- statistics = 33.36)  $> 1.96$ . The results of this hypothesis test are very much in accordance with previous research (Ngo and Nguyen, 2016) and strengthen the test results because previously the path coefficient was 0.744 now 0.839. The most influential indicator on customer satisfaction is service quality.

From four hypotheses, three of them were accepted and one hypothesis which is relational capabilities has a significant impact on Customer Satisfaction were rejected.

## 5. Conclusion

Based on the results and data analysis carried out in result, the objective is to determine the significant influence of Technical Competence, Relational Ability and Cognitive Ability on Customer Satisfaction that affects Customer Loyalty. Several conclusions can be drawn below:

1. Technical Competency has a positive significant impact on Customer Satisfaction, meaning that if the technical competency possessed by mechanics is good, customer satisfaction will be good.
2. Relational Capability does not have a significant impact on Customer Satisfaction is mean that if the Relational Capability possessed by a mechanic is good, that is not enough to make customers satisfied.
3. Cognitive Ability has a positive significant impact on Customer Satisfaction, meaning that if the Cognitive Ability possessed by the mechanic is good then customer satisfaction will be good and compared to technical competency, this is what customers expect the most.
4. Customer Satisfaction has a significant impact on customer loyalty, this is what makes customers repeat orders and can recommend repair and maintenance services for heavy equipment carried out by UT mechanics.

## 6. Recomendation for Further Study

First, future research can apply the same model in other types of industries, especially in the service sector, but added with interviews with several companies representing their segments; low, medium and large. Second, variables related to dynamic capabilities are likely to develop, so they need to be updated according to the times.

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