

The Impact of Corporate Governance in Forming a Strong Supply Chain: Evidence from Indonesia

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Abstract- The main purpose of the recent research is to investigate the importance of corporate governance in evaluating supply chain capabilities. This investigation aims to assess the direct effect of SC information systems potential, SC relational potential and CG on the SC command and control efficiency of manufacturing companies operational in Tin sector of Indonesia. Additionally, we have investigated the balancing effect of CG in the collaboration between SC capability and operating efficiency of the supply chain. The scholars have utilized the SEM-PLS technique to accomplish the distinctive targets of recent research. The observations of the recent research supported the suggested findings. The research demonstrates that the organization's strategy to customer expectations is also associated with the manufacturing-oriented approach. The implications of the report may help decision-makers identify the problems associated with the administration of the corporate governance supply chain. It is one of the few pioneering researches on these problems as per researcher's knowledge.

Keywords; Supply Chain operating performance (SCOPR), corporate governance (CG), Supply Chain (SC), Supply Chain Management (SCM)

1. Introduction

The concept of SCM has emerged among the key approaches required for SC's operating performance. This also emerged as a global initiative that incorporates all stakeholders, i.e. investors, customers and suppliers, through collective strategy formulation, coordination and data transmission. Nevertheless, SCM's efficacy is completely dependent on its capacity to decrease costs, introduce technology, enhance output versatility, attract buyers and to improve relations [1-4]. Many authors including, [5], [6] and [7], characterized Supply Chain Management as an administrative domain that binds each part of a firm and contributes to its strategic activities at every phase. Supply Chain

Management corresponds to an integrated system of operations that initiates with purchasing, manufacturing and stops at the consumers [1]. They suggested that an effective supply chain enables corporations to make informed decisions at every step of this system. Several leading scholars such as [1], and [8], concluded that the coordinated processing of data facilitates resource movements and, in effect, reduces expenses that typically occur due to inadequate processing of data or interruption in documentation. Significant interference of IT plays a collective function in the improvement of SC activities by controlling the transmission of data. Whilst the expanded SC structure expands throughout specific trading businesses to inter-organization activities, comprising consumers, distributors, service providers, business associates, vendors, transporters, and sellers.

Organizational competence of supply chains can also be characterized as the consequence of the productive and consistent exchange of information and resources to and from various entities, as service providers and manufactured commodities [9]. Supply Chain Management greatly affects the global market as well. While Supply Chain is a philosophy, it should be recognized as a concept dependent on numerous sub-factors and manifestations, such as versatility, logistics, processing, lean, etc. SCM has emerged in recent years as an essential factor for the achievement of possible competitive edge. The input of SC is now being observed in both philosophy and practice which has drawn the attention of many professionals and researchers to interpret it even farther in detail.

Indonesian tin sector is recognized as a significant contributor to the Gross Domestic Product (GDP). Producers of tin in Indonesia, export their goods to Malaysia, China, Singapore, the UK and many developed countries. Among several other fields, the Supply Chain of the tin industry has gained greater importance. Processing of the tin production sector and

Supply Chain are inadvertently complex. [10], identified SC operating results as a result of reliable, tactical and comprehensive incorporation of standardized corporate practices across and inside the enterprise, including input transformation behaviors and roles into outcomes. In the whole study background, four components including supply chain flexibility, SC performance, expenses and versatility in the supply chain are integrated to evaluate SCOPR. Resource management has been exempted from the component of supply chain operating quality because there is no emphasis on financial performance. According to the definition of the SCOPR design, asset management is seen more like a return on capital. The research specifies the quality of SC as the efficiency of the supply chains that provide the necessary prerequisites and goods in controlling and executing complete demand satisfaction. Moreover, the flexibility of supply chains refers to the efficiency of the supply chain in supplying the supply chain stakeholders with data, goods and services [11]. In addition, SC agility is the potential of SC to instantly adopt procedures and policies in the growing market dynamics. Moreover, supply chain expenses are the expenditures that are attributed to supply chain procedures.

2. Literature Review

2.1. Supply Chain operational Performance

SC efficiency is usually evaluated by the flexibility of the supply chain, performance, resource management, expense and agility [12]. As this research concentrates on the operational efficiency of the supply chain, the dimensions of adaptability, flexibility, cost and reliability are used to evaluate its effectiveness. Moreover. Management of resources emphasizes primarily on return on investment when developing the SCOR design, operational efficiency is the domain concerned when evaluating non-financial performance. Additionally, management of resources is also exempted from the operating efficiency indicators of the SC to be determined. Generally, the aim of SC was to provide consumers with low costs and a reasonable amount of time for better quality products and services conveniently. Companies will face poor performance if they have less information of the variables guaranteeing progress in the SC, all of them are of good quality e.g. Supply Chain reliability; less costs e.g. accumulative SC expenses; prompt responsiveness i.e. Agile Supply Chain; and flexibility e.g. flexibility factor of Supply Chain [13]. Therefore, the purpose of Supply Chain Management can also be modified to enhance the functional and financial efficiency of all stakeholders and of Supply Chain throughout the world [14-17]. According to [14], Performance evaluation is extremely necessary for supply chains and companies to improve their output.

Evaluation utilizing performance measurement systems (PMSs) is the measurement techniques used at the Supply Chain performance management level [18]. In general, the phrase performance evaluation can be characterized as "a method of analyzing the efficiency and effectiveness of activities". [18], identified a performance measurement system as a collection of observations designed to calculate the effectiveness and efficiency of the activities. The method also offers a mechanism for identifying possible supply chain deficiencies and challenges. This also enables customers to understand the performance profile of the supply chain, with its vulnerabilities, strengths and actual output level or position, in order to enable firms to take proactive decisions about potential threats and opportunities. Companies should take proactive decisions and adequate measures to efficiently improve their efficiency in the optimal time [13].

All the performance measurements have been meant to define the performance criteria. Effectiveness assessment is intended to examine the external performance criteria, whereas performance evaluation is used to explain internal performance criteria. In contemporary SCM, efficiency and performance standards are high priorities among companies. Effectiveness and efficiency can also be calculated utilizing six key factors, namely job satisfaction, product quality, job flexibility, on-time delivery, consumer satisfaction and profit margins [15]. For example, firm performance may be obtained by in time manufacturing, and quality may be attained by the means of technology and distributor or consumer orientation. Nevertheless, performance measurement methods and technologies are modifying dramatically within the firms in the supply chain. Typically, the efficiency evaluation of businesses was based primarily on the income and expenses of enterprises. Nevertheless, today, due to the deterioration of the worldwide requirements for products and services, companies are largely dependent on their SCM capabilities with the motive to enhance the efficiency, profits and transfer their costs out of supply chains [19].

2.2. Supply Chain Capabilities and Supply Chain Operational Performance

The resource-based view concludes that all the organizations have the diversified expertise and also have resource diversification that is considered to be expensive and therefore complicated to incorporate and replicate by rivals [20]. According to [21], Within today's international business environment, companies ought to have a competitive edge over their rivals, and for that reason, businesses must have the potential to be extremely competitive by concentrating on four competitive attributes, i.e. efficiency, reliability, price and volume. In addition, the strategic flexibility of the supply chain is also

significant variable in the calculation of Supply Chain operational success [22]. Meanwhile, characteristics such as institutional cultural capacity and Information Technology capabilities are of identical significance [22, 23]. In Supply Chain Management literature, it is observed that a number of scholars have indicated that development within consumer relationship, supplier cooperation, data sharing and quality have significantly strengthened Supply Chain operational efficiency [22, 23]. Optimization of SC expenses can be managed by stronger and better consumer relationship, data sharing and distributor engagement, Supply Chain efficiency, versatility and versatility in order management and distribution uncertainties [24]. For Tin manufacturers, supplier relationship serves a vital role, since it can offer rapid responses to evolving consumer requirement and circumstances [24]. The hypothesis is also confirmed by the [25]. The fundamental benefit of the distributor relationship is that consumers will ensure appropriate standard goods and prompt supply from distributors. Between W-Mart and P&G, W-Mart assumed to be a wealthy distributor of resource and data, while P&G is a wealthy producer of resources and data, both businesses have a win-win relationship with respect to data exchange, shared goals and enhanced supply chain efficiency throughout their supply chains [26]. A strong relationship with distributors in particular has a substantial effect at the operating efficiency of an SC. Moreover, the worst mechanism and consequence is seen in the event of reduced dependency on the distributor.

2.3. IT Capability and Supply Chain Operational Performance

Information Technology skills have been considered a significant aspect of SCM and are assumed as primary factors in enhancing supply chain efficiency. Information technology skills share a substantial positive relation with supply chain efficiency [27]. Various researchers have examined the importance of information technology infrastructure particularly and recommended it as the most essential element in cost reduction and flexibility in organizational efficiency [28]. Additionally, Information Technology services may not necessarily make a constructive contribution to accountability but on the other hand, eliminates corrupt practices. In the organizational point of view, IT staff perform a primary role in facilitating the primary IT operations and goods to flow smoothly [29]. IT staff are suggesting a proactive solution to solve problems in information technology environments. Inherently, IT professionals have encouraged versatility in the IT environment to propose initiatives for SCM on that basis, IT workers have had a significant and direct effect on an organization's agility [30].

Corporate culture has proven as one of the basic components of firm efficiency for several years [31]. Culture has a significant positive effect on firm achievement or inability. The number of scholars including [32] and [33], observed that the corporate strategies and the corporate culture should be affiliated. Moreover, corporate culture impacts supply chain efficiency positively and substantially [24], explicitly on increased adaptability and versatility in worldwide SCM. [34], in his research, the supply chain management of small and medium-sized firms in Malaysia were significantly influenced by corporate culture. Moreover, a study was carried out by [33], which was composed of 220 feedbacks from SC scholars mentioned by the Institute of Supply Management, America. The research revealed that a corporation's culture is significantly associated to SC performance.

2.4. Corporate Governance in Supply Chain Performance

[35] concludes that effective corporate governance as an efficient corporate governance mechanism is a requirement for improving future owners' capital, mainly from organizations. An organizational level to which it complies to the Corporate Governance Framework indicates the effectiveness of its governance [36]. There is a distinction between risk-taking and risk-bearing practices, as a consequence of that, a conflict of interest develops between the stakeholders i.e. management and shareholders, defined this conflict as a conflict of agency [35, 37]. The expansion of ownership and control provides additional opportunities to management in securing capital from small shareholders, continuing to make managers more efficient and impartial. The corporate governance discourse has proposed an alternative to this issue, i.e. the implementation of a structure to perform external control such as the board of governors. [36], examined that integrity, board capacity and expertise are the essential determinants of agency conflict. It is therefore explicit from the research that there is a divergent interest between management and investors, nevertheless, efficient control mechanism adopted by the governing board to minimize the potential difference [35-37].

There is a theory of stakeholders besides the theory of agency that includes firm as an integrated structure usually recognized by its stakeholders [37]. Stakeholder theory suggests that every stakeholder concerned leads a firm towards progress. Stakeholder theory recognizes the firm as a diverse array of interactions that stretches further than the theory of the agency's association with the principal-agent [38]. Firm partners are comprised of purchasers, distributors, workers, shareholders, state and the public [39]. Similarly, the theory of stakeholders establishes, that firm success or failure is important in the

context of the stakeholders' engagement, contrary to the agency theory that is restricted to the topic of shareholders and management. [38]. Two-tier boards are common in Japan and Germany, and these boards are formed according to the dimensions of stakeholder theory. [40] instituted the corporate governance perspective of interested parties. In his research, he further concluded that shareholders alone are not accountable for the expense or income from the supply chain, but that interested parties are also affected by the decision making of the management of an SC. this is the reason that they are often psychologically and financially affiliated with the commodity or the firm.

In addition, agency theory ensures the auditing function of the Boards, this does not, on the other hand, take into consideration the consultative and resource allocation responsibilities of the Boards and the potential of the Boards to perform successful supervision improve the efficiency of the Board [39]. Throughout the study of resources dependence and the supportive feature of agency theory, [38], Stated that these two hypotheses can be regarded as essential frameworks by management for decision making on MNC franchises and can be identified properly.

The board of directors intends to associate the company with external variables that generate external dependency and instability in their capacity of resource dependence. The capacity of the Boards to complete this dual function depends extensively on diversity premised on resource dependency theory [39]. Board of directors behaves as a unifying agent that integrates the interests of stakeholders, investors and passes them to the executives. They are known as boundary-spanners as specified by [40], and such boundary-spanners aim to provide executives with data in the desired time period. Board develops a relationship between an organization and its surrounding environment that ultimately enables the company to manage ambiguity in the external environment.

[41], concluded that consultative and monitoring responsibilities of the board are primarily board investment activities in the form of credibility, network relations, knowledge and competence because external directors of the organization are usually different from one another. [41], explored various consequences of external and internal directors, Using the synthesis of resource independence and agency theory insight. Purposefully, the factor of the human resource over R&D had been investigated by extracting a sample of 230 firms from America. These results indicated that director neutrality significantly impacts the degree to which management use their resources, i.e. human capital, to control R&D investment. The board members must have certain expertise and qualities to be a member of the board so that they can contribute positively to the firm. Such

value-added activities draw capital into organizations using network alliances from outside the business, introducing new distributors and consumers, creating political relations and offering consultancy services to board executives employing their expertise and professional capabilities to improve the value of the company [42, 43].

There is a coordination group at the locus of a rational supply chain governance framework, and it basically means an executive board committee and its job is to facilitate the sustainability of a specific program or to attain tactical targets. The task of this coordination committee is to assist policymaking about the strategic organizational divisions, lines of business (LOBs) or territorial boundaries of the entire supply chains. It does not, therefore, take into consideration the specific logistical processes of the portfolio of the firm including inbound shipping, purchasing, storage, inventory management, supply and outbound shipment in order to obtain the adequate results.

Hypothesis 1: SC information technology (IT) competence has a significant association with the SCOPR.

Hypothesis 2: SC relational capability has a significant association with SCOPR.

Hypothesis 3: CG has a significant association with SCOPR.

Hypothesis 4: CG moderates the relationship between supply chain IT capability and SCOPR.

Hypothesis 5: CG moderates the relationship between SC relational capability and SCOPR.

The theoretical framework of this investigation is demonstrated in Figure 1. Agency theory and resource-based theory have been utilized to understand the framework of this research and shown in Fig 1.

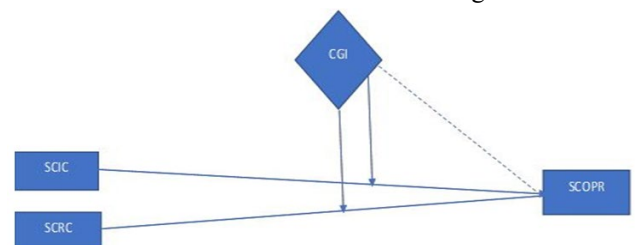


Figure 1. Theoretical framework

3. Methodology

Quantitative method findings are reliant on survey questions and are restricted to numbers, figures, sample evaluation and several types of economic analysis. For this analysis, a quantitative research model was structured to facilitate the researcher in careful evaluation of a broad sample of participants in the study; provide their opinions on the suggested hypothesis. In addition, the researcher can take a simplified interpretation of human conduct. In this context, the researcher included a questionnaire as the primary instrument in this analysis to comprehend the determinants influencing the productivity of personnel in

state universities. Survey questions were structured according to the research study aims, issue and assumptions to evaluate the collective significance of variables that can influence the output of workers in Indonesian manufacturing sector. Data from the questionnaires were filled into Microsoft Excel, IBM SPSS and Smart-PLS. Likert scale of five points is utilized for the application of variables and their secondary models based on 200 questionnaires.

4. Research Analysis and Discussion

The SEM-PLS is another most reliable method for analyzing data on social problems in recent years, is included as a quantitative method in this study. However, most of the scholars including [44] and [15] have claimed that if research is based on mathematical modelling or require an alternative estimation of a specific concept, recommend method is Partial Least Square Structural Equation Modeling over other methodologies like multiple regression analysis. Accordingly, [44] concluded that the Partial Least Square Structural Equation Modeling is a 2-step calculation that is a progressive method of multiple regression analysis that stands for two tests, known as the internal model evaluation and the external model evaluation. The initial step is the assessment of the accuracy and relevance of the research design. In Smart Partial Least Square it is important to analyze the structural model outcomes after collecting the findings of consistency and credibility of every design in an attempt to evaluate the thesis. Here are five methodological phases in the analysis of the outcomes of the structural model;

Investigate a systemic design for concerns of collinearity; (2) Importance of the path coefficients; (3) Preceded by an assessment of the R^2 factors; (4) Assessing the size of the f^2 effect; and last but not least, (5) Investigation of empirical validity (Q2 and scale of Q2 impact). The possible explanation of why SEM-PLS is recommended for regression analysis and the previous one performs multiple regression formula sequentially and may generate outcomes in the sequential method by establishing a correlation with all significant hypotheses.

Reliability assessment is conducted to determine inner reliability of the goods. Cronbach's alpha is frequently employed to assess the degree of reliability. The investigator in this study also decided to measure composite reliability to evaluate the outcome among both reliability analysis and composite reliability. However, several observations have revealed that the significance of composite reliability is greater than that of Cronbach's alpha and the indication is considered to be true and important if the load factor exceeds 0.5 on the intended model. However, the research evaluated the performance of the loading factors resulting from Smart-PLS. Accuracy of the data was carefully examined before examining the hypothesis. These measures have been taken mostly

through PLS 3. Table 1 demonstrates that the loading factor is greater than 0.7, the average variance extracted (AVE) is more than 0.7 and the composite reliability is higher than 0.8 as well. It is thus confirmed that the existing research has reached convergent validity. The validity of the measure tends to refer to the point at which the designed concepts to be evaluated are appropriately calculated by the components developed for its calculation. Most significantly, all products designed for structural estimation have to be most heavily loaded on their model compared to other designs, and this is assured via a detailed literature review. By the help of this investigation, components already identified in the literature are chosen in contexts of their effectiveness. Based on the findings of the variable assessment it was verified that the established elements were loaded accurately into their relative models in this research. According to [44], Convergent validity can be assessed by factor loading, reliability assessment and durability of composites. In addition, Average Variance Extracted (AVE) has been investigated as one of the indicators which are effective in determining validity. Evaluating the convergent validity, it can verify that the factors within their parent factor, either facilitating or dependent, associate adequately with one another.

Discriminate validity has become one of the approaches to evaluate how the variables deal with their respective indices. This simply demonstrates or tests that in the context of research, the calculation or operationalization of factors that are not truly interconnected [17]. [45], initiated one of the comprehensive and extensively used discriminatory validity criteria, and that is why the new research utilizes the resultant value as a scale for evaluating the discriminate validity. In addition, many scholars like, [44], [16] and [15] concluded that the reliability index for a variable should exceed 0.700. Nevertheless, the results in the cross-loadings were equivalent to the outer loading value, the variance is in the cross-loadings in comparison to the model relationship. Table 2 indicates the results of 72 evaluations of the discriminate validity in this research through Fornell-Larcker Criterion and Cross Loadings.

Table 1. Convergent and Discriminant Validity

	Indicators	Loadings	CR	AVE
SCIC	SCIC1	0.740	0.824	0.731
	SCIC2	0.770		
	SCIC3	0.801		
	SCIC4	0.743		
CGI	CGI1	0.849	0.896	0.785
	CGI2	0.860		
SCIN	SCRC 1	0.850	0.749	0.735
	SCRC 3	0.860		
	SCRC 4	0.858		

SCOPR	SCOPR1	0.894	0.839	0.825
	SCOPR2	0.842		
	SCOPR4	0.812		
	SCOPR5	0.833		

Table 2. Discriminant Validity

	1	2	3	4
SCIC	0.763			
CGI	0.658	0.718		
SCIN	0.466	0.495	0.721	
SCOPR	0.466	0.495	0.721	0.721

As discussed at the beginning of this segment, the next stage is to obtain the organized relationship among the variables after evaluating the efficiency and validity of the tools or necessarily claiming the observational evaluation of the conceptual model. The benefit of SEM-PLS over other methodologies is that it consistently evaluates all organized relationships while others inappropriately evaluate them. Furthermore, internal and external influence is investigated in structural equation modeling. Indirect influences were investigated to evaluate the arbitration. During the analysis of the data, a standard p-value level of 0.05 was assumed for examining the hypothesis. This was revealed that the proposed hypothesis has a p-value of lower than 0.050 compared to the direct consequences. Thus, it supports the consideration of Hypothesis 1, Hypothesis 2 and Hypothesis 3.

Table 3. Direct Effect

	(β)	SD	T-value	P-Values
Hypothesis 1	0.100	0.032	2.8449	0.002
Hypothesis 2	0.186	0.039	-4.329	0.000
Hypothesis 3	0.212	0.111	2.529	0.000

Table 4 also illustrates the mediation impact of consumer responsiveness in the collaboration with supply chain agility and the output of the external SC. Moderation outcomes reveal that the t-value is more than 1.96 for both the moderation hypothesis and the p-value is less than 0.05 and supports Hypothesis 4 and Hypothesis 5.

Table 4. In-Direct Effect through Moderation

	(β)	SD	T-value	P-Values
Hypothesis 4	0.206	0.196	4.724	0.000
Hypothesis 5	0.287	0.016	3.887	0.000

The statistical potential of the conceptual design is evaluated by R2 results in the endogenous model [44]. Therefore, R-squared in the model is precisely characterized as the "percentage of variability explained". The R2 value in this research is 0.247, which indicates that 25 percent of the variation in workforce devotion may be described by Sharia codes of ethics and religiosity provide by Islam. Whereas the R2 value of 0.329 indicates that work dedication can describe 33 percent of the variability in job quality.

Table 5. Expected Variance

	R ²
SCIN	33%

The findings of the current study supported all of the hypotheses of the study.

5. Conclusion

Today, the strategies firms were using to operate have changed substantially. The primary function of customer engagement in the organizational fit for the company is very significant, but businesses eventually change their perspective from customer to production, whereas rendering initiatives to expand the organizational performance ambit. Gradually, businesses have exhibited a growing inclination to produce better quality products at the lowest possible expense but have lost greater potential for a competitive edge. Today, the emphasis is on producing consumer-requested merchandise at the appropriate location, time and at the best value. Many of the experts further explained this concept by asserting the leading position of enterprises, i.e. fulfilling consumer demands, in context of providing the best commodity with the right volume and reliability with the appropriate technology to the consumers.

The primary purpose of the latest research is to investigate the importance of CG in evaluating the ability of SC. This research is concerned in discovering the direct effect of information technology supply chain potential, supply chain relational competence and corporate governance on the supply chain operating efficiency of production firms in Indonesia particularly engaged with the Tin sector. Additionally, we have discussed the mediating aspect of corporate governance in the association between SC abilities and operating efficiency of the supply chain. The researchers utilized the SEM-PLS methodology to obtain the distinctive goals of this new research. The observations of the latest research have supported the proposed results. The outcomes revealed that the company's strategy to consumer care is also in accordance with the manufacturing-oriented strategy. The results of the research can enable stakeholders to recognize the challenges relevant to SCM and corporate governance.

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