

Hybrid Strategies Study : Total Quality Management Practices and Supply Chain Management as a New Antesenden to Improve the Performance of Manufacturing in East Java

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Abstract

The purpose of this study was to examine the practice of TQM and SCM in improving the performance of manufacturing firms in East Java .The research methodology is quantitative (positivist) will be used to answer the research question . Survey method used in this study . The sampling method used in this study is the probability sampling . Sampling techniques in this study using simple random sampling technique by means of the drawing (lottery) . Analysis using multivariate statistical method (Structural Equation Modeling).Research shows that strong commitment from leadership , customer- oriented company , carrying out education and training , leadership has the initiative to make continuous improvements and innovative , managing suppliers and led efforts to encourage employees to participate fully in the development of the required quality in the Practice run TQM has an important role to improve Organizational Performance . The results of this experiment indicate that the management of materials is good , Customer relationship and corporate culture in the running SCM Practice has an important role to improve Organizational Performance . The research proves that the practice of Total Quality Management (TQM Practices) and Practice Supply Chain Management (SCM Practice) proved to be a hybrid Strategy in improving Organizational Performance . This study also answered a question that has always been a debate in the international discussions , that the practice of TQM and SCM practices is something different .

Keywords : Hybrid Strategy, TQM practices, SCM practices, Organizational Performance

1 . INTRODUCTION

Changes in dynamic business environment followed by intense competition requires companies to look for ways to still exist and thrive . Efforts manufacturing company to win the competition not only creates only quality products , but seeks to make the product reach the customer faster . The global marketplace is constantly changing , offers quality products is not enough , but now comes a new challenge which is focused on the timing and place (*delivery*) for a product (Chin et al , 2004; Robinson and Malhotra , 2005) .

At this time the 21st century , Total Quality Management (*TQM*) and Supply Chain Management (*SCM*) is an important strategy for manufacturing , services , either small -scale enterprises , medium and large scale . TQM and SCM become a prerequisite for success in the global marketplace . The higher the intensity of competition in a global context , has prompted many organizations to implement Supply Chain Management as a strategy to meet customer needs and satisfaction . In accordance with the opinion Gunasekaran and Mc Gaughey (2003) ; Gunasekaran et al . (2001) , Mills et al , 2004, in the Lamey (1996) , Total Quality Management and Supply Chain Management aims to achieve customer satisfaction .

Thus TQM is a total approach that works horizontally which are passed to functions and departments , to include the entire workforce , from top to bottom , rear and front through the supply chain and customer chain . TQM applications helps reduce process variation , which directly affect the supply chain performance measurement , such as circulation time and reliable delivery (Flynn et al . , 1995) and the practice of TQM resulted in reduced preparation time , provide improved and more responsive schedules achievement in answer the market demand (Flynn and Flynn , 2005) . It helps in synchronizing to a greater extent on the overall supply chain (Tutuncu and Kucukusta , 2008; Ferdows et al . , 2004) . Thus , the practice of TQM ensure processes followed by customer satisfaction .

On the other hand , SCM seen as an approach to improve the performance of competing with the integration of internal functions of an organization and connect with the external operations of suppliers , customers and other members of the supply chain . This makes it possible to lead to changes in the traditional structure of an organization (Tutuncu and Kucukusta , 2008) . SCM Focus on coordination and configuration of the processes

required to make the product on time (not late) , can be reproduced , and satisfying the conditions (quality assurance) in conjunction with efforts to maintain the material inputs or services (Forker et al . , 1997) .

SCM includes a group of approaches and practices to effectively integrate suppliers - suppliers , manufactures , distributors and customers to improve long-term performance of the organization and the supply chain as a whole in a strong bond in high-performance business model (Chopra and Meindl , 2001) . Similarly, the statement Kanji and Wong (1999) that the SCM took a picture of the vertical relationship between buyers and suppliers , which focused on the performance of organizations upstream and downstream . Both upstream and downstream organizations should be managed directly or indirectly by the company in order to satisfy the customers .

So it is important to have a customer that is focused on the company's vision , when trying to implement TQM and SCM practices effectively to the upstream and downstream (Sila et al . , 2006) ; implementation can create a competitive advantage to supply chain . Coordination of planning and operations among supply chain partners provide better access to information , increasing the effective supervision , eliminating or reducing non-value activities , and immediately provides increased performance (Germain and Iyer , 2006; Rodrigues et al . , 2004) .

In addition, following the suggestions of previous studies which suggest that the practice of TQM and SCM are both largely determine the performance of the organization and are rarely investigated with or near - equal (Gunasekaran and McGaughey , 2003; Robinson and Malhortra , 2005; Casadesus and de Castro , 2005; Vanichchinchai and Igel , 2009) and there is little research that integrates two concepts . Similarly, research conducted by Talib et al . (2011) , which states that the implementation of TQM and SCM are rarely studied together and their effects on organizational performance . This statement motivates researchers to mengekspianasi about " the influence of TQM and SCM practices in improving company performance .

2 . LITERATURE REVIEW

2.1. Total Quality Management

Basically , Quality Management or the Integrated Quality Management (Total Quality Management / TQM) is defined as a way to improve performance continuously (*countinous performance improvement*) at every level of operation or process , in each functional area of an organization , with use of all human and capital resources available (Gaspersz , 2002) . TQM is defined as an organizational philosophy that requires the participation of all employees at every level to focus more efforts on improvement of their business activities . (Mehra et al , 2001) . Mehra and Ranganathan (2008) defines TQM is a management strategy that is adopted to enhance customer satisfaction through concentration on the customer and also stated that TQM is a strategy that can be applied to the business operations of manufacturing and service industries in various global cultures . TQM is a new avenue for the management of the organization to improve the quality and performance of the organization . Mehra et al (2001) said that TQM is continuous improvement in the long-term period which requires significant resources both financial and human resources . The same view is expressed by Bruce et al (2007) that the TQM focus on organizational development and responsiveness to customer satisfaction and TQM requires the participation of all members of the organization to undertake the development of processes, products , services and cultural development in a sustainable manner . Mehra and Ranangathan (2008) said that TQM is a process that is dynamic rather than static , a continuously ongoing effort without a time limit or a target time and process . TQM has become a way of life to quality . Many of the views and understanding describes as Total Quality Management , TQM is simply a work program through long- term oriented management approach with the goal of obtaining customer satisfaction (Gaspersz , 2002) . Referring to the literature study conducted by Talib et . al . (2011) , investigators determined that the same six indicators to measure the TQM practices (1) Top - management commitment , (2) customer focus , (3) Training and education ; (4) Continuous improvement and innovation ; (5) Supplier management ; (6) Employee involvement .

2.2. Supply Chain Management

In the SCM literature Chin et al . , (2004) and Kuei et al . , (2001) by Jayaram et al . , (2000) gives a comprehensive overview concludes that the issue of timeliness is a major concern in the research of SCM . SCM aims to respond to customers as soon as possible , at the exact time and location with the lowest possible cost . Furthermore , some researchers SCM (Chase et al . , 2007; Simchi - Levi et al . , 2008; Lummus and Vokurka , 1999; Lummus et al . , 2003) have agreed that the SCM emphasizes the flow of materials and information through the supply chain . This is because the traditional SCM is focused on physical distribution (Gilmour , 1999; Croom et al . , 2000) . Although TQM and SCM gives the same end goal in customer satisfaction , its basic purpose is different , as implied by putting pressure on " Quality and supply " . Better quality and faster delivery will lead to the lowest cost . In the end , QDC (*Quality - Cost - Delivery*) will encourage better

customer satisfaction and competitiveness of the entire supply chain (Vanichchinchai and Igel , 2009) . SCM requires coordination and configuration of the processes required to make the products available just in time, can be reproduced , and in a satisfactory condition . Characteristics of SCM can be achieved by identifying and making useful SCM practice , in the way of organizing . SCM practice involves a group of activities undertaken by the organization to introduce effective management of the supply chain (Koh et al . , 2007) . Referring to the study of literature on SCM are performed by Talib et . al . (2011) , investigators determined that the same six indicators to measure SCM practices , namely : (1) Customer relationship ; (2) Materials management , (3) Strategic supplier partnerships ; (4) Information and communication Tehnologies ; (5) Corporate culture ; (6) Close the supplier partnership .

2.3. Organizational Performance

Organizational performance is an indicator that measures how well the organization completing the goal (Ho , 2008) . Li et . al . (2006) define organizational performance in terms of how well an organization oriented to market and reach financial goals . In regard to financial objectives , organization 's profits , return on investments , and the growth of sales , business performance and organization effectiveness are the indicators of organizational performance (Venkatraman and Ramanujam , 1986) . Koh et . al . (2007) and Petrovic - Lazarevic et . al . (2007) see organizational performance from the perspective of SCM . Koh et . al . (2007) rightly stated that although organizational performance measured by financial and market criteria , the short - term goal of SCM is to improve productivity and reduce inventory and lead times . The long term goal of SCM is to increase market share and integration of the supply chain (Koh et . Al . , 2007) . While Petrovic - Lazarevic et . al . (2007) to measure organizational performance against indicators of Lead Time , Inventory turnover , product rejection / return , sales levels , cost reduction and meeting customers ' requirements . Referring to research conducted by Petrovic - Lazarevic et . al . (2007) , there are similarities in the indicator in previous studies , the researchers will use 6 indicators similar to measure organizational performance : (1) lead time , (2) inventory turnover , (3) product rejection / return , (4) sales level , (5) cost reduction and (6) meeting customers ' requirements .

3 . FORMULATION AND HYPOTHESES

Research conducted by Anderson et al . (1994) ; Flynn et al . (1995) ; Terziovski and Samson (1999) ; Huarng and Yao (2002) ; Kaynak (2003) , Sila and Ibrahimpour (2005) ; Dermingbag et al . (2006) ; Lakhal et al . (2006) ; Prayogo and Hong (2008) ; Arumugam et al . (2009) ; Salaheldin (2009) , and Miyagawa and Yosida (2010) who found that there is a positive relationship between TQM practices with organizational performance . The researchers generally regard TQM as a system consisting of several quality management practices that are collectively and closely intertwined with each other that have a relationship with organizational performance .

In contrast to the results of research conducted by Terziovski (2003) who concluded that ISO 9000 certification does not show any significant effect on the performance of the organization. Likewise Prayogo and Brown (2004) which concluded that there was no significant difference between the performance quality that organizations implement TQM formally with organizations adopting TQM practices in non-formal , O indicates that the adoption of quality practices are more important things than just the program formal . Similarly, Cunningham and Ho (1996) , Curkovic et al . (2000) , Han et al . (2007) , Sila (2007) , found that there is no direct positive relationship between TQM to business performance , so that the formulation of the first research hypothesis is :

H1 . TQM practices can improve organizational performance.

Several studies have shown a positive relationship between supply chain collaboration and performance (eg: Rodrigues et al . , 2004; Sanders and Premus , 2005; Stank et al . , 2001) , and supporting SCM distribution practices toward greater organizational performance (Khan K , Bakkappa , Metri and Sahay , 2009) . However, upstream partners is important , when the activity of downstream collaboration , such as planning and forecasting is considered as one of the biggest factors of the overall performance difference (Closs and Savitskie , 2003) . Such case study results Bayraktar et al . (2009) also reported a positive relationship between the use of information systems and technology on SCM practices and firm performance using a sample of the metal fabrication industry in Turkey . In contrast to the results of the study Kim , (2006) in his research on small firms indicate that SCM practice and competition capability and has no direct relation to the effect of firm performance , the formulation of the second research hypothesis is :

H2 . SCM practices can improve organizational performance.

Statement Gunasekaran and McGaughey (2003) ; Robinson and Malhortra (2005) ; Casadesus and de Castro (2005) ; Vanichchinchai and Igel (2009) stated that TQM and SCM are both largely determine the performance

of the organization and are rarely investigated with or near - equal (and there is little research that integrates two concepts . Likewise suggestions Talib et al . (2011) and Vanichchinchai et . al . (2009) who suggests empirical research needs to be done to TQM and SCM practices in improving the performance of the company . statement is motivating researchers to mengeksplanasi about " influence of TQM practices and SCM practices on organizational performance " , then the formulation of the third research hypothesis is :

H3 . TQM and SCM practices can improve organizational performance.

4 . METHODOLOGY

4.1. Research Design

The research approach is quantitative (positivist) will be used to answer the research question . Survey method used in this study . Data were collected through kuesionaire . Using a Likert scale of 1-5 as an approach to facilitate the measurement of perception . Relationship latent variables and indicators are reflective . Exogenous variables reflected TQM six indicators , namely (1) Top - management commitment , (2) customer focus , (3) Training and education ; (4) Continuous improvement and innovation ; (5) Supplier management , (6) Employee involvement . Variable endogenous SCM practices reflected six indicators : (1) Customer relationship ; (2) Materials management , (3) Strategic supplier partnerships ; (4) Information and communication Technologies ; (5) Corporate culture ; (6) Close the supplier partnership and performance variables organization reflected the six indicators , namely (1) the lead time , (2) inventory turnover , (3) product rejection / return; (4) sales level , (5) cost reduction and (6) meeting customers ' requirements . Analysis using multivariate statistical method (Structural Equation Modeling) .

4.2. Population

The population in this study is a medium - scale manufacturing enterprises that run large Total Quality Management and Supply Chain Management in East Java . There are 175 large companies that are located in East Java .

4.3. Sampling

The sampling method used in this study is the probability sampling . Sampling techniques in this study using simple random sampling technique by means of the drawing (lottery) based on the existing population on the basis that each unit of analysis has an equal chance to become the study sample (Cooper and Schindler , 2003) . To determine the number of samples , used the technique proposed by (Hair et al . , 2006), which states that it takes to perform a multivariate study power of 0.8 with an alpha of 5% is assumed . Based on the power of 0.8 and an alpha value of 5 % , then what is needed in this study is at least as much as 130 samples (Hair et al . , 2006) . Of the 160 total sample , there were 15 pieces of research questionnaires were not included in the analysis because of incomplete filling so that the number of questionnaires that can be analyzed as many as 145 samples .

5 . RESULT AND DISCUSSION

5.1. Testing Instrument

The test results of the research instruments 45 respondents in the above table shows all items of the statement of the three studied variables declared invalid evidenced from the correlation coefficient of each item statement is greater than 0.3 . Furthermore, it demonstrates the level of reliability that is well proven from Chronbach 's Alpha coefficient values greater than 0.6 . Thus , the instrument can be distributed throughout the target sample set in this study.

5.2. Assumption Testing Structural Equation Models

In this study also tested the structural equation model (SEM) is required as the assumptions of normality , outliers and multicollinearity . The results of the normality of the data output is assisted by Amos program above shows that almost all of the indicators are not normally distributed . In addition, the results of multivariate value of 58.325 showed still not able to meet the assumptions of normality, the numbers proved far between absolute value of ± 2.58 .

Bollen (1989) argues that the approach to estimation using Maximum likelihood (ML) approaches a normal distribution when the sample size exceeds the estimated parameters in structural equation models . The number of samples (n) in this study were 145 . The number of parameters estimated economic assisted with the program AMOS for structural equation parameters established researchers showed as many as 39 . These results indicate that the number of samples exceeds the number of investigators assigned parameters generated in the modeling , thus it can be concluded that the indicators tested normal distribution .

The other view, the opinion refers Bentler and Chou (1987) in Wijayanto (2008) says that if the sample size exceeds the number at least 5 times the number of observed variables in structural equation models or 100-200 cases, it can be managed to meet the normal distribution. The number of samples studied as much as 145 times the amount exceeds 5 observed variables which is equal to 90 (5x18), and do not exceed the limit of 100 to 200 cases. Thus, based on the opinion Bollen (1989), Bentler and Chou (1987), the indicators tested normal distribution.

Results of the program assisted output Mahalanobis Distance Amos showed low of 8,609 and a high of 82 015. test results showed that none of the cases the observations have values above 187.95 Mahalanobis Distance. The results of this test indicate no observed data are multivariate outliers.

Results from the correlation matrix output multicollinearity of measurable variables that showed none of the correlation values above 0.9. The results of this evaluation indicate that there is no problem of multicollinearity.

Figure 1 shows a summary of the results of the analysis of SEM using AMOS program. Factor loading value of each latent variable showed none below 0.5 with a significance level of less than 0.05, meaning that each latent variable and meth unidimensionalitas able to form the high convergent validity. Structural equation model can be used as an analysis tool indicated by the Chi-square value divided by the value 259 321 degrees of freedom (132) of 1,965.

The results of the study indicator factor loading values (Figure 1) proves that the practice of TQM with the commitment of the leadership indicators has the highest value of loading factor loading value than others, and this study proves that proximity to customers, management materials, corporate culture has an important role in the running SCM Practice and organizational performance.

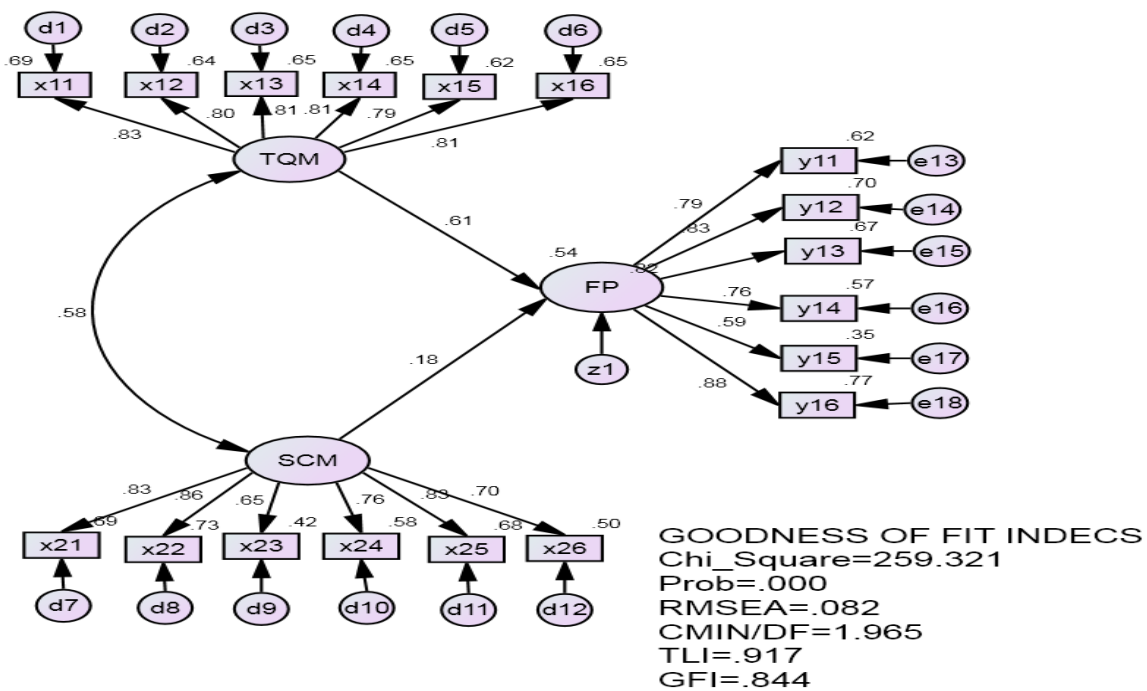


Figure 1 Weight Standardized Coefficient Values In Structural Equation Models

Testing the causal relationship between the study variables are shown in Table 1. The statistical results of TQM practices are still more influential than the SCM practices to organizational performance and in the practice of structural equation model of TQM and SCM practices demonstrate a significant effect. There are differences in the practice of TQM with SCM practices in improving organizational performance.

Table 1. Causality Relations Research Variables

Variabel		Koef. Standardized	Prob.	Ket.	Hipotesis
Bebas	Tergantung	Langsung			
Praktik TQM	Kinerja Organisasi	0,612	0,000	S	H1- Diterima
Praktik SCM	Kinerja Organisasi	0,181	0,043	S	H2- Diterima
Praktik TQM & Praktik SCM	Kinerja Organisasi	-	0,000	S	H3- Diterima
Praktik TQM	Praktik SCM	0,578	0,000	S	-

Note : All coefficients are signifikan at 0.05 level (when identified by *)

5.3. TQM Practices in Improving Organizational Performance

Test results Confirmatory Factor Analysis (CFA) Total Quality Management Practice proves that the leaders of manufacturing companies in East Java implemented / TQM practice well . This is evidenced by the commitment of the leadership of the company in implementing TQM practice -oriented customers , implement education and training , leadership has the initiative to make continuous improvements and innovative , managing suppliers and led efforts to encourage employees to participate fully in the development of quality needed . The results of the analysis of loading factors for each of the indicators prove that the commitment of the leadership indicators (*Top - management commitment*) has the highest value of loading factor loading value than others .

The test results of TQM practices on organizational performance proves that TQM practices can improve organizational performance . The stronger the commitment of the leadership of the company to carry out the work program of TQM , it will help improve the ability of managers SCM / Logistics companies in improving their performance . Impact of corporate orientation towards customer -oriented enterprise customer response , implement education and training , leadership has the initiative to make continuous improvements and innovative , managing suppliers and led efforts to encourage employees to participate fully in the development of quality required in running the practice of TQM able to increase efforts manager SCM / Logistics companies to improve organizational performance. The test results showed that TQM practices can improve the performance of the organization in line with research conducted by Lakhal et al. (2006) stated that there is a positive relationship between TQM practices and organizational performance . In addition , expanding the statement Berquist and Ramsing (1999) who found the implementation of TQM practices have a positive effect on employees in terms of their perceptions towards organizational competitiveness and business performance. Madu et al . , (1995) examined the quality management practices in manufacturing firms in Taiwan . They found a significant causal relationship between the dimensions of quality (ie customer satisfaction , employment satisfaction , and employee service quality) and organizational performance . Similarly, research conducted by Anderson et al . , (1994) ; Flynn et al . , (1995) ; Terziovski and Samson (1999) ; Huarng and Yao (2002) ; Kaynak (2003) , Sila and Ibrahimpour (2005) ; Dermingbag et al . , (2006) ; Lakhal et al . , (2006) ; Prayogo and Hong (2008) ; Arumugam et al . (2009) ; Salaheldin (2009) , and Miyagawa and Yosida (2010) who found that there is a positive relationship between TQM practices with organizational performance . The researchers generally regard TQM as a system consisting of several quality management practices that are collectively and closely intertwined with each other that have a relationship with organizational performance .

5.4. SCM Practices in Improving Organizational Performance

Test results Confirmatory Factor Analysis (CFA) Supply Chain Management Practice proves that the leaders of manufacturing companies in East Java implemented / SCM Practice well . This is evidenced by the proximity to customers, materials management, strategic supplier partnership, information and communication technologies, corporate culture, a close relationship with supplier. Loading factor analysis results for each of the indicators prove that the indicators proximity to customers, materials management, corporate culture has the highest value of loading factor loading value other than . study proved that proximity to customers, materials management , corporate culture has an important role in the running SCM Practice .

The test results of SCM practices on organizational performance proved that the SCM practices can improve organizational performance . The better manager SCM / Logistics companies to practice SCM , then able to improve organizational performance . Thus , the belief manager SCM / logistics to always establish proximity to customers, materials management, corporate culture, will help facilitate the manager SCM / Logistics companies

improve organizational performance . Test results that show the SCM practices can improve the performance of the organization in line with research conducted by Lindskog and Wennberg (2002) which proved that the use of information technology systems to support SCM , the results clearly show that the use of new technology improves the efficiency of the supply chain and improve performance the whole enterprise . The results of these tests Bayraktar et al . (2009) reported a positive relationship between the use of information technology systems with SCM practices and firm performance using a sample of the metal fabrication industry in Turkey . Several studies have shown a positive relationship between supply chain collaboration and performance (eg Rodrigues et al . , 2004; Sanders and Premus , 2005; Stank et al . , 2001) , and supporting SCM distribution practices toward greater organizational performance (Khan K , Bakkappa , Metri and Sahay , 2009) . Similarly, the results of research Ardianto et al . , (2013) which directly proves Information Technology Organizations do not affect performance , but is able to mediate the SCM Practice on Information Technology and Organizational Performance Practice SCM significantly affect Organizational Performance .

5.5. TQM and SCM Practices Together can Improve the Performance of the Company

Research Vanichchinchai et al . (2009) and Talib et al . (2011) resulted in a recommendation to future researchers to analyze the extent of the influence of TQM and SCM practices are seldom studied together and their effects on organizational performance . The existence of a direct effect of TQM and SCM practices on organizational performance , and offer Talib et al . , (2011) and Vanichchinchai et al . , (2009) and the statement of (Gunasekaran and McGaughey , 2003; Robinson and Malhortra , 2005; Casadesus and de Castro , 2005) previous studies which suggest that TQM and SCM are both largely determine the performance of the organization and besama rarely studied together , Vanichchinchai et al . , (2009) , and there is little research that integrates two concepts , the results of this study demonstrate that the practice of TQM and SCM be shared equally capable in improving organizational performance . The test results in this study demonstrate that the practice of TQM and SCM is able to be a hybrid Strategy in improving organizational performance . Besides, this study also answer has always been a debate in the international discussions , that the practice of TQM and SCM practices is something different .

6 . CONCLUSIONS AND FUTURE RESEARCH

Research shows that strong commitment from leadership , customer- oriented company , carrying out education and training , leadership has the initiative to make continuous improvements and innovative , managing suppliers and led efforts to encourage employees to participate fully in the development of the required quality in the Practice run TQM has an important role to improve Organizational Performance . The results of this experiment indicate that the management of materials is good , proximity to customers and corporate culture in the running SCM Practice has an important role to improve Organizational Performance . The research proves that the practice of total quality management and practice supply chain management proved to be a hybrid Strategy in improving Organizational Performance . This study also answered a question that has always been a debate in the international discussions , that the practice of TQM and SCM practices is something different .

7 . LIMITATIONS

This research was carried out on certain large industries , the population in this study and has not fully incorporate other types of major industries such as the list of names of large -scale enterprises at the Department of Industry and Trade in East Java . The results of this study can only be generalized to populations of major industries studied , because of the limitations of research to include other types of major industries as the population in this study . This study examined the practices of TQM and SCM practices as a strategy in the manufacturing industry and have not measured the ability of human resources in the possession or use of information technology , organizational structure , culture and behavior issues , employee motivation , education and training , or ISO 9000 as a new latent variable capable of promoting TQM and SCM practices in improving organizational performance , and it is possible to add new indicators to the practice of TQM, SCM practices and organizational performance as a key to the company's successful long-term orientation .

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