The Application of Agency Theory in Supply Chain Finance: A Case of Indonesian Manufacturing Firms

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Abstract--- The prime objective of the current study is to explore the relationship between supply chain operational performance and firm supply chain management in the reference of agency theory. To further explain the role of agency theory, in the supply chain management we have examined the direct and indirect impact of supply chain operational performance on firm supply chain management. The SMART-PLS is used to achieve the objective of the current stud. The data is collected from the operation managers, production managers and finance managers of manufacturing firms listed in Indonesian Stock Exchange. The results of the study have shown a great deal of agreement with our proposed hypothesis. The corporate governance index comprising of board characteristics appears as a moderator in the relationship between supply chain operational performance and firm supply chain management. The results of the current study are also providing support to agency theory and resource base theory. The study which is among pioneering studies on the issue will be helpful for policy makers and managers in understanding the role of agency theory in supply chain management.

Keywords: Agency Theory, Supply chain management, Indonesia

1. Introduction

In various disciplines, the agency theory has been used widely during the last few decades, but not any considerable work has been observed on how this theory can be used to describe relations among different organisations. Whereas, agency theory is applicable to the situations in which one party represents authority to the other one, in the form of decision making and control related to specific tasks [1], [2]. Basheer [2] mentioned that major

contributions of scholars in this area includes: Mitnick [3], Eisenhardt [4], and Jensen and Meckling [5], who have greatly enhanced the understanding of agency theory in terms of economic relations. While some others have incorporated this theory in other disciplines like management [2],[3],[4], information systems [6], and economics and finance . Scholars of SCM such as Halldórsson and Skjott-Larsen [7], Grant et al [8], and Michalski, Montes & Narasimhan [9] have recently gained interest in employing agency theory in order to conceive information about managing risks, developing relationships and aligning of incentives within the supply chain. These studies based on the implications of agency theory in the field of logistics, just partially addressed the concept of relationships in the supply chain. A structured and well-designed literature review is constructed from the databases available online and from the keyword classifications like agency relationships, agency theory, system of incentives, relationships among principal and agents, supply chain and risk management. Initially the search brought out 86 studies which were published from 1973 to 2011, and it started from the contribution of Mitnick [10] in year 1973. The number of articles declined to 19 after further classification of the relevant information required for the study.

In order to achieve a successful and smooth functioning of the FSCM practice, a comparative advantage between the business and the strategies of the supply chain of the firms is also carefully observed. The aim of this paper is to redefine Financial Supply Chain Management (FSCM) on the basis of empirical and theoretical research and to fill the research gaps in the existing literature, thus providing valuable ground for the future studies. In the first step, the elements that constitute FSCM are described in detail. Furthermore, on the basis of

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collaboration with the suppliers, companies' financial entities and buyers, more attention is given on the modern and recent aspects of financial SCM. In the next step, review of the theoretical as well as empirical literature is studied in order to highlight the significance of FSCM and reach out for conclusions in the modern literature and management theory. The findings will be concluded by analyzing the empirical studies available in the literature which could justify the empirical results on the theoretical grounds. In the final step, study proposed suggestions for all the parties involved in the supply chain in order to capture benefits from the FSCM and provided useful literature for further studies.

The next section contains explanations provided by the authors regarding associated models and branches of the agency theory. Afterwards, a discussion about the methodology employed for this study is included. In the section of results and analysis, explanation regarding SCM and agency theory as well as certain themes of methodology are also discussed. In the discussion section, the agenda of exploring the behavior of supply chain through agency theory is further reviewed, followed by a brief description of the limitations of this theory. Final section of this paper includes conclusion, and implications of this theory in management, and further research opportunities available in the future.

Generally, a supply chain is conceptualized as a network of certain chain of events. Borgatti and Li [11], defined Supply Chain Management (SCM) as: "SCM has not been just dyadic, as say, most of resource dependency has been, but has – through the notion of chains – implicitly considered paths through a network of firms."

Earlier to the notion of SCM, many scholars from marketing industry considered approaches of how dealers, distributors and dealers from the downstream are arranged with reference to their management in the supply chain [12]. In 1986, Thorelli [13] in his work introduced a term of competing networks in order to define the notion of supply chain in a market. Lambert et al., [14] also discussed the network of supply chain with context to its management, while Ford (1990) argued that there are no chances for any pair of firms to function independently. In an attempt to consider a triad i.e. smallest of the unit in a network, the researchers have started to discover beyond the dyad relationship [12], while extended network from the triad was witnessed by Choi and Dooley [15]. This research network of archetypes and buyer-supplier-supplier triad is a phenomenon that has already been examined [12], while relationships of associated behavior of buyer-buyer-supplier and

buyer-supplier-supplier relationships , and structural fixation of supplier in a broader network of supplier have also been constructed and observed by the researchers.

2. Literature Review

2.1. Supply Chain Management

Supply chain is an organizations network that associated corporate activities and coordination within and between organization to create value for customer [12]. An effective SCM enables firms to make informed decisions in supply chain function, which start from procurement of materials for manufacture to become products and then distribute the products to final customer. SCM grows within and across organizations by the information flow to truly support the real time communication (IT applications such as internet, intranet, and extranet based tools are becoming essential for firms to optimize the materials flow and information flow in the entire supply chain. The extended supply chain network moves beyond the individual firm to inter-organization functions, including suppliers, customers, trading partners, service providers, retailers, manufacturers, and transporters [42].

It claimed that SCOR model is employed by thousands of companies worldwide which including manufacturers, distributors, retailers, and service provider. However, there has been limited academic study that applied SCOR model in measuring the performance of the supply chain author further suggested that the elements in SCOR model, which consists of reliability, responsiveness, agility, cost, and asset management efficiency are suitable to use to measure supply chain performance that involves the complete supply chain members. Millet, Schmitt, and Botta-Genoulaz [30] stated that SCOR model could provide multi view in business operational environment. However, the present study is focused on supply chain operational performance instead of financial performance, thus, asset management efficiency is excluded. The empirical studies have shown that the elements in SCOR model were effective in measuring the supply chain performance [12]. Hence, the effect of supply chain capabilities and supply chain technology adoption to supply chain operation performance is expected to be explained by reliability, responsiveness, agility, and cost.

As of today, there is still lacked of theoretical support for understanding and explaining the reality or the boundaries of SCM [16], [30],[12].

The concept of SCM is originally derived from the logistical concept since 1950 and matured in 1970.

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The logistical concept is slowly evolving into the SCM concept and initiated the SCM concept since 1980, and the first publication took place in 1982. The concept of SCM started to emerge in the manufacturing industry since 1985 . In the early 1990s, scholars and industry practitioners start to place attention on agile manufacturing. This is followed by the service industry initiated the SCM in their business operations in 1995 . The development and continuing evolution of the SCM role are obvious in the last decade, which gained an incredible attention from both 36 academics and practitioner's community since 2000 (Chan & Qi, 2003). This has led the SCM to enter the education industry since 2007 [21]. In the twenty first century, SCM has been considered as the most effective operations tools to improved organizational competitiveness. Both agile manufacturing and SCM seem to vary in philosophical emphasis, but the goals of each complements are the same which is to improved competitiveness. Agile manufacturing is emphasized more on partnerships to achieve speed and flexibility in producing goods. While, SCM is emphasis on all aspects which includes quality, speed, flexibility, cost, and asset management. In SCM, the integration of suppliers and customers are crucial to achieve great values [24]. In short, SCM becomes a popular management tool in helping organizations to improve their performance through the ultimate goal of SCM which waste elimination and increased efficiency.

2.2. Agency Theory in Supply Chain Management

The supply chain management was introduced to the scholars and attributed to the experts, ever since then it has been helping to integrate operations, procurement, and distribution into an arrangement of supply chain management [16], With the maturity of this discipline, the disclosure of certain theories about supply chain management has been emerged. Such conceptual approaches were attempted to construct frameworks and to discover processes in SCM by [17],[12], [18] Similarly, [18] Wuttke,, Blome, Heese , and Protopappa-Sieke, [16], Basheer et al., [12], and Lekkakos and Serrano [17], have developed a multiple inductive, case study approach for developing SCM theories. Lekkakos and Serrano [17], argued that development of these underlying and unrefined frameworks and theories somehow causes an evolution of a certain discipline. Resultantly, rather than relying on other disciplines, it calls for the development of theories under the discipline of SCM [18],[19]. After considering the prevailing state of developing theories, it is observed that there exists some error in conceptualization which calls for the need of developing a managing theory of supply chain before establishing any other theory on supply chain management. A theory on supply chain is needed before developing meaningful theories for supply chain management.

The agency theory was initialized back in 1960s and 1970s, with the context of management [18]. However, the origin of this theory relates to the studies on the analysis of economic risk, in which it addresses the problems of risk-sharing and incongruency of individual goals [2],[3], [20]. In its contemporary form, agency theory is prominently derived from the studies of Jensen [5] Mitnick [9], in the disciplines of economics and political science, that increases its scope from contractual obligations to other areas. It was eventually employed by the disciplines of management, sociology, and in studies involving firm's [2], [3],[20]

According to Jensen and Meckling [5], the principal assigns work to the agents during agency relationships. Mitnick [9], exclaimed that under the delegation of principal, the agent performs its duties for the welfare of the principal and somehow acts as a representative of the principal. Among the agency relationship, the principal generally seeks to minimize the cost of agency, like monitoring, rewarding, policing the behavior of the agent and specifying, while on the other hand, agent aims to maximize benefits for the principal and targets control of the principal [14]. However, problems related to the efficient functioning of the agency involves preference mismatch, acquisition of information, adverse selection of capabilities, and efforts which are commonly associated with the activities of the agent and are equally important in this relationship.

Agency theory is largely dependent upon two significant areas of inquiry, i.e. positive agency theory and principal agent theory. According to classical theory of agency, both the principal and agents tend to maximize benefits and positions using interpretation of their individual contract. The development of this principal-agent relationship was derived by the economic scholars through bounded rationality, personal interest and risk aversion of the agent as important determinants for modelling of this relationship. In terms of descriptive agency theory, the theory of positivist agency contributes majorly in comprehending the behaviors of real world [18]. However, both the approaches significantly contribute in helping managers and researchers to capture attributes and complexity of this theory. According to Basheer et al. [2] lack of implication of its non-empirical and mathematical orientation in real

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world is the major cause of its stagnating position both in academic research and in organizations.

In an attempt to overcome the shortcomings of principal-agent relationship and to deal with the complexity, the positivist agency theory (PAT) was majorly evolved [20]. Shapiro [21], described that PAT attempts to combine expert agency, sociology, political science and the agency law into one unified framework that would help to explain development of relationship among government and business, and suggest measures to manage these relationships more effectively. It also suggests framework for handling issues regarding separation of principals' control from the agent, thus highlighting the non-rational activities of the agents, for instance a situation when an agent hides a sensitive information from the principal due to trust deficit [5],[9],[20],[21].

Just as a node, an agent can look upwards to its suppliers and downwards on its customers in a supply chain. Though, in both cases the visibility is expected to be quite limited. Choi and Krause [22], claimed that the visibility beyond this realm emerges usually for the agent. To this level, as a network the SC functions with a self-organisation and known to be a complex adaptive system [2],[9]. Basheer et al., [12] advocated that the need for managing supply chain in the form of a system is required and often mentioned by the scholars and managers. Furthermore, as a system, SC in itself is difficult to control and predict, also it is complex and dynamic. Due to these specific reasons, it is impossible to treat SC as merely a system, rather it entitles to be complex adaptive system that allow managers to better understand the behaviors and would be able make interventions effectively.

In terms of functioning as a benefit or cost center, every point possesses a grip on the accountability and resources within the supply chain. As a result, agent tend to maximise its benefits by managing portions of the upstream and downstream and tries to control operations in order to enhance performance of its expected benefits. For example, the aim of the distributor is to focus on the selection of best manufacturers as well as expanding its customers, thus targeting both upstream and downstream networks evenly. On the other hand, manufacturer will try to apply a system of JIT or VMI along with its suppliers and develop its distribution centers at suitable locations. In that case, the agent has to accept beyond this range, and together these agents form a self-organizing supply chain.

There are two main challenges that are faced by agency namely, lack of effort and misinterpretation of

ability i.e. poor selection which are totally accredited towards the agent. Basheer et al. [2] suggested that the models of hidden action and information are designed in order to help construct an appropriate kind of contract. According to Pepper, and Gore [23], for the successful completion of the tasks, the models assume that principals are fully aware about the capabilities and nature of the work desirable for the agents. The models of hidden information mainly focus the areas like selection of agents and identification of the agents' prospects for falsification of abilities and skills which is usually done during some activity or at hiring. One of the major benefits of these models, is their assistance for developing a contract that motivates and allows the agent to act accordingly with careful observations [17], [2]. For instance, informing owner about any kind of faults regarding the condition of asset is the requirement for the report by the agent. Moreover, through different processes of management, model of hidden information tends to separate capabilities of agents using the aspects of signaling, screening through personal interviews, giving opportunities through self-selection process i.e. in the form of training workshops for the new hiring's.

The principal is thought to be exposed with higher risks of taking advantaged by the agent, for situations where it is hard to observe the actions of the agent majorly because of the complexity of the task. Pepper, and Gore [23],[41], explained that, in that case agent has the opportunity to either misinterpret or avoid control of its capabilities. Li et al. [24], proposed that models of hidden action help to allocate the contract design and further helps to remove the problem of moral hazards by stimulating the agent to perform appropriately. Agents are generally found to be risk-averse while principals are thought to be risk neutral which might have been mistaken during calculation of the risk. The justified reasoning behind this approach is the fact that principals acquire more capability of expanding investments while agents are dependent upon the principal and have less chances to involve in any kind of morally hazardous actions [2],[24]. This rationale suggests that contractual power and capabilities are uniformly existed among the shared relationships having limited choices available to the agents. According to Li et al. [24],, evidence from the study explained that agents are mostly ready to take risks because of the changes in the options and power available to them, and as well as due to the uncertain changes in the economies and industrial sectors [4],[2],[24]. Pepper, and Gore [23]mentioned that these arguments explain that the relationship among the principal and agent is highly conditioned upon the

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factors other than limited ability for risk assessment and contractual obligations. When applied to supply chain operations, its importance is increasing rapidly, it is because in SC trust, commitment and knowledge often accounted to be more significant than contractual obligations [39].

The need for theories regarding practical application in organizations was felt by many researchers namely. They have also recognized the importance of these organizational theory in describing, predicting and explaining complex behaviors within an organization. Wilhelm, Blome, Bhakoo, and Paulraj [25] mentioned that these researchers were also involved in highlighting the significance regarding TCE in literature.

Wilhelm, Blome, Bhakoo,, and Paulraj, [25] argued that during economic exchange the notion of transaction-cost economics suggests that hidden cost also takes into account the cost of all services and products. For instance, in constructing a buyer and supplier relationship, the arrangement of contracts made up by the lawyers, time taken in establishing a relationship among the partners and travelling is also included in the hidden costs. Other than that, the relationships along the supply chain are usually intangible and fails to provide any appropriate reasoning for the behavioral, political, social and legal dynamics. Transaction cost economics most importantly comprehends relationships into costs making it tangible for the partners [38].

Therefore, an underlying issue with the transaction cost economics is its assumptions on how transitions are developed and grasped as a result of this relationship. The authors Short, McKenny, Ketchen, Snow, and Hult [26] claimed that TCE has missed two important considerations i.e. involvement of contractual agreements and employing ways which results in immoderate transaction costs across the supply chain; and the problem of possessing control particularly by the minor players with structural manipulation. As it has been observed that problems like quality, risk, flexibility and time are often controlled by the agents [40].

The bottlenecks of transaction-cost economics in exhibiting a relationship along the supply chain can be neutralized by applying the agency theory, which helps to provide a fundamental mechanism. It functions by describing how collectively and independently players respond towards the dilemmas of transaction cost within a SC, considering both rational and non-rational behaviors [26]. Additionally, Craighead, Ketchen, and Cheng, [27] proposed that agency theory also assists the managers

to understand the behavior of SC by focusing on certain issues namely:

- Establishment of relationship including inter and intra organizational behaviors;
- Managing complex customer-supplier relationships such as third-party providers and vendors; and
- Calculating the benefits and costs of supply chain arrangement

Despite of the known importance and power of agency theory available in the literature, limited number of studies incorporated it as a basic theoretical foundation. According to Short, McKenny, Ketchen, Snow, and Hult [26], arguments are present external to the research from SCM, which have proved the combination of agency theory and TCE to be more promising than any other. Contrarily, Craighead, Ketchen, and Cheng, [27] showed concerns to treat these theories as complementary theories. This debate is not relevant to this paper. Moreover, discussion of the importance of the agency theory and how it can be presented across the SCM is discussed in the section of analysis and discussion. Methodology opted for this paper is explained in the next section.

H1: supply chain operational performance(SCOR) has significant impact on the supply chain management (SCM).

H2: Corporate governance index (CGI) has significant impact on firm supply chain management (SCM).

H5: Corporate governance index (CGI) Moderates the relationship between supply chain operational performance (SCOR) and supply chain management (SCM)

Figure 1 depicts the theoretical framework of this study. The resource-based theory and agency theory are used to conceptualize the framework shown in figure 1.
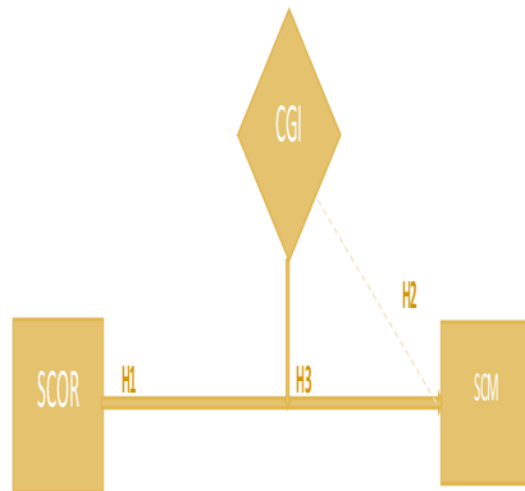
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Figure 1: Conceptual framework

3. Methodology

The current study is amid to explore the impact of external governance mechanism such as board characteristics in the relationship between operation performance and supply chain management. The prime objective is highlighting the role of agency theory in the relationship between operational performance and supply chain performance. To achieve the objective of the current study we have employed a quantitative methodology with the aid of adapted questionnaire. For the analysis purpose the data is collected from the operation, production, and finance managers of firms operating in manufacturing sector of Indonesia. The questionnaire is adapted from the prior findings. The total questions sent to the respondents are 650. However, the total questions received as true respondents are 435. The response rate is 67 percent.

4. Research Analysis and Discussion

The Nitzl, and Chin [28] the partial least square is suitable or applicable where the theoretical model is novel or not well explained by theories or the model is complex with number of latent variables and structural paths. Because of the above-mentioned reasons, the current study is employing the smart PLS as thi study is among few pioneering studies on this issue with an unexplained structural path. In addition to that the current study has employed two steps PLS mythology This is in line with the studies of of Hameed et al. [26], there are two main steps in SEM analysis. The first step combines Confirmatory Factor Analysis (CFA) with the measurement model where the evaluation of the measurement instruments will be assessed through confirmatory factor analysis (CFA); and the second step is structural equation model which specifies the structural relationships

among latent variables in the measurement model using a path diagram for the testing of the hypotheses. Based on the items of each construct, a second order measurement model was developed to test for the confirmatory factor analysis [37]. The fitness of the measurement model is assessed through unidimensionality, reliability and constructs validity. Validity is the ability of the instrument to measure what is supposed to be measured for a construct [27]. Validity determines the accuracy of measurement instruments of the variables. Specifically, construct validity makes certain the degree of measurement instruments represents the theoretical variables that they are designed to measure. Construct validity is divided into two types, convergent validity and discriminant validity [27]. (CFA); and the second step is structural equation model which specifies the structural relationships among latent variables in the measurement model using a path diagram for the testing of the hypotheses.

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Table 1. Convergent and Discriminant Validity

	Indicators	Loadings	CR	AVE
SCOR	SCOR1	.843	0.995	0.832
	SCOR2	.855		
	SCOR4	.802		
	SCOR5	.925		
	SCOR7	.955		
	SCOR8	.922		
	SCOR9	.917		
CGI	CGI1	.924	0.902	0.737
	CG23	.912		
	CGI4	.771		

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SCM	SCM1	.822	0.960	0.871
	SCM2	.955		
	SCM3	.722		
	SCM4	.825		
	SCM5	.941		
	SCM6	.898		
	SCM7	.891		
	SCM8	.981		
	SCM9	.896		
	SCM10	.881		
	SCM13	.882		
	SCM15	.908		
	SCM16	.890		
	SCM17	.901		
	SCM18	.802		

Discriminant validity refers to the extent to which different measures of different constructs are distinct from each other's. In the present study, discriminant validity was established by comparing the items loadings with cross-loadings as presented in Table 1 . To actualize this, experts on path modelling [2], [25], [26] have suggested that all the items loadings should exceed the cross-loadings.

Table 2. Discriminant Validity

	1	2	3
SCOR	0.948		
CGI	0.731	0.798	
SCM	0.518	0.550	0.801

The next step to the confirmation of reliability and validity is the development and estimation of structural model therefore after confirmation of reliability and validity, the SEM was used to analyze the hypothesis. The direct and indirect effect was examined. Indirect effect was examined to check the mediation. In this process, the p-value was considered. While analyzing the data, 0.05 minimum level of p-value was considered to test the hypothesis. After ascertaining the measurement model, the present study assessed the structural model. In doing so, the present study employed standard bootstrapping procedure with 500 bootstraps samples and 249 cases to determine the significance of the path coefficients. This was carried out by following the guidelines provided by the eminent scholars in their recent studies). According to the direct results, it is shown that all hypothesis has a p-value less than 0.05. Thus, the hypothesis 1 related to supply chain financial risk and supply chain management is significant, and results of the second hypothesis sis

also in consistent with the proposed hypothesis as the supply chain operational performance is in significant positive relationship with supply chain performance. The direct results of the current study are shown in table 3.

Table 3. Direct Effect

	(β)	SD	T-value	P-Values
H1	0.411	0.235	4.221	0.000
H2	0.357	0.152	3.618	0.000

Along with the direct relationship between supply chain operational performance and supply chain management, the current study is also interested in investigating the moderating role of supply chain operational performance in the relationship between supply chain financial risk and supply chain management. The results of the moderating effect of corporate cash holdings is shown in the table 4 . These results of moderation show that for both mediation hypothesis, the t-value is above 1.96 and p-value is below 0.05 which accept H3.

Table 4. In-Direct Effect through Mediation

	(β)	SD	T-value	P-Values
H3	0.322	0.121	4.311	0.000

PLS-SEM structural model assessment recommends another important criterion; that is the R-Squared value assessment. The R-square is also called coefficient of determination [29,35.36]. According to various scholars the r-squared value represents the proportion of variation in the dependent variable(s) that could be explained by one or more predictor variable The R-squared value obtained for the present study is reported in Table 5

Table 5. Expected Variance

	R^2
SCM	76.2%

As all the endogenous latent variables in this study are reflective hence, a blindfolding procedure was applied specifically to the endogenous latent variables.

5. Conclusion

Agency theory is largely dependent upon two significant areas of inquiry, i.e. positive agency

theory and principal agent theory. According to classical theory of agency, both the principal and agents tend to maximize benefits and positions using interpretation of their individual contract. The development of this principal-agent relationship was derived by the economic scholars through bounded rationality, personal interest and risk aversion of the agent as important determinants for modelling of this relationship. In terms of descriptive agency theory, the theory of positivist agency contributes majorly in comprehending the behaviors of real world . The current study is amid to explore the impact of external governance mechanism such as board characteristics in the relationship between operation performance and supply chain management. The prime objective is highlighting the role of agency theory in the relationship between operational performance and supply chain performance. To achieve the objective of the current study we have employed a quantitative methodology with the aid of adapted questionnaire. The SMART-PLS is used to achieve the objective of the current stud. The data is collected from the operation managers, production managers and finance managers of manufacturing firms listed in Indonesian Stock Exchange. The results of the study have shown a great deal of agreement with our proposed hypothesis. The corporate governance index comprising of board characteristics appears as a moderator in the relationship between supply chain operational performance and firm supply chain management[34,35] The results of the current study are also providing support to agency theory and resource base theory. Moreover, discussion of the importance of the agency theory and how it can be presented across the SCM is discussed in the section of analysis and discussion. Methodology opted for this paper is explained in the next section.

References

[1] Basheer, M. F. (2014). Impact of Corporate Governance on Corporate Cash Holdings: An empirical study of firms in manufacturing industry of Pakistan. International Journal of Innovation and Applied Studies, 7(4), 1371.

[2] Basheer, M. F., Waemustafa, W. and A. Ahmad, " The Paradox of Managerial Ownership and Financial Decisions of the Textile Sector: An Asian Market Perspective."

The Journal of Social Sciences Research Special 4 (23) (2018): 184-190.

[3] Hye, Q. M. A., Lau, W. Y., & Tourres, M. A. (2014). Does economic liberalization promote economic growth in Pakistan? An empirical analysis. Quality & Quantity, 48(4), 2097-2119.

[4] Eisenhardt, K. M. (1989). Building theories from case study research. Academy of management review, 14(4), 532-550.

[5] Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of financial economics, 3(4), 305-360.

[6] Mahaney, R. C., & Lederer, A. L. (2003). Information systems project management: an agency theory interpretation. Journal of Systems and Software, 68(1), 1-9.

[7] Halldórsson, Á., & Skjøtt-Larsen, T. (2006). Dynamics of relationship governance in TPL arrangements–a dyadic perspective. International Journal of Physical Distribution & Logistics Management, 36(7), 490-506.

[8] Grant, D. B., Kovács, G., & Spens, K. (2018). Questionable research practices in academia: antecedents and consequences. European Business Review, 30(2), 101-127.

[9] Michalski, M., Montes, J. L., & Narasimhan, R. (2018). Relational asymmetry, trust, and innovation in supply chain management: a non-linear approach. The International Journal of Logistics Management.

[10] Hye, Q. M. A., Lau, W. Y., & Tourres, M. A. (2014). Does economic liberalization promote economic growth in Pakistan? An empirical analysis. Quality & Quantity, 48(4), 2097-2119.

[11] Borgatti, S. P., & Li, X. (2009). On social network analysis in a supply chain context. Journal of Supply Chain Management, 45(2), 5-22.

[12] 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.

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[13] Jacob, D., & Mazuruse, P. (2018). Estimating Default Risk of Bank Loans in Zimbabwe Using the Mover-Stayer Model. Asian Journal of Economic Modelling, 6(3), 220-234.

[14] Lambert, D. M., Stock, J. R., & Ellram, L. M. (1998). Fundamentals of logistics management. McGraw-Hill/Irwin.

[15] Ibrahim, H. B. H., Johnson, S., Gilligan, P., & Adu-Gyamfi, J. (2018). Critical Reflection on My PhD Research Experience. *International Journal of Asian Social Science*, *8*(10), 856-867.

[16] Wuttke, D. A., Blome, C., Heese, H. S., & Protopappa-Sieke, M. (2016). Supply chain finance: Optimal introduction and adoption decisions. International Journal of Production Economics, 178, 72-81.

[17] Lekkakos, S. D., & Serrano, A. (2016). Supply chain finance for small and medium sized enterprises: the case of reverse factoring. International Journal of Physical Distribution & Logistics Management, 46(4), 367-392.

[18] Carnovale, S., Rogers, D. S., & Yeniyurt, S. (2018). Broadening the perspective of supply chain finance: The performance impacts of network power and cohesion. Journal of Purchasing and Supply Management.

[19] Caniato, F., Gelsomino, L. M., Perego, A., & Ronchi, S. (2016). Does finance solve the supply chain financing problem?. Supply chain management: an international journal, 21(5), 534-549.

[20] Basheer, M. F., Ahmad, A. A., & Hassan, S. G. (2018). How managerial view the dividend policy: A case of UAE. Opción, 34(16), 630-645.

[21] Inusah, N. (2018). Toda-yamamoto granger no-causality analysis of stock market growth and economic growth in ghana. *Journal of Accounting, Business and Finance Research*, *3*(1), 36-46.

[22] Choi, T. Y., & Krause, D. R. (2006). The supply base and its complexity: Implications for transaction costs, risks, responsiveness, and innovation. Journal of Operations Management, 24(5), 637-652.

[23] Pepper, A., & Gore, J. (2015). Behavioral agency theory: New foundations for theorizing about executive compensation. Journal of management, 41(4), 1045-1068.

[24] Haseeb, M., Iqbal-Hussain, H., Ślusarczyk, B., Jermsittiparsert, K. (2019). Industry 4.0: A solution towards technology challenges of sustainable business performance. Social Sciences, 8(5), 154; doi: https://doi.org/10.3390/socsci8050154

[25] Ishak, K. (2016). A Factor Analysis Approach Towards a Study of the Factors Affecting Students' Choice of Higher Education Institution: A Case Study of a Private Institution (Twintech International University College of Technology). *Journal of Social Economics Research*, *3*(2), 21-30.

[26] Jermsittiparsert, K., M. Siam, M. Issa, U. Ahmed, & M. Pahi. 2019. "Do Consumers Expect Companies to Be Socially Responsible? The Impact of Corporate Social Responsibility on Buying Behavior." Uncertain Supply Chain Management 7 (4) (In press), doi: 10.5267/j.uscm.2019.1.005.

[27] Ahmed, U., Isa, N. M., Majid, A. H. A., Zin, M. L. M., & Amin, B. M. (2017). Towards understanding work engagement: can HR really buffer HR? Test of a moderated model. International Journal of Economic Research, 14(20), 1-18.

[28] Wilhelm, M. M., Blome, C., Bhakoo, V., & Paulraj, A. (2016). Sustainability in multi-tier supply chains: Understanding the double agency role of the first-tier supplier. Journal of Operations Management, 41, 42-60.

[29] Short, J. C., McKenny, A. F., Ketchen, D. J., Snow, C. C., & Hult, G. T. M. (2016). An empirical examination of firm, industry, and temporal effects on corporate social performance. Business & Society, 55(8), 1122-1156.

[30] Craighead, C. W., Ketchen Jr, D. J., & Cheng, L. (2016). "Goldilocks" Theorizing in Supply Chain Research: Balancing Scientific and Practical Utility via Middle-Range Theory. Transportation Journal, 55(3), 241-257.

[31] Islam, S., Nahar, T. N., Begum, J., Khatun, M., & Hossain, M. I. (2018). Marketing and Financial Analysis of Milk Production-A Value Chain Perspective. Asian Development Policy Review, 6(1), 32-40.

[32] Albasu, J., & Nyameh, J. (2017). Relevance of stakeholders theory, organizational identity theory and social exchange theory to corporate

social responsibility and employees performance in the commercial banks in Nigeria. International Journal of Business, Economics and Management, 4(5), 95-105.

[33] Aldulaimi, S. H. (2018). The Influence of National Culture on Commitment that Produce Behavioral Support for Change Initiatives. International Journal of Applied Economics, Finance and Accounting, 3(2), 64-73.

[34] Aldulaimi, S. H., & Abdeldayem, M. M. (2018). The Economic Value of Time in Arab Culture: New Evidence using Zimbardo Time Perspective Inventory (ZTPI). American Journal of Social Sciences and Humanities, 3(1), 63-72.

[35] Ali, H. E. (2017). Phase Transfer Synthesis of Novel Based Surfactants: Role of Biocorrosion Inhibition. Global Journal of Social Sciences Studies, 3(1), 43-55.

[36] Alsharif, D., & Shukri, N. (2018). Exploring Pedagogical Challenges of ESP Teachers at a Saudi Arabian University. International Journal of Asian Social Science, 8(10), 841-855.

[37] Nitzl, C., & Chin, W. W. (2017). The case of partial least squares (PLS) path modeling in managerial accounting research. Journal of Management Control, 28(2), 137-156.

[38] Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). A primer on partial least squares structural equation modeling (PLS-SEM). Sage Publications.

[39] Ali, A., & Haseeb, M. (2019). Radio frequency identification (RFID) technology as a strategic tool towards higher performance of supply chain operations in textile and apparel industry of Malaysia. Uncertain Supply Chain Management, 7(2), 215-226.

[40] Millet, P. A., Schmitt, P., & Botta-Genoulaz, V. (2009). The SCOR model for the alignment of business processes and information systems. Enterprise Information Systems, 3(4), 393-407.

[41] Hameed, W. U., Basheer, M. F., Iqbal, J., Anwar, A., & Ahmad, H. K. (2018). Determinants of Firm's open innovation performance and the role of R & D department: an empirical evidence from Malaysian SME's. Journal of Global Entrepreneurship Research, 8(1), 29.

[42] Jermsittiparsert, K. (2016). Culture of 'Elephant front legs-hind legs': A debate on the actuality of sexual politics in Thai society. The Social Sciences, 11(1), 20-28.