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Total Quality Management and Supply Chain Integration on Firm Performance: A Study of Cosmetic Industry in Jakarta

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Abstract. The main goal in this study is to investigate the impact of management dimensional total quality management leadership, training and customer focus, as well as the role of Supply Chain Integration mediator from TQM on firm performance. For reaching this objective, our research uses approach modeling SEM-PLS structural equation. Data is also used from five beauty industry companies in Jakarta represented by 200 respondents collected through questionnaire adapted to scale Likert five points. Research results show the positive and significant effect of TQM on firm performance. Likewise, the positive and significant effect is revealed between TQM and SCI and SCM on Firm Performance. This study will help researchers, practitioners, managers and makers policy in deciding on action about TQM practice, SCI in upgrade performance moving company in industry beauty in Jakarta.

Keywords: total quality management, supply chain integration, firm performance, beauty industry

Introduction

Currently, product of cosmetics already becomes primary need for people women who are the main target from industry of cosmetics. Besides, along with development of the times, industry of cosmetics also start innovate on products of cosmetics for men. Many cosmetic industries are trying to hard fulfil need customer with various type innovation product by no direct make cosmetic industry becomes attention public especially the women. This study take notes company of cosmetics that have been well known in Jakarta such as Kino Indonesia Tbk, Martia Berto Tbk, Mustika Ratu Tbk, Mandom Indonesia Tbk and Unilever Indonesia Tbk. Of the five companies the will analyzed how firm performance to the product he owns seen of total quality management and supply chain integration. Purpose of this study is for now influence practice total management quality (TQM) and supply chain integration to firm performance about cosmetics in Jakarta. Practice total quality of play most important role in success business (Thai et al., 2014). If the company apply practice management quality to supplier, then it seems like will look for connection long term between company with supplier with share information through technology information and communication (Abdullah & Tari, 2012).

Total Quality Management is as principles management quality throughout company or organization and integration of customers and suppliers in business processes. TQM as combination management participatory and performance team (Dale et al., 2007).

Cooperation between quality and productivity as well as customer is aspect important thing to do processed by everyone inside company (Cetindere et al., 2015). While Supply Chain Integration reflects how far the company work same with supplier main and customer for manage process firm performance (Wiengarten et al., 2016). In the integration supply chain, there is internal integration and external integration (Sundram et al., 2018; Fernandez & Jiménez, 2017). One example integration external is customer. Cooperation with customer so will impact on increasing firm performance reflected by quality product, response need customer, anticipate change needs and wants customers (Huo et al., 2014). Integration with customer could make it easy build supply chain integration, which in the end could upgrade firm performance. This integration make company for facilitate genre information, materials, products and services throughout supply chain at level operational (Wiengarten et al., 2016). If the company work same with supplier, then already goods of course supplier will send

ingredients quality and precise raw materials time. Next if company work same with supplier with delivery quality goods from supplier to customer so will satisfying customers (Prashar & Aggarwal, 2020; Gunasekaran et al., 2019; Alkalha et al., 2019). Synergy Among supplier, company with customer could upgrade firm performance (Rajaguru & Matanda, 2019).

Supply chain integration is a company strategy in upgrade firm performance (Kanyoma et al., 2018). Good or bad of company depends on the total quality and able empower employees, then will could upgrade firm performance (Ekaterini, 2011; Yu et al., 2014). Quality management with integrate among upstream and downstream could upgrade firm performance (Cogollo Flórez & Correa-Espinal, 2019). In Literature show that Supply *Chain Integration* own effective way for upgrade firm performance (Huo, Ye, Zhao, & Shou, 2016; Zhao, Feng, & Wang, 2015). Supply Chain Integration has recognized by theoretical (Van der Vaart & van Donk, 2008), but progress still championed by the company (Cao, Huo, Li, & Zhao, 2015; Huo et al., 2016). Studies that state that Supply chain integration has a significant effect on firm performance including Zhao et al. (2015), Hani (2021), Rajaguru and Matanda (2019), Huo et al. (2014). However, there are also those who state that supply chain integration does not influential to performance company including: Khan and Wisner (2019), Lu et al. (2018). Difference results research that has been put forward, then occur inconsistent. because that, researcher try for research and add management variables total quality as a mediating variable.

Literature Review

Effect of Total Quality Management on Firm Performance

Linkages Among quality total management with firm performance already many studied in literature, as for the discussants including: Hana et al. (2016), Mahmud et al. (2019), Ahmad et al. (2015). Although study before own mixed results, but in general that quality tight total management relation with performance company (Duh et al., 2012). Kober et al. (2012) revealed that Total quality management no influential by significant to performance finance. total quality management (TQM) has been introduced since 1995 by developed countries in implementation development his country because own trend repair sustainable for company after use a number of standard work quality. Nguyen et al. (2016) have evaluate TQM practice and firm performance which is reflected by six factors, namely: market ability and profit, customer satisfaction, employ satisfaction, process of efficiency, process of effectiveness and time order, the result own effect positive between TQM and firm performance. This thing reinforced by Adnan M. Rawashdeh (2018) states in the research that total quality management of practice own impact positive and significant to business, quality and firm performance. With thus the proposed hypothesis:

H1: Total Quality Management has an effect positive and significant on firm performance.

Effect of Total Quality Management on Supply Chain Integration

Vanichchinchai and Igel (2009) found that TQM is more focuses on internal participation, whereas SCM is more emphasis on partnership external. TQM reflected from support and commitment, customers focus, and partnerships supplier is a common indicator often found in literature (Talib et al., 2011). However, linkages between TQM and supply chain integration are still not yet clear (Thai, 2017). Still rare researcher previously in highlight connection total quality management with supply chain integration. Literature has described that TQM is considered as set practice for upgrade repair sustainable related performance, customer satisfaction, solution problem, upgrade time delivery, planning strategic period long and fruitful relationship Among various participant supply chain (Soares, Soltani, & Liao, 2017).

One of the studies on the relationship between TQM and SCI in logistics companies in Malaysia found that there was a significant positive relationship between TQM and SCM. Another study, for example Zimon, (2017) the results of his research reveal that TQM and SCI have a positive and significant effect (Zimon, 2017). The results of research by Sofiyabadi, & Kolahi, (2019) also reveal that TQM practices contribute to the added value of SCI practices. With Thus, the hypothesis that is built are:

H2: Total Quality Management is significant effect on supply chain integration.

Effect of Supply Chain Integration on Firm Performance

Supply Chain Integration used for know how far the company cooperate with partner the other supply chain about current information, product, speed service (Zhao et al., 2008). Supply Chain integration proven influential positive to firm performance (Zhao et al., 2013; Tse et al., 2016). Purpose used supply chain integration is for give mark maximum to customer use speed service, fee low, current good information (Flynn et al., 2010). Tse et al. (2016) researched about influence supply chain integration impact positive to firm performance.

Supply Chain integration is system of coordination and synchronization among company with supplier for reach objective companies (Chaudhuri et al., 2018). Supply Chain integration is good cooperation so that capable upgrade firm performance (Mitrega et al., 2017; Hani, 2021). If the supply chain integrate with customer so will make company more operational and competitive (Rajaguru & Matanda, 2019; Huo, 2012). Thus efficient Supply Chain Integration plays an important role in enhancement of firm performance. Supply chain integration in this study consists from combined between supplier integration and customer integration. Supplier integration and customer relationship considered very important for push in enhancement firm performance (Wong et al., 2011). Powerful supplier backed by integration customer could help company for take profit (Frohlich & Westbrook, 2001). Supplier integration help company in develop production, offer products and services appropriate time which in turn, increases firm performance (Flynn et al., 2010). Supplier integration could contribute to performance companies (Zhao et al., 2015). Droge, Jayaram, and Vickery (2004) found that integration customer could upgrade company market share and firm performance. In integration naturally company always try for integrate one each other in reduce obstacle external for improvement firm performance (Chang et al., 2016; Stevens & Johnson, 2016). Thus, we propose that:

H3: Supply Chain Integration is effect positive and significant to the firm performance.

Based on review library and development hypothesis, proposed research model is as following:

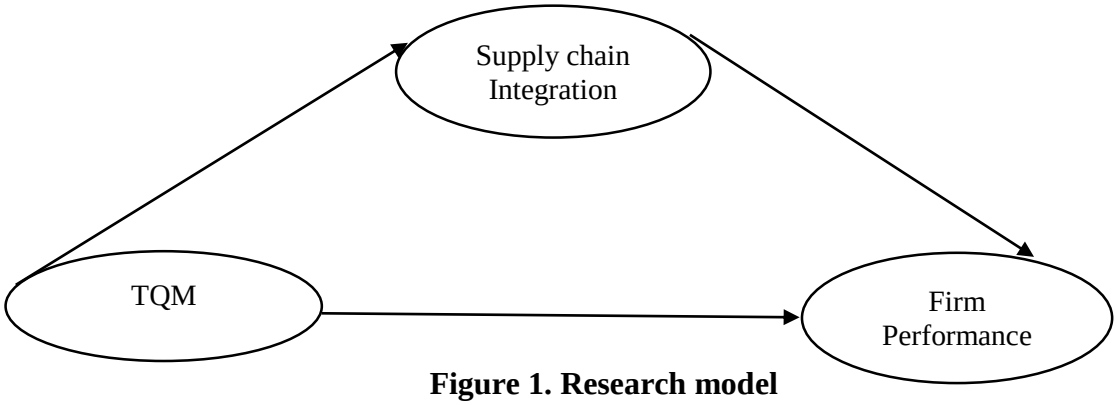

Figure 1. Research model

Research Method

In this research, construction the research are Total Quality Management and supply chain integration as well as firm performance has taken from gap study previously that is no

there is connection between supply chain integration and firm performance. Instrument study use scale Likert five points. Preferred company is product beauty including Kino Indonesia Tbk, Martia Berto Tbk, Mustika Ratu Tbk, Mandom Indonesia Tbk, Unilever Indonesia Tbk. The five factories are all go public companies in Jakarta. Instrument study first time tested try it to 30 respondents for test mark its validity and reliability. Result it turns out all indicators of construct used has been valid and reliable, then the instrument is used for a sample of 200 people consists of from internal and external supplier's company.

A total of 200 responses from suppliers as representative of five industries beauty in the city of Jakarta has been fill in questionnaire with good. Amount sample as much as 200 is considered appropriate and can accepted (Van der Vaart & Van Donk, 2008). For cookie hypothesis, then device PLS SEM and SPSS statistical software were used. It is very suitable for structural modeling equation, analysis pathways and confirmatory factors analysis.

Results

Relationship test results between variables Smart PLS Structural Equation Modeling has been used in this study. This Smart PLS Approach considered more superior compared to regression multiple because increased ability and possess ability for enter a variable that is not observed (latent) in model analysis. In this research all variables are measured latent construct through the indicators. SEM approach using Inner Model and Outer model.

Measurement Model

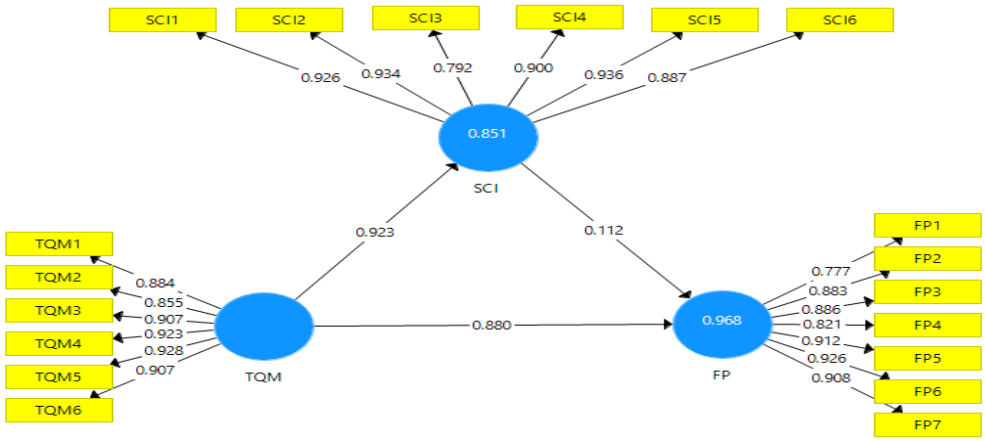

Figure 2. Model measurement

Analyzing the outer model of every variable size, of course the validity of the indicator is measured. Indicators that have mark not enough from 0.70 eliminated of the models. In this research there are 2 items eliminated of 21 indicators because own load under mark standard.

Level correlation between latent construct is called with validity convergent. With determine the AVE of each construct, validity convergent analyzed and for reach validity convergent, the AVE value must be same or bigger from 0.50. This research uses confirmatory factor analysis that is for test validity and reliability. The results of the validity and reliability test show that mark reliability composite and value Alpha Cronbach everyone exceed criteria 0.70. Hair, et al., (2010) stated that good criteria in reliability composite and Cronbach's alpha is above 0.70. Then validity convergent is also at position above 0.60. Average value of variance extract (AVE) everything taller of 0.50. For test more carry on about validity discriminant done with compare root square AVE everything taller from correlation between construction.

Table 1. Outer Loadings

Indicator	Firm Performance (FP)	Supply Chain Integration (SCI)	Total Quality Management (TQM)
FP 1	0.777		
FP 2	0.883		
FP 3	0.886		
FP 4	0.821		
FP 5	0.912		
FP 6	0.926		
FP 7	0.908		
SCI 1		0.926	
SCI 2		0.934	
SCI 3		0.792	
SCI 4		0.900	
SCI 5		0.936	
SCI 6		0.887	
TQM 1			0.884
TQM 2			0.855
TQM 3			0.907
TQM 4			0.923
TQM 5			0.928
TQM 6			0.907

Table 2. Reliability Analysis

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
FP	0.948	0.958	0.765
SCI	0.951	0.961	0.805
TQM	0.954	0.963	0.812

Table 3. Discriminant Validity

	Firm Performance (FP)	Supply Chain Integration (SCI)	Total Quality Management (TQM)
FP 1	0.875		
FP 2	0.923	0.897	
FP 3	0.983	0.923	0.901

After estimation of the measurement model, then the structural model is estimated with the bootstrap model. Structural model assessment after makes sure the model measurement in this research. 5,000 bootstrap samples were used in this study with 320 number of sample size. The path coefficient significance was identified and 320 sample size to assess the significance of the path coefficients was applied. The structural model is based on the relationship in the hypothesized model.

Structural Model

Main model analysis is with modeling structural equation is done with use device soft smart PLS. As for the reason use Smart PLS used in this study is Smart PLS is perfect for study exploration and development theory and have many used by widely by researchers previously related with marketing and management surgery (Roberts, Thatcher, & Grover, 2010). Next

reason that SmartPLS capable analyze size small sample (Hair et al., 2012). This research uses sample 200 so recommended with size sample smaller from (Reinartz, Haenlein, & Henseler, 2009).

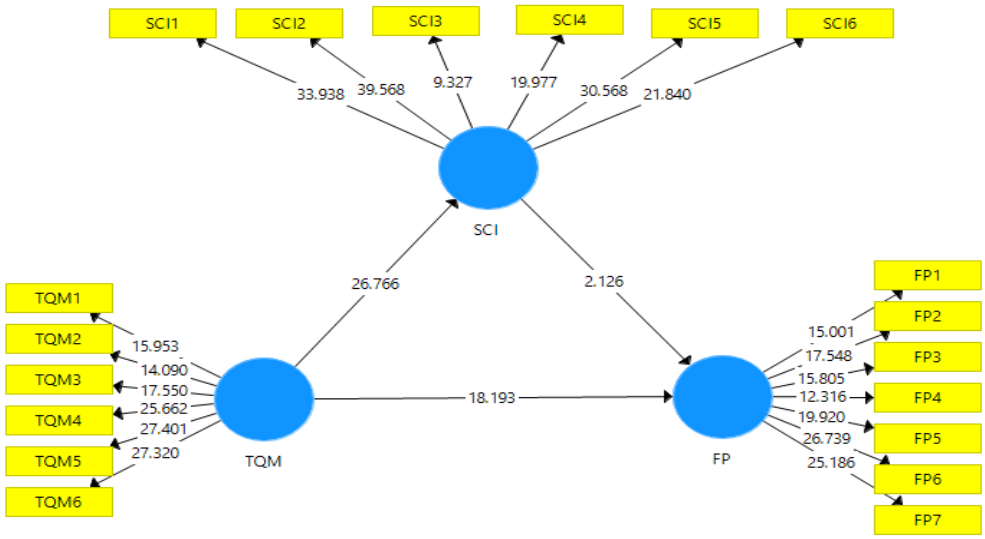

Figure 3. Structural Model

Evaluation model, assessment hypothesis and correlation between variables has identified in this study. Models give least number of parameters for quality given result for the estimated model.

Table 4. Direct effects

	Original samples	t. statistics	P.Values
SCI V →FP	0.923	26,766	0.000
TQM →FP	0.880	18,193	0.000
TQM →SCI	0.112	2.126	0.034

Table 5. Indirect effects

	Original samples	t. statistics	P.Values
TQM →SCI - →FP	0.103	2.096	0.037

In determining the PLS-SEM model, the criteria other is the known R-Square as coefficient determination. R-squared values for endogenous latent variables are presented in Table 6.

Table 6. R-Square

	F. Square
FP	0.968
SCI	0.851

Conclusion

Main goal in this study is for investigate impact management dimensional total quality management leadership, training and customer focus. Other than that, the role of Supply Chain Integration as indirect effect from TQM on Firm Performance. For reach objective our research uses approach modeling SEM-PLS structural equation. Data from five beauty industry companies in Jakarta represented by 200 respondents collected through questionnaire adapted to scale Likert five points. Research results show that effect positive and significant of TQM

on firm performance. Likewise, the positive and significant effect between TQM and SCI and SCM on Firm Performance. This study will help researchers, practitioners, managers and makers policy in decide action about TQM practice, SCI in upgrade performance moving company in industry beauty in Jakarta.

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