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The Role of Activity-Based Costing in Determining the Relationship between Relational Capability and Supply Chain Cost Performance in the Textile Industry of Indonesia

Khomsan Laosillapacharoen[a], Boonying Charoenthitiwong[b], Sudawan Somjai[c], [a,b,c]Graduate School, Suan Sunandha Rajabhat University, Bangkok, Thailand, E-mail: [a]s56584916034@ssru.ac.th, [c]sudawan.so@ssru.ac.th

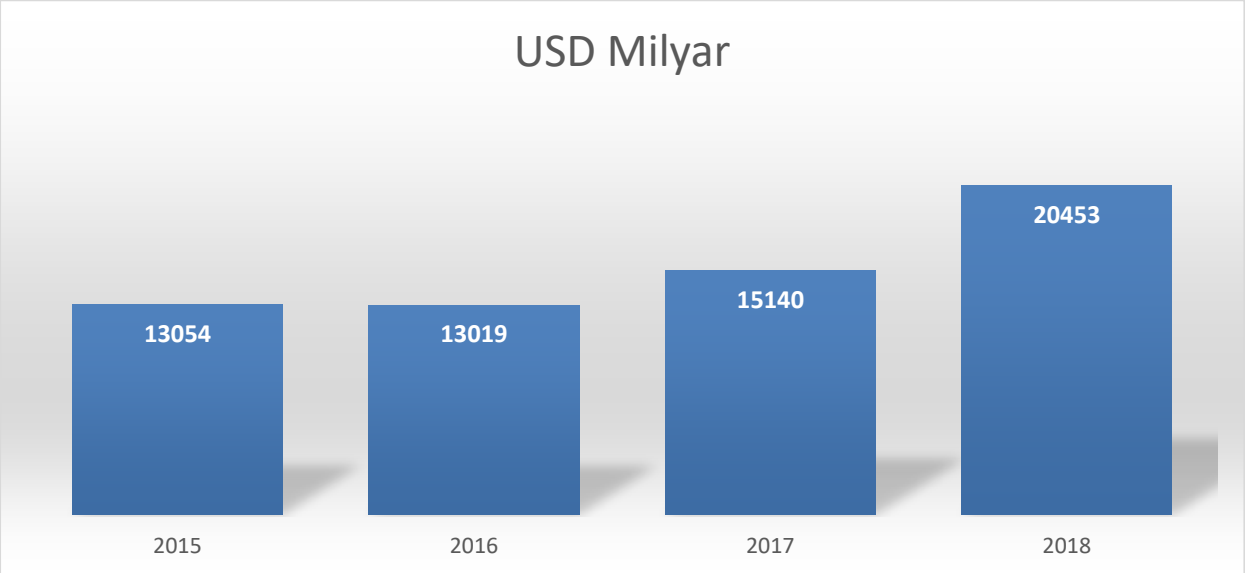
In today's business environment, the competition is no longer between firms, but between supply chains. The nature of business competition is growing the focus on supply chain performance. This practice accentuates the need of supply chain technology adoption to facilitate SCM. This study has examined the nexus between activity-based costing in determining the relationship between relational capability and the cost performance of the textile industry of Indonesia. The present study employed a quantitative research method for testing the theoretical framework, by examining the association between variables involved in the model. The study aims to examine the impact of cost accounting and the supply chain capabilities relationship on the SC operational performance. Since a quantitative research design has been formulated for conducting this research, a survey questionnaire was selected as a research instrument. The survey data was collected from the textile and apparel companies operating in Indonesia. The findings of the study prove the proposed hypothesis.

Key words: *Supply chain, accounting, Textile, Indonesia.*

Background

During the mid-1960s, the supply chain management (SCM) concept appeared as part of academic literature and additionally, during the 1980's, it received dramatic interest from researchers and become renowned in the 2000s among practitioners and academics (Maestrini, Luzzini, Maccarrone, & Caniato, 2017). The literature shows the significant role that t supply chain management (SCM) has been playing in organization performance for the past three decades (Dechprom & Jermsittiparsert, 2018; Jermsittiparsert, Sutduean, Sriyakul, Sangperm, & Prianto, 2018; Jermsittiparsert & Rungsrisawat, 2019; Sutduean, Joemsittiprasert, & Jermsittiparsert, 2019). In todays' competitive business environment, instead of emphasizing organizational performance, firms must focus predominantly on supply chain performance (SCP) to remain competitive in the market (Leng & Zailani, 2012). This has been supported by several studies (constangioara, 2012), since the SCP directly and significantly influences organizational performance. The textile sector in Indonesia is among emerging sectors whose contribution in export is mounting as shown in Figure 1 below.

Figure 1. Textile exports of Indonesia



Presently, organizations have been showing keen interest in the SCM studies, as the current business trends provide opportunities to become a multinational organization and tend to shape global businesses according to the international standards, thereby increasing the supply chain complexity. According to Beske (2012) the whole system of supply chain or complete chain forms the basis for Supply chain management (SCM), requiring all supply chain partners to possess the key determining factors of competitiveness (Jermsittiparsert, Joemsittiprasert, & Syazali, 2019; Ploenhad, Laoprawatchai, Thongrawd, & Jermsittiparsert, 2019). Today, it is not the business firms but rather the supply chains that are competing. Thus, SCM acts as a management tool to facilitate firms towards achieving competitiveness.

In the textile and apparel industry, the SCM has been considered to be an essential concept (Jayaram & Avittathur, 2015). The SCM functions can be used to coordinate, plan and control capital flow, business information flow and logistics knowledge flow. It helps organizations in reducing supply chain uncertainty and improving their responsiveness. Firms have faced strong business competition in recent global business markets. Thus, textile and apparel organizations must essentially cooperate with each other, in order to achieve common organizational goals, i.e. stock holding cost, increased punctuality, low delivery cost, improved responsiveness, quality and better flexibility and fulfill customer satisfaction and profitability (Agami, Saleh, & Rasmy, 2012), in the absence of this a company might lose business competence in an ever-changing global markets. As an example, Zara, one of the dynamic and greatest apparel organizations in Spain exemplified the functioning of a hybrid supply chain. This organization offers a wide range of trendy apparel for people in the 18-35 years group. Since the majority of the supply chains are faced with lack of actual demand visibility, therefore supply chains are driven by forecast demand in a way that is better than a demand driven supply chain. Thus, a quick response system has been introduced by Zara to effectively handle the visibility problems arising in the apparel industry.

Primarily, the SC capabilities such as, IT capability, organizational capability and relational capability play a significant role in improving the operational performance of supply chain. Due to rapidly changing fashion trends, the textile and apparel markets also witness quick market changes. The relational capability is defined as the ability to enter into business relationships for the purpose of having access to skills and resources (Gorane & Kant, 2016). Furthermore, customer relationship, information sharing and supplier partnership are the important supply chain performance determinants (Jangga, Ali, Ismail, & Sahari, 2015), whereas, information quality has been claimed to effectively improve the competitive advantage of an organization. Further, several empirical research studies have also supported the fusion of IT knowledge, IT infrastructure and IT personnel, whereas, IT configurability also acts as a particular IT capability for enhancing the performance of supply chain. An organization must possess highly effective organizational culture capability involving innovativeness, consistency, involvement and adaptability. Thus, SC capabilities are expected to improve the operational performance of SC.

Consequently, the operational performance of SC also improves with technological adoption by the supply chains, which is a crucial element towards efficient supply chain development. However, the SC technological adoption is still controversial as an agreed upon concept as not enough studies have attempted to examine the role of SC technological adoption as a mediator on the supply chain operational performance. Thus, it has broadened the scope of research particularly in the textile and apparel industry of developing economies. Moreover, the supply chain technology adoption refers to the usefulness offered by the interconnected electronic

applications for undertaking efficient and effective SC processes. SC technology adoption acts as a determining factor of SC performance in textile industry (Goodwin & Goodwin, 2016). Thus, the relation among SC operational performance and SC capabilities is assumed to be mediated by the SC technology adoption. However, only limited empirical research has investigated the concept of supply chain technology adoption as a mediator.

Literature review

Supply Chain Operational Performance

Organizational performance can be classified into three types, with reference to resource based view (RBV): operational, financial and environmental performance (Guang Shi, Lenny Koh, Baldwin, & Cucchiella, 2012). The present study primarily emphasizes the operational performance of the SC, as it is recognized to greatly influence the performance of supply chain. However, the current study does not aim to consider the financial and environmental performance of SC, since both these performances are positively contributed by the SC operational performance. According to Bharati and Chaudhury (2006) supply chain operations refer to the processes and activities related to the transformation of intermediate parts or raw materials into finished goods. It is usually determined by assessing the responsiveness, reliability, cost, asset management and flexibility.

As the primary focus of this research is the operational performance of SC therefore, responsiveness, reliability, cost and flexibility would be considered as the performance measuring dimensions of the supply chain. Although, in terms of SCOR model, asset management is concerned more to the return on investment, whereas, operational performance concerns more about non-financial performance. Thus, the asset management is not included as a determining variable for the SC operational performance. The supply chain principally aims to deliver goods as well as services efficiently at minimum total cost, time and in best quality to the customers. This has also been supported by Al-Majed, Al-Omar and Nagi (2006) who argued that if the firms are not fully aware of the success factors such as high quality, flexibility, quick response and low costs, then they will be destined to face failure. Thus, the ultimate SCM objective is to improve the operational and financial performance of global SCs and for each SC partner (Neubert, Zaoui, Dominguez, & Ageron, 2010).

It is suggested that performance measurement plays an essential role in improving the supply chain as well as organizational performance. Therefore, performance measurement systems (PMSs) act as critical tools for measuring performance at the monitoring stage of SC. In addition, according to Neely, Gregory and Platts (1995) the term performance measurement refers to the system of determining the effectiveness and efficiency of activities and actions. On the other hand, the performance measurement system refers to a set of measures for determining the effectiveness and efficiency of particular actions. Further, it also operates for

detecting gaps and potential problems in the way of SC performance. Such performance measurement systems allow organizations to become fully aware of the supply chain performance status, such as current performance levels, weaknesses and strengths to carry out well informed decision-making by the firms in order to deal with organizational threats and opportunities, thereby enabling firms to act efficiently for the effective enhancement of supply chain performance (Nasiri, Davoudpour, & Karimi, 2010).

Efficiency and effectiveness are measures for determining the performance standard of supply chain, where efficiency accounts for internal standard and effectiveness accounts for the external performance standard. Curretnly, efficiency and effectiveness of SCM are the important concerns for organizations. In view of Ip, Chan and Lam (2011), six components can be used to measure efficiency and effectiveness, namely on-time delivery, employee fulfilment, product reliability, profitability, work efficiency and customer fulfilment. For instance, supplier-customer innovation and orientation bring effectiveness, while just-in-time production helps in achieving SC efficiency. Although, performance measurement system varies greatly from one organization to the other.

Previously, the performance measurement systems adopted by organizations tend to focus solely on the profits and costs of the firm. Presently, the decline in the global goods and services demand have persuaded firms to enhance their SCM skills for managing SC cost while increasing the quality and revenues for the firm. Establishment of a consistent performance measurement system is essential for a firm to achieve organization goals and also because it provides the basis for future business excellence. The persistent increase in SC complexity could make it quite challenging and difficult to effectively choose the SC performance measures (Sakka, Millet, & Botta-Genoulaz, 2011), resulting in incomplete and inaccurately obtained firm's analysis. Thus, choosing an appropriate tool for performance measurement is essential, critical and indispensable since it plays an important role for making informed decisions by a firm.

Supply Chain Capabilities

The supply chain capability is a pre-known concept and Learned, Christensen Andrews and Guth (1969) suggested that these studies particularly emphasized developing distinctive capabilities already been featured in earlier published business policy framework. Regardless of the insights regarding the advantages of these capabilities mentioned in previous studies, there is still insufficient theoretical framework available for complete understanding of the SC capabilities phenomena. Since capabilities are the accumulated knowledge and complex set of skills, therefore it can be shaped through the SC processes, which enable organizations to undertake asset utilization and manage SC activities. In business operations, these capabilities

can be shown as order fulfilment, service delivery and new product development. Following is the detailed discussion regarding components and variables of SC capabilities:

Relationship among supply chain operational performance and Supply chain capabilities

The researchers who advocated RBV believed that each organization carries certain dynamic capabilities and resources which are costly and hard to imitate and adopt by competing firms (Lim, Stratopoulos, & Wirjanto, 2012). In order to realize competitive advantage in global market, an organization must focus on following four characteristics, i.e. quality, cost, flexibility and speed to remain responsive towards market competition. An important operational performance factor of supply chain is the supply chain relational capability (Jangga et al., 2015). Further, organizational cultural capability and IT capability also recognized as equally essential for the supply chain performance. The aforementioned discussion has shown that SC capabilities definitely possess the ability of influencing the SC performance. The following sections present further discussion regarding SC performance and capabilities relationship.

Relationship among Operational Performance and Relational Capability

While investigating the relation among SC operational performance and relational capability, several researchers have reported that operational performance usually improves through customer relationship, supplier partnership, information quality and information sharing (Jangga et al., 2015; Prajogo & Olhager, 2012). Thus, the greater customer relationship, information sharing and supplier partnership result in improved SC reliability, optimization of the SC costs, flexible and effective handling of supply and demand uncertainties and improved SC responsiveness. For the textile and apparel industry, supplier partnership is recognized as critical, as it enable firms to be highly responsive towards changing market needs and requirements. Fynes, Voss and de Búrca (2005) also supported this finding.

According to Al-Majed et al. (2006) and Amad, Hamid, Salleh and Choy (2008) supplier partnership provides benefit to the buyers by ensuring timely and consistent delivery of quality materials from the suppliers. Such as the case of Wal-Mart and Procter and Gamble (P&G) partnership, where Wal-Mart is a retailer of rich capital and information and P&G is the manufacturer of rich capital and information, therefore, they shared a win-win information sharing cooperation across mutual SC, which resulted in the enhanced performance and mutual benefits for both P&G and Wal-Mart. Briefly, it has been concluded that a favourable supplier partnership positively influence the organizations' operational performance. On the contrary, lower supplier partnership dependency results in worst or poor SCP. Furthermore, customer relationship management has been gaining popularity around the globe. Thus, favorable customer relationship effectively captures the wants and needs of customers and higher customer focus ensures higher SC performance (Al-Majed et al., 2006).

In a mixed method research, it has been reported that SC operational performance was found to be affected by information capability. Information sharing is recognized as a most common means for improving 50 percent of the SCP (Marinagi, Trivellas, & Reklitis, 2015). In addition, higher information sharing levels tend to improve efficiency and responsiveness of all supply chain activities. In addition, information sharing among retailer and distributor also leads to improvement in avoidance of lost sales and order fulfilment, particularly during peak season and promotions (Watanarawee & Baramichai, 2010). Thus, several organizations motivated suppliers and retailers to share information regarding customer demand and needs. Based on the literature reviewed we have drawn the following hypotheses

H1: Information quality has significant impact on the supply chain cost performance.
H2: Information sharing has significant impact on the supply chain cost performance.
H3: Customer relationship has significant impact on the supply chain cost performance.
H4: Supplier partnership has significant impact on the supply chain cost performance.

Moderating role of Activity-based Costing among Supply chain cost performance and Supply chain capability

Supply chain costs refer to the costs that are associated with supply chain business operations, such as manufacturing, distribution and procurement. Although, supply chain cost does not account for sales and promotion, marketing and overhead functions. However, the manufacturing lead times greatly influence the organizations' operating costs, i.e. delivery cost and overtime. According to this research, an organization must work overtime and deliver the demanded product by air to the customer, if it has failed to deliver the product on time. However, information forecasting and shared planning for matching supply quantity and demand allows to minimize the overall costs of the SC.

The apparel manufacturers in Indonesia only manufacture for export purposes and their competitive success is established mainly on the fusion of cost, quality, value and cultural advantage. In supply chain, damage and inventory carrying costs are not of less significance, whereas logistic or transportation costs generally rank highest among other supply chain operating costs. Since petrol and transportation costs kept on inflating in recent business environment, therefore, optimal management of resources and operations have gained vital importance in supply chain (Loon, Udin, Hassan, Bakar, & Hanaysha, 2017). Such as, E-commerce adoption by the textile and apparel industry could result in cost saving facility, saving of transportation cost and inventory cost saving.

Activity-based costing is a costing approach which concerns about processes and not functions. Costs can only be managed by controlling those activities which are the root causes of such

costs. Therefore, discovering drivers and allocation of cost towards processes based on these cost drivers are the key aspects of activity-based costing. The costs across the boundaries of organization combined with the organizations' indirect cost can also be added in the context of supply chain. Previously, based on some random overhead absorption, the indirect costs were allocated to the services or costs. Moreover, activity-based costing carries out data collection which goes beyond the traditional functional boundaries of organizations and can be implemented besides other continuous improvement programs, such as Kaizen, Six Sigma, for establishing supply chains and more responsive and leaner organizations. In addition, for carrying out non-value adding operations, it can also be adopted besides quality costing and open book accounting. Another important feature of supply chain is that the activity-based analysis is usually handled in outside and inside the conventional organizational boundaries. The following relationships are proposed

H5: the activity-based costing moderates the relationship between information quality and supply chain cost performance.
H6: the activity-based costing moderates the relationship between information sharing and supply chain cost performance.
H7: the activity-based costing moderates the relationship between customer relationship and supply chain cost performance.
H8: the activity-based costing moderates the relationship between supplier partnership and supply chain cost performance.

Methodology

The present study employed a quantitative research method for testing the theoretical framework, by examining the association between variables involved in the model. The study aims to examine the impact of cost accounting and supply chain capabilities relationship on the SC operational performance. Since, a quantitative research design has been formulated for conducting research, therefore, a survey questionnaire was selected as a research instrument. Thus, the survey data was collected from the textile and apparel companies operating in Indonesia and statistical procedures were used to test the objective theories. Such investigation assumes to develop protection against bias, deductively testing theories, and is able to replicate and generalize the research findings and directing alternative explanations (Creswell, 2009). In addition, the study used probability sampling technique. Basically, probability sampling can be restricted sampling (complex probability sampling) or unrestricted sampling (simple random sampling) (U Sekaran & Bougie, 2010). Therefore, this study adopted simple random sampling for sample collection, as it provides an equal opportunity to each organization for being selected as a sample.

This section includes the data analysis and discussion about the results and empirical findings. Since it is the primary research study, therefore an important aspect is the sample size selection. According to the table presented by Krejcie and Morgan (1970) for sample selection, a sample of 357-361 must be taken for a population of 5000-6000. As the population size for present research is 5440, a sample size of 361 was chosen. The sample collection procedure was carried out by distributing questionnaires to the targeted samples, i.e. employees who were part of the soft skills training program or the employees who were being allowed by the universities. Thus, the study employed purposive sampling technique instead of random sampling to collect samples. Therefore, the researcher distributed 450 questionnaires to the ten public universities' academic staff in Thailand and 378 questionnaires were returned, however only 361 properly filled questionnaires were taken for further data processing and analysis. The response rate for this study was 84% which meets the threshold level. According to Uma Sekaran and Bougie (2003) the acceptable response rate for a study is 30 percent.

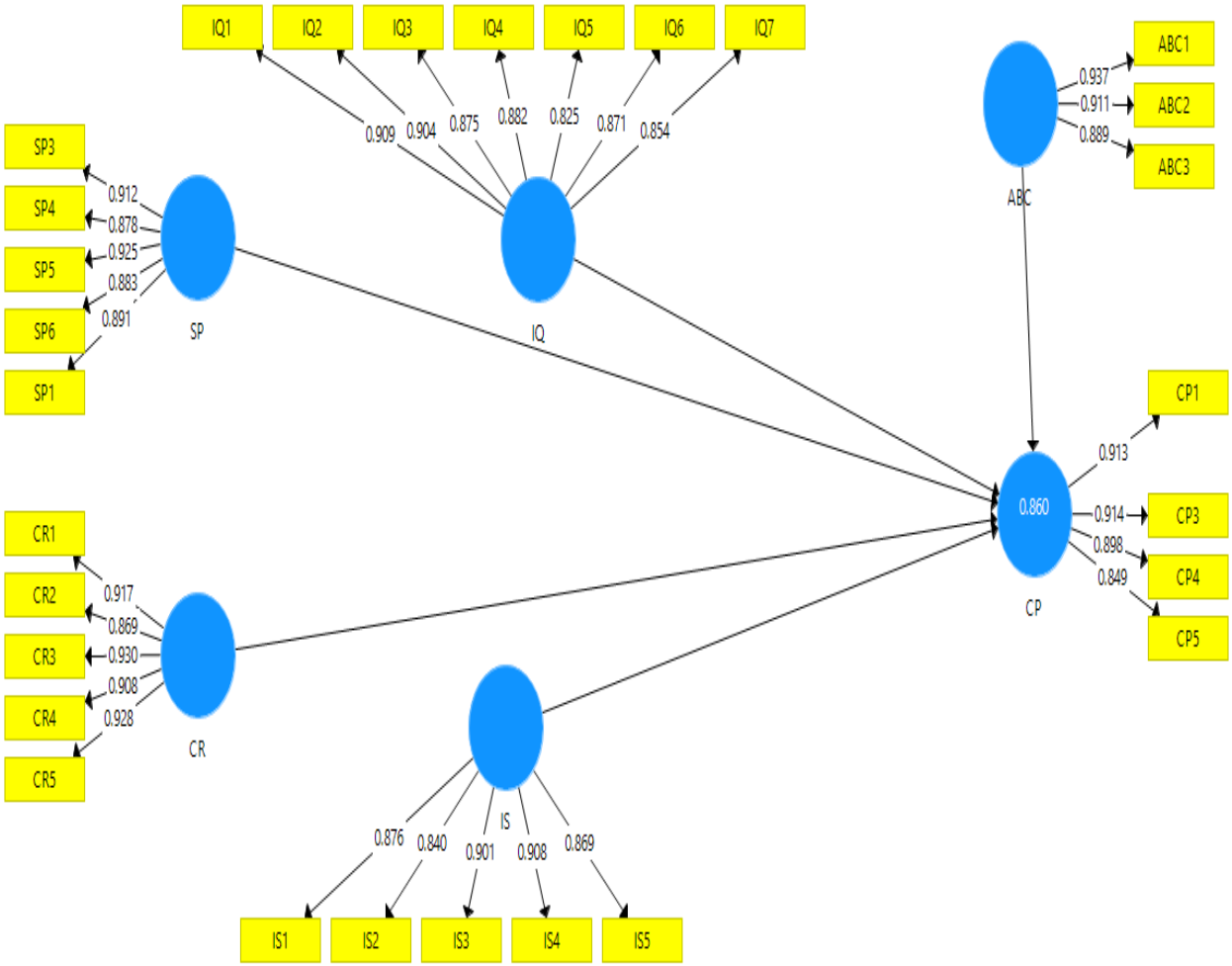
The data obtained through questionnaires was then entered into the SPSS for obtaining descriptive statistics and then transferred to the Smart PLS to perform statistical analysis for testing the proposed hypotheses as well as for checking the instruments reliability and validity through estimation of measurement and the structural model. PLS-SEM, also referred as a second-generation multivariate statistical data analysis was employed, following the Cassel, Hackl and Westlund (1999) recommendation, who viewed PLS-SEM to be an appropriate technique when the model involves multiple variables and complex relationships. Since the present study involves four constructs of second order and large number of indicators therefore, PLS-SEM was employed. This technique is essential as the study items were reflective and formative in nature, which could have been difficult for other software to handle properly (Hair, Sarstedt, Hopkins, & G. Kuppelwieser, 2014). PLS-SEM is also recommended when there is inadequate supporting theory or theoretical framework (Chin & Newsted, 1999; Wetzels, Odekerken-Schröder, & Van Oppen, 2009). It also takes account for any measurement errors and a few high ranking journals also use this technique. In addition, PLS-SEM is also a user friendly method.

SEM-PLS Analysis

The data analysis for this study was performed to assess the relationship among the model constructs, however, Calvo-Mora, Leal and Roldán (2006) suggested that PLS-SEM involves two models, namely, the structural model and the measurement model. To confirm the theoretical framework or the supporting theory, measurement model is estimated which confirms the possible association between the model constructs and also predicts, assuming that this study can explain all the variance of the measured constructs.

The measurement model explains the relationship between the measured variables and the unobserved variables (Hair et al., 2014). While estimating the measurement model, the study performed confirmatory factor analysis for measuring the discriminant and convergent validity of the constructs and the items' reliability. For this purpose, composite reliability and average variance extracted (AVE) were computed. The composite reliability (CR) value should exhibit greater than 0.70 values and AVE value to be greater than 0.50, for the variables (Gefen, Straub, & Boudreau, 2000). According to Nunnally and Bernstein (1994) the Cronbach alpha value must be ≥ 0.70.. After estimation of the measurement model and checking the validity and reliability of the model, thus confirms the estimation of the structural model, see Figure 2 below.

Figure 2. Measurement model



The indicator reliability is the percentage by which the latent variable explains the indicator variance. Indicator reliability ranges between 0-1. The indicator reliability is determined by assessing each constructs' outer loadings (Hair et al., 2014). Thus, an indicator reliability is

equal to the square of its indicator loading, when both latent variable and its indicator are standardized. According to a rule of thumb, if the loadings of reflective indicators under PLS model is less than 0.70, such indicators should be excluded from the model (Hair et al., 2014; Peng & Lai, 2012). However, this model involves no item with less than 0.70 loading thereby indicating non-exclusion of any indicators, see Table 1 below.

Table 1: Outer loadings

	ABC	CP	CR	IQ	IS	SP
ABC1	0.937					
ABC2	0.911					
ABC3	0.889					
CP1		0.913				
CP3		0.914				
CP4		0.898				
CP5		0.849				
CR1			0.917			
CR2			0.869			
CR3			0.930			
CR4			0.908			
CR5			0.928			
IQ1				0.909		
IQ2				0.904		
IQ3				0.875		
IQ4				0.882		
IQ5				0.825		
IQ6				0.871		
IQ7				0.854		
IS1					0.876	
IS2					0.840	
IS3					0.901	
IS4					0.908	
IS5					0.869	
SP3						0.912
SP4						0.878
SP5						0.925
SP6						0.883
SP1						0.891

After analyzing the indicators' unidimensionality, internal consistency of the variables were assessed. Instead of Cronbach alpha (α), the composite reliability measure is used under PLS-SEM, which measures the reliability of the observed variables' indicators, on the basis of their inter-correlation. Including items of the variables with respect to their individual reliability in the PLS-SEM model combined with the Cronbach alpha's limitations, it is assumed that all indicators exhibit equal indicator loadings. As Cronbach alpha underestimates the variables' internal consistency and show sensitivity for number of items of the variables, therefore, an alternative measure is essential that could adequately measure the internal consistency reliability, however, this gap was then filled by the composite reliability (ρ_c) measure, which determines each indicators' extent of sharing greater proportion of variance and also show convergence, as compared to model indicators which are responsible for determining other variables in the model.

On the contrary, the convergent validity measures whether an indicator determines what it actually assumed to measure. According to Fornell and Larcker (1981) convergent validity is measured through the AVE value, which is equal to the communality of the indicators' square loadings of a corresponding construct in proportion to the total number of items of the constructs. Thus, AVE ≥0.50 shows that on average, more than half of the indicators' variance is explained by the respective construct, thus achieving convergent validity of the constructs. However, if this value is below 0.50, it shows that due to measurement errors, indicators' variance could not be explained through the constructs, thereby indicating non-established convergent validity (Hair et al., 2014; Urbach & Ahlemann, 2010). Table 2 below shows that the adequate level of convergent validity is established for the measures since the AVE range turned out as 0.610-0.814, satisfying the minimum acceptable range i.e. 0.50 (Bagozzi & Yi, 1988), thereby shows that convergent validity is achieved.

Table 2: Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
ABC	**0.900**	**0.905**	**0.937**	**0.833**
CP	**0.916**	**0.921**	**0.941**	**0.799**
CR	**0.948**	**0.951**	**0.960**	**0.829**
IQ	**0.949**	**0.949**	**0.958**	**0.765**
IS	**0.926**	**0.927**	**0.944**	**0.773**
SP	**0.940**	**0.944**	**0.954**	**0.806**

Discriminant validity refers to the extent that measures of the construct that should not be related theoretically to each other are actually not related. Achieving discriminant validity

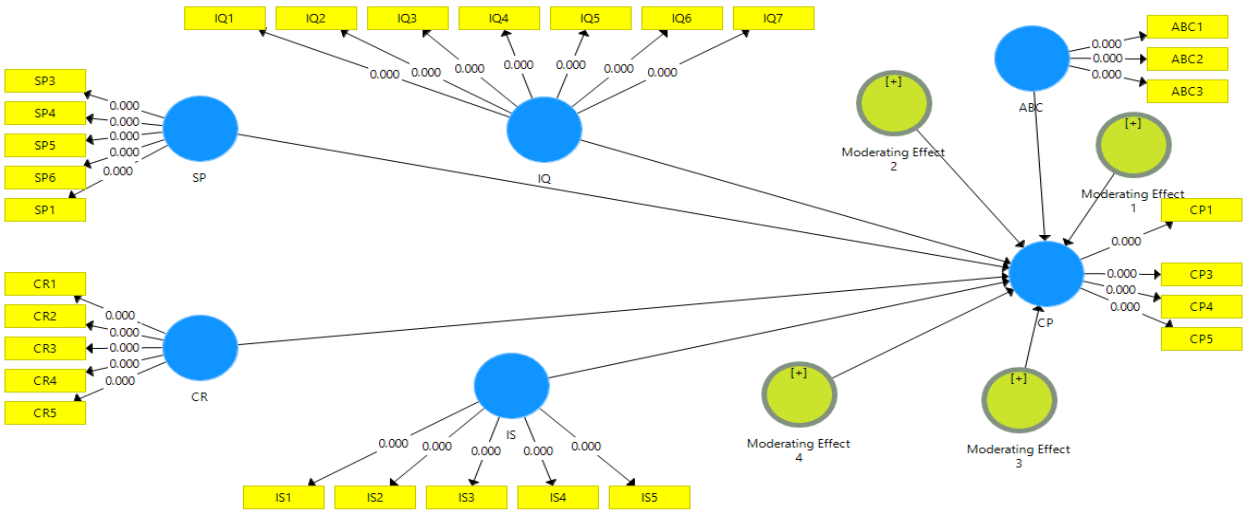
means a construct has shown distinctive features as compared to the other constructs involved in the PLS-SEM model. In a reflective measurement model, the discriminant validity can be assessed through a) Fornell and Larcker (1981), which observes and compares each constructs' AVE square root to the correlation of latent construct with other constructs. Therefore, the AVE square roots must exhibit greater value than the correlations, for successful achievement of discriminant validity of the measurement model; b) Determining the cross-loadings of indicators, i.e. for each construct, the indicator loadings must exhibit greater value than the cross-loadings for other constructs of the underlying model. Therefore, discriminant validity is not achieved if the actual construct loading is less than the cross loadings of this construct on other constructs of the same model (Hair et al., 2014) see Table 3 below.

Table 3: Discriminant validity

	ABC	CP	CR	IQ	IS	SP
ABC	0.913					
CP	0.900	0.894				
CR	0.654	0.692	0.911			
IQ	0.888	0.885	0.651	0.875		
IS	0.722	0.710	0.916	0.704	0.879	
SP	0.669	0.674	0.895	0.680	0.911	0.898

Hair et al. (2014) suggest that structural model determines the relationship among the constructs presented in the hypothetical model. In addition, it provides the nature of interrelationships between the constructs, such as the nature of association among the latent constructs, see Figure 3 below.

Figure 3. Structural Model



The structural model also attempts to test the proposed relationship between the variables through hypotheses testing. The structural model for present study consists of exogenous variables, namely quality academic process, institutional effectiveness and quality administrative process and an endogenous variable i.e. distributed leadership. During the structural model estimation, the study also attempted to determine its predictive relevance, checking for any collinearity issues, relevance as well as the significance of the structural relationships and the R^2 effect sizes. The study performed bootstrapping pattern to estimate t-statistics and standard errors for the variables, which provides the precision for path coefficients. However, when the model exhibit greater than 1.96 t value, at 5% significance level, than the hypothesis is accepted, see Table 4 below.

Table 4: Regression results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
ABC -> CP	0.516	0.510	0.089	5.768	**0.000**
CR -> CP	0.268	0.275	0.106	2.517	**0.012**
IQ -> CP	0.380	0.366	0.106	3.573	**0.000**
IS -> CP	0.100	-0.086	0.110	3.917	**0.000**
Moderating Effect 1 -> CP	0.032	0.021	0.108	3.295	**0.000**
Moderating Effect 2 -> CP	0.002	0.001	0.050	3.043	**0.000**
Moderating Effect 3 -> CP	0.026	0.043	0.160	3.165	**0.000**
Moderating Effect 4 -> CP	0.049	0.055	0.146	3.333	**0.000**
SP -> CP	0.076	0.077	0.099	3.772	**0.000**

It has been argued that PLS-SEM is efficient in predicting (Ringle, Sarstedt, & Straub, 2012) and according to Zhu et al. (2015) for almost all structural model estimations, the studies employ R^2 for predicting the ability of exogenous variables to explain the endogenous variable. The R^2 or coefficient of determination, explains the combined effects of exogenous latent constructs on the endogenous variable, or it shows if the variance in endogenous variable is explained by the exogenous latent constructs. Thus, it is a goodness of fit measure and ranges from 0-1. The greater the value the higher the proportion in endogenous variable that is explained by the exogenous variables. Chin (1998) suggests that the R^2 values such as 0.67, 0.33 and 0.19 indicate substantial, moderate and weak predictive power. The R^2 acceptability varies based on the field and nature of the study. According to Hair et al. (2014) the greater

the value, the higher the percentage of variance explained by the exogenous constructs, see Table 6 below.

Table 6: R-Square

	R Square
CP	0.860

Conclusion

This is a primary study that looked to total supply chain, which is internal and external supply chain processes on textile and apparel industry. This means that this study looked at the total supply chain that comprises supplier, manufacturer, distributor, service provider, wholesaler, retailer and customer in textile and apparel industry. As a third recommendation for future study, researchers could narrow the focus on a particular internal supply chain to get deeper information on how supply chain capabilities and supply chain technology adoption contribute to financial performance of a company. This is suggested based on the interest of the real business world, since the practitioners are more interested in the nature of financial performance. Last and most importantly, generalization is a limitation of this study, future research in other industries and different countries would be advisable to increase the conceptualizations, measurement scales and generalizability of the findings.

A replication of this study would further advance the knowledge on this subject matter, since the model of the study is considered as fresh in the research context and more research on this topic needs to be undertaken. To provide a competitive model for current business environment, this study examined the relationship of supply chain capabilities, namely relational capability, information technology capability and organizational culture capability on supply chain operational performance. This study further investigated whether supply chain technology adoption mediates the relationship between supply chain capabilities and supply chain operational performance and it was found that no benefits happen instantaneously. The potential benefits can be realized only if the interrelationships between supply chain capabilities are aligned to the use and usefulness of supply chain technology adoption.

Quantitative findings with triangulation of research findings offer considerable empirical support for the model under study. Three out of four main research hypotheses have been fully supported, while one research hypothesis has been partially supported. The empirical findings of this study recognized the contribution of relational capability, organizational culture capability and supply chain technology adoption towards supply chain operational performance. IT capability was the only factor that is not given any relationship to supply chain operational performance. The empirical findings further revealed that supply chain technology adoption appreciated the contribution of supply chain capabilities. In addition to

the empirical findings, the mediating effect of supply chain technology adoption successfully contributed to the relationships of supply chain capabilities and supply chain operational performance.

The final model has been agreed to by the industry experts with the suggestion of two emerging terms, namely human support and work experience as moderators for future study on the model. These findings are expected to support Indonesian textile and apparel organizations to continuously invest in or reengineer key strategies with internal and external supply chain.

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