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Analysis of Total Quality Management (TQM), Just In Time (JIT) System, and Partnership Implementations on Corporate Competitive Advantages and Mediation of Lean Manufacturing Performance

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Abstract
The purpose of this paper is to investigate the influence of implementations of total quality management (TQM), just in time (JIT) system and partnership on corporate competitive advantages and mediation of lean manufacturing performance. Respondents of the research were managerial levels from supervisor to senior manager in manufacturing organizations. The data were collected from 106 manufacturing managers and supervisors and analyzed by using a path analysis methodology. Based on construct 2, it was found that TQM, JIT and partnership directly influenced lean manufacturing performance.Furthermore, TQM gave the most direct influencetoward corporate competitive advantages. Similarly,it was found on contruct 1 that TQM, JIT, and partnership directly influenced corporate competitive advantages, in which JIT gave the most influence toward lean manufacturing performance. Finally, lean manufacturing performance indirectly could be a mediation to increase the influence of TQM, JIT and partnership on corporate competitive advantages.
Keywords: total quality management, just in time, partnership, lean manufacturing performance, corporate competitive advantages.

1. Introduction

Competition in the industrial world today is inseparable from the influence of globalization and rapid technological change. A company that is able to obtain information quickly and master the technology will be easier in creating value added and innovation of the product so that the company and the product has the competitive advantages. Technology and information become very strategic to support the creation of effective and efficient management system. Therefore, company's can create a management system that can accommodate quickly and easily in the company operational process and the resulting product has the competitiveness of innovation.

Parts of production become the most important part in a manufacturing industry. It is in this part of production that requires enormous capital in production processes such as raw materials, machinery, equipments, and other factors of production. With the need for a lot of capital in this part of production, planning and implementation must be done very well so that the production process runs effectively and efficiently that can reduce unnecessary company expenditure to improve the productivity of company well.

Enterprise in improving the productivity and utilization of a company is to apply the principle of Lean Manufacturing or Lean Service even more widely is Lean Supply Chain Management. Lean is an ongoing effort to eliminate waste and increase the value added of products (goods/services) in order to provide value to customers (customer value), Gaspersz (2009). The goal of Lean is to continually improve customer value through continuous improvement of the value added to waste ratio (the value to waste ratio). To illustrate, the value to waste ratio of 50% Japanese companies such as Toyota Motor has a value to waste ratio of about 57%, the best companies in North America (the United States and Canada) is about 30% , and the value to waste ratio of the best companies in Indonesia is merely about 10%. A company can be considered Lean if the value to waste ratio has reached a minimum of 30%. If a company has not been Lean then it can be referred to Un-Lean Enterprise and categorized as a traditional company, Gaspersz (2009).

The company's efforts in achieving Lean must be totally covering all elements of company. The implementation of Total Quality Management (TQM) is absolutely applied in order to increase the value of product and management process and minimize production failure or errors. TQM is a total quality management applied to all organizational elements in accordance with corporate missions, goals and objectives by applying high leadership in running quality improvement programs in accordance with standard operating procedure set. Heizer& Render (2011).

In addition to the TQM implementation, the company should also apply Just In Time (JIT) system which is a system that continuously minimizes costs or waste by using the right materials at the right time and the minimum inventory (zero inventory) but not lacking. This concept applies to the whole process flow from raw materials to consumer with exact time, exact suppliers, and exact quantities. In the application of JIT, company must know the needs of the customer (pull system) so it can make the purchase of production needs on time and

in the right amount. JIT focus is on the company inventory system which includes inventory for raw materials, work in process (WIP), and inventory for finish goods. Inventory for raw material includes the management of raw materials to make minimum inventory but no shortage so that the cost can be minimum (zero inventory). To get the right amount of materials, company does pull system by forecasting to customer requirement so that the amount of materialsneededcan be identified and right when needed. Similar to other processes, JIT can be implemented by reducing processing errors continuously so as to minimize waste. Therefore, to set a good company inventory then the just in time system is needed.According to Haizer and Render (2011) " Just in time is a sustainable and compelling problem-solving philosophy that supports lean production. Lean production supplies customers exactly due to the desires of customers when they want it, without waste, through continuous improvement". Then the implementation of just in time should be done continuously in order to continue the realization of effective and efficient production and improve the productivity of companies that realize the good performance of the company's production.

Lean manufacturing performance can also be improved with partnership implementation by developing Supplier Relationship Management (SRM) system, Gaspersz (2009). The partnership will facilitate or assist the company in improving the utilization and distribution of products and shorten processing time.

Based on the background of problems previously mentioned, the researcher formulates the problems as follows: (1) how does Total Quality Management (TQM) implementation influence corporate competitive advantages?; (2) how does Just In Time (JIT) system implementation influence corporate competitive advantages?; (3) how does partnership implementation influence corporate competitive advantages?; (4) how does Total Quality Management (TQM) implementation influence lean manufacturing performance?;(5) how does Just In Time (JIT) System implementation influence lean manufacturing performance?; (6) howdoes partnership implementation influence corporate competitive advantages?; (7) how does lean manufacturing performance influence corporate competitive advantages? (8) what is the role of lean manufacturing performance mediation on corporate competitive advantages?

Based on the above formulation of the problems, the purposes of this study are as follows: (1) to know the influence of Total Quality Management (TQM) implementation on corporate competitive advantages; (2) to know the influence of Just In Time System (JIT) implementation on corporate competitive advantages; (3) to know the influence of partnership implementation on corporate competitive advantages; (4) to know the influenceof Total Quality Management (TQM) implementation on lean manufacturing performance; (5) to know the influence of Just In Time System (JIT) implementation on lean manufacturing performance; (6) to know the influence of partnership implementation on lean manufacturing performance; (7) to know the influence of lean manufacturing performance on corporate competitive advantages; and (8) to know the role of lean manufacturing performance mediation on company competitive advantages.

This research has the following benefits: 1) for the companies, this research can be a reference in making planning related to production, inventory, logistics and Supply Chain Management; 2) for higher education institutions, it also can be a reference in the development of science and technology especially in Management Science and in improving the accreditation of study program; 3) for the researcher, it can increase knowledge and skill in conducting research which is suitable with area of expertise that is Operational Management; and finally 4) for other researchers and students, this research can be used as a reference for further research.

2. Literature Review

There are several definitions of TQM. According to Ritzman & Krajeweski (2009), it is defined as "an approach in running a business that seeks to maximize the competitiveness of an organization through continuous improvement of products, services, people, processes, and the environment". According to Hashmi (2004), TQM is a management philosophy that tries to integrate all organizational functions (marketing, finance, design, engineering, production, customer service, etc.), focused on fulfilling consumer desires and organizational goals.

H1 : There is influence of TQM (X1) on corporate competitive advantages (Y2).

Lean manufacturing can be defined as an approach to identify and eliminate waste or activities that do not have value added (non-value-adding activities) through radical continuous improvement by flowing the products (materials, work-in-process, output) and information by using pull system of internal and external customers to pursue excellence (Gaspersz, 2011).

H2 : There isinfluence of JIT (X2) on corporate competitive advantages (Y2).

Partnership viewed from an etymological perspective isderived from the word rootof partner. Partnercan be translated as "spouse, mate, ally, or campaign". The meaning of the partnership is translated into fellowship or alliance. In addition, Dolphin (2011) states that JIT and partnership exist when suppliers and buyers work together on a common goal to eliminate waste and lower costs. This kind of relationship is important for the success of JIT. Each time the raw material is retained, the value must be added, and everytime the raw material moves, there must be additional value.

H3 : There is influence of partnership (X3) on corporate competitive advantages (Y2).
Today there are still many companies that turn a blind eye to the importance of training and education. They assume that the company is not a school, what is required is a ready-made skilled manpower. Such companies will only provide superficial training to their employees. This condition causes the companies cannot develop and are difficult to compete with other companies specially in the era of global competition such as : a) controlled freedom asin nature TQM involvement and empowerment of employees in decision making and problem solving are very important elements; b) must have unity of purpose in order the TQM can be applied well; c) the involvement and empowerment of employees which may increase the possibility of making a good decision, a good plan or a more effective improvement because it also includes views and thoughts of people who are directly related to the work situation.
H4: There is influence of TQM (X1) onlean manufacturing performance (Y1).
Lean manufacturing is popularly known as "Just-In-Time Manufacturing " developed by Toyota companies. This concept is now used by various industries and businesses that include engineering , administration, project management, and manufacturing. Lean manufacturing aims to change an organization to be more efficient, run smoothly, and competitive. The application of lean is reducinglead time and increasing output by eliminating waste that arises in various forms (Gaspersz, 2012).
H5: There is influence of JIT (X2) on lean manufacturing performance (Y1).
Partnership in essence is known as cooperation from various parties, either individually or in groups. According to Notoatmodjo (2007), partnership is a formal cooperation between individuals, groups or organizations to achieve a certain task or purpose.
H6: There is influence of partnership (X3) onlean manufacturing performance (Y1).
Lean is an on-going effort to eliminate waste and to increase the value added of products (goods/services) in order to provide customer value. The APICS Dictionary (in Gaspersz, 2007) defines Lean as a business philosophy based on the minimization of resources (including time) use in various corporate activities. Lean focuses on identifying and eliminating non-value-adding activities in design, production (for manufacturing), or operations (for services), and supply chain management which is directly related to customers (Gaspersz, 2011)
H7: There is influence of lean manufacturing performance (Y1) oncorporatecompetitiveadvantages (Y2).

3. Research Methods

The research was conducted at manufacturing companies in the territory of the Republic of Indonesia. This research used the quantitative data and they were collected based on the following sources: primary data and secondary data. The population of this research was all employees of manufacturing companies at the levels of supervisors, managers and top level managers. Then the sampling technique used was purposive sampling. The respondentswere determined based on the predefined criteria: the employeesat the levels of supervisors and aboveand they were linked to the company's operational process. The sample size was 106 respondents and it was determined based on the quote since this research was not concerned with the representative of the samples with the consideration of the researcher’s limitation (Sekaran, 2011). The data collection was done through questionnaires, interviews, and literature research. Before the data was taken, the researcher first defined the variablesto be studied including the indicators and measurement scales as in Table 1.

Table 1. OperationalDefinition of Variables and Measurement

No	Research variables	Indicator	Measurement Scale
1	Total Quality Management (X1) is a total product quality management system through all the elements in customer-focused organizations (Heizer& Render, 2011)	1) Customer Focus 2) Continuous Improvement 3) Leadership 4) Effective Operating Procedures 5) Employee Empowerment 6) Organizational Commitment 7) Tools of TQM (Heizer& Render, 2011)	Likert
2	Just In Time (X2) is a philosophyconceptof producing the required products based on customer requirements with the right amount and time to minimize waste (Gaspersz, 2009)	1) Pull Sytem 2) Value Stream 3) Inventory 4) Customer Value specification (Gaspersz, 2009)	Likert
3	Partnership (X3) is a cooperation between suppliers and companies in minimizing waste and cost with the aim of increasing the benefits of both parties (Heizer& Render, 2011)	1) Eliminate unnecessary activities 2) Speed up lead time 3) Guarantee of material availability 4) Price competitive 5) Quality assurance (Heizer& Render, 2011)	
4	Lean Manufacturing Performance (Y1) is the result of systemic and systematic approachesto identify and eliminate wasteor any non value-addedactivities through the continuous improvement radical by smoothing the flow of the production process and customer information *(pull system)* in realizing the advantages and perfection. (Gaspersz, 2009: 86).	1) Increased customer value 2) Improved cost efficiency of production process *3)* Increased production process time 4) Capacity that suits customer needs 5) Production quality 6) Systemic and systematic improvement in production process continuously (Gaspersz, 2009: 86).	Likert
5	Competitive advantages (Y2) is the ability of a company to achieve economic benefits above the profit that can be achieved by competitors in the market in the same industry. (Kotler, 2009)	1) Product price/cost 2) Product innovation 3) Product quality 4) Manufacturing flexibility 5) Delivery dependability 6) Time to market. (Heizer& Render, 2011) Suhong Li et al (2004)	

4. Results and Discussion

4.1 The Description of Respondents

The classification of respondents in this researchwas divided into five groups based on age, last education, position, length of work and type of company. It is necessary to know the description of characteristics of the respondents consisting of 43 people that became the samplesof the research. The validityof the test results can be seen in Table 2.

Table 2. Validity of Test Results

Item	Variables	Indicator	r value	r table	Description
1.	TQM(X1)	TQM1	0.698	0,301	Valid
		TQM2	0.373	0,301	Valid
		TQM3	0.655	0,301	Valid
		TQM4	0.583	0,301	Valid
		TQM 5	0.591	0,301	Valid
		TQM 6	0.361	0,301	Valid
		TQM 7	0.314	0,301	Valid
2.	Just In Time(X2)	JIT1	0.551	0,301	Valid
		JIT2	0.621	0,301	Valid
		JIT3	0.624	0,301	Valid
		JIT4	0.631	0,301	Valid
		JIT 5	0.559	0,301	Valid
		JIT 6	0.531	0,301	Valid
		JIT 7	0.376	0,301	Valid
		JIT 8	0.376	0.301	Valid
3.	Partnership(X3)	PS1	0.567	0,301	Valid
		PS2	0.497	0,301	Valid
		PS3	0.351	0,301	Valid
		PS4	0.461	0,301	Valid
		PS 5	0.348	0,301	Valid
4.	Lean Manufacturing Performance(Y1)	LP1	0.595	0,301	Valid
		LP2	0.626	0,301	Valid
		LP3	0.817	0,301	Valid
		LP4	0.534	0,301	Valid
		LP 5	0.670	0,301	Valid
		LP 6	0.672	0,301	Valid
5.	Competitive Advantages (Y2)	KB1	0.365	0,301	Valid
		KB2	0.515	0,301	Valid
		KB3	0.708	0,301	Valid
		KB4	0.461	0,301	Valid
		KB 5	0.322	0,301	Valid
		KB 6	0.474	0,301	Valid

Source: Processed Data in 2017

Table 2 above shows that all the indicators used to measure the variables in this research have a correlation coefficient greater than r table, therefore all the indicators are valid. Reliability of the test results can be seen in Table 3.

Table 3.Reliability of Test Results

No.	Variables	Alpha	Description
1.	Total Quality Management (X1)	0, 767	Reliable
2.	Just In Time (X2)	0, 817	Reliable
3.	Partnership (X3)	0, 689	Reliable
4.	Lean Manufacturing Performance (Y 1)	0, 858	Reliable
5.	Competitive Advantages (Y2)	0, 731	Reliable

Source: Processed Data in 2017

From the results of reliability tests in Table 3 above, it can be seen that all variables have Alpha coefficient greater than 0.6, hence the questionnaires can be stated reliable.

4.2 Construct 1. Path Analysis of TQM(X1), JIT (X2) and Partnership (X3) on Competitive Advantages(Y2)

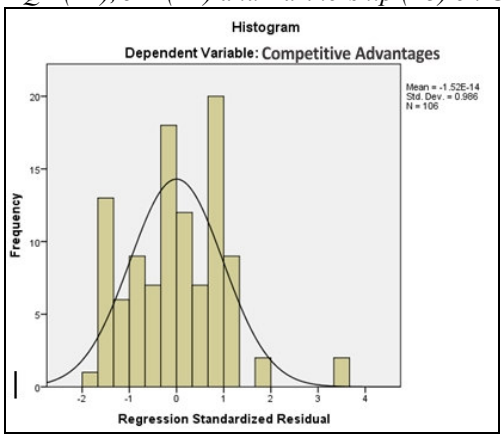


Figure 1. Histogram Normality

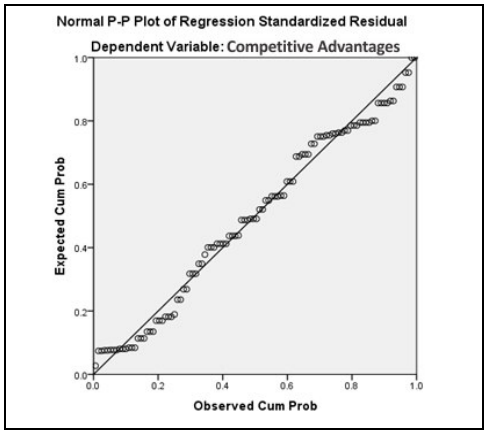


Figure 2. Normal P-P Plot

From the curve analysis, it can be seen that the data are scattered around the diagram and follow the regression model so that it can be concluded that the data processed is a normal distributed data so that the normality test is met. Furthermore, the results of heteroskedasticity testcan be seen on the scatter-plot produced in Figure 3.

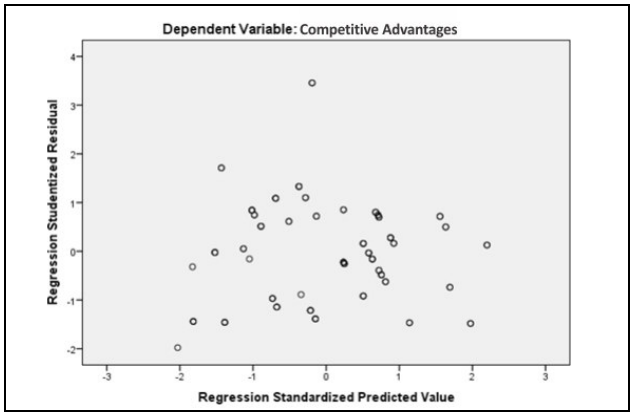


Figure 3. Scatter plot Heteroskedasticity Test

The scatterplot in Picture 3 shows that the data spread around zero both above and below irregularly then it shows no heteroskedasticity occurs so that the multiple regression can be done in Table 4.

Table 4.Multiple Linear Regression Analysis
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std.Error	Beta			Tolerance	VIF
1	(Constant)	.289	.217		1.331	.186		
	Total Quality Management	.618	.044	.722	14149	.000	.495	2,021
	Just In Time	.215	.055	.160	3.919	.000	.770	1.298
	Partnership	.161	.048	.168	3.395	.001	.526	1.902

a.Dependent Variable: Competitive Advantages
Source: Processed Data of SPSS Version 21.0 Year 2017

Based on Table 4, the researcher obtained the following regression formula:

Y2 = 0.722X1 + 0.160X2 + 0.168X3 + (ę1 = 0.362)

To find out whether the proposed hypothesis is significant or not, it is necessary to compare between t valueand t table. If t value > t table, then the hypothesis can be accepted, and vice versa, if t value < t table then the hypothesis is unacceptable. It is known that t table for df = 106 - 3 = 103 with 5% significance is 1.985.

In Table 4, it is seen that t value of TQM (X1), JIT (X2) and Partnership (X3) are greater than t table (t value > 1.985) and the significance level <0.05.Then the three variables can give significant influence on competitive advantage(Y2). Based on simultaneous test result, the hypothesis will be accepted if sig value <0.05 or F value > F table. The result of simultaneous test analysis can be seen in Table 5.

Table 5. Anova Test Results
ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.490	3	.497	224.961	.000[b]
	Residual	.225	102	.002		
	Total	1.715	105			

a.Dependent Variable: Competitive Advantages
b.Predictors: (Constant), Partnership, Just In Time, Total Quality Management
Source: Processed Data of SPSS Version 21.0 Year 2017

In Table 5, it shows that the sig value is 0.000 <0.05, then F table is 2.700 with 5% level, so that it can be seen that F count is 224.96>2.700 (F table), therefore simultaneously this model can be stated as good and feasible.

To know how far the influence of the independent variableson the dependent variables,Table 6 shows how much the contribution through coefficient of determination (*R square*).

Table 6. *R Square*(Coefficient of Determination)
Summary Model[b]

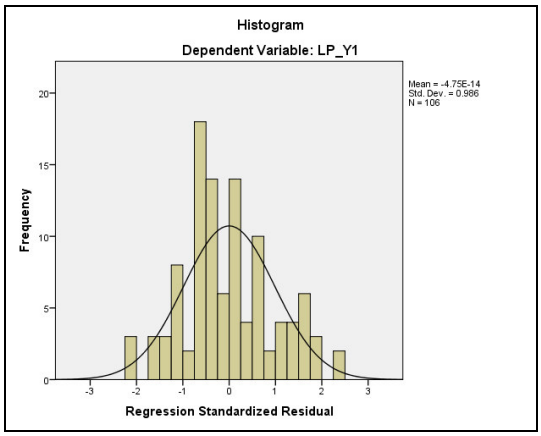
Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Durbin-Watson
1	.932[a]	.869	.865	.04698	1.855

a.Predictors: (Constant), Partnership, Just In Time, Total Quality Management
b.Dependent Variable: Competitive Advantages
Source: Processed Data of SPSS Version 21.0 Year 2017

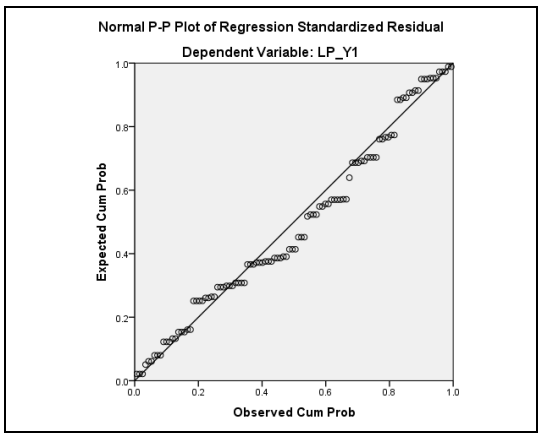
Based on Table Summary Model above, it can be concluded that all independent variables have influence of 86.9% on competitive advantages while the rest (e = 13.1%) is influenced by other non-examined variables. This shows that the three variables are representatives in giving influence oncompetitive advantages.

4.3 Construct 2.Path Analysisof TQM(X1), JIT (X2) and Partnership(X3) on Lean Manufacturing Performance (Y1)

Here are the plot results of the normality test done by using plot or diagram showing that the data is normal processed in the form a normal distribution diagram. The results of the plot using SPSS 21.00 can be seen in Picture 4 and Picture 5.



Picture 4.Histogram Normality



Picture 5.Normal PP Plot

The curve analysis shows that the data are scattered around the diagram and follow the regression model so it can be concluded that the data processed is normally distributed and it means the normality test is met. Then in Table 7, the VIF value from the independent variables<10 and the tolerance value> 0.01 meaning no multicollinearity occurs so it is feasible to do multiple linear regression. Further,the heteroskedasticity test result can be seen on the scatter-plot produced in Figure 6.

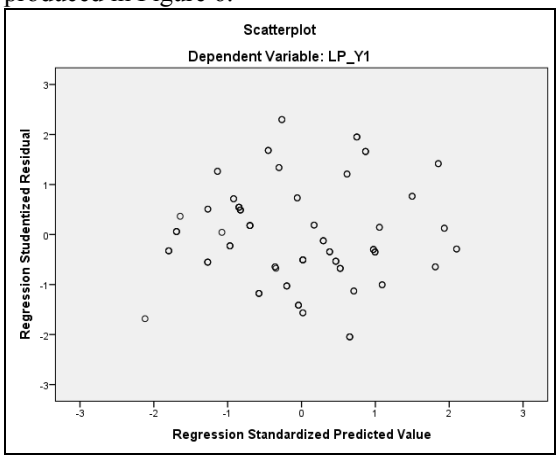


Figure 6. Scatterplotof Heteroskedasticity Test

The scatter plot above shows that the data are scattered around zero number above and below irregularly then it shows no heteroskedasticity occurs so the that multiple regression can be done.

Multiple linear regression analysis is used to determine whether there is influence of independent variables on the dependent variable. Below is the result of multiple linear regression analysis which the ordinal data is then processed by using SPSS version 21.0 as in Table 7.

Table 7. Multiple Linear Regressionn
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std.Error	Beta			Tolerance	VIF
1	(Constant)	.133	.221		.602	.548		
	Total Quality Management	.433	.044	.520	9.742	.000	.495	2,021
	Just In Time	.212	.056	.162	3.796	.000	.770	1.298
	Partnership	.365	.048	.391	7.537	.000	.526	1.902

a.Dependent Variable: LP_Y1

Source: Processed Data of SPSS Version 21.0 Year 2017

Based on the above table, then the regression formula is obtained:

Y2 = 0,520X1 + 0,162X2 + 0,391X3 + (ę2 = 0,379)

From this equation, it shows that the influence of TQM (X1) on LP (Y1) is 0.520, then the influence of JIT (X2) on LP (Y1) is 0.162, and the influence of partnership (X3) on LP (Y1) is 0.391, thus the influence of TQM is the most dominant in giving influence on lean manufacturing performance (Y1). The hypothesis test is done to know whether there is influence of independent variableson dependent variables partially. To find out whether the proposed hypothesis is significant or not, it is necessary to compare between t value with t table. If t value > t table, then the hypothesis is acceptable, and vice versa, if t value <t table then hypothesis 1 is unacceptable. t table for df = 106 - 3 = 103 with 5% significance is 1.985.

In Table 4 above, t value of TQM (X1), JIT (X2) and partnership (X3) are greater than t table (t value > 1.985) and the significance level <0.05. Hence, these three variables can give significant influence on lean manufacturing performance(Y1). Based on the simultaneous test results, the hypothesis will be accepted if sig value <0.05 or F value > F table. The result of simultaneous test analysis can be seen in Table 8.

Table 8. Anova Test Results
ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.387	3	.462	202.223	.000[b]
	Residual	.233	102	.002		
	Total	1.621	105			

a.Dependent Variable: LP_Y1

b.Predictors: (Constant), Partnership, Just In Time, Total Quality Management

Source: Processed Data of SPSS Version 21.0 Year 2017

Table 8 shows that the sig value is 0.000 <0.05, then F table is 2.700 with 5% level, so from the above table it is known that F count is 202,22> 2,700 (F table). To conclude, simultaneously this model can be stated as good and feasible.

To know how far the influence of independent variableson dependent variables, Table 9 displays how big the contribution through coefficient of determination (*R square*).

Table 9. *R Square*(Coefficient of Determination)
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Durbin-Watson
1	.925[a]	.856	.852	.04782	2.097

a.Predictors: (Constant), Partnership, Just In Time, Total Quality Management

b.Dependent Variable: LP_Y1

Source: Processed Data of SPSS Version 21.0 Year 2017

Based on Table Model Summary above,it can be concluded that all independent variables have influence of 85.6% onlean manufacturing performance(Y1) while the rest (e = 14.4%) is influenced by other non-examined variables. This shows that the three variables are representatives in giving influence on lean manufacturing performance (Y1).

4.4 Construct 3.Path Analysis of Lean Manufacturing Performance (Y1) on Competitive Advantages(Y2)

The simple linear regression analysis is used to determine whether there is influence of independent variables on dependent variables. Here is the result of simple linear regression analysis which the ordinal data is then processed using SPSS version 21.0 as seen in Table 10.

Table 10. Simple Linear Regression Analysis
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std.Error	Beta		
1	(Constant)	.227	.161		1.405	.163
	LP_Y1	.964	.035	.937	27.310	.000

a.Dependent Variable: Competitive Advantages

Source: Processed Data of SPSS Version 21.0 Year 2017

Based on the above Table 10, the following regression formula is obtained:

Y2 = 0.937Y1

Hypothesis test is done to know whether there is influence of independent variables on dependent variables. To find out whether the proposed hypothesis is significant or not, it is necessary to compare between t valuewith t table. If t value > t table, then the hypothesis is acceptable, and vice versa, if t value <t table then hypothesis 1 above is unacceptable. t table for df = 106 - 1 = 105 with 5% significance is 1.986.

To know how far the influence of independent variables on dependent variables, Table 11 shows how big the contribution through coefficient of determination (*R square*).

Table11. *R Square* (Coefficient of Determination)
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate
1	.937[a]	.878	.876	.04492

a.Predictors: (Constant), LP_Y1

b.Dependent Variable: Competitive Advantages

Source: Processed Data of SPSS Version 21.0 Year 2017

This shows that the variablesare representatives in giving influence on competitive advantages.

Path Analysis

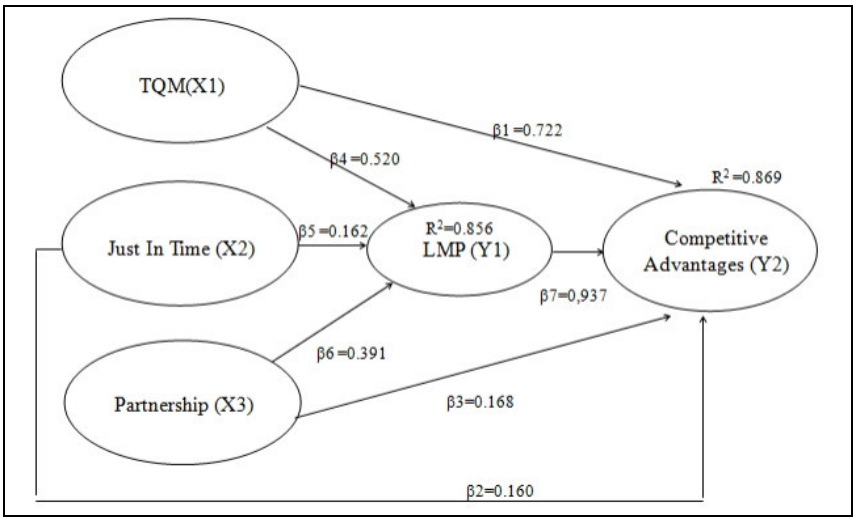


Figure 7. Results of research

5. Discussion

Based on the results of linear regression, it can be seen that the independent variables TQM, JIT and partnership can be a simultaneous model in giving influence on lean manufacturing performance (LP) and competitive advantages.

The above phenomenon explains that in improving the performance of lean manufacturing performance which continuously aims to improve the efficiency and effectiveness of each section in the company, the roles of TQM, JIT and partnership are very large, so the application of these three variables is crucial in increasing the effectiveness and efficiency to support the corporate competitive advantages. The greatest contribution is given by TQM variable in increasing the production optimization so that to produce competitive prices, excellent product innovation, product quality excellence, and production flexibility and speed towards the target market can be achieved, although there are also the roles of JIT and partnership in creating the corporate competitive advantages.

The role of lean manufacturing performance mediation is sufficient in providing mediation that can increase the influence of TQM, JIT and partnership on competitive advantages. Therefore, every manufacturing company

needs to continue to put an emphasis in improving the performance of lean performance in order to boost the corporate competitive advantages.

6. Conclusions and Recommendations

6.1 Conclusions

The results of the analysis and discussion can answer the problems in this study, thus the conclusions can be drawn as follows:

- There is influence of Total Quality Management (TQM) implementation on corporate competitive advantages.
- There is influence of Just In Time (JIT) System implementation on corporate competitive advantages.
- There is the influence of partnership implementation on corporate competitive advantages.
- There is influence of Total Quality Management (TQM) implementation on lean manufacturing performance.
- There is an influence of Just In Time (JIT) System implementation on lean manufacturing performance.
- There is influence of partnership implementation on lean manufacturing performance.
- There is influence of lean manufacturing performance on corporate competitive advantages.

Lean manufacturing performance can act as a mediation that can increase the influence of TQM, JIT and partnership on competitive advantages.

6.2 Suggestions

Based on the conclusions and the literature review in this research, here are a number of suggestions given:

- Manufacturing companies rely heavily on the implementation of TQM, JIT and partnership,hence the programsshould be continuously implemented and improved to level up the performance of *Lean* more efficiently and effectively on every company's operation.
- TQM, JIT and partnershipprograms are very essential in creating competitive advantages so they have to always get the attention from senior managers in designing company's strategic programs.
- The performance of *Lean* also has to be paid attention and enhanced by designing a better *Lean* system so that it can absolutely influence the increase ofcorporate competitive advantages.
- In creating the ease of supply chain operation, the partnershipshould be significantly improved in order to assist the distribution of products as well as the supply of raw materials that company needs by applying the business application network system.
- For the next researchers, they can improve the research by examining the influence of other variables related to supply chain managementsystem optimization in service companies besides in manufacturing companies.

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