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Effect of total quality management and supply chain management to organization performance through competitive advantages in manufacturing company in Bogor Indonesia

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Abstract
This study aimed to describe the Total Quality Management, Supply Chain Management, Competitive Advantage and Organizational Performance in manufacturing companies in Bogor, analyze the influence of Total Quality Management and Supply Chain Management of the Competitive Advantage in manufacturing companies in Bogor, analyze the influence of Total Quality Management and Supply Chain Management on Organizational performance in manufacturing companies in Bogor, analyzing the effect on Organizational performance Competitive Advantage in manufacturing companies in Bogor, and analyze the influence of Total Quality Management and Supply Chain Management on Organizational performance through Competitive Advantage in manufacturing companies in Bogor. This study is a quantitative research using the survey method. The population in this study is a manufacturing company which has obtained ISO 9000 certification for at least 1 year by 15 manufacturers. The number of samples was 165 people at 15 manufacturing companies. The sampling technique used is sampling based on purposive sampling. The analysis technique used is descriptive analysis and Analysis of Structural Equation Modeling (SEM).
The analysis showed that the Total Quality Management and Supply Chain Management effect on Competitive Advantage in manufacturing companies in Bogor. Total Quality Management and Supply Chain Management on the performance of the organization at a manufacturing company in Bogor. Competitive advantage on the performance of the organization at a manufacturing company in Bogor. Competitive advantage to mediate the effect of Total Quality Management and Supply Chain Management on the performance of the organization.

Keywords: total quality management, supply chain management, competitive advantage, organizational performance

1. Introduction
Globalization is a condition where every company must be ready to compete globally. In Indonesia it can be felt after the first stage, the establishment of ASEAN in 1967, and the second phase, in 1992 the commencement of the agreement AFTA (ASEAN Free Trade Area), with the implementation of the scheme CEPT (Common Effective Preferential Tariffs). In this scheme each ASEAN member reduces tariffs from 0-5%, removal of other quantitative and non-tariff restrictions (depkeu.go.id). The third phase is ahead of the Asean Free Trade or previous Asean Economic Community will be implemented in 2020 accelerated into 2016.
With the enactment of Asean Free Market then by itself there is liberalization of Asean trade which of course demands increasingly tight competition between companies in Asean region. This competition will spur the company to improve its performance both in financial, human resources, marketing and operational. Meanwhile, from January 1, 2010, Indonesia entered a new era of free trade that has been agreed with China and Southeast Asian countries in a treaty agreement called ASEAN-China Free Trade Agreement (ACFTA). With the agreement, all the countries involved in it are required to open up the domestic market and open up greater opportunities for other countries to market its products through the import duty exemption and ease other regulations. In order to face this problem of course the local government needs to improve the macro industry performance and organizational performance of each company micro. Organizational performance is the actual result or output produced by an organization which is then measured and compared with the expected output or output (Jahanshasi, *et al.* 2012: 6488), while according to Ho (2008: 416) [34], organizational performance is an indicator that measures how well the organization achieved its goals
The concept of organizational performance can be operationalized in several different measurement contexts such as; individual performance, team performance, the performance of the organization, depending on the research objectives to be achieved (Ardianto, 2013: 40) [6]. Given the organization's performance can be measured by various measurement context, then in order to improve the performance of the organization require different strategies and concepts, between is Total Quality Management and Supply Chain Management. Ardianto and Natsir (2014: 1) [5] in research proves that the implementation of Total Quality Management and Supply Chain Management proved to be a hybrid strategy in improving organization performance. Total Quality Management is an integrated approach to obtaining and maintaining high quality output, focus on maintenance, continuous improvement and prevention of failures at all levels and functions of the company, in order to meet or exceed consumer expectations

(Flynn, *et al.* 1994: 350) [34]. Total Quality Management is a new paradigm of doing business that seeks to maximize the competitiveness of the company through a focus on customer satisfaction, involving all employees, improved continuously over the quality of products, services, people, processes and organizational environment (Chase, *et al.* 2007: 406) [13]

According Heizer and Render (2014: 95) [32] Supply Chain Management is coordinating the activity of the supply chain starting from raw material supply and ending on customer satisfaction, including suppliers, factories, distribution service providers, retailers and others. Supply Chain Management is prioritizing punctuality, as well as what has been said Chin *et al.* (2004: 508) [14] and Kuei *et al.* (2001 [46]: 868) provides a comprehensive overview concludes that is s ue punctuality is a major concern in the study of Supply Chain Management. Supply Chain Management aims to respond to customers as quickly as possible, at the right time and location with the lowest possible cost. Total Quality Management and Supply Chain Management alike - are aiming to provide satisfaction for the customer, often conceived as a strategy. It is given by Total Quality Management and Supply Chain Management as a strategy to give some source selection (difference, cost advantage, innovation, delivery of products on time, the integration between suppliers - manufacturers - the distributor) which is expected to gain Competitive Advantage (Lynch, 2000: 42), because Competitive Excellence is a necessary factor in obtaining business success (Analou & Karami, 2003: 40) [3].

Gupta *et al.* (2009: 220) [29] stated that resources alone will not be enough to compete, but must be able to maximize expertise through technology / software and it can be obtained by applying total quality management and supply chain management. In line with the Gupta *et al.* was also addressed by Reed *et al.* (2000: 18) [67] that competitive advantage can be obtained from the focus on costs and differences, it can also be obtained from the utilization of existing sources within the company. Meanwhile, according to McGinnis, MA *et al.* (1999: 45) [57]; Porter (1985: 25) [62]; Barney (1991: 791) [8] competitive advantage includes the ability of organization in maintaining its position in competition. Competitive advantage is defined differently by some experts, but given that the creation of this competitive advantage comes from a strategy created by the organization, it can be concluded that competitive advantage depends on how the organization formulates and implements the existing strategy (Richard 2000: 170;, 2003: 281; Powell, 2003: 286; Porter and Kramer, 2006: 83) [68, 64, 63,]. In the study Munizu (2013: 184) [61] that the total affected competitive advantage quality management and affect the performance of the organization, on the other side of the Li *et al.* (2006: 107) [51]; Karimi and Rafiee (2014: 2) [42], the research concluded there is a significant influence on the performance of supply chain management through the organization's competitive advantage. According Vanichchichai and Igel (2009: 255) [85], when TQM and SCM integrated these organizations will be complex, because TQM focuses on internal integration, while focusing on an external SCM, it can even lead to conflict. Therefore it is necessary to do further research related to both variables.

2. Literature Review

2.1 Total Quality Management

Total Quality Management is a system that involves management in an effort to improve quality on an ongoing basis. According Mosadeghrad (2013: 161) [60], Total Quality Management is a management system that aims in addition to increasing customer satisfaction as well as to improve the performance of the organization by providing high quality products and services through the participation of all stakeholders. Total Quality Management has been applied extensively by many companies in order to improve performance, such as quality, productivity and profitability (Krajewski *et al.* 2006: 64) [44]. According Gaspersz (2002: 43) [27] Total Quality Management is defined as a way to improve performance continuously in all the operations or processes, in every functional area of an organization, using all human resources and capital available.

Total Quality Management according to Mehra and Ranganathan (2008: 916) [59] is a management strategy that is adopted to enhance customer satisfaction through the concentration on the customer and also stated that Total Quality Management is a strategy that is applied to the business operations of manufacturing and service industries on a variety of global cultures. Total Quality Management is defined as both a philosophy and a set of guiding principles that present the foundation of a continuously improving organization, when translated Total Quality Management is a philosophy and a guide to improve the organization's performance on an ongoing basis using quantitative methods to be used now and the time will come (Bestherfield *et al.* 2003: 1) [9], and Total Quality Management is more often practiced in the manufacturing industry (Joiner, 2007: 618), and its implementation into the impact on Organizational performance (Prayogo, 2005: 217) [65].

Several previous studies have shown a positive relationship between Total Quality Management with Organizational Performance (Sterman *et al.* 1997 [76]; Choi and Eboch, 1998 [16]; Terziovski and Samson, 1999 [81]; Brah *et al.* 2002 [10]; Brah and Lim, 2006 [11]; Demirbag *et al.* 2006; Feng *et al.* 2006 [22]; Kumar *et al.* 2009 [47]; Prayhoego and Devie, 2013 [66]; Masood ul Hassan *et al.* 2012 [56]; Ardianto, 2013) [6]. Munizu (2013: 184) [61] in a recent research in the fishing industry in North Sulawesi resulted in that there is a positive relationship between Total Quality Management and Competitive Advantage, as well as the results of research Prayhoego and Devie (2013: 1) [66] the company in Surabaya, which concluded that there is significant influence between Total Quality Management and Competitive Advantage. Similarly, the results of research Al Qudah (2012) [2], the application of Total Quality Management will enhance Competitive Advantage.

Some opinion about Total Quality Management indicators include; Besterfield *et al.* (2003) [9]; Leadership, Customer Satisfaction, Employee Involvement, Supplier partnership, Continuous Process Improvement and Performance Measures. Ahire *et al.* (1996) [1]; Top Management Commitment, Benchmarking, Statistical Process Control, Internal Information Usage, Employee Involvement,

Employee Training, Employee Empowerment, Customer Focus, Quality Management and Design Supplier Quality Management. While Talib and Rahman (2010) [79] delivered 9 indicators for Total Quality Management; Top Management Commitment, Customer Focus, Training & Education, Continuous Improvement & Innovation, Supplier Management, Employee Involvement, Employee Ecouragement, Benchmarking, Quality Information and Performance. Antony *et al.* (2002) [4] used 11 indicators to describe the Total Quality Management; Management Commitment, Role of Quality Management, Training and Education, Employee Involvement, Continuous Improvement, Supplier Partnership, Product / Service Design, Quality Policies, Quality Data and Reporting, Communication to Improve Quality and Customer Satisfaction Orientation.

Saraph *et al.* (1989) [71] in his research determine 8 indicators namely; Top Management Leadership, Role of Quality Department, Training, Product Design, Supplier Quality Management, Process Management, Quality Data Reporting and Employee. Research-influenced model of previous studies, this study used four indicators to Total Quality Management; 1. Top Management Commitment, 2. Continuous Improvement, 3. Customer Focus, 4. Product Design (Besterfield *et al.* 2003 [9]; and Rahman Talib. 2011 [78]; Antony *et al.* 2002) [4].

2.2 Supply Chain Management

Supply Chain Management is a procurement activity and service of goods through distribution systems (Heizer and Render, 2012). Furthermore, according Heizer and Render (2014) [32] Supply Chain Management is coordinating the activity of the supply chain starting from raw material supply and ending on customer satisfaction, including the suppliers, factories, distribution service providers, retailers and others. Supply Chain Management involves not only the companies and suppliers, but also involves the transport services, warehousing services, retailers and of course customers (Chopra and Meindl, 2013) [17] and in quantities, locations, the right time to minimize costs and provide satisfaction to customers (Simchi-Levi, 2003) [74].

Supply Chain Management is a management philosophy which involves the management and integration of a series of key business process selected from end users through major suppliers, who provide products, services, and information that add value for customers and other stakeholders through a collaborative effort of members of the supply chain (Ho, *et al.* 2002) [33]. The main concern of the Supply Chain Management is to achieve improved production quality and efficiency through the incorporation of the supply chain (Chin *et al.* 2006) [15].

Bratic (2011) [12] uses five indicators to Supply Chain Management; Strategic Supplier Partnership, Customer Relationship, Level of Information Sharing, Quality of Information Sharing and postponement. Li *et al.* (2005) [50]; Strategic Supplier Partnership, Customer Relationship, Information Sharing, Information Quality, Internal Lean Practice and postponement. In a study of SMEs in Turkey, Koh *et al.* (2007) [43] used 12 indicators for; Just In Time Supply, Many Suppliers, Holding Safety Stock, subcontracting, Few Supplier, Close Partnership with Suppliers, Strategic Planning, Outsourcing, 3PL, Close Partnership with Customer, E-Procurement and Supply Chain Benchmarking.

Talib *et al.* (2011) [79] use; Customer Relationship, Materials Management, Strategic Supplier Partnership, Information and Communication Technology, Corporate Culture and Close Supplier Partnership, while Ardianto (2013) [6] refers to studies Talib *et al.* eliminating two indicators, namely; Strategic Supplier Partnership and Corporate Culture. Based on the above research, this study used three indicators used Talib *et al.* (2011) [79]; Supplier Quality Management, Customer Relationship, Materials Management, and addtional 1 indicator Strategic Supplier Partnership, it is given the quality of the suppliers will also affect the performance of the Supply Chain Management (Kuei *et al.* 2001) [46], but it would be even better if the relationship between producers and suppliers in the long term.

2.3 Competitive Advantages

Competitive Advantages is the company's ability to implement strategies to utilize resources as effectively as possible to gain advantage over competitors. Li *et al.* (2006) [51] defines that Competitive Advantage as the company's ability to create value that is not owned and cannot be imitated by competitors. McGinnis and Vallopra (1999) [57] more simply conclude Competitive Advantage is how far a company is able to create a position and maintain a position over a competitor.

Sustainability Competitive Advantage depends on three main characteristics of the organization's resources and capabilities: Durability; which is the period in which a sustainable competitive advantage has the ability to hold on to its position Among competitors, transferability; the ability of society together or the company to increase its competitive advantage, and finally replicability; the ability of a company or organization to implement its strategy so that it cannot be replicated or acquired in the market (Sandler, 2003) [70]. According to Reed *et al.* (2000) [67], Competitive Advantage has two complementary models, the first model is a market-based model, focuses on cost and differentiation and argues that the environment will choose inefficient or non-offering companies to consumers who are willing to pay a premium. The second model focuses on the company's resources and driven by factors that are internal to the company. Some studies use indicators that are generally almost identical to each other, Karimi and Raffie (2014) [42]; Tracey *et al.* (1999) [83].

Price, Quality, Dependability and ProductInnovation delivary (Flexibility). Flexibility and Responsiveness (Evan, 1993; Krajewski and Ritzman, 1996 [45]; Macmillan and Tampoe, 2000) [53]. While Li *et al.* (2006) [51] and Thatte (2007) [82] use the same indicators; Price, Quality, Delivery Dependability, Product Innovation and Time to Market.

Inspired indicator model in the study of Li *et al. (*2006) [51] and others above, this study uses indicators; Cost - Price, Delivery Dependability, Product Innovation and Time to Market. It is also considering that indicators Flexibility and Responsiveness have been used in the variable Total Quality Management and Supply Chain Management.

2.4 Organizational Performance

Organizational performance is defined as the output of the company or the achievement of corporate objectives within a certain time, and measures of performance (performance) can be measured from various functions of the company (operations, marketing, finance and human resources). Company performance should be easy to measure and compare, as well as a real picture of the company of a standard size. The concept of corporate performance is often not explained in detail in the academic literature. The concept of company performance can be operationalized in several different measurement contexts such as individual performance, team performance, organizational performance, depending on the research objectives to be achieved (Ardianto, 2013) [6].

Organizational Performance refers to how well organizations achieve market-oriented goals as well as financial goals (Karimi and Rafiee, 2014) [42]. According to Ho, (2008) [34] Organizational Performance is an indicator that measures how well an organization accomplishes its objectives. While Lebans and Euske (2006) [48] provide a set of overviews of the concept of Organizational Performance as follows:

1) Performance is a set of financial and non-financial indicators that offer information about the level of achievement of goals and outcomes.
2) Dynamic performance requires assessment and interpretation.
3) Performance can be illustrated using a causal model that illustrates how current actions affect future results.
4) Performance can be understood differently depending on the people involved in the assessment of organizational performance.
5) To determine the concept of performance is required to know in advance the elements of each characteristic responsibility
6) Organizational Performance reporting forms are required to report in the form of reporting results in quantity.

Venkatraman and Ramunujam (1986) [86] separates Business Performance based on three dimensions: Operational, Financial and Organizational Effectiveness. Operational or non-financial performance includes product quality, market share, market effectiveness and introduction of new products; financial performance includes profitability and sales growth; and organizational effectiveness is the extent to which organizations achieve their effectiveness. Organizational performance can be measured in two dimensions: operational performance and organizational performance. Operational performance is a reflection of the company's internal operating performance which includes; reducing waste of operational costs, improving product quality, developing new products, improving delivery performance and increasing productivity. While organizational performance is measured from; income financial measures such as growth, net income, the ratio of profit to revenue and return on assets, as well as non-financial measures such as investment in R & D and capacity of the company to develop competitive profiles (Brah and Lim, 2006) [11].

Meanwhile, according to Agarwal *et al.* (2003) Organizational Performance has two dimensions consisting of Judgmental Objective Performance and Performance. Perform ance judgmental include employee and customer perception such as service quality, customer satisfaction and retention. On the other hand, Objective Performance include financial and based on market assessments such as sales growth, profit, market share and efficiency. Ardianto (2013) [6], in measuring the use of Organizational Performance indicators: Product Rejection, Level Sales, Cost Reduction and Meeting Customer Requirements. Indicator - This indicator is similar to indicators used Petroviv-Lazaveric *et al.* (2007); Lead Time, Inventory Turnover, Product Rejection, Sales Level, Cost Reduction and Meeting Customer Requirement.

3. Research Methods

3.1 Conceptual Framework

In this study in detail the conceptual framework constructed compiled from the results of previous studies using the following variables:

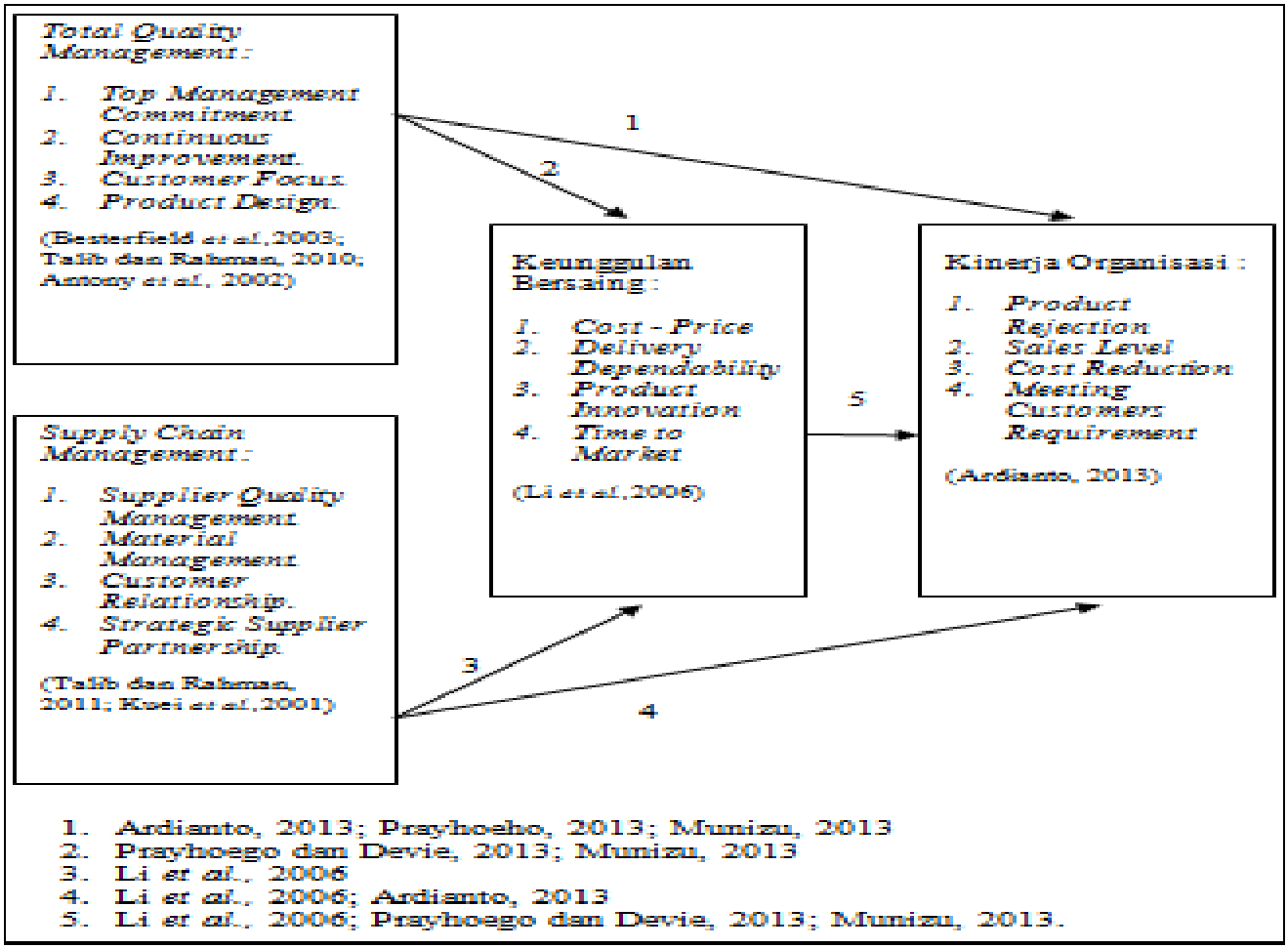

Fig 1: Conceptual Framework of Research Model

Based on the relationship and formulation above, and the conceptual framework that has been made, it can be formulated hypothesis as follows;

1. Total Quality Management and Supply Chain Management significant effect on Competitive Advantage in manufacturing companies in Bogor.
2. Total Quality Management and Supply Chain Management significant effect on Organizational Performance at a manufacturing company in Bogor.
3. Competitive Advantage has a significant effect on Organizational Performance at a manufacturing company in Bogor.
4. Total Quality Management and Supply Chain Management significant effect on Organizational Performance through Competitive Advantages at a manufacturing company in Bogor.

3.2 Study Design

This research is a quantitative research using survey method. The purpose and nature of the problem of this research is categorized as a causal explanatory research which examines the phenomenon of the relationship, the influence of variables Total Quality Management and Supply Chain Management of the Competitive Advantage and Organizational Performance. In order to obtain the primary data to be used, this study collected answers from the questionnaire results to the leadership of a manufacturing company that has been certified ISO 9000 in Bogor, with the amount according to the provisions set by this study sample.

3.3 Population

The research population is a manufacturing company which has obtained ISO certification. The total number of manufacturing companies in Bogor has been ISO certified by 31 companies (bps 3271@bps.go.id).The target population is the leader manufacturing company that covers people - people who are responsible for the processing of raw materials into finished goods.

3.4 Sample

The research sample is the leader of a manufacturing company that has been ISO 9000 certified for 1 - 3 years and has worked at least 1 year in the research company and amounted to 253 people. The number of samples is determined based on the comparison between the population and its characteristics, so the number of samples in this study is at least 5 to 10 the number of indicators (Ferdinand, 2006) [23], so the number of samples used in this study is minimal: 16`X 10 = 160 samples.

3.5 Sampling technique

The sampling technique used is sampling based on purposive sampling, sample selection is done by

distributing 180 questionnaires to 15 companies. Recorded questionnaires were 171 and 6 were not complete, so this study used 165 questionnaires and this is according to the calculation of samples of at least 160 questionnaires, so the questionnaires used for research purposes amounted to 165.

3.6 Test Instruments Research:

i) Validity test

According Sekaran and Bougie (2013) [72] Validity is a test of how well the instrument developed to measure a particular concept is intended to measure. Or it can be said the validity test is how appropriate the instrument used to measure a concept. It can be measured from the correlation coefficient number between the score of an indicator with the total of all indicators greater than 0.3, then the instrument is considered valid.

ii) Test Reliability

Test Reliability is intended to measure the level of consistency of the instruments used. Thus this instrument can be used safely because it can work well at different times of different conditions. So reliability shows how measurements can provide a relatively different results when measurements were taken back to the same subject. Reliability testing can be done by splitting the questionnaire into two parts. The first part of the second part odd- and even-numbered numbered, then the total score of each hemisphere was correlated with the use of formula like measure product moment correlation on the validity of the test. The limit value used to assess an acceptable level of reliability is 0.70 (Ferdinand, 2002). If the research is exploratory then a lower value of 0.70 is still acceptable throughout the dissertation with empirical reasons seen in the exploratory process.

3.7 Types and Sources of Data

The data used is the data subject (self-report data) documentary data (documentary data). Subject data is a type of data used in research, which is an opinion, attitude, experience or characteristics of a person or group of people who became the subject of research, while documentary data is research data used in the form of research journals, scientific magazines and so forth (Indriantoro and Supomo, 2002) [37]. Data source used is primary data. Primary data in this study include; total data quality management, supply chain management, competitive advantage and organizational performance obtained directly from the leaders of manufacturing companies in Bogor, by giving questionnaires to the company's leaders as respondents. While the secondary data that provides information on the number of manufacturing enterprises and other figures obtained from Bogor in 2013 andGoBogor.co.id.

3.8 Data Analysis Techniques

This study will analyze the impact of Total Quality Management and Supply Chain Management on Organizational Performance through Competitive Advantages the manufacturing company in Bogor using descriptive and analytical methods SEM (Structural Equation Modeling).

4. Results and Discussion

4.1 Validity and Reliability Test Results

i) Validity Test Results

All variable has a coefficient of r count value is greater than the critical r and a smaller probability value of $\alpha = 5\%$, meaning that there is a significant correlation between the scores of each indicator with a total score. Significant correlations indicate that the indicator really can be used to measure the variables to be measured, in other words an instrument being used is valid, which means that the instrument can be used in research and are appropriately used to measure variables TQM, supply chain management, competitive advantage and performance organization.

ii) Reliability Test Results

Reliability test results on all the variables showed that each value reliability coefficient greater than 0.6 so that the instruments used have a high chance to be answered consistently by respondents.

4.2 Test Results SEM Assumptions

i) Normality test

Testing normality of the data by observing the value of CR in multivariate analysis. If the value is multivariate critical ratio is within an interval -2.58 to 2.58, it can be categorized data distribution is normality. Here are the results of testing in multivariate normality in the structural equation model:

Table 1: Test Results Multivariate normality

Variable	min	m ax	skew	cr	kurtosis	cr
X14	3.00	5.00	-0.30	-1.59	-0.72	-1.90
Y11	1.00	5.00	-1.00	-1.26	4.04	1.60
Y12	3.00	5.00	-0.03	-0.15	-0.60	-1.58
Y24	2.00	5.00	-0.78	-1,11	0.90	2.05
Y23	3.00	5.00	-0.25	-1.29	-1.61	-1.21
Y22	2.00	5.00	-0.84	-1.42	1.78	1.66
Y21	2.00	5.00	-0.56	-1.95	0.55	1.45
Y13	2.00	5.00	-0.55	1.89	0.40	1.04
Y14	1.00	5.00	-0.67	-1.52	1.08	2.03
X11	2.00	5.00	-0.39	-2.05	-0.39	-1.01
X12	3.00	5.00	-0.18	-0.92	-0,87	-2.08
X13	1.00	5.00	-0.67	-1.49	1.70	1.45
X21	2.00	5.00	-0.31	-1.63	0.40	1.05
X22	2.00	5.00	-0.33	-1.70	0.37	0.98
X23	2.00	5.00	-0.29	-1.52	0.51	1.32
X24	2.00	5.00	-0.51	-2.18	1.04	2.13
Multivariate					1.579	1.198

Source: Primary data processed, 2017

Based on the results of processing the data from Table 1 is known multivariate CR value of 1.198 which is between the interval -2.58 to 2.58, then conclude multivariate normality assumptions are met, so the assumption of normality required by SEM analysis had been met.

ii) Outlier test

Outlier examination was conducted using Mahalanobis distance (Mahalanobis distance squared). If the Mahalanobis

distance squared is greater than the value of chi-square df = the number of indicators and a significance level of 0.001, then the data is an outlier. The following are the results of the calculation of the Mahalanobis distance squared:

Table 2: Outlier Test Results (Mahalanobis Distance Squared)

Observation Number	Mahalanobis d-squared	p1	p2
1	117.59	0.00	0.00
12	89.45	0.00	0.00
13	75.49	0.00	0.00
8	74.92	0.00	0.00
7	63.59	0.00	0.00
33	60.04	0.00	0.00
3	55.94	0.00	0.00
14	48.69	0.00	0.00
31	45.11	0.00	0.00
71	43.84	0.00	0.00

Source: Primary data processed, 2017.

The results of Table 2 with Mahalanobis distance squared showed that statistically there are observations that are detected as outliers are observations that have a Mahalanobis distance greater than the chi square table (df = 98, α = 0.001), ie 1 22, 107 of the results of analysis show that the 16 indicators used in this study was not No containing outlier.

iii) Test Multicolinearity

Multicollinearity problem is a very strong relationship between exogenous and exogenous measured variables. Multicollinearity can be detected by correlation of each measured variable under study. The correlation is high (above 0.9) between the measured variables indicate multicollinearity (Ghozali, 2006: 170). The results of the correlation matrix between TQM output with supply chain management was 0.78. The results of this evaluation indicate that there is no problem of multicollinearity.

4.3 Results of SEM Analysis

i) Confirmatory Analysis of Exogenous Variables

Confirmatory analysis of the exogenous variables (TQM and supply chain management) carried out for confirmatory whether the observed variables may reflect factors analyzed, which has a model confirmatory test goodness of fit test, significant weight and value of lambda factor or factor loading.

Table 3: Confirmatory Test Results Analysis of Total Quality Management and Supply Chain Management

Indicator	Line direction	Variables Latent	Factor Loading	CR	The value of P	Information
Top Management Commitment	←	Total Quality Management	0.869	13,605	0,000	Valid
Continuous Improvement	←	Total Quality Management	.898	14.294	0,000	Valid
Customer Focus	←	Total Quality Management	0.826		0,000	Valid
Product Design	←	Total Quality Management	0.879	13,896	0,000	Valid
Supplier Quality Management	←	Supply Chain Management	0.856	15,382	0,000	Valid
Material Management	←	Supply Chain Management	0.955	19,717	0,000	Valid
Customer Relationship	←	Supply Chain Management	0.992	21,598	0,000	Valid
Strategic Supplier Partnership	←	Supply Chain Management	0.871	13,605	0,000	Valid
Reliability Construct = 0.970 (cut-off value = 0.7)						Reliable
Variance Extract = 0,800 (cut-off value = 0.5)						Reliable

Source: Primary data processed, 2017.

Based on information Table 3 factor loading value of each indicator exceeds the cut-off value of 0.5, a probability value (p) is less than or equal to 0.05, a value of 0.970 Construct Reliability is greater than the cut-off value of 0.7 and Extract of 0,800 Variance value is greater than the cut-off value of 0.5. TQM indicators that show the highest factor loading value is X12 is Continuous Improvement with a value of 0.898, while the three indicators of supply chain management that shows the value of the highest loading factor is that Customer Relationship X23 with a value of 0.992. These test results show that the indicators were tested had good reliability in establishing and operational latent variables TQM and supply chain management.

ii) Confirmatory Analysis of Variable Endogenous

The results of significance test loading factor endogenous variables (a competitive advantage and organizational performance) are presented in Table 4 following.

Table 4: Test Results Analysis and Competitive Advantage Confirmatory Organizational performance

Indicator		Variables latent	Factor Loading	CR	value P	Information
Cost - price	←	Competitive advantage	0.763	9.112	0,000	Valid
Delivery dependability	←	Competitive advantage	.789	9.331	0,000	Valid
Product innovation	←	Competitive advantage	0.822	9.953	0,000	Valid
Time to market	←	Competitive advantage	0.722		0,000	Valid
Product rejection	←	Organizational performance	.871		0,000	Valid
Sales level	←	Organizational performance	0.935	17.441	0,000	Valid
Cost reduction	←	Organizational performance	0.883	15.913	0,000	Valid
Meeting customers requirement	←	Organizational performance	.842	14.206	0,000	Valid
Reliability Construct = 0.947 (cut-off value = 0.7)						reliable
Variance Extract = 0.690 (cut-off value = 0.5)						reliable

Sources: Primary data is processed, 2017.

Based on information Table 1 use values factor loading of each indicator exceeds the value of the cut-off of 0.5, a probability value (p) is less than or equal to 0.05, the value of Reliability Construct amounted to 0.947 greater than the cut-off of 0, 7 and value Variance Extract amounted to 0.690 greater than the cut-off of 0.5. Indicators of competitive advantage that demonstrate the value of factor loading highest product innovation with a value of 0.822, while the four indicators of organizational performance that shows the value of factor loading is the highest cost reduction with a value of 0.935. These test results show that the indicators that were tested turned out to have a good reliability in establishing and operational latent variables competitive advantage and organizational performance.

iii) Test Model (Goodness of Fit)

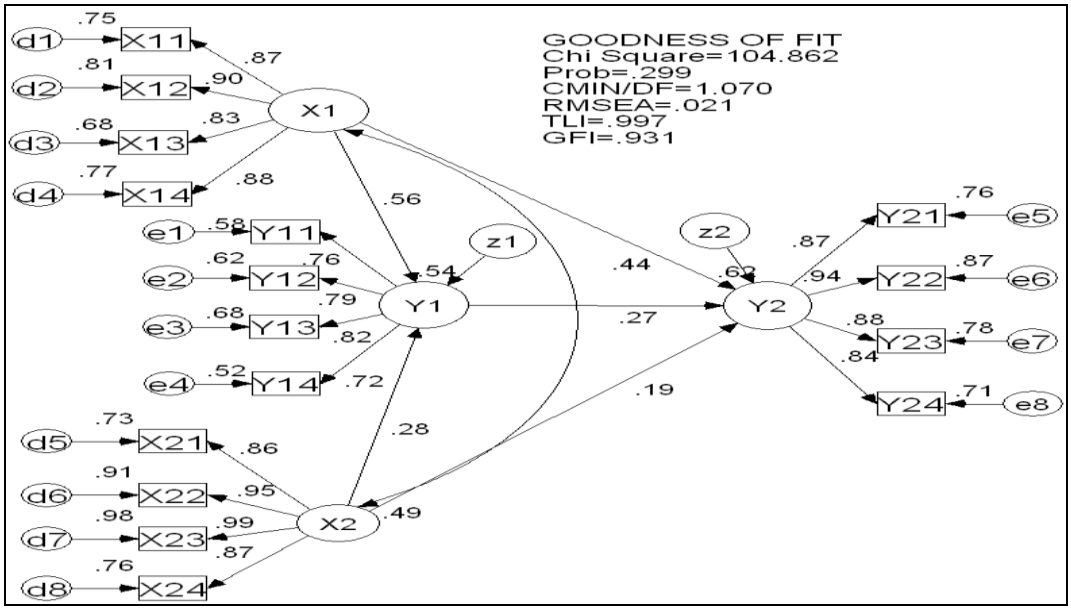

Fig 1: Results of SEM analysis

Based on Figure 1 n use values factor loading required is ≥ 0, 50. Results of testing the loading factor variables TQM is greater than 0.50. Of the four indicators TQM showing the loading factor height is X_{12} is continuous improvement with a value of 0, 90. Results of testing the loading factor variables of supply chain management is greater than 0.50. Of the four indicators of supply chain management that shows the factor loading height is X_{23} namely customer relationship with a value of 0, 99. Results of testing the loading factor variables competitive advantage is greater than 0.50. Of the five indicators of competitive advantage that showed factor loading height is Y_{13} is product innovation with a value of 0, 82. Results of testing the loading factor variable performance of the organization is greater than 0.50. Of the four indicators of the performance of the organization which showed factor loading height is Y_{22} sales level with a value of 0, 94. Results computing AMOS 18 for SEM models, resulting indices fitness model (goodness of fit) are presented in Table 20. Furthermore, the values of this index compared with the value of the critical (cut-of value) of each index. A good model is expected to have indices of goodness of fit which is greater than or equal to the critical value.

Table 5: Results of Testing Goodness of Fit Model Structural Modification

Goodness of Fit Index	Cut-of Value	Results Model	Information
Chi-square (df = 98)	122.11	104.862	Good
Chi-Square Probability	≥ 0.05	0,299	Good
CMIN / DF	≤ 2.00	1,070	Good
RMSEA	≤ 0.08	0,021	Good
GFI	≥ 0.90	0.931	Good
TLI	≥ 0.95	.997	Good

Sources: Primary data is processed, 2017.

Based on the evaluation criteria of Goodness of Fit Indices in Table 5 shows that the overall evaluation models already meet, then the model is acceptable.

4.4 Hypothesis Testing Results

Testing the hypothesis in this study was conducted to see the value of p (probability), if the p-value greater than or equal to 0.05, then it is said that there is a significant effect.

i) Hypothesis Testing One

The hypothesis of the states that Total Quality Management and Supply Chain Management a significant effect on Competitive Advantage in manufacturing companies in Bogor. Based on the analysis on the hypothesis testing as shown in Table 6.

Table 6: Test Results SEM

Variables	Standardized Regression Weight	Estimate	SE	CR	P
TQM	.558	.536	0.087	6.159	0,000
Supply chain management	0.275	0.279	0.078	3,555	0,000

Sources: Primary data is processed, 2017.

Based on Table 6, the obtained models the following equation: $Y_1 = 0.558\ X_1 + 0.275\ X_2$. Table 6 shows that the variables of TQM and supply chain management has a value of the critical ratio (CR) of greater than 2 and a value p-value less than or equal to 0.05. In the form of standardized coefficient factor loading TQM worth 0.558, and supply chain management amounted to 0.275. These results give a decision that the variable TQM and supply chain management positive and significant impact on competitive advantage. The research hypothesis which states that the Total Quality Management and Supply Chain Management significant effect on Competitive Advantage in a manufacturing company in Bogor statistically tested.

ii) Two Hypothesis Testing

Hypothesis two states that Total Quality Management and Supply Chain Management a significant effect on Organizational Performance in manufacturing companies in Bogor. Based on the analysis results of hypothesis testing two as shown in Table 7.

Table 7: Test Results SEM

Variables	Standardized Regression Weight	Estimate	SE	CR	P
TQM	.441	0.382	0.079	4.819	0,000
Supply chain management	0.192	0.176	0.063	2,809	0,005

Sources: Primary data is processed, 2017.

Based on Table 6, the model obtained the following equation: $Y_2 = 0{,}441X_1 + 0.192\ X_2$. Table 7 indicates that the variable TQM and supply chain management has a CR value is greater than 2 and a value p-value less than or equal to 0.05. In the form of standardized coefficient factor loading TQM worth 0.441, and supply chain management of 0.192. These results give a decision that TQM variable positive and significant effect on the performance of the organization, and the variable supply chain management positive and significant impact on organizational performance. The research hypothesis which states that the Total Quality Management and Supply Chain Management significant effect on Organizational Performance in manufacturing companies in Bogor statistical hypothesis tested.

iii) Third Hypothesis Testing

The third hypothesis states that the Competitive Advantage significant effect on Organizational Performance in manufacturing companies in Bogor. Based on the analysis in the third hypothesis testing as shown in Table 8.

Table 8: Test Results SEM

Variables	Standardized Regression Weight	Estimate	SE	CR	P
competitive advantage	0.275	0.248	0.088	2.829	0,005

Sources: Primary data is processed, 2017.

Based on Table 8, the model obtained the following equation: $Y_2 = 0.275\ Y_1$. Table 8 shows that the competitive advantage variable has a value of CR is greater than 2 and a value p-value less than or equal to 0.05, the value of the standardized coefficient factor loading of 0.275. These results provide the decision that the competitive advantage variable positive and significant impact on the performance of the organization, thus statistically the third hypothesis hypothesis tested.

iv) Fourth Hypothesis Testing

Hypothesis four states that Total Quality Management and Supply Chain Management significant effect on Organizational Performance through excellence Compete in manufacturing companies in Bogor. Based on the analysis results of hypothesis testing four as shown in Table 9.

Table 9: Results Effect of Total Quality Management and Supply Chain Management of Organizational Performance through Competitive Advantage

Variables	Direct Impact	Indirect Influence	Effect of Total
TQM to organizational performance through competitive advantage	.441	0.558 X 0.275 = 0,153	0.594
Supply chain management to organizational performance through competitive advantage	0.192	0.275 X 0.275 = 0.076	0.268

Sources: Primary data is processed, 2017.

Base on Table 9, the model obtained the following equation:

$Y_2 = 0.441 X_1 + (0.558 \times_1 \times 0.275 Y_1)$

$Y_2 = 0.192 X_2 + (0.275 \times_2 \times 0.275 Y_1)$

Based on Table 9 the results of the analysis indicate that the competitive advantage status as variables intervening to mediate the variable total quality management, because the total effect is greater than the direct effect. Competitive advantage status as variables intervening to mediate the variable supply chain management to organizational performance, because the total effect is greater than the direct effect.

This means that the t otal quality management and supply chain management significant effect on the organization performance through competitive advantage on manufacturing companies in Bogor statistically tested.

5. Discussion

5.1 Description Total Quality Management, Supply Chain Management, Competitive Advantage Through Organization Performance.

i) Total Quality Management

Total quality management in this study formed by top management commitment, continuous improvement, customer focus and product design. This finding is consistent with Besterfield (2003) [9], Talib (2011) [78] and Antony (2002) [4]. Customer focus biggest contribution to the total quality management, this represents a manufacturing company in Bogor capable of responding to the wishes of customers on product quality, so by responding to the wishes of customers that the product can be easily accepted by the market. Top management commitment plays a role in monitoring the quality of products, and also responsibility and supervision in an effort to maintain the quality of the product. Continuous improvement that describes the ability of a manufacturing company in Bogor in maintaining product quality and increase product quality. Product design describes the ability of a manufacturing company in Bogor in maintaining the quality and designing products according to the customer's wishes. The design of this product relating to product durability and shape according to the needs of customers want.

ii) Supply Chain Management

Supply chain management in this study established by the supplier quality management, material management, customer relationship and strategic supplier partnership. This finding is consistent with the Taliban and Rahman (2010) [79] and Kuei (2001) [46]. Customer relationship biggest contribution to the supply chain management, this represents a long-term contract manufacturing company in Bogor done by the customer, the company's commitment to customer satisfaction orientation as well as a response to the customer. Long-term contracts will create understanding especially those related to the level of customer satisfaction. Strategic supplier partnership is a long-term contract manufacturing company in Bogor with suppliers, the company's cooperation with suppliers in terms of the cost of information exchange and product problems. As is the case with the customer, then the long-term contracts with suppliers need to do in order to obtain information relating to cost and product. Materials management describes the ability of a manufacturing company in Bogor in keeping the material inventory turnover rate of raw, ability to purchase raw materials in accordance with the quality of the order, the supplier is able to conduct timely delivery of raw materials and the right amount. Companies constantly strive for the level of supplies of raw is maintained, so that the necessary certainty and timeliness of deliveries of raw materials from suppliers. Supplier quality management associated with the selection by a manufacturing company in Bogor on suppliers and evaluate the performance of suppliers per period, it is associated with quality suppliers in terms of both performance and reputation, so in addition to the selection of suppliers is also required an evaluation of suppliers on a regular basis.

iii) Competitive Advantage

Competitive advantage at this research formed by the cost - price, delivery dependability, product innovation and time to market. This finding is consistent with the Li *et al.* (2006) [51]. Product innovation contributes greatest competitive advantage, this matter illustrates the ability of a manufacturing company in Bogor innovate products according to customer requirements, considering the product and packaging innovation. One strategy to gain a competitive advantage through operational is how to create a unique product, in order to obtain the uniqueness of the product in addition to have innovative characteristics should also include packaging that is tailored to customer needs. Cost - The price an overview of the cost as a major factor in competition, the ability of a manufacturing company in Bogor in cost competition, the commitment of companies to reduce their costs and prices as a major factor in the competition. Reduce production costs through efficiency and quality improvement to reduce the selling price of products. Delivery dependability illustrates the timeliness of delivery of products which are run by the manufacturing company in Bogor to distributors and customers, while maintaining the accuracy of the time it can satisfy the customer. Time to market is the ability of a manufacturing company in Bogor release products to market quickly and on time. Removing a product to market is not just rely on speed but also timeliness, it is associated with the customer's needs as well as the existence of a competing product in the marketplace.

iv) Organization Performance

The organization's performance in this study formed by product rejection, sales levels, cost reduction and meeting customer requirements. This finding is consistent with Ardianto (2013) [6]. Cost reduction biggest contribution to the competitive advantage, this illustrates the ability of a manufacturing company in Bogor in lowering the cost of materials purchased raw, maintain efficient transportation costs and the company's ability to maintain an efficient storage costs. Organizational performance can be seen on the company's ability to reduce operating costs. Meeting customer requirements is a manufacturing company in Bogor capabilities deliver the product on time, the company's ability to send high quality products according to customer demand and the company's ability to send the number of products in accordance with customer demand. Sales levels are a

manufacturing company in Bogor ability to achieve sales targets and increase market share compared to last year. Product rejection is the level of capability manufacturing company in Bogor in controlling the defective product from the customer to the company, the smaller the amount of defective products, the better the company's performance and as well as with the delivery process, which is reflected in the level of product damage during transportation are low.

5.2 Influence Total Quality Management and Supply Chain anagement Through Competitive Advantage

Total quality management which is appreciated by the continuous improvement in the form of the company to maintain and improve product quality. Supply chain management appreciated by the customer relationship in the form of long-term contracts with customers, orientation on customer satisfaction and responsiveness to customer complaints. Appreciated competitive advantage by product innovation in the form of expensive innovative products, packaging innovation and innovation according to customer requirements.

The findings of the research manufacturing company in Bogor explained that the continuous product quality will create a competitive advantage of the product against competitors' products. The company's ability to maintain and improve the quality of products will improve the product - quality innovative products ever, both for products and as well as the packaging, which will meet the needs of customers.

The results also showed that long-term contracts with customers, orientation to the customer satisfaction as well as responsive to the demands of the customers will be then to create a good relationship between the company and customers. A good relationship between the company and customers will benefit for the company as it will determine the product - innovative products that suit customer needs.

The findings of the results showed that the total quality management and supply chain management can result in a competitive advantage for manufacturing companies in Bogor. The results are consistent with research Prayhoego and Devie (2013) [66] and Munizu (2013) [61] which states that the total quality management influence on competitive advantage. The results of the study are also consistent with the study of Li *et al.* (2006) [51] which states that the supply chain management affects the competitive advantage. The study also obtain the results of total quality management influence on competitive advantage greater than the effect of supply chain management to competitive advantage.

5.3 Influence Total Quality Management and Supply Chain Management through Competitive Advantage

Organizational performance appreciated by the sales level in the form to afford an manufacturing company in Bogor achieve sales targets and be able to increase its market share compared to last year. The company's ability to keep and improve the quality of products will help improve the performance of the organization appreciated by the achievement of sales targets and be able to increase its market share compared to last year, this is in accordance with the concept Krajewski *et al.* (2006: 64) [44] states that total quality management is a management system that aims than to increase Customer satisfaction is also to improve the performance of the organization by providing high quality products and services through the participation of all stakeholders.

The results of this study support and in line with research Ardianto (2013) [6], Prayhoeho (2013) [66] and Munizu (2013) [61] which states that the total quality management on the performance of the organization. Supply chain management appreciated by the customer relationship in the form of a long-term contract manufacturing company in Bogor with customers, orientation on customer satisfaction and responsiveness to customer complaints, which will result in increased market share, this is in accordance with the opinion of Lee H. L *et al.* (1997) [49], which states that the short-term objective of supply chain management, especially to improve productivity and reduce inventory and cycle time, while the long-term goal is to increase market share.

Findings from these results of this study explained that the implementation of supply chain management companies manufacturing in Bogor on the performance of the organization and in line with the study of Li *et al.* (2006) [51], Ardianto (2013) [6] and Karimi and Rafiee (2014) [42] which states that the supply chain management affect the performance of the organization. The study's findings also suggest that the total quality management have more influence on organizational performance compared to the effect of supply chain management to organizational performance.

5.4 Effect of Competitive Advantage through Organization Performance

Appreciated competitive advantage by product innovation in the form of expensive innovative products, packaging innovation and innovation in accordance with the needs of customers manufacturing company in Bogor will have an impact on the performance of the organization appreciated by the sales level in the form of the company was able to achieve sales targets and be able to increase its market share compared to last year. Product innovations for rapid technological developments will have an impact on the performance of the organization, it is in accordance with the opinion (Hurley and Hult, 1998) [36]. Product innovation, in addition to product innovation also for packaging innovations that are tailored to the needs of customers will gain a competitive advantage.

Competitive advantage in the end will result in increased sales from year to year for the company. Competitive advantage is the company's strategy to achieve the ultimate goal of the company is the performance of organizations that generate high profits, is mean competitive advantage is not an end, but a means to achieve the ultimate goal of the company, which is to increase the performance of the organization. The results of the research indicate where the competitive advantage gained in Bogor manufacturing company can improve organizational performance, is in line with the study of Li *et al.* (2006) [51], Prayhoego and Devie (2013) [66], and Munizu (2013) [61] which states that the competitive advantage of an effect on the performance of the organization.

5.5 Influence Total Quality Management and Supply Chain Management through Competitive Advantage

Research results obtained from the role of total quality management and supply chain management to organizational performance through competitive advantage is, the application of total quality management and supply chain management in a manufacturing company in Bogor can improve organizational performance. The evidence suggests that the role of total quality management is greater than the role of supply chain management.

The role of product innovation, packaging innovation and innovation in accordance with the needs of customers as part of a competitive advantage is a judgment made by the company in order to improve organizational performance. The findings of this study as well as answering doubts research Vanichchinchai and Igel (2009) [85], about the difference the focus of total quality management to supply chain management that, when put together will be able to create conflict, this has not happened, even between total quality management and supply chain management with each other supporting the company in order to gain a competitive advantage while increasing the performance of the company.

This research has been carried out to the maximum, but given the breadth of the scope of the performance of the organization, then this study has limitations or shortcomings as follows: the study is limited only to measure total quality management, supply chain management and competitive advantage as variables that affect the performance of the organization. After doing some research it turns out there is a variable which is actually also greatly affect the performance of the organization, these variables are information and communication technology. Developments in information technology (IT) has penetrated into all aspects of human activities make use of the technology to be one important part of the organization's performance, because IT as one of the organization's information and knowledge management systematically. In addition this study did not separate manufacturing industry in a variety of industries, for example; automotive, footwear, machinery and others - others.

6. Conclusions and Recommendations

6.1 Conclusion

Based on the analysis and discussion, it can be concluded as follows:

1. Total quality management is formed by continuous improvement, product design, top management commitment and customer focus. The main thing formers total quality management is continuous improvement is reflected in the company is able to maintain and improve the quality of products and supply chain management is formed of a customer relationship, material management, strategic supplier partnership and supplier quality management. The main thing in formation supply chain management is customer relationship reflected in the company conducts long-term contracts with customers, orientation on customer satisfaction and responsiveness to customer complaints. Competitive advantage in this case is formed by product innovation, delivery depend ability, cost - price and time to market. The main thing forming a competitive advantage is product innovation is reflected in the innovative products tailored to customer needs. Organizational performance is formed of sales levels, cost reduction, product rejection and meeting customer requirements. The main thing in the establishment of organizational performance is a sales level reflected the company was able to achieve sales targets and be able to increase its market share compared to last year, increasing its market share compared to last year.
2. Total quality management and supply chain management affects the competitive advantage. These findings can be explained that the total quality management applied in Bogor manufacturing company with a focus on how to maintain product quality and improve the quality of the product will have an impact on competitive advantage by focusing on innovative products tailored to the needs of customers. The study also obtain the same fact that the implementation of supply chain management in a manufacturing company in Bogor that is focused on long-term contracts with customers, Orientation on customer satisfaction and responsiveness to customer complaints will be able to enhance the company's competitive advantage, especially in terms of innovation adjustments related to customer needs. Findings from this study indicate that the role of total quality management is greater than the role of supply chain management.
3. Total quality management and supply chain management on the performance of the organization. These findings can be explained that the total quality management and supply chain management applied in Bogor manufacturing company will be able to improve the performance of an organization that reflected the company's ability to achieve sales targets and be able to increase its market share compared to last year. Total quality management play a bigger role than supply chain management.
4. Competitive advantage effect on organizational performance. These findings can be explained that the innovation of products, packaging and innovations that are tailored to the needs of customers manufacturing company in Bogor will be able to meet sales targets and increase market share.
5. Total quality management and supply chain management on the performance of the organization through competitive advantage. Competitive advantage is the amplifier (mediate) total quality management and supply chain management to organizational performance. This gives a sense of organizational performance in manufacturing companies in Bogor in the form of sales levels can be awakened if the competitive advantage that is formed from the application of total quality management in the form of the company was able to maintain product quality and to improve the quality of products, coupled with the implementation of supply chain management in the form of long-term contracts with customers, orientation on customer satisfaction and responsiveness to customer complaints.

6.2 Suggestion

Based on research results and conclusions that have been

raised, the suggestions made in this study are as follows:

i) For the Development of Science

Enriching the concept of competitive advantage by developing the concept of TQM and the concept of supply chain management as a driver of organizational performance.

ii) For Further Research

For further research, is expected to undertake research development using other exogenous variables such as customer satisfaction, information technology and production technology in order to provide a broader picture of the performance of the organization.

In the present study the organization's performance in terms of the perspective of the company, in future studies are expected to use the customer's perspective to measure organizational performance by using the customer's satisfaction.

The research findings indicate supply chain management have a smaller effect than total quality management, so as future research needs to examine the relationship between the companies - customers who are represented by long-term contracts.

iii) For Policy Makers

a. Companies need to be considered in order to stay focused on customers, especially those related to customer needs and expectations of quality products manufactured and by keeping the focus on the company's customers can determine the level of customer satisfaction, this is done by way of doing customer feedback.
b. Needs to be consideration of the company in order to always maintain the quality of the suppliers, so it needs to make the selection of suppliers on an ongoing basis so that the quality of suppliers is maintained primarily concerned with the ability to provide basic quality and timeliness of delivery of the supplier, this is done by giving questionnaires to customers with the aim of measuring the performance of suppliers on a regular basis.
c. Needs to be consideration of the company in terms of timing the release of a product to market, so expect the company's products first to market compared to competitors' products, this is done by developing information technology and production technology that is expected to short time delivery of raw from suppliers and product delivery to customers,
d. Need to be taken into consideration for company has worked together with customers in an effort to improve the company's ability to know the customer demand, particularly with regard to timeliness delivery products to customers.

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