

The Mediating Role of Intra-firm Collaborative Capabilities: A Strategic Management Perspective

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Two important contributions have been made to the literature through this research. In this study, the influence of commitments to sustainability on the attainment of firm capabilities (inter and intra) in the supply and purchasing function has been considered. Further, the impact of these abilities on performance has been investigated. The research on sustainability requires identification of how improved performance can be achieved through commitment to sustainability (Barney, 2012). This research offers a unique example involving social and environmental performance along with financial aspect of performance of testing theory in the research on sustainability. Empirical support is provided by this research for making improvements in different aspects of sustainability. Employing a survey-based methodology, the structural equation modelling technique is used to test the hypothesised relations. The SEM-PLS is used as a statistical tool to answer the research questions raised in this study and research objectives envisaged in the current study. The findings of the study have provided support to the theoretical foundation and proposed hypothesis of the current study. This study will be helpful for policy-makers and practitioners in terms of understanding the issues related to intra-firm collaborative capabilities, commitment to sustainability and performance. It is one of only a few pioneering studies on this issue.

Key words: *Intra-firm collaborative capabilities, Commitment to sustainability, performance.*

Background

Organisations have shown concern about sustainability over the last two decades by incorporating it as an integral part of their business (Gimenez et al., 2012; Gunasekaran & Spalanzani, 2012; Makower & Pike, 2008; Schoenherr, 2011). Research is being conducted into the association between commitment, sustainability and organisational performance

(Schrettle et al., 2013). There is a need to incorporate sustainability across the supply chain to achieve improvements in performance. The supply networks must be linked with the sustainability factors (Sarkis, 2012). A crucial role is played by supply and purchasing functions for several reasons. The first is the influence of techniques implied in the purchasing of products and services on social, financial and environmental organisational performance. The shift in the competition at the supply chain level has required organisations to adopt sustainable approaches within the supply chain as well. The second reason is linked to increased responsibility for the social and environmental behaviour of suppliers to the firm (Seuring et al., 2008). The sustainability decisions related to the process of procurement and supplier management must be supported by the supply and purchasing functions (Brammer & Walker, 2011).

By incorporating buy-in within the entire supply chain, sustainability can be achieved (Paulraj, 2011). The role of practices related to supply chain management and specific purchasing has been investigated by some research studies specific to particular economies and sectors (Gopalakrishnan et al., 2012; Walker & Brammer, 2012).

The research is limited when it comes to exploring how firms ensure sustainability in purchasing that affects performance (Leire & Mont, 2010). This research study is concerned with the influence of sustainability commitment on routines and collaboration for sustainability, which in turn influence the performance of an organisation. Integration among departments and cross-functional level is considered in the firm's intra-firm collaborative capabilities when making decisions about selection of supplier, strategy sourcing and evaluation of suppliers. The level of integration among the suppliers is considered by the inter-firm capabilities of collaboration in relation to the development of the supplier relationship and product innovation (Sharfman et al., 2009). The influences on the growth of firm capabilities (inter and intra) through a commitment to sustainability by collaborating in the supply and purchasing functions are examined in this study. The focus is on how these capabilities influence the firm's social, environmental and cost performance.

It has been argued from the perspective of resource based theory (RBT) that the level of collaboration at the inter- and intra-firm levels can be enhanced by the supply and purchasing functions. These capabilities result in greater cost, and increased social and environment benefits to the firm. From an extended RBT perspective, advantage can be attained by using these capabilities beyond the boundaries of an organisation (Barney, 2012).

Theoretical Framework and Formulation of Hypothesis

The use of sustainable economic activities in business processes offers opportunities for the organisation to achieve a competitive advantage. The activities required for improvements in

sustainability performance have been examined by the literature in the context of supply and purchasing management, such as selection of suppliers, collaboration with suppliers, integration of suppliers, and evaluation and management of supply (Bai & Sarkis, 2010; Foerstl et al., 2010). High-level sustainability activities are required both within a firm and beyond its boundaries. In other words, inter- and intra-firm collaborative capabilities are required that influence the social, environment and cost performance of the firm (Ageron et al., 2011).

Supply and purchasing functions can be a source of competitive advantage, depending on how social complexity, path dependency and causal ambiguity are linked together in different ways in the management of supply and purchasing (Barney, 2012; Priem & Swink, 2012). It is critical to know how supply and purchasing functions improve performance through commitment to sustainability rather than knowing whether they improve performance (Bai & Sarkis, 2010).

RBT is a famous theoretical approach in the management research. Yet the poorly defined boundaries of concepts have limited this theory. Several researchers have tautologically considered that organisational success leads to the development of these capabilities (Cepeda & Vera, 2007), while others consider RBT suitable for identifying the processes by which these capabilities lead to competitive advantage. The antecedents, capabilities and performance in sustainable supply chain management have been considered by previous research studies (Paulraj, 2011); however, there is limited research available.

The focus of this study is how commitment to sustainability results in the development of collaborative capabilities in supply and purchasing functions within and across firms, impacting their performance. The level of a firm's engagement with environmental and social initiatives is part of its commitment to sustainability. The development of specific capabilities is influenced by this strategic focus of the firm.

The level of integration among the departments and cross-functional abilities in decision-making regarding the selection of suppliers, evaluation and strategic sourcing is regarded as a firm's intra-firm collaborative capabilities. The traditional RBT concept is extended by inter-firm collaborative capabilities to know which resources will result in advantage, including the outside boundary resources of the firm (Barney, 2012; Zhu et al., 2010). The level of integration with suppliers is considered in terms of these capabilities with reference to the development of suppliers and new products. The social, cost and environmental performance can be improved through these capabilities. In the next section, a conceptual model is discussed and hypotheses presented.

The conceptual model is shown in Figures 1 and 2.

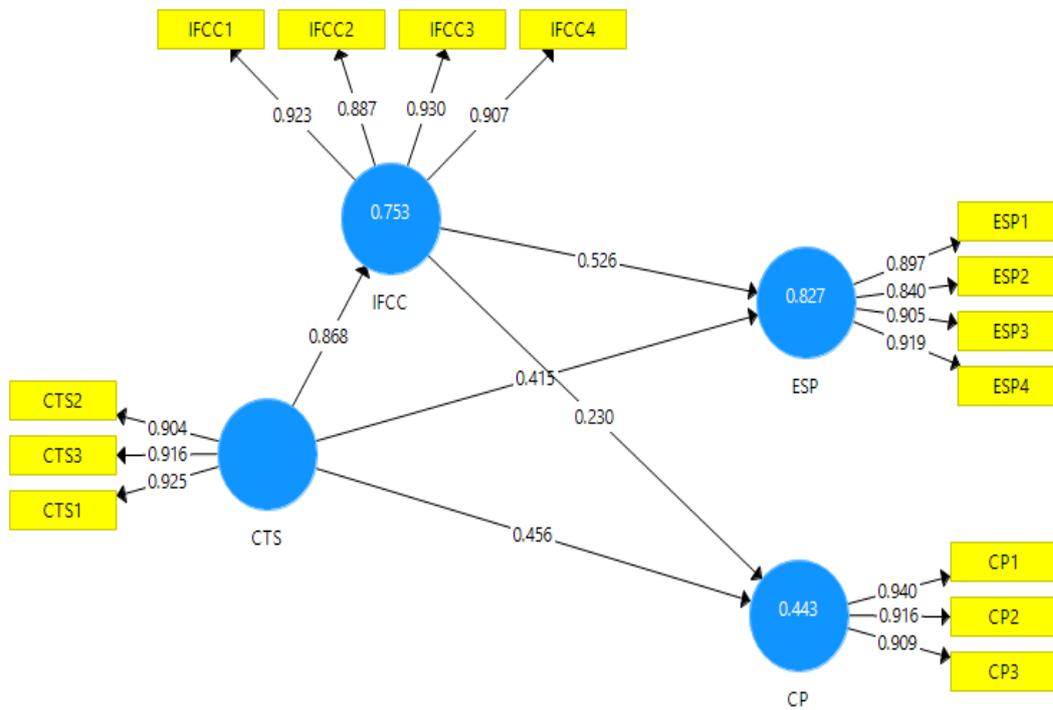


Figure 1. Measurement model

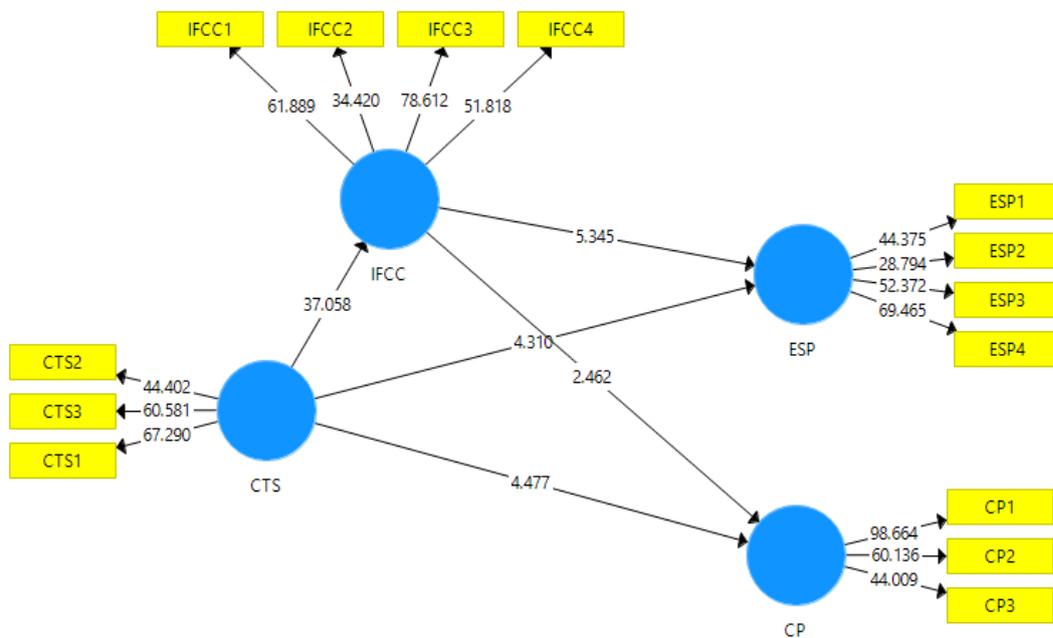


Figure 2. Structural model

It is based on the perspective of resource-based view and related to firm collaborative capabilities (inter and intra) and a commitment to sustainability within the supply and purchasing functions. The model developed in this study shows that the supply and purchasing functions are important to be considered across the supply chain to achieve improved performance through a commitment to sustainability. The focus of collaborative capabilities is less on the results of sustainability initiatives and more on the ways in which these initiatives can be incorporated into the organisation. This leads to activities that include audits of sites, questionnaires and requirements of buyers, all of which are involved in the sustainable procurement processes. These propositions have been explored in detail, and six research hypotheses have been developed, which are based on the model use in this study. The first two are:

H1: The commitment to sustainability is in significant relationship with the social and environmental performance.

H2: The commitment to sustainability is in a significant relationship with the cost performance.

The relationship of an organisation's commitment to sustainability and collaborative capabilities (intra-firm) has been considered in terms of the supply and purchasing functions. The level at which an organisation is involved in the social and environmental initiatives is regarded as its commitment to sustainability. This can be an antecedent to the development of capability.

In achieving performance through commitment to sustainability, social and environmental considerations are put behind operations and integrated into decisions related to product or process. The strategic purchasing activities, which are cross-functional, are referred as collaborative capabilities, and these are intra-firm in nature (Dimitriades, 2006). The cross-functional teams in supply and purchasing management have been examined in the traditional studies conducted on organisations. People of different backgrounds, education, skills and expertise work in a team, which leads to the development of new ideas and learning. This results in organisational improvements. Therefore, cross-functional teams can be used by a firm to work on sustainable initiatives, which can develop new ideas, innovations, learning and improved knowledge through expertise. Different departments can become coherent, with consistent priorities.

Bowen et al. (2001) argue that, in the sustainability context, regular interaction among different departments in the supply chain, such as logistics and operations with purchasing, can result in the realisation of environmental strategies. The value of intra-firm collaboration has been highlighted by Seuring and Müller (2008), including the selection of suppliers,

evaluation and contracts. The researchers claim that objectives can be communicated clearly through such practices, and suppliers can be selected based on set criteria. Moreover, a minimum standard can be set, which can be communicated to all the suppliers outside the organisation.

This results in Hypothesis 3:

H3: Intra-firm collaborative capabilities are in a significant relationship with commitment to sustainability.

Performance outcomes can result from the development of capabilities in accordance with RBT (Basheer et al., 2019). The extent to which an organisation fulfils its set targets to improve the sustainability of society and the environment relates to its social and environmental performance (Kauppi et al., 2013). However, the price of purchasing and the process are involved in the cost performance. The cost performance is based on the financial aspect of sustainability. Kauppi et al. (2013) argue that the collaboration of the purchasing department with other organisational departments is important for improving performance. This claim has been made by considering the influence of intra-firm collaborative capabilities on social and environmental performance. Purchasing performance can be improved through the selection and evaluation of suppliers who are cross-functional; this is crucial for developing collaborative intra-firm capabilities. The development of cross-functional teams can support the execution of different strategies through the sharing of knowledge, ideas and expertise across the boundaries of the business organisation. A tradeoff between social, environment and economic performance has been indicated by some research (Corbett & Klassen, 2006). Both performance dimensions can be improved simultaneously. The rare, inimitable, valuable, and non-substitutable characteristics of the capabilities lead to performance improvement according to RBT. Because of unique organisational characteristics, intra-firm collaborative capabilities can be considered path dependent. Therefore, the following research hypothesis has been developed:

H4: Intra-firm collaborative capabilities are in a positive and significant relationship with social and environmental performance.

Performance is positively influenced through information sharing and increased collaboration with suppliers, in addition to the collaborative capabilities (Singh & Power, 2009). Processes can be improved by employing collaborative capabilities, which can enhance the social and environmental compliance of the current supply chain partners (Paulraj et al., 2008). The above information shows that these capabilities have the tendency to achieve competitive sustainability for the organisation. Activities of boundary spanning cannot be imitated by other organisations (Leppelt et al. 2013; Blome et al., 2014). Moreover, research indicates

that performance of supplier capability can be improved through efforts for development supplier relations that result in cost reductions. Both the organisation and suppliers can be influenced positively by collaboration on environmental performance, and the utilisation of inter-firm collaborative capabilities can result in improved social, cost and environmental performance. Both the performance dimensions can be improved simultaneously. Therefore, the following research hypothesis has been developed:

H5: Intra-firm collaborative capabilities are in a positive and significant relationship with the cost performance.

The relationship between the collaborative inter-firm capabilities for supply and purchasing function and commitment to sustainability has been considered. Collaboration with and mentoring of suppliers are regarded as inter-firm collaborative capabilities. There is a need to work effectively with the supply chain partners to achieve improved performance through a commitment to sustainability (Klassen & Vereecke, 2012). Competition occurs in supply chains of organisations rather than in individual organisations (Seuring & Gold, 2013). Increased responsibility lies across the entire supply chain. To understand the potential for achieving competitive advantage, this extended resource-based view is important, suggesting that resources or strategies should be valuable, rare, inimitable or non-substitutable.

There is a need for the firms to create long-term relations with suppliers over time, and to maintain these associations Sustainability can be supported through supplier development programs, which are crucial inter-firm collaborative practice. However, the focus of other inter-firm collaborative capabilities is not so much on the operational routine tasks, but rather linked with specific projects, including the development of new products (Hafeez et al., 2018). During the initial stages of process design, the sustainability objectives can be contributed by the supply and purchasing functions, including reuse design, and disassembling and recycling of products through collaboration with suppliers.

It is clear from the literature that change can be implemented to increase sustainability through inter-firm collaborative capabilities across the supply chain. Resources need to be allocated to initiatives linked with social and environmental issues by the supplier and buyer organisations through inter-firm collaborative capabilities. This can include the development of suppliers or monitoring (Leire & Mont, 2010). When the buyer firm is committed to sustainability to gain competitive advantage, this can result in the growth of inter-firm collaboration capabilities because of the involvement of the firm in strategic techniques (Leire & Mont, 2010). According to RBT, commitment can be an antecedent to collaborative capabilities (inter-firm). The development of these capabilities can result from commitment to sustainability being regarded as a precursor according to the RBT perspective. The following research hypotheses have been developed based on these notions:

- H6:** Intra-firm collaborative capabilities mediate the relationship between commitment to sustainability and social environmental performance.
- H7:** Intra-firm collaborative capabilities mediate the relationship between commitment to sustainability and cost performance.

Methodology

The questionnaire was developed in English, but the target respondents were based in Libya. The branch managers of Malaysian firms were the survey respondents; their mother tongue was Malay. For this reason, the questionnaire was converted from English into Malay. As recommended by Brislin (1986), it was translated through a process of back translation. In this process, the validity and reliability are assessed by converting the translation back to the original version. For the process of translating questionnaire, the services of two bilinguals were obtained and requested to translate the questionnaire again to its original form without looking at that version. The final two questionnaire versions in English were compared and contrasted. Few changes were made. The process of back translation ensured that the two versions of the English questionnaires were similar.

In this research study, data analysis was conducted using Smart PLS Version 2.0 M3, as suggested by Ringle, Wende and Will (2005). In the field of management science and marketing, the use of Smart PLS on a large scale (Henseler et al., 2009) is a dynamic tool for modelling and analysing interlinkages and is capable of handling analysis involving multiple and non-linear latent independents, correlated independents, measurement errors, latent dependents with multiple determinants and interrelated error terms. While considering the simultaneous estimation of dependent relationships, it is a powerful tool to deal with measurement errors, and can precisely determine the degree of association among the factors. In addition, confirmatory factor analysis is preferred over exploratory factor analysis. Therefore, employing the structural equation model to analyse the invariability of data enables the researcher to incorporate a number of measures to represent the constructs and also enables careful handling of specific errors, thus making it easier to prove the validity of a construct.

The present study determines the multiple variables in the form of indirect paths, path analysis and predictor variables. The questionnaire is designed by including ratio and interval scales as well as adding the measures of constructs, both conceptual and hypothetical. For instance, the selection of SEM was inevitable for the present study. Moreover, it also helps to observe the causal relationship among the variables and highlights the unobserved variables and complexity in the analysis.

The measurement of the commitment to sustainability is adapted from the studies of De Burgas Jimenez and Lorente (2001) and Krause et al. (2009). The scale of the inter-firm collaborative is taken from the studies of Johnsen (2009) and Krause et al. (2009). The environmental and social performance scale is adapted from the study of Karjalainen and Salmi (2013) and the cost performance scale is adapted from the study of Luzzini et al., (2012)

Results

Two steps are involved in analysis using the PLS model. Validity and reliability are measured through an outer model. The second step involves the structural model analysis, which is done through R^2 , relevance of predictive model, goodness of fit and effect size. By including the discriminant and convergent validity, the measurement of the properties of different item constructs is done. After the second step, the hypotheses are tested using bootstrapping. Reflective measurement items were included in the initial analysis of the model. Four unobserved variables – one dependent and two independent variables as well as one mediator – were used. Almost seven relations were involved among the variables based on the proposed research. The level at which the specific items measure the expected outcome is referred as content validity.

It was ensured that the value of items loadings was greater than 0.70, which is the accepted level suggested by Hair et al. (2010). The significance level for the factor loadings was 0.01, which is significant. Composite reliability was used to ensure convergent validity. This test measures the consistency in the measurement of latent constructs by the items (Hair et al., 2010). The values of composite reliability and Cronbach's alpha are shown in Table 2, which shows that that the Cronbach's alpha values lie between 0.771 and 0.945. On the other hand, the values of composite reliability lie in the range 0.881 to 0.956, which show the they are above the recommended value (0.70) (Fornell & Larcker, 1981; Hair et al., 2010). The results confirm that there is convergent validity in the model. Moreover, values of AVE were used to determine the convergent validity of the outer model.

Table 1: Outer loading

	CP	CTS	ESP	IFCC
CP1	0.940			
CP2	0.916			
CP3	0.909			
CTS1		0.925		
CTS2		0.904		
CTS3		0.916		
ESP1			0.897	
ESP2			0.840	
ESP3			0.905	
ESP4			0.919	
IFCC1				0.923
IFCC2				0.887
IFCC3				0.930
IFCC4				0.907

Four different means were proposed by Sekaran and Bougie (2003), which are used extensively in research studies to measure reliability. These methods include alternative form methods, test retest, split half and coefficient of Cronbach's alpha. The first three methods for measuring reliability are not sufficient, according to Sekaran and Bougie (2003), due to their weak points. These tests can result in low score value because of subject changes. There are several issues with some of these tests. Some tests are very expensive. The reliability coefficients can be generated differently according to the item's division. The other methods are not recommended for research for various reasons. Cronbach's alpha is used to determine reliability by overcoming the issues posed by the other methods. It is used extensively in the social sciences.

This research study has adopted the coefficient of Cronbach's alpha for reliability measurement. The extent to which the construct concept is measured by the proposed items it is intended to determine is referred as content validity (Hair et al., 2010). It involves high loading of items to the specific constructs. A thorough literature review has been considered for the items. The items were loaded correctly to the respective constructs based on factor analysis. Table 2 shows the validity measures of content. The table clearly shows that loading of items has been done significantly to the relevant constructs. This confirms the validity of content. The extent to which convergence is shown by a group of variables for determining a specific concept is called convergent validity (Hair et al., 2010). By using simultaneous testing of factor loadings, AVE and composite reliability, convergent validity can be established.

Table 2: Construct reliability and validity

	Cronbach's alpha	rho_A	Composite reliability	Average variance extracted (AVE)
CP	0.911	0.913	0.944	0.850
CTS	0.902	0.903	0.939	0.837
ESP	0.913	0.914	0.939	0.793
IFCC	0.933	0.934	0.952	0.832

Another method of determining the level of difference between one variable and another is referred as discriminant validity (Hair et al., 2010). The difference among the constructs is measured (Duarte & Raposo, 2010). Moreover, this study measures the discriminant validity. When the level of discriminant validity is high, it suggested that the constructs are different from one another. The square root value of AVE was used to determine discriminant validity, which needs to be greater than the value of association or correlation between the variables (Fornell & Larcker, 1981). The comparison of association among the variables and AVE square root was done. The standard given by many studies was based on making comparisons of item loadings in the form of cross-loadings, as depicted in Table 3.

Table 3: Discriminant validity

	CP	CTS	ESP	IFCC
CP	0.922			
CTS	0.655	0.915		
ESP	0.669	0.871	0.891	
IFCC	0.625	0.868	0.886	0.912

In this section, the structural modelling has been determined after the measurement model analysis. it is important to know that the goodness of fit is not considered to be appropriate for measuring validity of the model (Hair et al., 2014). Through the use of simulated data along with the PLS path models, the researchers recommend that invalid models can be separated from valid models. The recent developments in research studies have influenced the choice of a two-step method for interpreting the results of PLS-SEM path. The structural model has been determined in this study. A total of 5000 bootstrap samples were used in the process of bootstrapping to determine the significance of the path coefficients (Hair et al., 2014). The structural model is shown in Figure 2 earlier in this article.

The significance of the path coefficients was assessed using the standard bootstrapping procedure, which included 5000 bootstrap samples and 217 cases as recommended (Table 4).

Table 4: Direct relations

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
CTS -> CP	0.655	0.658	0.069	9.543	0.000
CTS -> ESP	0.871	0.870	0.023	38.538	0.000
CTS -> IFCC	0.868	0.867	0.023	37.058	0.000
IFCC -> CP	0.230	0.234	0.093	2.462	0.014
IFCC -> ESP	0.526	0.531	0.098	5.345	0.000

The mediating role of intra-firm collaborative capabilities is shown in Table 5.

Table 5: Indirect relations

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
CTS -> IFCC -> CP	0.199	0.203	0.083	2.395	0.017
CTS -> IFCC -> ESP	0.456	0.461	0.089	5.101	0.000

In structural modelling, the coefficient of determination, or R^2 , explains the predictive power of endogenous variables. Being closer to a value of 0 for path coefficients indicates insignificance of coefficients. The R^2 value also lies between 0 and 1; a value closer to 1 indicates greater predictive accuracy and vice versa. The value of 0.75 indicates substantial predictive power, 0.50 indicates moderate predictive power and 0.25 indicates weak predictive power. The R^2 value of the current study is shown in Table 6.

Table: 6

	R^2
CP	0.443
ESP	0.827
IFCC	0.753

Conclusion

RBT is considered a suitable approach for considering how competitive advantage is generated through sustainability-related activities in supply and purchasing management functions. According to RBT, organisations work by developing different capabilities and



strategic resources. Competitive advantage is generated when the organisations are able to develop capabilities and resources that are rare, valuable, non-substitutable and inimitable. This results in the competitive advantage of the firm over its competitors. Two important contributions have been made to the literature through this research. In this study, the influence of commitments to sustainability on the attainment of firm capabilities (inter and intra) in the supply and purchasing function has been considered. Further, the impact of these abilities on performance has been investigated. The research on sustainability needs to identify how improved performance can be achieved through a commitment to sustainability (Barney, 2012). This study focused on the ways in which commitment to sustainability results in the development of collaborative capabilities within and across firms in supply and purchasing functions, which influence their performance. The level of a firm's engagement with environmental and social initiatives is involved in its commitment to sustainability. The development of specific capabilities is influenced by this strategic focus of the firm.

This research offers a unique example of testing the research on sustainability involving social and environmental performance along with the financial aspects of performance. Empirical support is provided for making improvements in different aspects of sustainability. Employing a survey-based methodology, the structural equation modelling technique was used to test the hypothesised relations. The SEM-PLS was used as a statistical tool to answer the research questions and research objectives of the study. The findings have provided support for the theoretical foundation and proposed hypothesis of the study. This research will be helpful for policy-makers and practitioners in understanding the issues related to intra-firm collaborative capabilities, commitment to sustainability and performance. It is one of only a few pioneering studies on this issue.

REFERENCES

- Ageron, B., Lavastre, O., & Spalanzani, A. (2013). Innovative supply chain practices: the state of French companies. *Supply Chain Management: An International Journal*, 18(3), 265-276.
- Bai, C., & Sarkis, J. (2010). Integrating sustainability into supplier selection with grey system and rough set methodologies. *International Journal of Production Economics*, 124(1), 252-264.
- Barney, J. B. (2012). Purchasing, supply chain management and sustained competitive advantage: The relevance of resource-based theory. *Journal of supply chain management*, 48(2), 3-6.
- Basheer, M., Siam, M., Awn, A., & Hassan, S. (2019). Exploring the role of TQM and supply chain practices for firm supply performance in the presence of information technology capabilities and supply chain technology adoption: A case of textile firms in Pakistan. *Uncertain Supply Chain Management*, 7(2), 275-288.
- Blome, C., Schoenherr, T., & Eckstein, D. (2014). The impact of knowledge transfer and complexity on supply chain flexibility: A knowledge-based view. *International Journal of Production Economics*, 147, 307-316.
- Brammer, S., & Walker, H. (2011). Sustainable procurement in the public sector: an international comparative study. *International Journal of Operations & Production Management*, 31(4), 452-476.
- Brislin, R. W. (1986). The wording and translation of research instruments.
- Cepeda, G., & Vera, D. (2007). Dynamic capabilities and operational capabilities: A knowledge management perspective. *Journal of business research*, 60(5), 426-437.
- Corbett, C. J., & Klassen, R. D. (2006). Extending the horizons: environmental excellence as key to improving operations. *Manufacturing & Service Operations Management*, 8(1), 5-22.
- De Burgos Jiménez, J. and Céspedes Lorente, J.J. (2001), "Environmental performance as an operations objective", *International Journal of Operations and Production Management*, 21 (12), 1553-1572.
- Dimitriadis, Z. S. (2006). Customer satisfaction, loyalty and commitment in service organizations: Some evidence from Greece. *Management Research News*, 29(12), 782-800.



- Duarte, P. A. O., & Raposo, M. L. B. (2010). A PLS model to study brand preference: An application to the mobile phone market. In *Handbook of partial least squares* (pp. 449-485). Springer, Berlin, Heidelberg.
- F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, 26(2), 106-121.
- Foerstl, K., Reuter, C., Hartmann, E., & Blome, C. (2010). Managing supplier sustainability risks in a dynamically changing environment—Sustainable supplier management in the chemical industry. *Journal of Purchasing and Supply Management*, 16(2), 118-130.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.
- Gimenez, C., van der Vaart, T., & Pieter van Donk, D. (2012). Supply chain integration and performance: the moderating effect of supply complexity. *International Journal of Operations & Production Management*, 32(5), 583-610.
- Gopalakrishnan, K., Yusuf, Y. Y., Musa, A., Abubakar, T., & Ambursa, H. M. (2012). Sustainable supply chain management: A case study of British Aerospace (BAe) Systems. *International Journal of Production Economics*, 140(1), 193-203.
- Gunasekaran, A., & Spalanzani, A. (2012). Sustainability of manufacturing and services: Investigations for research and applications. *International journal of production economics*, 140(1), 35-47.
- Hafeez, M. H., Basheer, M. F., Rafique, M., & Siddiqui, S. H. (2018). Exploring the Links between TQM Practices, Business Innovativeness and Firm Performance: An Emerging Market Perspective. *Pakistan Journal of Social Sciences (PJSS)*, 38(2).
- Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). *Multivariate data analysis: A global perspective* (Vol. 7).
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *New challenges to international marketing* (pp. 277-319). Emerald Group Publishing Limited.
- Karjalainen, K. and Salmi, A. (2013), “Continental differences in purchasing strategies and tools”, *International Business Review*, Vol. 22, pp. 112-125



- Kauppi, K. (2013). Extending the use of institutional theory in operations and supply chain management research: Review and research suggestions. *International Journal of Operations & Production Management*, 33(10), 1318-1345.
- Klassen, R. D., & Vereecke, A. (2012). Social issues in supply chains: Capabilities link responsibility, risk (opportunity), and performance. *International Journal of Production Economics*, 140(1), 103-115.
- Krause, D.R., Vachon, S. and Klassen, R.D. (2009), “Special topic forum on sustainable supply chain management: Introduction and reflections on the role of purchasing management”, *Journal of Supply Chain Management*, 45 (4), 18-25.
- Leire, C., & Mont, O. (2010). The implementation of socially responsible purchasing. *Corporate Social Responsibility and Environmental Management*, 17(1), 27-39.
- Leire, C., & Mont, O. (2010). The implementation of socially responsible purchasing. *Corporate Social Responsibility and Environmental Management*, 17(1), 27-39.
- Leppelt, T., Foerstl, K., Reuter, C., & Hartmann, E. (2013). Sustainability management beyond organizational boundaries—sustainable supplier relationship management in the chemical industry. *Journal of Cleaner Production*, 56, 94-102.
- Luzzini, D., Caniato, F., Ronchi S. and Spina, G. (2012), “A Transaction Costs Approach to Purchasing Portfolio Management”, *International Journal of Operations and Production Management*, Vol. 32, No. 9, pp. 1015-1042.
- Makower, J., & Pike, C. (2008). *Strategies for the green economy: Opportunities and challenges in the new world of business*. McGraw Hill Professional.
- Namkung, Y., & Jang, S. (2007). Does food quality really matter in restaurants? Its impact on customer satisfaction and behavioral intentions. *Journal of Hospitality & Tourism Research*, 31(3), 387-409.
- Paulraj, A. (2011). Understanding the relationships between internal resources and capabilities, sustainable supply management and organizational sustainability. *Journal of Supply Chain Management*, 47(1), 19-37.
- Paulraj, A., Lado, A. A., & Chen, I. J. (2008). Inter-organizational communication as a relational competency: Antecedents and performance outcomes in collaborative buyer–supplier relationships. *Journal of operations management*, 26(1), 45-64.



- Priem, R. L., & Swink, M. (2012). A demand-side perspective on supply chain management. *Journal of Supply Chain Management*, 48(2), 7-13.
- Ringle, C. M., Wende, S., & Will, A. (2005). SmartPLS 2.0 (M3) Beta.
- Sarkis, J. (2012). A boundaries and flows perspective of green supply chain management. *Supply chain management: an international journal*, 17(2), 202-216.
- Schoenherr, T., & Mabert, V. A. (2011). A comparison of online and offline procurement in B2B markets: results from a large-scale survey. *International Journal of Production Research*, 49(3), 827-846.
- Schrettle, F., Krohns, S., Lunkenheimer, P., Loidl, A., Wulf, E., Yankova, T., & Zheludev, A. (2013). Magnetic-field induced multiferroicity in a quantum critical frustrated spin liquid. *Physical Review B*, 87(12), 121105.
- Sekaran, U., & Bougie, R. (2003). *Research Methods For Business, A Skill Building Approach*, John Willey & Sons. Inc. New York.
- Seuring, S., & Gold, S. (2013). Sustainability management beyond corporate boundaries: from stakeholders to performance. *Journal of Cleaner Production*, 56, 1-6.
- Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of cleaner production*, 16(15), 1699-1710.
- Sharfman, M. P., Shaft, T. M., & Anex Jr, R. P. (2009). The road to cooperative supply-chain environmental management: trust and uncertainty among pro-active firms. *Business Strategy and the Environment*, 18(1), 1-13.
- Singh, P. J., & Power, D. (2009). The nature and effectiveness of collaboration between firms, their customers and suppliers: a supply chain perspective. *Supply Chain Management: An International Journal*, 14(3), 189-200.
- Walker, H., Mayo, J., Brammer, S., Touboulic, A., & Lynch, J. (2012, August). Sustainable procurement: an international policy analysis of 30 OECD countries. In *5th International Public Procurement Conference* (pp. 3556-3582).
- Zhu, Q., & Geng, Y. (2013). Drivers and barriers of extended supply chain practices for energy saving and emission reduction among Chinese manufacturers. *Journal of Cleaner Production*, 40, 6-12.