

## **The Impacts of Leadership and Decision-Making Styles Middle Management on the QMS Implementation and Firm Performance**

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### **ABSTRACT**

*In heavy equipment and mining companies, it is important to always maintain the quality of the products and services provided to customers. Quality Management System (QMS) as a standard has a very important role in maintaining the company's business continuity. Quality management includes customer focus, leadership, people engagement, process approach, improvement, evidence-based decision making, and relationship management. Middle management leadership and decision-making styles as well as the implementation of QMS are examined in this study to see the extent of their correlation with firm performance.*

*The research was conducted on a heavy equipment company in Indonesia with a case study of PT. United Tractors, Tbk by involving 55 middle management respondents and 310 subordinates in 55 branch offices/sites throughout Indonesia. The results of the study concluded that QMS implementation was the only construct in this study that was positively relationship to firm performance, while decision making style was negatively relationship and leadership style was not significantly relationship. In another section, it was also confirmed that leadership style was negatively relationship to decision making style, it was also found that leadership and decision-making style middle management had no relationship to QMS implementation. Leadership style middle management PT. United Tractors, Tbk is known to be more inclined to the laissez faire style compared to the transformational and transactional styles, while the decision-making style is strongly predicted to dependent style compared that avoidant, rational and spontaneous styles.*

**Keyword:** *Decision Making Style, Firm Performance, Leadership Style, QMS Implementation*

## 1. Introduction

Quality Management System (QMS) is an important tool for organizations or companies to improve their performance and to ensure the satisfaction of their customers. The implementation of a quality management system is a strategic decision for an organization or company that can help an organization to improve its overall performance and provide a solid basis for sustainable development initiatives. Quality Management System (QMS) ISO 9001 is one of the most popular international standards in the world and is widely used in various organizations or companies in various countries today.

The potential benefit of an organization or company that implements a quality management system based on international standards is the ability to consistently provide products or services that meet aspects of customer needs and applicable legal and regulatory requirements. Quality management principles include customer focus, leadership, people involvement, process approach, improvement, evidence-based decision making and relationship management.

Referring to these quality management principles, an organization or company in carrying out its functions requires leadership that can direct the course of the organization to achieve its targeted goals. Leadership is a process in which an individual influences a group of individuals to achieve common goals, as well as a process of providing goals (meaningful direction) for collective efforts and causing efforts to be expended to achieve goals (Mezrig & Sarra, 2016). Leadership is at the core of a successful strategic plan and a major factor in the success of an organization or company (Kumar & Sharma, 2018).

In organizations, the quality of decision making is the main element and the essence of leadership. Leadership and decision making are two things that can affect the achievement of an organization's success. Several studies link leadership, decision-making style with organizational performance which is intended to find out which constructs having greater association towards firm performance. The relationship between leadership style and decision-making as revealed in several studies such as those conducted by Abbas & Daniel (2019), Teoman (2018), Chan et al. (2016), Al Khajeh (2018) and many others. In principle, everyone in the organization will make decisions about many different things in different circumstances or situations.

The implementation of QMS in an organization or company also directly related to leadership and evidence-based decision making applied to each work unit. How a QMS can be executed properly and can directly impact the organization or company requires adequate strategies, processes, and resources. Leadership in the realm of QMS will focus more on middle management positions because most of the implementation areas are in the operations section and they are the ones who are directly involved in making decisions regarding strategic steps in implementing the QMS in an organization or company.

Many leadership concepts are described in previous research, but one of the most highlighted forms of leadership classification includes at least three styles - namely Transformational, Transactional, and Laissez-faire leadership. Bass and Avolio (1993) at Koech (2012) explain that leadership can be conceptualized in behavioral areas from Laissez-faire (*non-leadership*) style, Transactional leadership style (*which*

*relies on reward and punishment systems*), to Transformational leadership style (*based on inspiration and behavioral charisma*). This three-style leadership approach was chosen because of the fact or quality of the generally accepted results in management research and the accuracy shown through the research findings. Chan et al. (2016) stated that there is a positive relationship leadership style and quality management practices in manufacturing companies. Al Khajeh (2018) found a positive relationship between leadership style and organizational performance. However, some of the previous studies also found that leadership style was not positively correlated with organizational performance. These show that the relationships between leadership styles among previous researchers has different results. Hence, a further study on these relationships warrants its consideration.

As with leadership style, decision making style is also widely studied in previous studies that have several different approaches. Rehman (2012) found the relationship of decision-making style with organizational performance. Rashid (2012) found a positive relationship between leadership style and decision-making style and Al-Omari (2013) argues that there is no significant relationship between leadership styles and the decision-making style. This also shows that the relationship between leadership style and decision-making style is still being debated by researchers, and there is still a need for future evidence.

Based on the previous studies discussed above, the relationship between constructs is inconsistent across various industry sectors, even though they use the same parameters. Therefore, further studies need to be carried out to clarify the relationship between leadership

style and decision-making style in organizations.

There are several things that will become research questions that arise can be grouped as follows:

*Question #1:* Is there a relationship between leadership style and decision-making style?

*Question #2:* Is there a relationship between decision-making style and Quality Management System (QMS) implementation?

*Question #3:* Is there a relationship between decision-making style and firm performance?

*Question #4:* Is there a relationship between leadership style and Quality Management System (QMS) implementation?

*Question #5:* Is there a relationship between leadership style and the firm performance?

*Question #6:* Is there a relationship between Quality Management System (QMS) implementation and firm performance?

## 2. Literature Review

### 2.1 Leadership Style

In accordance with the focus of this research, the leadership styles that will be discussed are Transformational, Transactional, and Laissez-faire leadership. This leadership style approach is widely used in management studies because it is related to the accuracy of the results shown through research findings. The following is an explanation of each of these leadership styles:

*Laissez-faire leadership style* is commonly known as the hands-off style. Is a style in which the involvement of the manager is less and gives more freedom to employees/subordinates, all authority or power is given to employees/subordinates, and

they must set goals, make decisions, and solve their own problems.

Tosunoglu (2016) explains the definition of laissez faire from some leadership literature, Northouse (2010) states that laissez-faire is a hands-off approach and lets things run to influence individuals in the workplace. Bass and Avolio (1990) describe laissez-faire leadership as the absence of leadership and the avoidance of intervention.

*Transactional leadership style* is known as the concept of leadership that uses the carrot or stick principle or reward and punishment which is usually characterized as a tool in achieving goals (Bass, 1997 in Puni et al., 2014). Al-Khajeh (2018) explains that a leader is called a transactional leader if he is always willing to give something in return (Uchenwamgbe, 2013). These rewards can include many things such as promotions, salary increases, performance reviews, new responsibilities, and others.

There are three factors/dimensions that make up the transactional leadership style including:

- a. *Contingent rewards*: Leaders are required to clarify expectations and offer acknowledgment when goals or targets are achieved.
- b. *Management by exception (active)*: Leaders determine compliance standards, and eliminate factors that cause ineffective performance, can also punish subordinates for not complying with these standards.
- c. *Management by exception (passive)*: Passive leaders tend to avoid setting agreements, clarifying expectations and standards that need to be achieved by subordinates, but will intervene

when certain issues become apparent.

*Transformational leadership style* can be defined as a motivational leadership style that can clearly present the organization's vision and inspire employees to work towards the organization's vision by building connections with employees, understanding employee needs, and helping employees achieve their potential, and contribute to good results for organizations (Fitzgerald and Schutte, 2010 at Alrowwad, 2017). Rehman (2012) defines transformational style through which a leader can raise awareness and interest in the group, increase self-confidence at the individual or group level and strive to get subordinates concentration on achievement and growth (Bass and Avolio, 1994).

Puni et al. (2014) explained that transformational leaders always encourage subordinates to make extra efforts and go beyond what expected by previous subordinates (Burns, 1978). Transformational leaders can achieve the greatest performance from their subordinates because they can inspire subordinates to improve their abilities to succeed and develop innovative problem-solving skills (Bass, 1985).

There are four factors/dimensions that make up the transformational leadership style including:

- a. *Ideal influence (charisma)*: The leader shows great perseverance and determination in achieving goals, demonstrates high ethical standards, principles, moral behavior, sacrifices personal gain for the benefit of others, prioritizes the needs of subordinates over their own needs and shares success and risks with subordinates.
- b. *Inspirational motivation*: The leader encourages subordinates to

envision attractive future conditions while communicating expectations and demonstrating commitment to a common goal and vision.

- c. *Intellectual stimulation*: Leaders always stimulate the intellect by encouraging subordinates to try new approaches but still prioritize rationality.
- d. *Individual consideration*: The leader builds relationships with everyone, acts as a coach or mentor by paying attention to everyone's needs for achievement and growth, developing, and supporting subordinates to a higher level of potential.

Transformational leadership is considered the best leadership style for organizations that want to introduce some changes to the organization, because transformational styles create changes in the lives of individuals and organizations by changing and redesigning the perceptions, values, expectations, and aspirations held by employees (Bacha, 2014).

## 2.2 Decision-Making Style

Driver and Brousseau (1990) in Rashid (2012) argue that people have different decision-making styles and these differences in decision-making styles are related to the number of alternatives used, the amount of information and the extent to which leaders coordinate different input resources. Scott and Bruce (1995) define a response pattern that is learned and then becomes a habit shown by an individual when faced with a decision situation. Penino (2002) and Gambetti et al. (2008) stated that decision-making styles differ by situation, thus differing from cognitive styles and psychological types that do not change in all situations. Rowe and Boulgarides (1983); Betsch and

Iannello (2010) describe decision-making style as a personality trait, while Scott and Bruce (1995) state that decision-making style is not a personality trait but a habit-based tendency to react in certain ways and in certain decision contexts.

More literature is used to measure decision-making style, Berisha et al. (2018) explain that measurement of decision-making style can use the Decision Style Inventory (DSI; Rowe and Mason, 1987) or the General Decision-Making Style (GDMS; Scott and Bruce, 1995). Given that there is no universally accepted model of decision-making style, the GDMS model of decision-making style developed by Scott and Bruce (1995) was used in this study. Rashid (2012) defines that a leader is involved in the decision-making process by utilizing one of the following decision-making styles (DMS): (a) Rational DMS - defined on the use of reasoning and a logical approach to decision making; (b) Intuitive DMS - defined on dependence on hunches, instinctive experiences, and feelings; (c) Dependent DMS - defined by specific characteristics that require support from others before making a decision; (d) Avoidance DMS - determined by withdrawal, delay, withdrawal and cancellation scenarios; and, (e) Spontaneous DMS - characterized by a quick, quick and impulsive way of making decisions.

According to Scott & Bruce (1995) the correlation pattern between the five decision-making style scales indicates conceptual independence. Because of this, the decision-making styles as measured by the GDMS are not mutually exclusive, meaning that individuals do not depend on one decision-making style. Several other researchers (Russ et al., 1996; Sager & Gastil, 1999; Lo, 2000; Spicer and

Sadler-Smith, 2005; Galotti et al., 2006; Sylvie and Huang, 2008; Allwood and Salo, 2012; Curseu and Schrujjer, 2012) have tested the validity of the GDMS and support it as one of the most widely used sound instruments in the decision-making literature.

### 2.3 Quality Management Implementation

The Quality Management System (QMS) implemented by many companies has the aim of synergistically integrating all activities carried out to meet the needs of customers and other stakeholders (Kafetzopoulos et al., 2015; Sabbagha et al., 2016; Omlea et al., 2014). QMS implementation if done correctly is one of the most effective ways to achieve success in the market, maintain business competitiveness and even more so to stay afloat in the market (Kafetzopoulos et al., 2015; Priede, 2012; Salgado et al., 2015).

Quality Management System (QMS) ISO 9001 is one of the most popular international standards in the world and is widely used in various organizations or companies in various countries today. Implementation of a Quality Management System (QMS) promotes sustainability (Santos et al., 2011; Barbosa et al., 2018 in Bravi et al., 2019).

Mezrig & Sarra (2016) it is explained that there are seven quality management principles as follows: i) Customer focus, ii) Leadership, iii) Engagement of people, iv) Process approach, v) Improvement, vi) Evidence-based decision making, vii) Relationship management. A brief explanation of the seven principles of quality management is as follows; *Customer focus* emphasizes meeting customer needs and trying to exceed customer expectations, *Leadership* emphasizes the importance of building unity of

purpose and direction and creating conditions so that everyone can be involved in achieving organizational goals, *Engagement of people* emphasizes the importance of being competent, empowered and involving all people in the organization to increase the ability to create and provide value to the organization, *Process approach* emphasizes understanding and managing activities as a coherently interrelated process to produce consistent and achievable outputs more effectively and efficiently, *Improvement* emphasizes continuous focus on improvement as the hallmark of a successful organization, *Evidence-based decision making* emphasizes decision-based analysis and evaluation of data and information because it is more likely to produce the desired output, *Relationship management* emphasizes managing relationships with interested parties to achieve sustainable success in the organization.

### 2.4 Organizational Performance

Regarding the definition of organizational performance, everyone tends to have different views on the general and specific conceptualization of performance. From a process point of view, organizational performance is based on changing inputs into outputs to achieve certain results. From an economic point of view, organizational performance is translated as the relationship between cost effectiveness, output realization, and results achieved (Abu Jarad et al., 2010; Masa'deh et al., 2016 in Puni et al., 2014). In Bravi et al. (2019) explaining that organizational performance can be interpreted as the extent to which an organization can meet its own needs and the needs of its stakeholders to survive (Griffin, 2003).

In terms of measuring organizational performance, Traditionally, organizational performance has been measured

using financial performance, but has been criticized for encouraging a short-term view, rewarding short-term behaviour, causing management frustration and resistance, not having a strategic focus, and providing data on quality, and failing to provide information about customer needs and quality performance competitors (Yukl, 2008; Shahin et al, 2014 in Puni et al., 2014). Kaplan and Norton (1992) have developed the balanced scorecard (BSC) as a method for measuring organizational performance. This method can provide managers with a more comprehensive framework and allow modification of the organization's strategy into a set of performance criteria.

In principle, organizational performance is influenced by internal and external factors of the organization. Internal factors cover company specifications and include leadership style, organizational culture, job design, and human resource policies. External factors enable the same for all firms, these include market preferences and perceptions, state rules and regulations, and the country's economy (Chien,

2004; Mirza and Javed, 2013 in Puni et al., 2014). In this study, the dimensions of financial and non-financial performance will be used to measure organizational performance based on research conducted by Hernaus et al., (2012) (Alrowwad et al., 2017).

From the explanation of the literature and the study above, this study proposes a hypothesis:

- H1: Leadership style has a positive relationship with decision-making style
- H2: Leadership style has a positive relationship with QMS Implementation.
- H3: Decision-making style has a positive relationship with QMS Implementation.
- H4: Leadership style has a positive relationship with Firm performance.
- H5: Decision-making style has a positive relationship with Firm performance.
- H6: QMS implementation has a positive relationship with Firm performance.

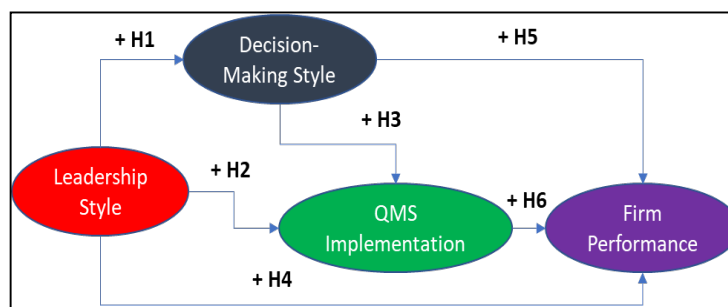


Figure 2.1 Research Model of the Study with Hypotheses

### 3. Research Method

#### 3.1 Sample and Data Collection

In this study, the sample from 55 branches/sites of PT. United Tractors, Tbk throughout Indonesia was divided

sample into two parts/groups where the assessment of the leadership style middle management was carried out by the subordinates (*random*) and the assessment for decision-making style, QMS implementation and firm perfor-

mance was directly carried out by 55 SDH branch/site. The total respondents who participated in this study were 55 SDH and 310 subordinates spread over 55 branches/sites.

The data obtained from the respondents through an online questionnaire using the google form and, in this study, because the leadership style assessment is rated by a subordinate a multi-level (two-stage) data processing system is applied as follows:

*Stage 1:* Assessment data from subordinates are collected and processed manually using excel and SPSS. There are two focuses to checking the *Intraclass Correlation Coefficients (ICC)* to assess reliability between two or more ratters, as well as test-retest reliability and then the *Inter Ratter Agreement (rWG)* to measure the level of conformity between ratters to a construct.

*Stage 2:* Combining leadership style assessment data from subordinate ratters with other construct assessment data carried out by middle management so that data on several middle managements are measured. This combined data is then tested in SPSS

including the outliers test, normality test, correlation test, multi-collinearity test. After the data is completed, testing in SPSS will produce final data which is then used to perform hypothesis testing using SEM which in this study uses Lisrel 8.8.

### 3.2 Research Variable

#### 3.2.1 Independence Variable

- a. *Leadership Style (LS)* is measured with 45 items across the four dimensions, refer to Multifactor Leadership Questionnaire (MLQ) from Bass and Avolio, (2004).
- b. *Decision-Making Style (DMS)* is measured with 25 items across five dimensions, refer to General Decision-Making Style (GDMS) Questionnaire from Scott and Bruce (1995).
- c. *QMS Implementation (QMS)* is measured with 34 items across eight dimensions, refer to QMS Implementation Questionnaire from Conca (2004).

Detail construct, dimensions and indicator/ observe variable of research can be seen in Table 3.1.



**Table 3.1** Constructs, Dimensions, and Indicators

Variable	Dimensions	Indicators/Observed Variables	
Leadership Style (LS)	Outcomes of Leadership (OL)	Extra Effort--> (EE)	SL 1-3
		Effectiveness--> (EFF)	SL 4-7
		Satisfaction--> (SAT)	SL 8-9
	Laissez-Faire (LF)	Laissez-faire--> (LF)	SL 10-14
		Management-by-Exception (Passive)--> (MBEP)	SL 14-17
	Transformational (TRF)	Idealized Influence (Attributed)--> (IA)	SL 18-21
		Idealized Influence (Behavior)--> (IB)	SL 22-25
		Individualized Consideration--> (IC)	SL 26-29
		Inspirational Motivation--> (IM)	SL 30-33
	Transactional (TRS)	Intellectual Stimulation--> (IS)	SL 34-37
Contingent Reward--> (CR)		SL 38-41	
Management-by-Exception (Active)--> (MBEA)		SL 42-45	
Decision-Making Style (DMS)	Avoidant (AV)	Avoidant--> (AV)	DMS 1-5
	Dependent (DEP)	Dependent--> (DEP)	DMS 6-10
	Intuitive (INT)	Intuitive--> (INT)	DMS 11-15
	Rational (RAT)	Rational--> (RAT)	DMS 16-20
	Spontaneous (SPO)	Spontaneous--> (SPO)	DMS 21-25
QMSImplementation(QMS)	Leadership (LD)	Leadership--> (LD)	QMS 1-4
	Quality Planing (QP)	Quality Planing--> (QP)	QMS 5-10
	Employee Management (EM)	Employee Management--> (EM)	QMS 11-15
	Suppliers Management (SM)	Suppliers Management--> (SM)	QMS 16-17
	Customer Focus (CF)	Customer Focus--> (CF)	QMS 18-20
	Process Management (PM)	Process Management--> (PM)	QMS 21-24
	Continues Improvement (CI)	Continues Improvement--> (CI)	QMS 25-29
	Learning (LR)	Learning--> (LR)	QMS 30-34
Firm Performance (FP)	Firm Performance	Firm Performance--> (FP)	FP 1-6

### 3.2.2 Dependence Variable

Firm Performance (FP) is measured with 6 items questionnaire refer to KPI's Service Department Head (SDH) as middle management to be measured focusing on profitability and growth.

### 3.2.3 Control Variable

This study has some control variable such as demographic, age, gender, education, tenure at their workplace, and their respective positions of the respondents to ensure that they have necessary qualifications to answer the questions in the survey representing their respective firms.

## 4. Result and Discussion

### 4.1 Demographic of Respondents

Demographic respondents of the Service team of PT. United Tractors, Tbk in this study can be grouped into several groups with the following explanation: Group gender is dominat-

ed by male gender as 335 respondents (97%). Then from the age group according to the demographics of permanent employees dominated by the age range of 31-40 years as 195 respondents (53%). Furthermore, when viewed from the group position is dominated by mechanic positions as 128 respondents (35%). When viewed from the level of education in accordance with the previous group position which was dominated by mechanic so that in the first place is high school and equivalent level as 251 respondents (67%). Finally, when viewed from the group of job tenur, it is almost evenly distributed and there are at the top, namely 11-15 years as 107 respondents (30%). We can also see geographically or work locations according to the position of the business area and branch office/site of PT. United Tractors, Tbk, which are mostly located in the Kalimantan as 236 respondents (65%). Detail demographic of respondents can be seen in Table 4.1.

**Table 4.1** Demographic of Respondents

Level	Variable	Measured Variable	Qty	%
Individual	Gender	Male	355	97%
		Female	10	3%
	Age	<20 years	0	0%
		21 - 30 years	69	19%
		31 - 40 years	195	53%
		41 - 50 years	87	24%
		>50 years	14	4%
	Education	High School or Equivalent	251	69%
		Diploma Degree (D3)	60	16%
		Bachelor's degree (S1)	52	14%
		Master's degree (S2)	2	1%
		Doctoral Degree (S3)	0	0%
	Job Tenure	<5 years	34	9%
		5 - 10 years	81	22%
		11 - 15 years	107	29%
		16 - 20 years	55	15%
		>20 years	88	24%
	Position	Mechanic	128	35%
		Officer/Staff/Member	85	23%
		Supervisor	91	25%
		Dept. Head Cabang/Site	55	15%
Manager Cabang/Site		0	0%	
Others		6	2%	

**4.2 Data Analysis**

The existing sample data was then further examined to see outliers using SPSS software version 25, the data was checked to see multivariate outliers using *Mahalanobis Distance* (MD) analysis. This MD will map the sample data and find the furthest distance from the centre that is acceptable.

Multivariate outliers will be indicated with a probability value less than 0.001. From the initial screening process it was found that there were 2 respondent data that had outliers below the threshold value which were then removed from the respondent sample. With the data removed from the sample, thus there are a total of 310 respondents as a sample to 308 respondents.

From the data that has no outliers, then measurements of *Intraclass Correlation Coefficients* (ICC) and *Inter Ratter Agreement* (rWG), from checking the

ICC and rWG values, the following data were obtained:

**Table 4.2** Result ICC and rWG

Test item	OL	PA	TRF	TRS
Ave rWG	0,789	0,694	0,758	0,777
ICC	0,958	0,844	0,934	0,763

From the results of the ICC and rWG tests on the subordinate ratter data, the average rWG of each construct dimension ranges from 0.7 to 0.8 which is still within acceptable limits.

*Descriptive Statistics Analysis* - Cronbach's Alpha testing shows that the construct leadership style, decision making style, QMS implementation and firm performance have values greater than 0.7 and all fall within Cronbach's Alpha range from previous studies, some even have higher scores. This shows that all the constructs used in this study have good reliability for use in this study.

The construct Leadership style (LS) from statistical data obtained in this study shows that the Laissez faire (LF) leadership style dimension has a mean value of 3.733 which is higher than the average mean value of 3.646, and this is the highest among the dimensions. This can illustrate the leadership style middle management (SDH) tendency towards this style, although other leadership styles also have a mean value that is quite close to this Laissez faire style.

Furthermore, in the Decision-making style(DMS) construct from the existing data, it was found that the highest mean value was found in the Dependent (DEP) dimension of 3,691 exceeding the average mean value of 3,030. This

mean value is quite far compared to other DMS dimensions whose mean value is below 3.0 The results of DMS from middle management are Dependent style.

In the QMS implementation construct, we can find the average mean value is quite large at 4,249, and many dimensions have a mean value above the average mean value, the largest mean value is in the Customer focus (CF) dimension of 4,391, followed by Continues improvement (CI) of 4.364 and Learning (LR) of 4.336. This shows the focus on middle management (SDH) in QMS implementation on these 3 dimensions. To make it easier to read and interpret the processing of this data, can be seen in Figure 4.1.



**Figure 4.1** Respondent Characteristics for Each Construct

While the complete results of the descriptive statistical analysis can be seen in Table 4.2.

**Table 4.2** Descriptive Statistics Analysis Results

Construct	Dimensions	Mean	Std. Deviation	Min	Max	Cronbach's Alpha
Leadership Style (LS)	Outcomes of Leadership (OL)	3,707	3,646	0,443	2,80	0,979
	<b>Laissez-Faire (LF)</b>	<b>3,734</b>		0,503	2,57	
	Transformational (TRF)	3,580		0,418	2,50	
	Transactional (TRS)	3,565		0,434	2,36	
Decision-Making Style (DMS)	Avoidant (AV)	2,636	3,030	0,784	1,00	0,792
	<b>Dependent (DEP)</b>	<b>3,691</b>		0,684	2,00	
	Rational (RAT)	2,936		0,714	1,00	
	Spontaneous (SPO)	2,855		0,692	1,50	
QMS Implementation (QMS)	Leadership (LD)	4,255	4,249	0,568	1,50	0,959
	Quality Planing (QP)	4,227		0,637	2,50	
	Employee Management (EM)	4,218		0,567	3,00	
	Suppliers Management (SM)	3,964		0,769	1,00	
	<b>Customer Focus (CF)</b>	<b>4,391</b>		0,488	3,00	
	Process Management (PM)	4,236		0,534	3,00	
	Continues Improvement (CI)	4,364		0,565	3,00	
	Learning (LR)	4,336		0,578	3,00	
Firm Performance (FP)	Firm Performance (FP)	4,118	0,776	1,00	5,00	0,85

*Normality Test* - the way to determine the normality of the data is to use the Kolmogorov-Smirnov and Shapiro-Wilk normality tests. The data will be determined as abnormal (sig score < 0.05), and the results of the normality test with Kolmogorov-Smirnov and Shapiro-Wilk showed that the index of all constructs in this study was from the minimum required limit. This confirms that the data is more accurately analyzed using nonparametric tests. The results of testing the non-parametric normality data can be seen in Table 4.3 below.

**Table 4.3** Normality Test Results

Variable	Kolmogorov-Smirnov		Shapiro-Wilk	
	Statistic	Sig.	Statistic	Sig.
FP	.256	.000	.832	.000
LS	.144	.006	.977	.387
DMS	.168	.001	.949	.020
QMS	.238	.000	.820	.000

*Correlations Test* - using the Spearman's rho correlation test feature in SPSS to show that there were variables that were significantly correlated with each other ( $P < 0.01$ ). The results of the normality test indicate that the data is not normal and thus Spearman's correlation is best used for

non-parametric data. The results of the Spearman's Rho Correlation Test Results, data shows that QMS implementation is the only construct that has a correlation to firm performance of 0.287 while the other two constructs have no significant correlation. Details of test results as shown in Table 4.4 below.

**Table 4.4** Spearman's Rho Correlation Test Results

Variable	FP	LS	DMS	QMS
FP	1			
LS	.136	1		
DMS	-.089	.170	1	
QMS	.287*	-.111	.091	1

*One Way Anova Compare Means Test*- a comparison test of the averages was also carried out using one-way ANOVA to determine whether there were differences in respondents' perspectives on each construct based on the demographic control variables used in this study. The standard value of the one-way ANOVA, which is equal to ( $P < 0.01$ ), is said to have a significant difference if analyzed below the standard.

The result of the compare means test using one-way ANOVA from the existing data, no differences in respondents' perspectives were found, both from demographic age, education, job tenure which means that all respondents have the same perspective in assessing all constructs in the study.

**Table 4.5** Compared Means Test Analysis

Variable	FP	LS	DMS	QMS
Gender	-	-	-	-
Age	.064	.528	.777	.060
Education	.170	.236	.423	.177
Working Tenure	.041	.477	.562	.072

*Multicollinearity Test* - if there is multicollinearity between the independent variable (IV) and the dependent variable (DV), the results of

the analysis can be disrupted (Ainiyah et al., 2016, Zeltzer, 2019). The results of the multicollinearity test show that there is no multicollinearity in the test data because all tolerance scores are > 0.1 and the variance inflation factor (VIF) score is < 10 (Ainiyah et al., 2016). The results can be seen in Table 4.6 below.

**Table 4.6** Tolerance/VIF Score from Multicollinearity Test

IV	FP		LS		DMS		QMS	
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
FP								
LS	.933	1.072			.994	1.006	.985	1.015
DMS	.915	1.093	.925	1.081			.985	1.015
QMS	.917	1.091	.925	1.081	.994	1.006		

*Measurement Model Analysis* – the results of the leadership style construct test are shown in Table 4.7 below.

**Table 4.7** Measurement Model Analysis

Item	Threshold Value	LS	DMS	QM	FP
		HOM	HOM	HOM	HOM
CR	≥0,7	0,99	0,86	0,98	0,87
AVE	≥0,5	0,96	0,62	0,88	0,69
X2/df	≤3	8,64	9,61	43,03	6,00
P-value of X2	n/a	1,00000	0,90775	0,10850	0,85708
RMSEA	≤0,08	Perfect fit	0	0,129	0
GFI	≥0,95	Perfect fit	1	0,96	1
SRMR	≤0,08	Perfect fit	0,0093	0,0079	0,0045
CFI	≥0,95	Perfect fit	1	1	1
NFI	≥0,95	Perfect fit	1	0,99	1
NNFI	≥0,95	Perfect fit	1,05	0,98	1,04
IFI	≥0,95	Perfect fit	1,02	1	1,01

From this test data, the VE value is an indicator of reliability, in the single factor model, the lower oblique model and the high order model (VE > 0.5) which means significant. Based on this fact, it would be better to represent leadership style using a high-level model, because it has been proven to be better than other models.

*Structural Model Analysis* – this study has six hypotheses, after testing the hypothesis with SEM, it was found that there were 3 hypotheses that were supported while 3 hypotheses were not supported. Detail hypothesis result can be seen in Table 4.8 below.

**Table 4.8** Hypothesis Testing Results

No	Hypothesis Relationship	Structural Coefficient	T-value	Hypothesis Test Result
H1	Leadership style has a positive correlation with decision-making style	-0,47	-3,23	Supported (Negative)
H2	Leadership style has a positive correlation with QMS Implementation	-0,24	-1,76	Not Supported
H3	Decision-making style has a positive correlation with QMS Implementation	-0,08	-0,53	Not Supported
H4	Leadership style has a positive correlation with Firm performance	-0,06	-0,36	Not Supported
H5	Decision-making style has a positive correlation with Firm performance	-0,96	-3,8	Supported (Negative)
H6	QMS implementation has a positive correlation with Firm performance	0,38	2,54	Supported (Positive)

### 4.3 Discussion

The result of testing the hypothesis from the data obtained turned out to have undergone many changes compared to the initial hypothesis which was based on the theoretical basis and previous research. The relationship between leadership style and decision-making style middle management is supported but negative (*opposite*), somewhat different from the initial analysis theoretically supported positively. We relate the research results obtained in accordance with the results of data processing that the middle management that the leadership style has a significant Laissez faire style compared to the Transformational and Transactional styles. Meanwhile, in terms of decision-making style, the results have significant to the Dependent (DEP) compared to other decision-making styles, namely Avoidant (AV), Rational (RAT) and Spontaneous (SPO).

As discussed earlier, the Laissez faire style has the characteristics of giving subordinates freedom of decision and only a few decisions because they leverage their authority. This is also in accordance with the decision-making

style model which tends to be Dependent on the style which requires the presence or intervention of others to make decisions. If we look at the actual work of middle management in this study, it will indeed be in the technical realm so that some of this work can be carried out by their subordinates (supervisors) and if there is something to be decided by middle management, they will tend to require information assistance from the subordinates (supervisors).

The relationship between leadership style, decision-making style and QMS implementation does not affect it directly. The pillars of QMS do have leadership and decision making but if a company has been running QMS for a long time, it tends to be able to run in a system so that there is not much need for leadership and decision-making roles in its implementation. If we relate this to the character of the leadership style, which is Laissez faire and the decision-making style is Dependent, it can strengthen that there is not much middle management intervention in the implementation of QMS because it can run without being influenced by the



leadership and decision-making style of middle management.

There are many studies that discuss leadership style and organizational performance and most of the results show a significant correlation between both, but from leadership style as a predictor it is more addressed to Transformational and Transactional types, while from the research facts obtained leadership style middle management tends to Laissez faire. From this study, it found a relationship between Laissez faire style and firm performance negatively and not significant, this happens because this Laissez faire type is more likely to take less role in deciding and leverage more to its subordinates. The fact of this research if we relate it to the characteristics of the service business at the branch/site which is more in the technical realm and heavy equipment operations for the customer business, the work is also more in the technical and operational realms where in this realm there are more supervisors who do it. That is why then the role of leadership style middle management (SDH) in firm performance is negatively correlated, this is also in accordance with the Laissez faire middle management leadership style which gives more freedom to supervisors to make decisions, especially related to technical and operational domains at the branch/site. The findings of the research on decision making style middle management have no significance with firm performance and are in accordance with the previous explanation according to the characteristics of the branch/site work so that decision making style middle management does not have much effect on firm performance.

From this study, the thing that has the most impact on firm performance is the

implementation of QMS, compared to the leadership style or decision-making style. Because QMS implementation is one way to improve company performance by creating services and products with superior and consistent quality. From the research facts in constructing QMS implementation, the Customer Focus (CF), Continuous Improvement (CI) and Learning (LR) dimensions are more prominent than other dimensions. This shows the focus of middle management (SDH) in QMS implementation on these dimensions. If we relate to the business at PT. United Tractors, Tbk especially in the service department area, apart from customer focus, the big thing that is a concern is continuous improvement and learning, customers who are satisfied with the company's services because they are supported by competent and innovative human resources will certainly be able to produce a differentiation of services provided and this will improve firm performance.

## **5. Conclusion and Recommendation**

### *5.1 Conclusion*

This study on impact leadership and decision-making style middle management on QMS implementation and firm performance can finally be concluded that QMS implementation is the only construct in this study that is positively relationship with firm performance, while decision making style is significantly negative relationship with leadership style is not significantly relationship. On the other hand, leadership style is significantly negative relationship with decision making style. Leadership style middle management PT. United Tractors, Tbk is known to be more Laissez faire style compared to the Transformational and Transactional styles, while the decision-making style is strongly predicted Dependent style

rather than Avoidant, Rational and Spontaneous styles.

From this research also found that leadership and decision-making style middle management PT. United Tractors, Tbk is not directly correlated with QMS implementation so that the leadership style and decision-making style of middle management cannot directly influence the success of QMS implementation at the branch/site. The success of QMS implementation in the company can improve the quality of products or services provided to customers and will ultimately improve firm performance and business sustainability in the future.

## 5.2 Recommendation

1. In the implementation of QMS PT. United Tractors, Tbk can maintain Customer focus (CF), Continuous improvement (CI), Learning (LR) and improve Suppliers management (SM) so that product or service quality and business sustainability are maintained.
2. The leadership style of middle management PT. United Tractors, Tbk can be encouraged to be more actively involved in operation and decision-making so that can become more Transformational style to make more impact on improving firm performance.

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