Influence of Just In Time Toward Corporate Performance: Mediating Role Of Total Quality Management

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Abstract
Industry in Indonesia faces challenges that are not easy. Companies are required to be able to increase their competitive advantage, both in the domestic and global markets. Companies are trying to implement various management systems, including management systems, including Just in Time (JIT) and Total Quality Management (TQM) in order to improve company performance. This study aims to: 1) determine and analyze the effect of just in time on total quality management. 2) determine and analyze the effect of total quality management on operational performance, 3) determine and analyze the effect of just in time on operational performance. The type of research is causal associative. The data used is primary data obtained through questionnaires were prepared with closed questions using a semantic differential scale. The number of samples used was 270 and the regression analysis used the AMOS computer program. The results state that just in time has a positive effect on total quality management. Total Quality management has a positive effect on operational performance. Just in time has a positive effect on operational performance, but the indirect effect on operational performance through total quality management becomes stronger.

Keywords: *just in time, total quality management, operational performance, AMOS*

INTRODUCTION

Industry in Indonesia faces challenges that are not easy. Companies are required to increase their competitive advantage, both in the domestic and global markets. On the other hand, the increase in production costs experienced by many manufacturing companies cannot be avoided. The high increase in workers' salaries, the increase in raw materials and fluctuating energy tariffs make manufacturing companies have to find ways to survive in an era of intense competition. Companies are trying to implement various management systems, including Just in Time (JIT) and Total Quality Management (TQM) to improve their performance. Some studies state that the successful implementation of JIT and TQM in the company can improve the quality of products and services produced, reduce operational costs, and increase customer satisfaction which affects the improvement of financial performance (Abdallah et al., 2014; Beshkooh et al., 2013; Sidiwanto, 2018; Truong et al., 2014).

Consumer demand for high quality goods and affordable prices is a trade off that is difficult to avoid for producers. Product quality is a very important factor for customer satisfaction, the products delivered must be in accordance with the desired specifications and have a good level of reliability. Various industrial companies are looking for ways to produce goods that have a high level of quality but efficient production costs. Efficiency in planning and production processes is a way that manufacturing companies can use to reduce production costs, ensure the absence of damaged or repaired goods, strict supervision in the production process to prevent or reduce waste, eliminate work that does not add value to production goods. The hope

24

is that the costs incurred can be efficient and effective. In addition to competitive prices, consumers demand that products are delivered according to the promised time, because late delivery will have a negative impact on consumers.

Just in time is a system that can be applied in every manufacturing industry with the aim of improving company performance by eliminating waste in every process carried out by manufacturing companies, from the procurement process, the production process, the process of delivering finished good to consumers. According to (Womack & Jones, 2013)(Womack & Jones, 2013), just in time production is a production process that produces more products with less people, less equipment, less time and less space. Most organizations want lean manufacturing/just in time in response to their needs, to fundamentally improve business competitiveness by reducing costs while improving quality and customer responsiveness including meeting delivery times, Benefits of just in time, according to (Keitany & Riwo-Abudho, 2014)(Keitany & Riwo-Abudho, 2014), there are three major ones, namely: Increase profitability (26%), increase manufacturing flexibility (21%) and increase competitiveness and efficiency (18%). Meanwhile, according to (Nekoueizadeh & Esmaeili, 2013)According to (Nekoueizadeh & Esmaeili, 2013), just in time and total quality management contribute to cost reduction (10%), profit improvement (7%) and product quality (7%).

Previous research on Just In Time and Total Quality Management concluded that both had a positive effect on improving company performance. (Sidiwanto, 2018). Furthermore, this time the researcher wants to see the effect of Just In Time, on operational performance by using Total Quality Management as a mediating variable. In this study, besides wanting to see the direct effect, it will also see the indirect effect and the total effect of JIT on operational performance through TQM. The research will be conducted at PT. X is one of the companies that produces electronic goods for both the national and international markets. PT. X, established since 1960 and has now produced six types of electronic products that are daily used by the public, namely water pumps, air conditioners, refrigerators, laundry systems, audio, and electrical fans. In this study, researchers wanted to see how much influence JIT has on operational performance through TQM, by taking a sample of industrial companies in Jakarta. Based on the background above, the problem of this research is how Just In Time affects Total Quality Management and Operational Performance.

The just in time system is a production system designed to get the best possible quality, cost and delivery time, by eliminating all waste in internal processes, so as to be able to deliver the ordered products according to the wishes of consumers in a timely manner, (Imai, 2018). According to (Heizer. & Render, 2011), just in time is an effort to reduce inventory, thereby cutting all costs. (Gaspersz, 1998) explains that just in time is a philosophical concept, producing products that are needed when customers need them, with the amount according to customer needs, at a prime quality level, from each stage of the process in the manufacturing system, in an economical, efficient manner through continuous improvement and eliminating waste. This is reinforced by the results of research conducted by (Barkhodari & Denavi, 2017), type of causal associative research, quantitative approach, data collection using surveys, data analysis using SEM AMOS. The results concluded that Just in time has a positive and significant relationship with operational performance. Just in time eliminates waste, optimizes the use of resources throughout the supply chain. Just in time quantities integrate the entire supply, including speed of supply, reliability, responsibility and flexibility. This type of causal associative research with a quantitative approach, data collection using surveys, using SEM AMOS data analysis. In line with this, research conducted (Chen & Tan, 2013) supports that just in time implementation has a positive and significant relationship with operational performance.

Studies conducted by (Zidan, 2014) taking a sample of manufacturing companies in Egypt, concluded that the just in time system is believed to improve operational performance

through increased investment, marginal profit and storage turnover. By taking the case in the industry in Jordan, (Haraisa, 2017) concluded that Just in time (equipment layout, supplier quality, reduction time and production pull) has a positive influence on operational excellence. In line with this, modeling that examines the effect of Just in time on the supply chain and organizational operational performance concludes that the effect of JIT on operational performance is indirect through the supply chain. (Jr et al., 2013). This is in line with research (Belekoukias et al., 2014)(Belekoukias et al., 2014), using a quantitative SEM approach concluded that JIT has the highest influence in improving organizational performance. The implementation of Just In Time has a positive influence on the performance of manufacturing companies stated by (Hadioetomo, 2009; Utama & Radhi, 2009).

TQM is a philosophy to fulfill quality that satisfies customer expectations .Quality is an important element in producing goods in order to win the competition. Japan views quality as the "vision" that the organization must do and places quality above all functions. Quality is the responsibility of top management, and involves everyone including suppliers, consumers and also the wider community. (Crosby, 1979) stated that quality is conformance to requirements, which is in accordance with what is required or standardized. (Nasution, 2005) explains four main principles in Total Quality Management, namely: customer satisfaction, respect for employees, fact-based management, and continuous improvement. A.V. Feigenbaum in (Slack & Lewis, 2014)defines total quality management as a system for integrating quality development, quality maintenance, effective improvement efforts of various groups in an organization so as to enable production, services at the most economical level. Studies conducted (Flynn et al., 1995) states that the application of JIT can improve quality performance through improved feedback processes and disclosure of problems within the company. Meanwhile, according to (Golhar & Stamm, 1991; Krajewski et al., 1987; Lambrecht & Decaluwe, 1988) state that in the manufacturing industry, JIT plays a role in reducing inventory and improving customer service levels through leveled production, reduced set-up time, and lot sizes. Similarly, a study conducted by (Golhar et al., 1990) in (Golhar & Stamm, 1991), concluded that the application of JIT provides the benefits of reduced inventory, increased productivity, and better product quality. Research conducted (Alencastro et al., 2017) analyzed the relationship between the elements of the QMS theoretical framework, two categories emerged as important to achieve the expected results and the results obtained from case studies 1, 2 and 3 confirm that the quality management procedures implemented correctly do not systematically defect quality assessments that have the potential to disrupt performance.

(Slack & Lewis, 2014) The company's operational performance can be measured through five dimensions, namely: Quality, speed, dependability, flexibility and cost. Company performance is the company's ability to handle challenges, customer satisfaction, order fulfillment, product innovation, inventory costs, market penetration, product costs, quality costs, profitability, productivity, response to consumer demand, on-time delivery. Dimensions of operational performance according to (Dessler, 2011)emphasizes on: 1) quality, where the results of activities carried out are close to perfect in the sense of adjusting some ideal way or meeting the expected goals, 2) quantity, the amount produced in units, the number of activity cycles completed, 3) timeliness, the level of an activity completed at the desired time, 4) coordination with output results and maximizing the time available for other activities 5) effectiveness, the level of use of the organization's human resources to increase profits or reduce losses from the use of resources, 6) independence, the level at which an employee can perform his work function without asking for help guidance from supervisors or asking for supervisory intervention to avoid adverse results.

Research (McCloskey & Collett, 1993) concluded that the implementation of TQM has a positive effect on increasing productivity, profitability and overall performance. However, some study results show doubts related to the various benefits obtained by companies that implement TQM and JIT, (Filippini, 1997; Taylor & Baker, 1994). The study conducted by (Filippini, 1997) stated that although the application of TQM is recognized as a management model that can improve quality and improve company performance as measured by profit and market share, the success rate of its application is relatively low. Research (Taylor & Baker, 1994) stated that so far there has been no agreement from several empirical research results that test the significance level of the effect of TQM implementation on customer satisfaction that can improve company performance. In contrast to research conducted by (Sidiwanto, 2018)who took a sample in one of the industrial companies in Indonesia, concluded that both JIT and TQM have a direct influence on operational performance. TQM is an approach to maintaining life and increasing the competitiveness of the company. In line with these results, using multiple regression analysis using SPSS, the implementation of TQM has a positive influence on company performance. (Utama & Radhi, 2009). Product quality according to (Juran, 1993) is the suitability of product use to meet customer needs and satisfaction. The suitability is based on the following five main characteristics: a) technological (strength or durability), b) psychological (taste or status), c) time (reliability), d) contractual (guarantee), e) ethical (courtesy, friendliness, honesty). Companies that focus on customer needs can increase customer satisfaction, the further effect can have a positive influence on consumer loyalty. (Malun & Sulistyowati, 2019). Loyal consumers will contribute positively to company performance. Studies conducted by (Al-Damen, 2017) taking cases in oil and gas companies in Jordan concluded that total quality management has a positive effect on organizational performance and operating efficiency. Studies conducted by (Koc, 2011) concluded that not only the direct effect of total quality management on company performance, but also the indirect effect of total quality management on performance through internal and external failures in manufacturing SMEs in Turkey. In line with research conducted by (Faritsy et al., 2014), by taking the case of MSMEs in Indonesia, concluded that total quality management has a positive effect on improving business performance.

RESEARCH METHOD

Explaining chronological research, including research design, research procedure (in the form of algorithms, Pseudocode or other), how to test and data acquisition. (Cronje, 2020). The description of the course of research should be supported by references, so that the explanation can be accepted scientifically. (Fryer & Dinsmore, 2020).

The research location is Bekasi Manufacturing Company, one of the industrial companies that produces electronic goods, which is domiciled in Bekasi, Indonesia. The type of research according to its explanation includes causal associative research. The population is a manufacturing company (positions at the level of Supervisor, Section Head, Manager, Business Unit Manager and directors). Sampling using non probability sampling category with purposive sampling technique. Sample selection is based on subjective judgment or judgment, selected people who are directly involved in TQM and JIT activities. The sample used is 270, this meets the requirements (Hair et al., 2012)that the sample required for analysis with Structural Equation Modeling (SEM) is a minimum of 100 samples. The study used the SEM-AMOS analysis method. The data measurement scale uses a differential semantic scale. In this study there are 3 (three) variables, namely Total Quality Management, Just in Time and Operational Performance. Total Quality Management (TQM) is an approach to doing business that tries to maximize the competitiveness of the organization through continuous improvement of products, services, labor, processes and the environment. (Nasution, 2005). TQM variables are measured by self-

developed instruments with quality criteria contained in ISO 9001. TQM variable consists of 7 dimensions. Just in Time dimension according to (Simamora, 2012) are a limited number of suppliers, minimal inventory levels, factory layout improvement, reduction of set-up period, integrated quality control, flexible labor.(Simamora, 2012).

This study has three latent variables namely JIT, TQM and Operational Performance. JIT has six dimensions and 15 indicators. The six dimensions are limited number of suppliers, minimum inventory, improvement of factory layout, setup time reduction, integrated quality control, flexible workforce. TQM has seven dimensions and 20 indicators. The seven dimensions are customer focus, leadership, respect for employees, relations with suppliers, employee education and training, process improvement and decision making. While Operational Performance has six dimensions and 18 indicators. The six dimensions are quality, manufacturing flexibility, lead time, inventory, productivity and cost. Details of the framework can be seen in Figure 1.
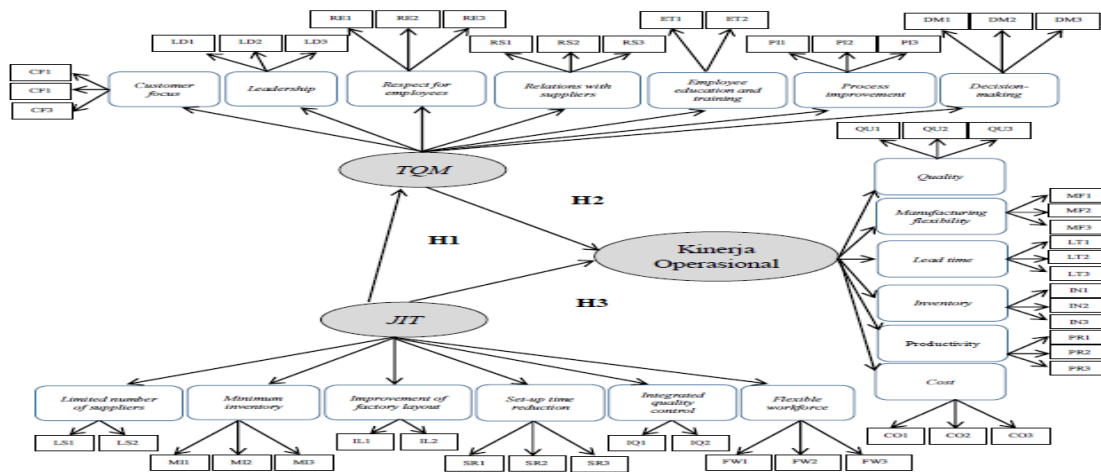

Figure 1. Research Model

Source: (Wisner et al., 2011)

Figure 1 explains the framework of the 2nd order structural equation model. This study aims to determine the influence between latent variables, the relationship between latent variables and their dimensions, and dimensions and their indicators. The hypothesis given is that JIT is expected to have a positive effect on TQM and Operational Performance.

RESULTS AND DISCUSSIONS

Confirmatory Factor Analysis Test

Confirmatory Factor Analysis (CFA) test aims to determine whether indicators can explain a construct. In this study, CFA was analyzed by looking at the significance level which must be below 0.05 and the standardized estimate value must be above 0.5 (Haryono, 2017). The analysis was carried out on the 1st CFA, namely the indicators against the dimensions and the 2nd CFA, namely the dimensions against the latent variables. If there is something that does not meet the requirements, the indicator must be removed and the CFA test is carried out again until the results are obtained according to the requirements. CFA test was conducted on SC strategy variables, competitive advantage variables and company performance variables.

The TQM Variable Regression Weight output shows that the probability value of all indicators and dimensions of Customer focus, Leadership, Respect for Employees, Relationship With Suppliers, Employee Education and Training, Process Improvement & Decision Making is 0.001 (***). Then all indicators and dimensions are declared valid. The standardized estimate loading values of Customer focus indicators are CF1 (0.645), CF2 (0.893), Leadership indicators LS1 (0.747), LS2 (0.828), LS3 (0.909), Respect for Employees indicators are, RE1 (0.904), RE2 (0.866), Relation With Suppliers indicators RS1 (0.803), RS2 (0.638), RS3 (0.789), Employee Education and Training indicators ET1 (0.710), ET2 (0.808), Process Improvement indicators PI1 (0.880), PI2 (0.790), PI3 (0.719) and Decision Making indicators are DM1 (0.848), DM2 (0.7412), DM3 (0.943). While in the Company's TQM variable, the loading factor value of the Customer focus dimension (0.962), Leadership (0.928), Respect for Employees (1.025), Relations With Suppliers (0.916), Employee Education and Training (0.932), Process Improvement (0.955) and Decision Making (0.980). The standardized estimate output values are all above 0.5, indicating that all indicators and dimensions can explain the TQM variable (Alhudri & Heriyanto, 2015).

The Regression Weight output of the Just in Time variable shows that the probability value of all indicators and dimensions is 0.001 (***). With this, all indicators and dimensions are declared valid. The strandadized estimate value of indicators FW1 (0.826), FW2 (0.740), FW3 (0.425) against the Flexible Workforce dimension, indicators IQ1 (0.380), IQ2 (0.942), IQ3 (0.460) against the Integrated Quality Control dimension, indicators SR1 (0.597), SR2 (0.163), SR3 (0.256) against the Setup Time Reduction dimension, indicators IL1 (0.886), IL2 (0.721) against the Improvement of Factory Layout dimension, indicators MI1 (0.731), MI2 (0.867), MI3 (0.789) against the Minimum Inventory dimension and indicators LN1 (0.893), LN2 (0.852). Flexible Workforce dimension (0.948), Integrated Quality Control (0.834), Setup Time Reduction (1.456), Improvement of Factory Layout (1.012), Minimum Inventory (0.923), Flexible Workforce (0.948) to the Just in Time variable. Invalid or standardized value <0.5: CF2, SR3, SR2, IQ1, FW3, IQ3, and RE1=0.504, because the STR dimension only has 1 SR1 indicator, and the IQC dimension only has 1 IQ2 indicator, so it is deleted. This shows that the Flexible Workforce, Improvement of Factory Layout, Minimum Inventory and Flexible Workforce dimensions can explain the Competitive Advantage Variables (Al Haraisa, 2017).

The results of the CFA test of Operational Performance Variables show that indicators QU1, QU2, QU3 on the Quality dimension, indicators MF1, MF2, MF3 on the Manufacturing Flexibility dimension, indicators LT1, LT2, LT3 on the Lead Time dimension, indicators IN1, IN2, IN3 on the Inventory dimension, indicators PR1, PR2, PR3 on the Productivity dimension and CO1, CO2, CO3 on the Cost dimension all indicators and dimensions produce Regression Weight output probability values at the 0.001 level. With this, all indicators and dimensions are declared valid. The standardized estimate values of Quality indicators are QU1 (0.853), QU2 (0.862), QU3 (0.841), Manufacturing Flexibility indicators MF1 (0.920), MF2 (0.648), MF3 (0.734). Lead Time dimension indicators are LT1 (0.856), LT2 (0.801), LT3 (0.867), Inventory indicators IN1 (0.878), IN2 (0.862), IN3 (0.853), Productivity indicators PR1 (0.768), PR2 (0.852), PR3 (0.786) and Cost indicators are CO1 (0.913), CO2 (0.916), CO3 (0.910). The loading factor value (estimate) is above 0.5, indicating that all indicators and dimensions can explain the Company Performance Variable. All indicators and dimensions in this study according to (Haryono, 2017);(Ghozali, 2017a)are valid.

Reliability Construct Test

Reliability test is a test to measure the internal consistency of the indicators of a variable formation which shows the degree to which each indicator indicates a common variable formation (Haryono, 2017). There are two test methods that can be used, namely composite (construct) reliability (CR) and variance extrated (VE). The cut-off value of construct reliability is

at least 0.70 while the variance extracted is at least 0.50 (Ghozali, 2017a) .The CR and VE test results show that the 1ndCFA values of the Customer Focus dimension (0.7 & 0.6); Leadership (0.7 & 0.6); Respect for Employees (0.9 & 0.8); Relations with Supplirs (0.7 & 0.6); Employee Education and Training (0.7 & 0.6); Process Improvement (0.8 & 0.6); Decision Making (0.8 & 0.7); 2nd CFA TQM variables (0.9 & 0.9); 1ndCFA Flexible Workforce dimension (0.7 & 0.6); Improvement of Factory Layout (0.7 & 0.6); Limited Number of Suppliers (0.8 & 0.7); 2nd CFA Just in Time (0.8 & 0.7); 1ndCFA Quality (0.7 & 0.6); Manufacturing Flexibilityl (0.7 & 0.5); Lead Time (0.7 & 0.5); Inventory (0.8 & 0.7); Productivity (0.7 & 0.6); Cost (0.7 & 0.5); 2nd CFA Operatonal Performance variable (0.8 & 0.7). All dimensions and indicators of the research constructs have factor values from the Construct Reliability test of more than 0.7 and Variance Extract of more than 0.5, meaning that all indicators and dimensions in this study are reliable.

Normality and Outlier Assumption Test

Multivariate normality analysis in AMOS 24 is performed using the critical ratio (c.r.) criterion from Multivariate on kurtosis. If the cr value is in the range between ± 2.58, it means that the data is normally distributed multivariate (Haryono, 2017). The results of normality testing show that there are several c.r values that are greater than ± 2.58. To fulfill the assumption of normality, it is necessary to conduct an outlier test by removing outlier data. Outlier data is obtained by comparing the Mahalanobis distance value with the Chi-square table at a significant 0.001. (Tabachnick & Fidell, 2007). In this study, the Chi-Square table value was 77.418 (obtained from the excel formula = chiinv (0.001,43). CHIINV(probability,deg_freedom).Then the calculated chi-square value of 4628.853> chi-square table 77.418, so the mahalanobis d-square value that is more than 77.418 is declared as outlier data.

So the Mahalanobis d-square value that is more than 77.418 is declared outlier data. There are 35 outlier data that must be removed. After the outliers are removed, the normality test is carried out again. The normality test output still shows that the multivariate is still not normal. Because the multivariate cr value of 28.668 is still above 2.58. To overcome multivariate abnormal data, the effect test can be analyzed with bootstrapping techniques (Ghozali, 2017a).

Goodness of Fit Test

Table 1. *Goodness of Fit*

Goodness of Fit	Required acceptance limit*)	Results after modification of the model	Decicions
CMI	≤ 2.00	1.554	Good Fit
GFI	≥ 0.90	0.923	Good Fit
AGF	≥ 0.90	0.858	Marginal
NFI	≥ 0.90	0.936	Good Fit
RFI	≥ 0.90	0.865	Marginal
IFI	≥ 0.90	0.976	Good Fit
TLI	≥ 0.90	0.972	Good Fit
CFI	≥ 0.90	0.976	Good Fit
RMS	≤ 0,08	0,042	Good Fit

*) Source: Ferdinand, 2014; Widarjono, 2015; Haryono, 2017; Ghozali 2017; Santoso, 2018

Absolute Fit Indices are tests that directly compare the sample covariance matrix with the estimate. One of them is the chi-square (x2) test. After modifying the model, the calculated chi-square value is 612,070> chi-square table 43.098. This shows that the model becomes invalid

because the sample covariance matrix becomes very different from the estimation matrix. By looking at the significance level of 0.000 <0.05, it means that the model is not fit. This happens because increasing the number of samples or increasing the number of indicators tends to increase the chi-square. Therefore, the conclusion for cases where the number of samples is large and the number of indicators is large must be complemented by other test tools such as Goodness of Fit (GFI), Adjusted Goodness of Fit Index (AGFI) and Root Mean Residual (RMR)(Santoso, 2018). The GFI test results obtained a value of 0.885 and AGFI of 0.858. The GFI and AGFI values range from 0 to 1, with the guideline that the closer to 1 the better the model will be in explaining existing phenomena. A value close to 1 indicates that the model can be considered fit. The RMR test aims to calculate the residual or the difference between the sample covariance and the estimated covariance, the RMR test results obtained a value of 0.057. The smaller the RMR result, the better it indicates the closer the sample number is to the estimate. A very small RMR value close to 0 indicates model fit. The RMSEA value obtained is 0.052 below 0.08, so the model can be considered fit (Santoso, 2018).

Incremental Fit Indices is a test comparing a particular model with the null model (baseline model), which is a model that assumes that all indicators are not correlated with one another. The NFI, CFI, IFI and TLI measuring instruments have a range of values between 0 and 1, where in general above 0.9 indicates that the model is fit. NFI obtained a value of 0.952. CFI obtained a value of 0.967. IFI obtained a value of 0.976 and TLI obtained a value of 0.975. By obtaining high numbers close to 1 and even some above 0.9, thus from the size of the incremental fit indices the model can be considered fit. Parsimony Fit Indices is a test that compares complex models with simple models. The model is considered fit if the PRATIO, PNFI, PCFI numbers are between the saturated model and independence model value ranges. PRATIO obtained a value of 0.901, PNFI = 0.701, PCFI = 0.854. from these results, the model is considered fit because it is between the range of values 0 to 1 (Santoso, 2018).

If one of the Goodness of Fit (GOF) criteria has been met, the model can be considered feasible (Widarjono, 2015)omitted. Overall Goodness of Fit can be assessed based on a minimum of five criteria being met (Ghozali, 2017a). According to (Hair et al, 2014) said that the use of 4-5 GOF criteria is considered sufficient to assess the feasibility of a model, provided that each criterion of GOF, namely Absolute Fit Indices, Incremental Fit Indices and Parsimony Fit Indices is represented(Haryono, 2017). So it can be concluded that the entire model can be considered feasible and can continue hypothesis testing to find out how much influence between variables in the model.

Hypothesis Test

In the complete structural model that has been modified and declared fit, hypothesis testing is then carried out using the bootstraping technique. Hypothesis testing is done with the bootstrap technique, because after removing 35 outlier data it still shows a multivariate non-normal distribution. Bootstrap is a resampling procedure where the original sample is treated as a population. Multiple sub samples with sample sizes equal to the original sample are then taken randomly with replacement from the population. With this method researchers can create multiple samples from the original data base (Ghozali, 2017a).

The use of 4 to 5 GOF criteria is considered sufficient to assess the feasibility of a model, provided that each criterion of GOF, namely Absolute Fit Indices, Incremental Fit Indices and Parsimony Fit Indices is represented, (Hair et al, 2014); (Ghozali, 2017a). (Ghozali, 2017b) So it can be concluded that the entire model is considered feasible and can continue hypothesis testing to find out how much influence between variables in the model. The complete structure that has been modified and declared fit, then a complete model is made as in Figure 3.
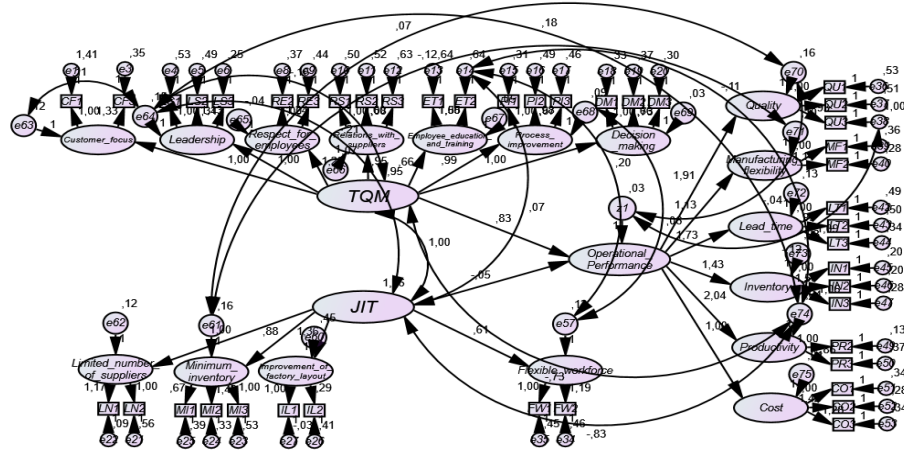
Figure 2. Model of the Effect of Just in Time on Total Qualty Management and Operational Perfomance

Figure 2 above is the output result of hypothesis testing using the bootstrap method, because after removing 35 outlier data there is still an abnormal distribution. Bootstrap is a resampling procedure where the original sample is treated as a population. Multiple sub samples with sample sizes equal to the original sample are then taken randomly with replacement from the population. With this method researchers can create multiple samples from the original data base (Ghozali, 2017b).

The step after it is stated that the data is valid, reliable and the model is good fit, then hypothesis testing is carried out. The output results of hypothesis testing on the influence between latent variables and the relationship between latent variables and their dimensions can be seen in Table 2.

Results of Hypothesis Test Outputs

			Estimate	S.E.	C.R.	P
TQM	<---	JIT	,841	,070	9,143	***
OP	<---	JIT	,798	,184	4,333	***
OP	<---	TQM	,973	,217	4,489	***
CUST	<---	TQM	0,962			
LEAD	<---	TQM	0,928	,139	9,924	***
RFE	<---	TQM	1,025	,134	11,370	***
RWS	<---	TQM	0,916	,126	9,761	***
EET	<---	TQM	0,932	,133	8,250	***
PRO_I	<---	TQM	0,955	,173	9,023	***
DEC_M	<---	TQM	0,980	,224	6,101	***
Quality	<---	OP	1,000			

			Estimate	S.E.	C.R.	P
MI	<---	JIT	0,923	,247	6,269	***
LNS	<---	JIT	0,623	,057	10,911	***
FW	<---	JIT	0,948			
IFL	<---	JIT	1,012	,062	11,848	***
COST	<---	OP	,818	,059	13,973	***
PROD	<---	OP	,592	,058	10,243	***
INV	<---	OP	,993	,066	15,021	***
LIT	<---	OP	1,017	,227	5,927	***
MF	<---	OP	,604	,050	12,199	***

Source: Data Processing Results

The analysis results in Table 2 show that hypothesis 1 (H1) is accepted, that just in time has a positive effect on total quality management with a significant level of 0.001, that every one unit increase in just in time can increase total quality management by 0.841. The strongest relationship of just in time variables is explained in order by the dimension of improvemen factory layout (1.012), the dimension of flexible workforce (0.948), the dimension of minimum inventory with loading factor (0.923), and the dimension of limited number of suppliers (0.623). This research supports is reinforced by the results of research conducted by (Barkhodari & Denavi, 2017).

The results of the analysis show that hypothesis 2 (H2) is accepted, that total quality management is positive to operational performance with a significant level of 0.001. An increase of one unit of total quality management can increase operational performance by 0.973. The strongest relationship of competitive advantage variables is explained in order by the dimension of process improvement with a loading factor value of (0.955), the dimension of respect for employees (1.025), the dimension of leadership (0.928), decision making (0.980), the dimension of relations with suppliers (0.916), the dimension of employee education and training (0.932) and the dimension of customer focus (0.962). This research supports the theoretical concepts put forward by (Nasution, 2005)that operational performance can be built through Customer focus, Leadership, Respect for employees, Relations with suppliers, Employee education and training, Process improvement, Decision-making. The results of this study are also supported by (Al-Damen, 2017) taking cases in oil and gas companies in Jordan concluded that total quality management has a positive effect on organizational performance and operating efficiency. In line with research conducted by (Faritsy et al., 2014), by taking the case of MSMEs in Indonesia, concluded that total quality management has a positive effect on improving business performance.

The results of hypothesis 3 (H3) show that H3 is accepted. The strongest relationship of operational performance variables is explained by the lead time dimension with a loading factor value (1.017), then quality with a loading factor value (1.000), the inventory dimension with a loading value (0.993), the cost dimension with a loading factor value (0.818), then the manufacturing flexibility dimension (0.604) and the weakest is the productivity dimension with a loading factor value (0.592). Just in time indirect influence on company performance through total quality management has a greater influence with a value of (0.818) than the direct influence of just in time on operational performance with a value of (0.798), this can be seen in (Table 8).

Table 3. Indirect Efect Hypothesis Results

Variable X	Mediation	Variable Y	Coefficient
Just in Time	Total Quality Management	Operational Performance	0,818

Table 8 states that there is an indirect effect of just in time on operational performance through total quality management of 0.818. Each increase of one unit of just in time can increase operational performance through total quality management by 0.818. This result states that total quality management is a perfect mediating variable between the just in time variable and operational performance.

The standardized estimate value of the indicator in the dimension of improvement of factory layout IL1 (0.886), IL2 (0.721) This implies that quality and layout improvement are interrelated to encourage companies to be more responsive to customer satisfaction and is the right decision to encourage just in time. These results are in line with those put forward by (Hadioetomo, 2009; Utama & Radhi, 2009) using a quantitative SEM approach concluded that JIT has the highest influence in improving organizational performance.

The standardized estimate value of the indicators in the Respect for Employees dimension in order starting from the largest are RE1 (0.904) and RE2 (0.866). It means that employee response is the most important in supporting the course of TQM. Previous research on Just In Time and Total Quality Management concluded that both have a positive effect on improving company performance. (Sidiwanto, 2018) adjusted to dynamic customer needs is effective in improving customer service quality. Also supported by Feigenbaum in (Slack & Lewis, 2014), defines total quality management as a system for integrating quality development, quality maintenance, effective improvement efforts from various groups within an organization so as to enable production, service at the most economical level. Also supported by research results (Mawih & Sulistyowati, 2019); (Huda & Syifaul, 2019);(Sulistyowati et al., 2019.)also concluded that TQM has a positive effect on improving operational performance.

The standardized estimate value of indicators in the lead time dimension in a row starting from the largest is LT3 (0.867), LT1 (0.856) and LT2 (0.801). This implies that the Lead Time policy is very effective in driving operational performance and overall company performance. According to (Slack & Lewis, 2014) the company's operational performance can be measured through five dimensions, namely: Quality, speed, dependability, flexibility and cost.

CONCLUSION

This study aims to determine the effect of just in time on operational performance through total quality management. The results state that just in time has a positive effect on total quality management. Total Quality management has a positive effect on operational performance. Just in time has a positive effect on operational performance, but the indirect effect on operational performance through total quality management becomes stronger. Total quality management is the perfect mediating variable of the effect of just in time on company performance. The strongest relationship of just in time is explained by the dimension of improvement of factory layout. Changes in the layout of the company are very responsive to the product is the right decision to encourage just in time. The strongest relationship of total quality management is explained by the Respect for Employees dimension. Policies to improve responsiveness to employees will affect quality and customer satisfaction. Because quality and

satisfaction are elements of business success in the global market. The strongest relationship of company performance is explained by operational performance. The lead time policy effectively drives operational performance and company performance.

The implications: 1) the company should give priority to the improvement of factory layout because it will prioritize responsiveness to timeliness, 2) Total quality management can be achieved through Respect for Employees which is adjusted to dynamic customer desires, 3) improved operational performance can be achieved with lead time efficiency.

The results of this study contribute to theory in increasing knowledge, proposing dimensions, and proposing conceptual frameworks of just in time, total quality management and operational performance. For practitioners, it can be an effective policy reference, especially for the manufacturing industry.

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