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The Impact of Supply Chain Outcomes on Product Quality: Mediating Role of Management Responsiveness

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The present study deals with the impact of outcomes from an effective supply chain on the quality of a firm's output with the help of management responsiveness. The textile sector of Indonesia was the target population of the study. The managers of the supply chain or top management, where a separate supply chain department did not exist, were the respondents of the study. PLS-SEM technique was used to extracts the results from the data. The results exposed that the outcomes of the supply chain, such as customer responsiveness, inventory management and skilled workforce, have a positive association with product quality. The findings also revealed that management responsiveness mediates among the supply chain outcomes and product quality. The findings suggest to policymakers that they should implement an effective supply chain system that motivates management responses to product quality.

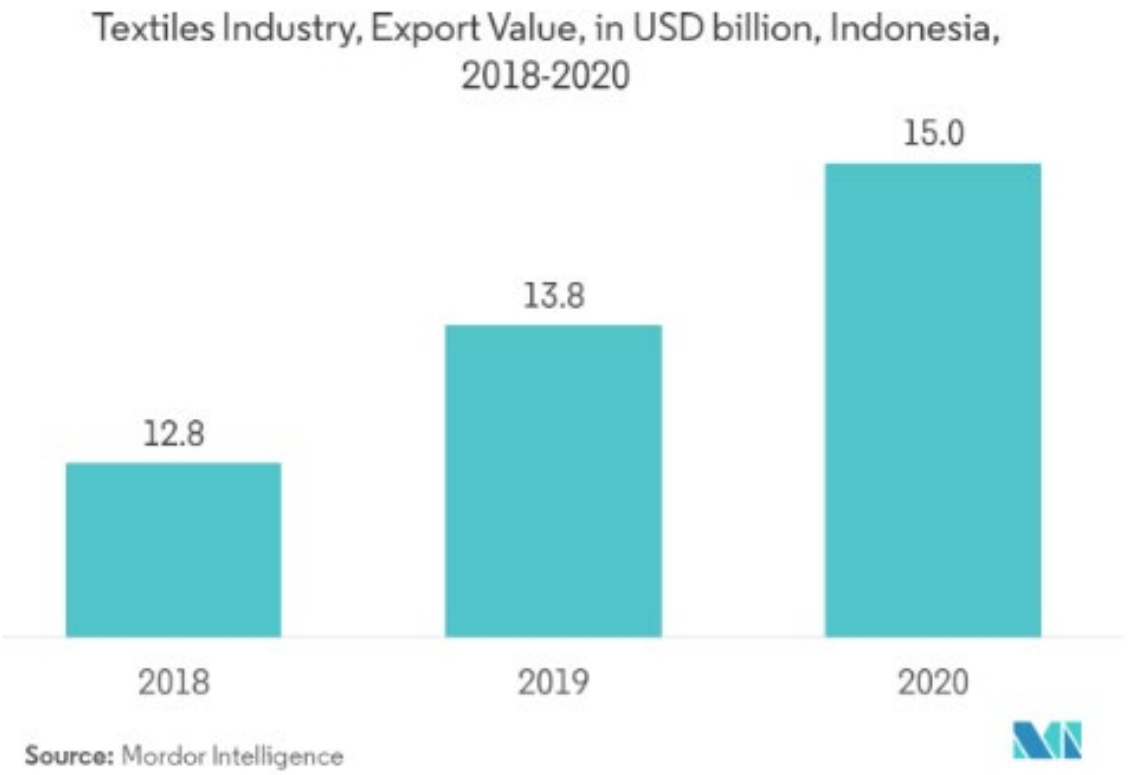
Key words: *Supply Chain Outcomes, Product Quality, Management Responsiveness, Customers Responsiveness, Inventory Management.*

Introduction

The growing globalization of the world increases the demand of effective supply chain system (Jermsittiparsert, Sriyakul, & Rodoonsong, 2013; Jermsittiparsert, Namdej, & Sriyakul, 2019). Particularly, the growing economy emphasizes the increasing need for supply chain, such that the growing economy of Indonesia needs to explore the supply chain system in their business entities (Diebäcker, 2000; Chatchawanchanchanakij, Arpornpisal, & Jermsittiparsert, 2019; Jermsittiparsert & Sommanawat, 2019). The textile industry of Indonesia is the prominent

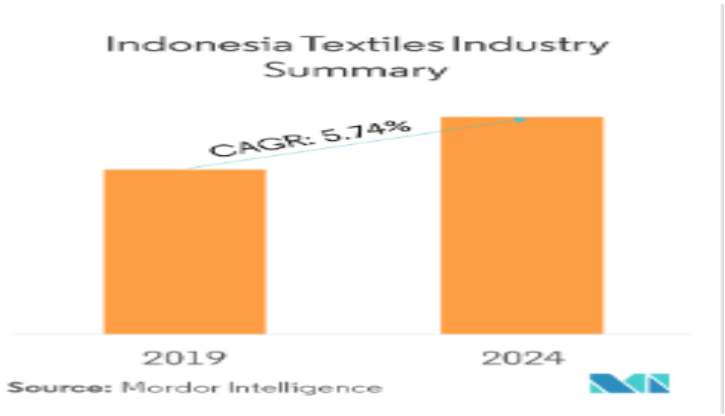
industry in the world and Indonesia is also in the top ten rankings of the largest countries in producing textile products. It is the oldest and most labor-intensive industry in the Indonesian economy. A total 476 textile companies are working on a large scale in the economy of Indonesia. It is a growing industry in respect of export and contribution to the GDP of the country. Figure 1 below shows that the export value of the Indonesian textile industry from 2018 to 2020 was only $12.8 billion and increased with time to reach $13.8 billion in 2019. The expectation of the export value of the textile sector in Indonesia will be $15.0 billion by the end of 2020. Figure 1 below depicts the export value of Indonesia from 2018 to 2020:

Figure 1. Export Value of Textile Industry in Indonesia



Moreover, the textile industry increasing with time and the compound annual growth rate (CAGR) of the industry from 2019 to 2020 is 5.74%. Figure 2 below highlights the CAGR of the textile industry of Indonesia.

Figure 2. Compound Annual Growth Rate (CAGR)



This growth highlights that there should be effective a supply chain system that channels the activities of the textile industry in a way that is recognized in the global market. However, a lot of constraints exist in the market that become a hurdle in the implementation of an effective supply chain system in the business entity. Thus, there is a need to handle all of the challenges that are existing in the implementation of a supply chain system. Table 1 below highlights the different respondent's attitude towards facing these challenges. They provide the ranks to different challenges faced by them in the implementation of the supply chain. The major ranking is given to two challenges, short lead time and supply management. If these two challenges are mange perfectly, then the implementation of supply chain is quite easy according to the respondents. Table 1 shows the ranking given to the challenges in the managing supply chain by the respondents:

Table 1: Ranked the Challenges in Managing the Supply Chain

Challenges	**Ranked First**	**Ranked Second**	**Ranked Third**
Short Lead Time	25%	20%	15%
Operations Supply Team Communication	15%	5%	20%
Protocol Accuracy	15%	5%	5%
Better Forecasting	10%	10%	10%
Visibility	10%	5%	….
Supply Management	5%	20%	5%
Planning Function not well Defined	5%	5%	10%
Site Location	5%	15%	….
Resources	5%	….	10%
Resources Utilization	5%	….	5%
Communication with the regional office	….	10%	5%
Outsourcing	….	5%	10%

Source: Lamberti (2005)

Therefore, it is important to handle the challenges in the implementation of the supply chain because the supply chain system brings the organization towards the international market that is the need of the Indonesian economy nowadays. Thus, this study has also investigated the association of outcomes of the supply chain with product quality with the help of management responsiveness.

Literature Review

Critical literature on the understudy variables and the literature on the relationship between the understudy variables are mentioned in this section.

Product Quality

Product quality is defined as the characteristics and features of saleable things that can be managed by the manufacturer and that create its desirability in the customer's mind. Moreover, it also refers to the fitness for use in term of quality. The quality creates the demand in the mind of the customer that he or she will have need of this particular product. Similarly, "product quality is also how well the product does what it's supposed to do and how well it holds up over time. Some consumers view quality as a price point, while others appreciate a product" (Rao & Monroe, 1989). Likewise, it also defined as the features of the goods that customers prefer to convince them that they must acquire that particular product. Furthermore, "product quality is a comprehensive set of tools that enables organizations to control and manage the data related to product quality across enterprises" (Kirmani & Rao, 2000). Therefore, product quality is necessary to build the customer's perception that they should acquire this product and is necessary for firm performance. Thus, this study uses product quality as the main variable of the study.

Customer Responsiveness

Customer responsiveness refers to the quality of services provided by the company to its customers (Jermsittiparsert, Sutduean, Sriyakul, & Khumboon, 2019). It includes both type of services: before the sale and after sale services. Before sale services means the response of the company about customer's demand, quires, price and other matters that customer required before the sale of the goods. After sale services mean the response of the company about customers complain, feedback and other matters after using the products. Moreover, "it is about being fast and right. The value of being right is obvious - customers get something that meets their needs. However the value also depends critically on the speed with which the response is produced" (Bernardes & Hanna, 2009). Similarly, it also defined as customer services of the company to its valued customers and it also refers to the customer care by the company.

Likewise, "customer responsiveness measures the speed and quality at which your company provides customer service and communication. If a customer has to wait five days just for a simple email response, they might be more willing to take their business elsewhere" (Sousa, Ruzo, & Losada, 2010). Therefore, customer responsiveness is necessary to build the customer's mind that they should acquire this product that is necessary for firm performance. Thus, this study uses customer responsiveness as a predictor of the study.

Inventory Management

Inventory management is defined as the process of storing, using and ordering the inventory of the company. It also includes the management, where housing and processing of components, raw material and end products of the company. Moreover, "an inventory management system's function is to track those warehouse items through acquisition, sales, or use processes; locate them across one or many warehouses and price (cost) the inventory (sometimes in multiple currencies) so you know the value of items you have in inventory for accounting purposes" (Cachon & Fisher, 2000). Similarly, it is also defined as a systematic approach to storing, obtaining, issuing and selling the raw material and finished goods to the factory or end consumers. The responsibilities include managing the right stock, at the right level, at the right time, in the right place and at the right cost. Likewise, "inventory management is the process of efficiently overseeing the constant flow of units into and out of an existing inventory. This process usually involves controlling the transfer in of units to prevent the inventory from becoming too high or dwindling to levels that could put the operation of the company into jeopardy" (Jammernegg & Reiner, 2007). Therefore, inventory management is necessary to acquire, safeguard and deliver the goods to the right customer, at the right time and at the right place that is necessary for firm performance. Thus, this study uses inventory management as a predictor of the study.

Skilled Workforce

Skilled workforce means the workforce that has training, experience, specialized know-how and expertise to deal with the complex situations often faced by the business entity. Moreover, a "skilled worker is any worker who has special skill, training, knowledge and (usually acquired) ability in their work. A skilled worker may have attended a college, university, or technical school. A skilled worker may have learned their skills on the job" (Olson, 1997). Similarly, skilled workforce refers to the workforce that has a lot of experience about their job and performed well in tough situations. Likewise, "skilled Labor is defined as the job market continues to change and evolve, it's important to understand the demand for unskilled, semi-skilled and skilled labor. Specialized skills are becoming more and more sought after in our increasingly technical world, while the demand for unskilled labor continues to go down" (Kirkegaard, 2008). Therefore, skilled labor is necessary to manage a tough situation in the

business that is necessary for firm performance. Thus, this study uses the skilled workforce as a predictor of the study.

Management Responsiveness

Management responsiveness refers to the management approach of paying attention to other persons and matters of the entity with a quick and effective response. Moreover, it is a set of different abilities, skills and attitudes that able the managers of the entity to lead effectively and managers should be more concerned about the success of the business entity (Salvador & Forza, 2004). Similarly, "management responsiveness refers to the specific ability of higher management as a unit to complete assigned tasks within a given time. For example, it would refer to the ability of artificial intelligence of the managers to understand and carry out its tasks in a timely fashion" (Angiolillo et al., 2007). Therefore management responsiveness is necessary to manage the tough situation in the business and to run the business more effectively that is necessary for high firm performance. Thus, this study uses management responsiveness as a mediator of the study.

Customer Responsiveness and Product Quality

Customer responsiveness characteristics of the company increase the customer's loyalty with the products of the company and to retain that loyalty company gradually improve its product quality (Yang, Jun, & Peterson, 2004). Moreover, customer responsiveness has a positive association with quality of the product because it enhances the company's response towards the complaint of the customers and most of the complaints are about quality and the quality assurance become a major element for the company (Bedi, 2010). Similarly, the companies who are more conscious about their customer's need and queries are also more conscious about the quality of the products. The major requirement of the customer's satisfaction is the quality of the product and customer responsiveness companies always strive to satisfy their customer by providing quality products (Abdullah & Rozario, 2009). Therefore, according to the previous literature, customer responsiveness, that is the outcome of the effective supply chain has a positive association with the quality of the products. Thus, this study also examined the association of customer responsiveness characteristics of textile industry in Indonesia with quality of the products and also developed the following hypothesis.

H1: There is a positive association between customer responsiveness and the product quality of the textile industry in Indonesia.

Inventory Management and Product Quality

Better sources and ways of store, sale, acquire and the issue of inventory are the indication of the strong inventory management system of the company that also maintains and improves the quality of the products (Akkerman, Farahani, & Grunow, 2010). There is a positive association among the strong inventory management system and quality of the products of the company. This positive association is due to Just-in-time (JIT) inventory system of the company that put less burden on the inventory management that allows less time to move the goods to the customers and maintain the quality of the goods (Kannan & Tan, 2005). Moreover, a study by Baird, Jia Hu and Reeve (2011) found that the quality of the goods also depends upon the effective inventory management system of the firm. Therefore, according to the previous literature, inventory management, that is the outcome of the effective supply chain has a positive association with the quality of the products. Thus, this study also examined the association of inventory management characteristics of textile companies in Indonesia with the quality of the products and also developed the following hypothesis.

H2: There is a positive association between inventory management and the product quality of the textile industry in Indonesia.

Skilled Workforce and Product Quality

The quality of the product depends upon the experience and skilled workforce that are employed by the company. If the workers are more experience and hold a quality oriented skills, then they perform well and improve the quality of the product and vice versa (Mason, Van Ark, & Wagner, 1994). There is a positive association has been observed between the skilled and experienced workforce and the quality of the products (Dahms, 2001). Similarly, a study by Mason, Van Ark and Wagner (1996) found that skilled workforce manages the all the processes of preparing goods in good shape and also have the ability to produce high-quality goods for their valued customers. Therefore, according to the previous literature, the skilled workforce that is the outcome of the effective supply chain has a positive association with the quality of the products. Thus, this study also examined the association of skilled workforce characteristics of textile companies in Indonesia with the quality of the products and also developed the following hypothesis.

H3: There is a positive association between the skilled workforce and the product quality of the textile industry in Indonesia.

Mediating Role of Management Responsiveness

Management response towards the outcomes of the supply chain has a significant impact on the quality of the product to that particular company (Colwell & Joshi, 2013). Management response about the implementation of the supply chain and manage the outcome of that effective system is the key element in the product quality of the company. Customer responsiveness is not possible without the intentions of the higher management that is necessary for product quality. Moreover, dealing with a customer quickly and effectively is only due to the high interest of the management and without their interest, customer responsiveness and product quality cannot be maintained (Qrunfleh & Tarafdar, 2013). Therefore, according to the previous literature, management response influences the association among the customer responsiveness that is the outcome of the effective supply chain and quality of the products. Thus, this study also examined the mediating role of management response among the association of product quality and customer responsiveness of textile companies in Indonesia and also developed the following hypothesis.

H4: Management responsiveness mediates the association between customer responsiveness and the product quality of the textile industry in Indonesia.

Management response about the implementation of supply chain and management of the outcome of that effective system is the key element in the product quality of the company (Naor, Goldstein, Linderman, & Schroeder, 2008). Inventory management is not possible without the intentions of the higher management that is necessary for product quality. Moreover, dealing with inventory quality management is only due to the high interest of the management and without their interest, inventory management and product quality cannot be maintained (Rajaguru & Jekanyika Matanda, 2009). Therefore, according to the literature, management response influences the association among the inventory management that is the outcome of the effective supply chain and quality of the products. Thus, this study also examined the mediating role of management response among the association of product quality and inventory management of textile companies in Indonesia and also developed the following hypothesis.

H5: Management responsiveness mediates the association between inventory management and the product quality of the textile industry in Indonesia.

A skilled workforce is not possible without the intentions of the higher management that is necessary for the product quality (Chen & Hu, 2013). Similarly, a study by Cantor, Blackhurst, Pan and Crum (2014) found that dealing with the skilled workforce is only due to the high interest of the management and without their interest, skilled workforce and product quality cannot be maintained. Therefore, according to the previous literature, management response

influences the association among the skilled workforce that is the outcome of effective supply chain and quality of the products. Thus, this study also examined mediating role of management response among the association of product quality and skilled workforce of textile companies in Indonesia and also developed the following hypothesis.

H6: Management responsiveness mediates the association between the skilled workforce and the product quality of the textile industry in Indonesia.

Research Methods

This study examined the large scale textile industry working in the economy of Indonesia. The study used the deducted method of research. Large scale textile industries were selected based on purposive sampling. A list of 190 registered large scale textile firms was obtained from the Jakarta stock exchange (JSE). Each top-ranked authority that manages the supply chain was a respondent of the study. A survey questionnaire method was selected to gather data from respondents. The adapted questionnaire consisted of five-point Likert scale items that needed to be answered by the respondents.

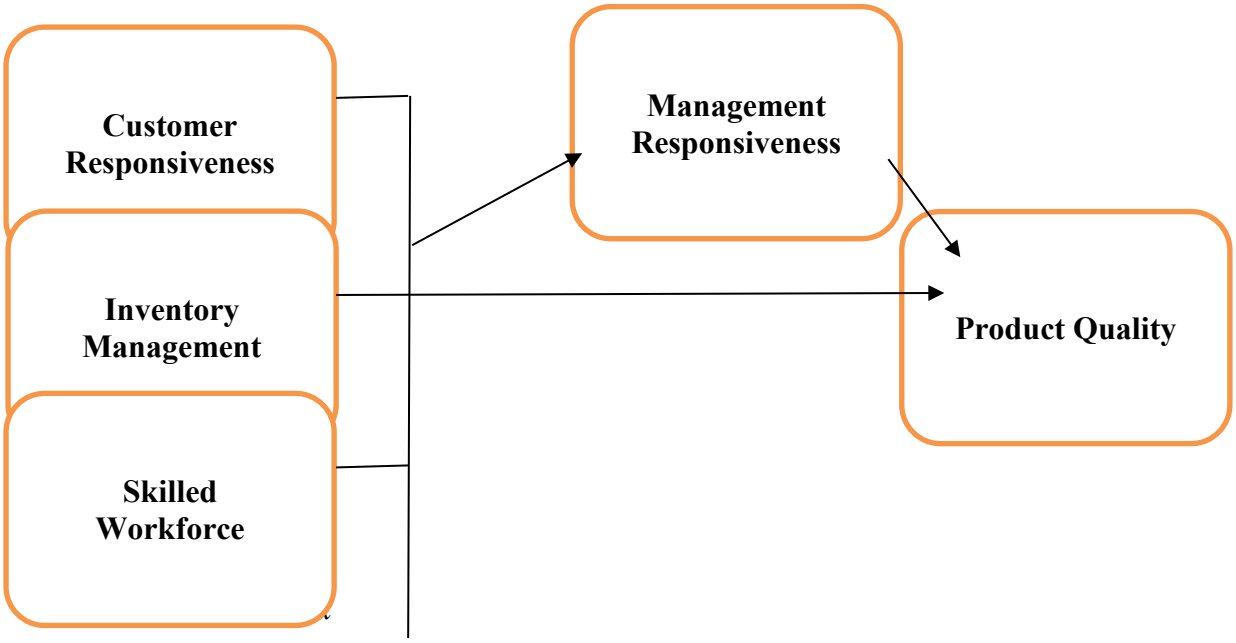
Measures

Product quality is used as a dependent variable with one dimension and has eleven items (Craighead, Patterson, Roth, & Segars, 2006). Moreover, outcomes of the supply chain such as customer responsiveness, inventory management and skilled workforce are used as predictor with one dimension and have eight items, six items and twelve items respectively (Craighead et al., 2006). In addition, management responsiveness is used as a mediator with one dimension and has twelve items. The adapted questionnaire consisted of five-point Likert scale items that needed to be answered by the respondents.

Data Collection Procedure

Large scale textile firms that are currently operating in Indonesia were selected in the scope of data collection. An email was sent to all the respondent to ensure their readiness in terms of obtaining data. Out of 190 respondents, only 165 shows their interest and a survey questionnaire was mailed to them. After fifteen days, only 150 valid responses were received from the managers of the supply chain of the large scale textile industry in Indonesia. The response rate was approximately 78.95%.

Theoretical Framework



Results

The analysis of the collected data has been executed with the help of PLS-SEM in this section. Two different types of model were used to analyze the data. The measurement model was for reliability and validity of items and constructs while the structural model was used to check relationships between the variables. In the measurement model, two different types of validity were checked. Convergent validity for the items to constructs and discriminant validity for constructs to constructs. Table 2 below highlights the convergent validity. According to this validity, items are correlated with each other if Alpha and CR values are greater than 0.70 and AVE values are greater than 0.50. Table 2 below shows all the values across the limits and there is no issue with convergent validity.

Table 2: Convergent validity

Constructs	Items	Loadings	Alpha	CR	AVE
Customer Responsiveness	CR4	0.598	0.754	0.835	0.579
	CR5	0.855			
	CR6	0.859			
	CR7	0.852			
	CR8	0.826			
Inventory Management	IM1	0.899	0.878	0.909	0.626
	IM2	0.850			
	IM3	0.723			
	IM4	0.668			
	IM5	0.747			
	IM6	0.838			
Management Responsiveness	MR1	0.685	0.913	0.927	0.536
	MR10	0.679			
	MR11	0.649			
	MR2	0.746			
	MR3	0.710			
	MR4	0.738			
	MR5	0.762			
	MR6	0.794			
	MR7	0.828			
	MR8	0.727			
	MR9	0.712			
Product Quality	PQ1	0.737	0.874	0.901	0.532
	PQ11	0.654			
Table 2 Continue					
Constructs	**Items**	**Loadings**	**Alpha**	**CR**	**AVE**
	PQ4	0.710			
	PQ5	0.756			
	PQ6	0.791			
	PQ7	0.779			
	PQ8	0.721			
	PQ9	0.676			
Skilled Labor (Workforce)	SL1	0.732	0.925	0.935	0.545
	SL10	0.727			
	SL11	0.702			
	SL12	0.792			
	SL2	0.753			

	SL3	0.730			
	SL4	0.737			
	SL5	0.692			
	SL6	0.766			
	SL7	0.780			
	SL8	0.748			
	SL9	0.693			

The second validity of constructs is about those that are not highly correlated with each other and can be checked by Fornel Lacker and HTMT. According to Fornel Lacker, the value in front of constructs should be greater than the rest. Table 3 below shows the above criteria are met and there is no problem with discriminant validity.

Table 3: Fornel Lacker

	CR	**IM**	**MR**	**PQ**	**SL**
CR	0.761				
IM	-0.333	0.791			
MR	-0.671	0.687	0.732		
PQ	-0.387	0.664	0.684	0.729	
SL	-0.390	0.507	0.557	0.616	0.738

Table 4: Cross Loadings

	CR	**IM**	**MR**	**PQ**	**SL**
CR4	-0.127	0.225	0.185	0.191	0.124
CR5	0.855	-0.269	-0.576	-0.321	-0.286
CR6	0.859	-0.246	-0.514	-0.266	-0.264
CR7	0.852	-0.193	-0.546	-0.289	-0.342
CR8	0.826	-0.338	-0.589	-0.367	-0.392
IM1	-0.330	0.899	0.639	0.581	0.425
IM2	-0.233	0.850	0.574	0.529	0.416
IM3	-0.189	0.723	0.444	0.454	0.371
IM4	-0.214	0.668	0.426	0.472	0.447
IM5	-0.287	0.747	0.588	0.604	0.415
IM6	-0.306	0.838	0.549	0.485	0.336
MR1	-0.237	0.718	0.685	0.596	0.405
MR10	-0.478	0.381	0.679	0.426	0.326
MR11	-0.456	0.385	0.649	0.408	0.325
MR2	-0.480	0.497	0.746	0.547	0.453
MR3	-0.254	0.646	0.710	0.628	0.373

MR4	-0.273	0.700	0.738	0.625	0.401
MR5	-0.642	0.412	0.762	0.397	0.391
MR6	-0.644	0.442	0.794	0.458	0.425
MR7	-0.669	0.471	0.828	0.540	0.498
MR8	-0.662	0.435	0.727	0.479	0.533
MR9	-0.643	0.367	0.712	0.331	0.304
PQ1	-0.324	0.520	0.521	0.737	0.470
PQ11	-0.298	0.447	0.479	0.654	0.395
PQ4	-0.303	0.527	0.538	0.710	0.414
PQ5	-0.306	0.430	0.485	0.756	0.455
PQ6	-0.253	0.541	0.555	0.791	0.553
PQ7	-0.241	0.533	0.525	0.779	0.535
PQ8	-0.287	0.476	0.472	0.721	0.369
PQ9	-0.257	0.364	0.387	0.676	0.356
SL1	-0.299	0.431	0.416	0.472	0.732
SL10	-0.301	0.368	0.367	0.392	0.727
SL11	-0.261	0.302	0.390	0.389	0.702
SL12	-0.343	0.438	0.522	0.555	0.792
SL2	-0.299	0.484	0.449	0.493	0.753
SL3	-0.281	0.450	0.416	0.547	0.730
SL4	-0.294	0.491	0.484	0.588	0.737
SL5	-0.237	0.235	0.340	0.358	0.692
SL6	-0.314	0.292	0.413	0.382	0.766
Table 4 Continue					
	CR	**IM**	**MR**	**PQ**	**SL**
SL7	-0.302	0.296	0.365	0.357	0.780
SL8	-0.249	0.289	0.361	0.393	0.748
SL9	-0.251	0.277	0.323	0.392	0.693

The second method to check the discriminant validity is HTMT and it is a latest and valid method of discriminant validity. According to this method, the value of HTMT should not be greater than 0.85 and Table 5 below shows that the values meet the criteria and there is no problem with discriminant validity.

Table 5: HTMT

	CR	IM	MR	PQ	SL
CR					
IM	0.427				
MR	0.807	0.751			
PQ	0.490	0.747	0.751		
SL	0.464	0.548	0.589	0.658	

Figure 3. Measure Assessment Model

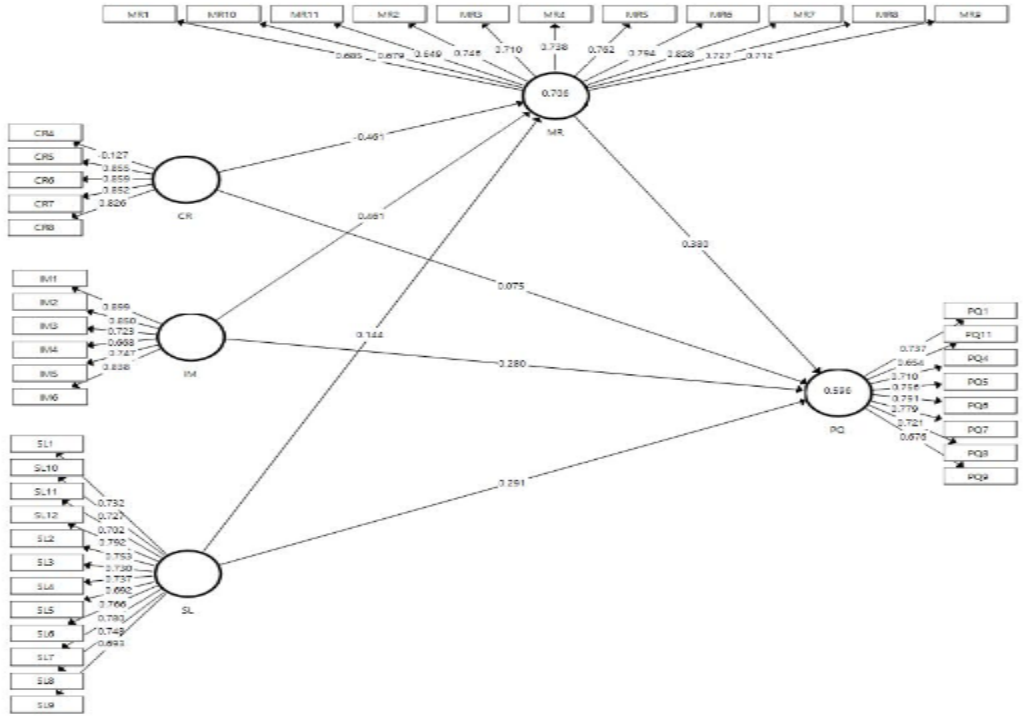


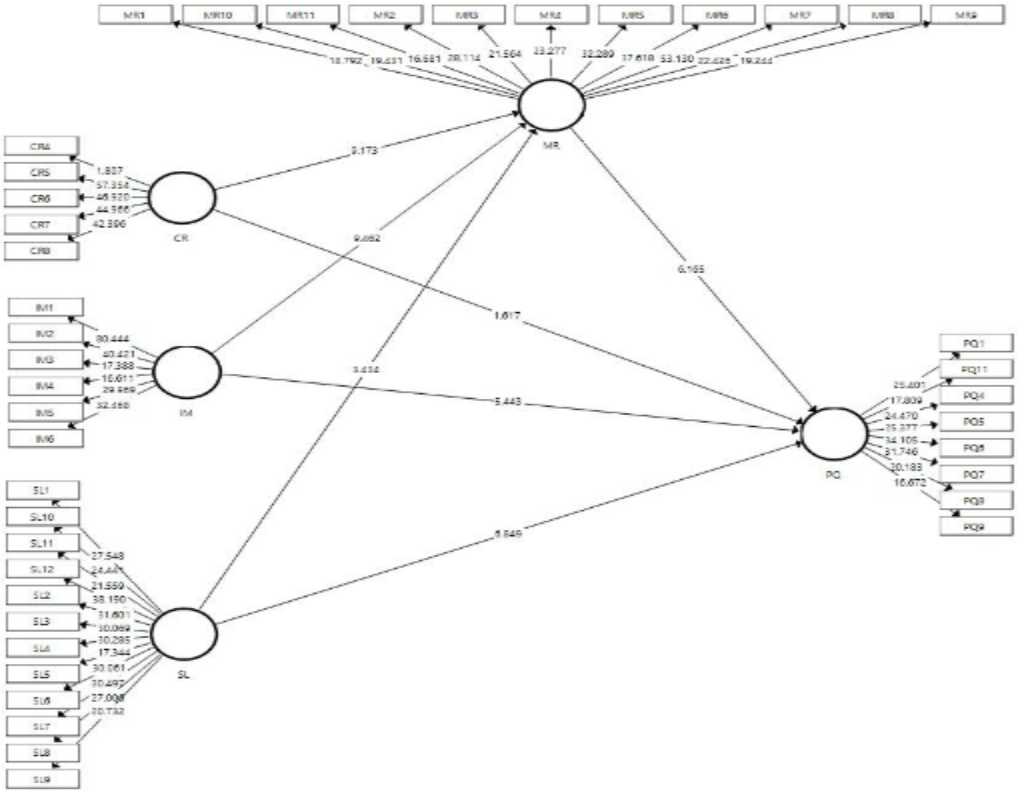
Table 6 below shows the relationship among the variables. The results shows significant positive association among the outcomes of the supply chain such as customer responsiveness, inventory management and skilled workforce with the quality of the product. Moreover, the results also indicated that management responsiveness mediates the relationship among all the outcomes of supply chain used in the study and product quality of the firm.

Table 6: Path Analysis

Relationships	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values
CR -> PQ	0.461	0.464	0.050	9.173	0.000
IM -> PQ	0.280	0.285	0.052	5.443	0.000
SL -> PQ	0.291	0.290	0.043	6.849	0.000
CR -> MR -> PQ	0.175	0.176	0.035	5.070	0.000

IM -> MR -> PQ	0.175	0.173	0.033	5.370	0.000
SL -> MR -> PQ	0.055	0.055	0.019	2.881	0.002

Figure 4. Structural Assessment Model



Discussion

Globalization brings new challenges for organizations requiring an effective system to compete in the market and to achieve this goal supply chain plays a vital role to improve the processes of an entity and global market competition. This study investigated the effect of outcomes of the supply chain on product quality with the mediating role of management responsiveness. The results showed a significant positive association among the outcomes of the supply chain, such as customer responsiveness, inventory management and skilled workforce with the quality of the product. These results are similar to the findings of Eltayeb, Zailani and Ramayah (2011) and Zhu, Sarkis and Lai (2013) who also indicated the positive association among the outcomes of supply chain and product quality. Moreover, the results revealed that management responsiveness positively mediates the relationship among all supply chain outcomes used in the study and product quality of the firm. These results also matched the findings of Lee (2010) and Aboelmaged (2014), who indicated that management responsiveness mediates the relationships.

Conclusion

Finally, the current study concluded that the outcomes of supply chain play a positive role in the improvement of quality of the product in the textile industry of Indonesia. The outcomes of the supply chain such as customer responsiveness, inventory management and skilled workforce are the key elements that enhance the product quality of the firm. Moreover, the present study also concluded that management response helps the outcomes of the supply chain to improve quality of product. When the managers implement these supply chain outcomes effectively in the firm then it positively influences the product quality.

Limitations and Future Directions

It is suggested to the policymakers that they train managers in a way that improves the product quality by implementing the supply chain outcomes in the company. It is also recommended that future research be conducted to add further factors that affect product quality and also expand the scope of this study by adding more industries and countries through further reserach.

REFERENCES

Abdullah, D., & Rozario, F. (2009). Influence of service and product quality towards customer satisfaction: A case study at the staff cafeteria in the hotel industry. *World Academy of Science, Engineering and Technology, 53*, 185-190.

Aboelmaged, M. G. (2014). Linking operations performance to knowledge management capability: the mediating role of innovation performance. *Production Planning & Control, 25*(1), 44-58.

Akkerman, R., Farahani, P., & Grunow, M. (2010). Quality, safety and sustainability in food distribution: a review of quantitative operations management approaches and challenges. *Or Spectrum, 32*(4), 863-904.

Angiolillo, D. J., Fernandez-Ortiz, A., Bernardo, E., Alfonso, F., Macaya, C., Bass, T. A., & Costa, M. A. (2007). Variability in individual responsiveness to clopidogrel: clinical implications, management and future perspectives. *Journal of the American College of Cardiology, 49*(14), 1505-1516.

Baird, K., Jia Hu, K., & Reeve, R. (2011). The relationships between organizational culture, total quality management practices and operational performance. *International Journal of Operations & Production Management, 31*(7), 789-814.

Bedi, M. (2010). An integrated framework for service quality, customer satisfaction and behavioral responses in Indian banking industry--a comparison of public and private sector banks. *Journal of Services Research, 10*(1), 15-27.

Bernardes, E. S., & Hanna, M. D. (2009). A theoretical review of flexibility, agility and responsiveness in the operations management literature: Toward a conceptual definition of customer responsiveness. *International Journal of Operations & Production Management, 29*(1), 30-53.

Cachon, G. P., & Fisher, M. (2000). Supply chain inventory management and the value of shared information. *Management Science, 46*(8), 1032-1048.

Cantor, E. D., Blackhurst, J., Pan, M., & Crum, M. (2014). Examining the role of stakeholder pressure and knowledge management on supply chain risk and demand responsiveness. *The International Journal of Logistics Management, 25*(1), 202-223.

Chatchawanchanchanakij, P., Arpornpisal, C., & Jermsittiparsert, K. (2019). The Role of Corporate Governance in Creating a Capable Supply Chain: A Case of Indonesian Tin Industry. *International Journal of Supply Chain Management, 8*(3), 854-864.

Chen, P.-T., & Hu, H.-H. S. (2013). The mediating role of relational benefit between service quality and customer loyalty in airline industry. *Total Quality Management & Business Excellence, 24*(9-10), 1084-1095.

Colwell, S. R., & Joshi, A. W. (2013). Corporate ecological responsiveness: Antecedent effects of institutional pressure and top management commitment and their impact on organizational performance. *Business Strategy and the Environment, 22*(2), 73-91.

Craighead, C., Patterson, J., Roth, P., & Segars, A. (2006). Enabling the benefits of supply chain management systems: an empirical study of electronic data interchange (EDI) in manufacturing. *International Journal of Production Research, 44*(1), 135-157.

Dahms, A. S. (2001). The US biotechnology industry: The importance of workforce quality in the maintenance of corporate competitive advantage. *Biochemistry and Molecular Biology Education, 29*(5), 206-208.

Diebäcker, M. (2000). Environmental and social benchmarking for industrial processes in developing countries: a pilot project for the textile industry in India, Indonesia and Zimbabwe. *Integrated Manufacturing Systems, 11*(7), 491-500.

Eltayeb, T. K., Zailani, S., & Ramayah, T. (2011). Green supply chain initiatives among certified companies in Malaysia and environmental sustainability: Investigating the outcomes. *Resources, Conservation and Recycling, 55*(5), 495-506.

Jammernegg, W., & Reiner, G. (2007). Performance improvement of supply chain processes by coordinated inventory and capacity management. *International Journal of Production Economics, 108*(1-2), 183-190.

Jermsittiparsert, K., Namdej, P., & Sriyakul, T. (2019). Impact of Quality Management Techniques and System Effectiveness on the Green Supply Chain Management Practices. *International Journal of Supply Chain Management, 8*(3), 120-130.

Jermsittiparsert, K. & Sommanawat, K. (2019). The Contributions of Strategic Zakat in Supply Chain and Profitability of the National Zakat Agency: A Case Study from National Zakat Agency Indonesia. *Humanities and Social Sciences Reviews, 7*(2), 471-478.

Jermsittiparsert, K, Sriyakul, T., & Rodoonsong, S. (2013). Power(lessness) of the State in the Globalization Era: Empirical Proposals on Determination of Domestic Paddy Price in Thailand. *Asian Social Science, 9*(17), 218-225.

Jermsittiparsert, K., Sutduean, J., Sriyakul, T., & Khumboon, R. (2019). The Role of Customer Responsiveness in Improving the External Performance of an Agile Supply Chain. *Polish Journal of Management Studies, 19*(2), 206-217.

Kannan, V. R., & Tan, K. C. (2005). Just in time, total quality management and supply chain management: understanding their linkages and impact on business performance. *Omega, 33*(2), 153-162.

Kirkegaard, J. F. (2008). *Accelerating Decline in America's High-Skilled Workforce: Implications for Immigration Policy*: Peterson Institute.

Kirmani, A., & Rao, A. R. (2000). No pain, no gain: A critical review of the literature on signaling unobservable product quality. *Journal of marketing, 64*(2), 66-79.

Lamberti, M. J. (2005). State of the Clinical Trials Industry. *Thomson CenterWatch, Boston, MA*, 177.

Lee, R. P. (2010). Extending the environment–strategy–performance framework: The roles of multinational corporation network strength, market responsiveness and product innovation. *Journal of International Marketing, 18*(4), 58-73.

Mason, G., Van Ark, B., & Wagner, K. (1994). Productivity, product quality and workforce skills: food processing in four European countries. *National Institute Economic Review, 147*(1), 62-83.

Mason, G., Van Ark, B., & Wagner, K. (1996). Workforce skills, product quality and economic performance. *Acquiring skills: Market failures, their symptoms and policy responses*, 175-198.

Naor, M., Goldstein, S. M., Linderman, K. W., & Schroeder, R. G. (2008). The role of culture as driver of quality management and performance: infrastructure versus core quality practices. *Decision Sciences, 39*(4), 671-702.

Olson, L. (1997). *The School-to-Work Revolution. How Employers and Educators Are Joining Forces To Prepare Tomorrow's Skilled Workforce*: ERIC.

Qrunfleh, S., & Tarafdar, M. (2013). Lean and agile supply chain strategies and supply chain responsiveness: the role of strategic supplier partnership and postponement. *Supply chain management: an international journal, 18*(6), 571-582.

Rajaguru, R., & Jekanyika Matanda, M. (2009). Influence of inter-organisational integration on business performance: The mediating role of organisational-level supply chain functions. *Journal of Enterprise Information Management, 22*(4), 456-467.

Rao, A. R., & Monroe, K. B. (1989). The effect of price, brand name and store name on buyers' perceptions of product quality: An integrative review. *Journal of marketing research, 26*(3), 351-357.

Salvador, F., & Forza, C. (2004). Configuring products to address the customization-responsiveness squeeze: A survey of management issues and opportunities. *International Journal of Production Economics, 91*(3), 273-291.

Sousa, C. M., Ruzo, E., & Losada, F. (2010). The key role of managers' values in exporting: Influence on customer responsiveness and export performance. *Journal of International Marketing, 18*(2), 1-19.

Yang, Z., Jun, M., & Peterson, R. T. (2004). Measuring customer perceived online service quality: scale development and managerial implications. *International Journal of Operations & Production Management, 24*(11), 1149-1174.

Zhu, Q., Sarkis, J., & Lai, K.-h. (2013). Institutional-based antecedents and performance outcomes of internal and external green supply chain management practices. *Journal of Purchasing and Supply Management, 19*(2), 106-117.