

Impact of Supply Chain Integration on Competitive Advantage

Obsatar Sinaga^{#1}, Suskim Riantani^{#2}, Yana Hendayana^{#3}, Mohd Haizam Mohd Saudi^{#4}, Zalina Zainudin^{*5}

¹Padjadjaran University

^{2, 3, 4}Widyatama University

⁵Universiti Kuala Lumpur Business School

*corresponding author: zalina@unikl.edu.my

Abstract— The interaction of supply chain management with other disciplines such as knowledge management is gaining increasing attention as their synergic relation is becoming an important competitive tool. Therefore, the current study is carried out to examine the relationship, between supply chain integration, knowledge management and competitive advantage. We have used the smart PLS as statistical tool to achieve the research objectives the data by mean of an adapted survey instrument in the form of questionnaire is collected from the operation and finance managers of Indonesian manufacturing firms. The results of the current study are providing support to the hypothesized results. The direct and indirect relations appears positive and significant. The current study which in author knowledge is among few pioneering studies on this issue, will be helpful for financial experts, operation managers, academicians, researchers and other policy makers in formulating policies.

Keywords: *Supply Chain integration, competitive advantage, Marketing, PLS*

1.0 Introduction

In the business environment of today, the life cycle of product is shorter, development of technology is faster, and competition is getting intense as well. To achieve competitive advantage, organizations are forced to find new ways. It is because productivity and operating efficiency of the firm plays critical role to gain competitive advantage. The performance of competitors performing at global level have best performance in all departments [1].

Organizations are able to compete in the marketplace if they are able to provide right product at the right time. However, competencies in terms of resources are required which is difficult for a company to retain and mobilize by a single organization. Therefore, it is important for the organizations to leverage core resources

competences via coordination that is partnership based [2].

Competitive advantage is one of the most discussed topics now a days in the field of strategy and business. There are number of scholars who have explained the concept of competitive advantage. [3] mentioned that ability of a firm to develop and maintain the position which is defensible over the firms that are in competition is known as competitive advantage. The main objective is to get competitive advantage in the business [4]. Whereas, it is not necessary to do performance above average for the longer period of time. It should be on the constant basis [5]. Same is now mentioned in the literature of management as well. In contrast, if organization is unable to get the competitive advantage [6], it will result in disaster [5].

There are two point of views regarding getting competitive advantage and making the position of an organization stable. Industrial organization theory is the base of first point of view, according to which opportunities available in the environment create the competitive advantage for a firm. The analytical tools which are included in this point of view are competitive advantage of the nations, clusters, completeness, general strategies, analyzing competitive forces and value chain of the organization. On the other hand, in perspective of second point of view, the base is resource based theory. According to the theory, its argued that competitiveness is created by every business by its own based on its own capabilities and competitiveness and capabilities all of which contribute to the competitive advantage. In fact, the competitive advantage that is weak and permanent, make the future of the business very strong [7].

[8] reported that the stage when the actions of an organization in that industry cause value creation, then competitive advantage is created in that particular industry by the firm. Its been also reported that there are three means to attain the competitive advantage; through differentiation of the product, centralization, and cost leadership.

Furthermore, organizations should work properly on their entering strategy to the market and maintain their competitive advantage in the market [9].

The relationship among the organizations are changing rapidly due to the development and globalization in the business. The competition is at the stage of supply chain, not at the stage of firms anymore [10]. The organizations must work on the networks related to downstream and upstream of networks and not only focusing on the management of their own firm [11]. Organizations are rethinking to collaborate with other firms in the form of partnership at the supply chain level, in order to maintain their competitiveness at the global level [12]. The organizations have given high priority to the processes at the inter organization processes for the improvement [13]. The main source of competitive advantage now a days is the supply chain management of the firm [14]. If the organizations are able to manage the supply chain of the organization well, they can survive and compete well in the market [15].

The ideal scenario is to coordinate, manage and design the process of supply chain process as entire unit [16]. The key element of the strategies related to supply chain management is the integration of supply chain [17]. In the past, the scholars on theoretical and empirical grounds agreed to the point that organizations will get maximum of the benefit if they get integrated with customers and suppliers [18]. Whereas, past studies are unable to find a clear relationship between performance of the organization and supply chain integration [19].

The main objective of managing the supply chain is to integrate both the flow of material and information throughout the supply chain as an effective weapon of supply chain [20]. The name often misleads the reader as the supply chain is not only the business chain as the formal chain of business. Instead it is the network of the relationship and business at the different level. In past, there is no clear definition of supply chain management available. The forum of the supply chain consists of the top CEO's of a variety of the organizations like consumer electronics, accessories, athletic equipment, automotive manufacturing, oil, commodity merchandising, athletic equipment, fashion apparel, consumer packaged goods, technology and communication. All possible locations throughout the supply chain are represented by the companies that are members: retailers, distributors, manufacturers of the products related to consumers, manufacturers of the products related to industrial product and main supplier. For this reason, the opinion provided regarding the forum of the global supply chain presents the

experiences and knowledge combined from the firms leading in the corresponding industry [21].

In order to be more responsive to the demands and needs of the consumers, requirements of the market, it is need of time that the firms deliver the high quality products in time. This process also requires the integration of supply chain. Through the integration of supply chain, an organization is able to get linked with members of the channels, suppliers, customers through integration of locations, process, functions, activities and relationships. The current movement is supported by the integration from the relationship that is conventional to strategic alliance, partnership that is long term and cooperative [22].

2.0. Literature Review

There are many sub-fields included in the term strategic management and is a wide terms as well. Whereas, the main objective of every organization is to find the way to get the competitive advantage. In the competitive markets, the competitive advantage of the firm is at its heart. In order to grow and to get diversification, firms often lose their way to get the competitive advantage. Their main objective is to expand on the large scale [23]. The need of the competitive advantage and screening the competitor is forgotten or underestimated by several organizations. On the other hand, most of the organizations operates as conjectures and informal impressions. Resultantly, firms are unable to trace the strategies of the competitors and competitors themselves in order to avoid the offensive strike of the competitor [24]. Thus, it is very important for the organizations to focus on the marketing strategy of the organization in order to create and sustain the competitive advantage which is the most important even for the companies which operates in a very narrow field.

As mentioned by [25], in order to get the competitive advantage over the competing firms, it is important for the firms to provide greater customer value, lower the price and give more benefits in order to justify the high price. The capability of a firm to create and sustain a position known as defensible over the competing firm is known as competitive advantage [26]. It has also been argued that distinctive competencies of the organization are the part of competitive advantage which separates it from the competitors, therefore providing an edge over the competitor in the marketplace. Additionally, competitive advantage is the outcome of decisions of the management that are critical for the firm [27].

Now a days, competition among the firms is perceived as the movement of war which depends upon analyzing the situation and responding

quickly to the needs of the market that are changing rapidly [28]. The basic principle of the concept of competitive advantage is the nonappearance of gap among the offering of the firm and the product being delivered. If the organization is able to differentiate its strategy and able to provide the good quality services and the products company will be able to get the competitive advantage. The main purpose of the organization should be able to provide consumers all those benefits which are promised in the advertisement. If they are unable to do so, there will not be any competitive advantage of the firm [29].

According to [29], firms can only get the competitive advantage if they are able to differentiate their products from the rival firms. Moreover, there are a number of ways through which a firm can differentiate its product from the competitors' firm like image differentiation, people, channels, services and products.

One of the basic force which deals with the formulation of organization is known as competitive force in relation with the environment of the industry. Basic strategies of the competition shows the position of the firm within the industry. As a result, the rate of profitability is affected as well. Sustainable competitive advantage of the firm is the key for the firm to be successful in the market [33].

There exists five different level of forces in the industry namely rivalry among the industry, bargaining power of supplier, buyers bargaining power, threat of substitute and entry level. While analyzing the position of an organization in the industry, in terms of the mentioned forces, organization can easily find an approach to protect itself. The signal for a company to analyze the position of the firm itself is the one or more potential shift in these forces accordance with the market and industry. One of the most closely inter-related approach is the strategic conflict among the firms [30]. According to the mentioned approach, it is important to keep an eye on the imperfection of the product market, strategic interaction and entry deterrence. In most of the past researches, game theory is used in order to analyze the competitive advantage of the firm through information, signaling, pricing and investment [30].

[31] proposed that resources and the organizations to whom they belong are hetero generous. Which means by utilizing these resources firms can easily generate the competitive advantage. Its been also argued that capabilities of the organization to develop dynamic capabilities is the most important feature in this manner [32]. According to both these perspectives, the capabilities and resources of the firm are fundamental. These forces are unable to explain the factors related to alternative approaches to explain the strategy and rivalry within the industry. It is always very important to compare the

context of the environment in the view of five entry forces also known as capabilities of the framework presents in the five forces [33] [34]. It is because of the environmental context of the organization is not in the context of industry. Instead it is in the context of ecosystem of the business. The ecosystem consists of research institutions, educational institutions, judiciary, standard setting points, regulatory authorities, suppliers and complementors. [34] further discussed that formulation of strategy according to the five forces is important to cope with competition. Whereas, shaping competition are related to the dynamic capabilities of the organization.

2.1. Supply Chain Integration

A normal supply chain basically is a network of services, information and material processing link with the features of demand, transformation and supply.. in order to explain the activities related to supply chain, flow of information, control of material, planning, and activities related to logistic, the term, supply chain management is used [35]. Additionally, [36] has defined supply chain management as SCM encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities, including coordination and collaboration with suppliers, intermediaries, third-party service providers, and customers.

Due to the intense of global competition, the organizations create cooperative and mutually beneficial relationship among supply chain partners [36]. Whereas, [37] pointed out that organizations or companies need to implement supply chain integration to meet the new challenges of the global competitive environment. Many studies propose different supply chain definitions.

[38] described supply chain integration as "the degree to which an organization strategically collaborates with its supply chain partners and manages intra- and inter-organization processes to achieve effective and efficient flows of products, services, information, money and decisions, with the objective of providing maximum value to its customers". [39] defined supply chain integration as "the effective coordination of supply chain processes through the seamless flow of information up and down the supply chain". Supply chain integration can be defined as the process through which all parties who involved with supply chain; supplier, organizations and customers, are working independently and dependently in a harmony way to achieve a unite objectives such as providing maximum customer value, lowering overall cost.

There is complexity in the supply chain most of the times. They are also characterized by a number of activities which are spread upon a number of

functions along number of organizations. This is one of the big challenges for supply chain integration [40]. In past, the process of removing boundaries and barriers among the organizations is also known as integration. A number of terms are used by the scholars to address the issue of integration namely model of enterprise collaboration, model of supply chain integration, model of enterprise integration, engineering enterprise, engineering of business process and modeling enterprise [41] [42] [43] [44] [44] [46]. Though, in literature there is slight difference in these terms in their wordings, but the final objective is the same.

There are three classifications in terms of macro stages of supply chain management. (a) management of customer relationship. Under this stage, all activities and processes are focused on downstream and interaction among the customers and organizations. (b) management of supply chain internally. At this stage, focus of organization is on all activities and processes within firm. (c). Management of supplier relationship. At this stage, processes of supplier relationships are integrated towards the relationship with supplier [47].

In the past literature, [48] has defined integration of supplier as the amount to which an organization can get partnership with the members of the suppliers. The main and only consideration of suppliers is the input which is required for the operations of the organizations. It is because they are important for their roles manufacturing the products on the regular basis so that the expectations of the customers can be fulfilled.

[49] defined internal integration as "the degree to which a manufacturer structures its own strategies, practices and processes into synchronized, collaborative processes to fulfill its customers' requirements and efficiently interact with suppliers". Internal integration is the center of gravity for both suppliers and customers and it's considered the linchpin that maintains the stability and continuity for all supply chain parties, so the organization couldn't make neither supplier nor customer integration without internal integration. Building the proper supply chain strategy depends heavily on the existence of clear and common objectives, which originally consequential to adopt all departments of the organizational mission, its goal and company's vision.

So, the integration of the customer is the mechanism to develop and maintain a very strong relationship with the consumer. It covers suggestions from the consumer, services, products, experience and knowledge. The main consideration of the organizations are their customers. More customers are always needed by the organization to grow the organization. Thus, supply chain helps in building strong relationship with the organization.

[50] observed supply chain integration from several perspectives such as practices, pattern and attitudes. Whereas other researchers have conducted research regarding integration with supplier and customer. For example [51] [37] [52] [53] analyzed the integration of supply chain as one-dimensional construct. Whereas, [54] [55] [49] [56] considered the perspective on a broader way for the integration of supply chain. [57] revealed that customer integration and supplier integration can be done as external integration.

As mentioned earlier, the links between an organization with its supplier, customers and other channel members through integrating their relationship, locations, process, functions and activities. From the past literature, there is close link between integration and several activities being performed at different levels of the organization. The internal and external integration of the organization can be achieved by several standardizations of every internal logistic and sharing information efficiently [40].

In order to provide support to the supply chain integration effectively, the organizations must be capable of coordinating and linking the system of every party involved into cohesive whole. Therefore, the organizations that manage the supply chain as one entity and make sure usage of proper techniques and tool to meet the market requirements will be able to survive very well [58], [68-75].

Those organizations which successfully combine their internal processes with their customers and suppliers through supply chain gain the competitive advantage over their competitors [37]. The main objective of supply chain management is to strengthen the performance and competitive advantage through the integration of functions within the organizations and linking these functions with customers and suppliers along the other members of the chain. [59], [61-71] revealed that to make successful application of supply chain management the aim of organization should be to integrate with customers and suppliers and to integrate these members with its internal functions. To develop good supply chain integration, knowledge is the one of the key components. One of the key enablers of supply chain is the management of knowledge within the firm. Those organizations that are information intensive and have environment at multi cultured enterprise, knowledge is the key for supply chain [60]. Moreover, [61] argued that new value creation for a firm is affected by the organizations. This is the era where every organization is using internet which enables organizations to distribute the products and services at the global level. By using modern technology, knowledge of the firms is also increased as well. So, it is need of time that organizations should work on their knowledge

based and integrate it as part of their strategy to develop and maintain competitive advantage over their competitors.

H1: Supply chain integration will positive effect the Competitive advantage

H2: Knowledge management will positively impact the competitive advantage

H3: Knowledge management will moderate the relationship between supply chain integration and competitive advantage

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.

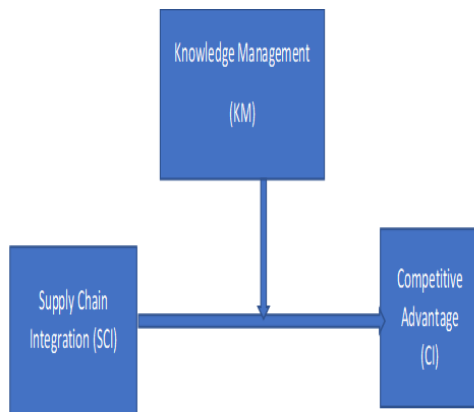


Figure 1: Conceptual framework

3.0. Methodology

By employing the quantitative survey-based methodology, the current study has used the operation managers and finance managers as a sample of the study. The Indonesian firms operating in manufacturing sector of Indonesia are chosen as a sample of the study. The number of aggregate managers was 470 for this examination information was gathered by pre-planned questionnaires to every one of the 360 managers. In this study, researchers have used the questionnaire method for collecting data. This questionnaire is divided into four sections which the entire question was conducted in English. Section A in this questionnaire asked about the respondent background. 360 questionnaires were received out of 278; the response rate was 57 per cent and hence accepted for further evaluation. Respondents' average age was 47 years, and around 60 percent of them were working in operation departments from last 15 plus years. The greater part of the respondents was held highest degrees; the response rate is above the threshold of

45-50 percent [11]. Male respondents were 252 and the female was 45. The average working experience was 13.5 years.

4.0. Research Analysis and Discussion

According to Hair et al., [61, 62], the PLS-SEM is the most updated and recent generation in structural equation modelling, which not only new but also a robust as it integrates all the model into a structure of the equation and produces results with a simultaneous operation by producing a relationship with all direct and intervening phenomena. PLS-SEM is one of the robust and most reliable statistical technique [63, 64], Therefore, this study adopted PLS SEM to analyses the data. Before testing the hypothesis, data reliability and validity was scrutinized. These steps were taken through PLS 3. It is revealed in Table 1 which shows that factor loading is more than 0.5, average variance extracted (AVE) is more than 0.5 and composite reliability is also more than 0.7 [65]. Therefore, it is revealed that the current study attained convergent validity.

Table 1. Convergent and Discriminant Validity

	Indicators	Loadings	CR	AVE
SCI	SCI1	.842	0.875	0.932
	SCI2	.939		
	SCI3	.910		
	SCI5	.725		
KM	KM1	.943	0.955	0.832
	KM2	.905		
	KM4	.897		
	KM5	.925		
CA	CA1	.874	0.832	0.817
	CA3	.915		
	CA4	.832		

After reliability of instrument through inner model assessment the next step is the examination of validity. To examine the validity, we have used the discriminant validity which is normally measured through average variance extracted. The

Table 2. Discriminant Validity

	1	2	3	4	5
SCI	0.898				
KM	0.821	0.798			
CI	0.640	0.718	0.650	0.801	

Following the study of Basheer et al. [22], we have measured the structural equation model for direct and indirect results of this study. Indirect effect was examined to check the moderation. In this process, the p-value was considered. While analysing the data, 0.05 minimum level of p-value was considered to test the hypothesis. According to the direct results, it is shown that all hypothesis has a p-value less than 0.05. Therefore, it accepts H1, and H2

Table 3. Direct Effect

	(β)	SD	T-value	P-Values
H1	0.111	0.035	3.234	0.002
H2	0.207	0.043	-3.810	0.000

Furthermore, the moderating effect of training and development 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 Moderation

	(β)	SD	T-value	P-Values
H5	0.109	0.018	4.319	0.000

The results of structural model show that the respondents have shown consistency with the proposed hypothesis. To further confirm the how much independent variable are bringing the impact on the dependent variable we have measured the value of R-square. The R-square value of CI is 52.1 percent.

Table 5. Expected Variance

	R ²
CA	49.1%

The results of the current study have shown a great deal of agreement with the hypothesized results.

5.0. Conclusion

In recent times especially in the post modern era of business world the , competition among the firms is perceived as the movement of war which depends upon analyzing the situation and responding quickly to the needs of the market that are changing rapidly . The basic principle of the

concept of competitive advantage is the nonappearance of gap among the offering of the firm and the product being delivered. If the organization is able to differentiate its strategy and able to provide the good quality services and the products company will be able to get the competitive advantage. Supply chain integration which defines as defined internal integration as "the degree to which a manufacturer structures its own strategies, practices and processes into synchronized, collaborative processes to fulfill its customers' requirements and efficiently interact with suppliers is becoming a competitive advantage. The interface of supply chain management with other discipline such as Human resource management is gaining an increasing attention as their synergic relation is becoming an important competitive tool. Therefore, the current study is carried out to examine the relationship, between supply chain integration, knowledge and competitive advantage. Moreover, the moderating role of training and development is also examined. We have used the smart PLS as statistical tool to achieve the research objectives the data by mean of an adapted survey instrument in the form of questionnaire is collected from the operation and finance managers of Indonesian manufacturing firms. The results of the current study are providing support to the hypothesized results. The direct and indirect relations appear positive and significant. Thus to develop good supply chain integration, knowledge is the one of the key components. One of the key enablers of supply chain is the management of knowledge within the firm. Those organizations that are information intensive and have environment at multi cultured enterprise, knowledge is the key for supply chain

References

- [1] Tidd J, Bessant J, Pavitt K. Managing innovation integrating technological, market and organizational change. John Wiley and Sons Ltd; 2005.
- [2] Rese, M. (2006). Successful and sustainable business partnerships: How to select the right partners. *Industrial Marketing Management*, 35(1), 72-82.
- [3] Li S, Ragu-Nathan B, Ragu-Nathan TS, Rao SS. The impact of supply chain management practices on competitive advantage and organizational performance. *Omega*. 2006 Apr 1;34(2):107-124.
- [4] Lambert, D. M., García-Dastugue, S. J., & Croxton, K. L. (2005). An evaluation of process-oriented supply chain management frameworks. *Journal of business Logistics*, 26(1), 25-51.

- [5] Ge, J., Wang, X., Wu, P., Huang, T., & Jiang, H. (2018). Establishing Shipping Service Complex Standard Framework: Experience from Shanghai. *International Journal of Management and Sustainability*, 7(4), 215-224.
- [6] Peng Wong W, Yew Wong K. A review on benchmarking of supply chain performance measures. *Benchmarking: An international journal*. 2008 Feb 29;15(1):25-51.
- [7] Esmaeilikia M, Fahimnia B, Sarkis J, Govindan K, Kumar A, Mo J. Tactical supply chain planning models with inherent flexibility: definition and review. *Annals of Operations Research*. 2016 Sep 1;244(2):407-27.
- [8] Barney JB. Strategic management: From informed conversation to academic discipline. *Academy of Management Perspectives*. 2002 May 1;16(2):53-7.
- [9] Porter ME, Strategy C. Techniques for analyzing industries and competitors. *Competitive Strategy*. New York: Free. 1980.
- [10] Ketchen Jr DJ, Hult GT. Bridging organization theory and supply chain management: The case of best value supply chains. *Journal of operations management*. 2007 Mar 1;25(2):573-80.
- [11] Xu LD. Information architecture for supply chain quality management. *International Journal of Production Research*. 2011 Jan 1;49(1):183-98.
- [12] Wong CY, Hvolby HH. Coordinated responsiveness for volatile toy supply chains. *Production Planning & Control*. 2007 Jul 1;18(5):407-19.
- [13] Garfield, A. (2018). Uprooted in Art: Contemporary Considerations of Refugee Art. *International Journal of Social Sciences Perspectives*, 2(2), 101-111.
- [14] Alfalla-Luque, R., Medina-Lopez, C., & Dey, P. K. (2013). Supply chain integration framework using literature review. *Production Planning & Control*, 24(8-9), 800-817.
- [15] Arana-Solares I, Machuca J, Alfalla-Luque R. Proposed framework for research in the triple A (Agility, Adaptability, Alignment) in supply chains. In *Managing global supply chain relationships: operations, strategies and practices 2011* (pp. 306-321). IGI Global.
- [16] Alfalla-Luque R, Medina-Lopez C, Dey PK. Supply chain integration framework using literature review. *Production Planning & Control*. 2013 Sep 1;24(8-9):800-17.
- [17] Cigolini R, Rossi T. Evaluating supply chain integration: a case study using fuzzy logic. *Production Planning and Control*. 2008 Apr 1;19(3):242-55.
- [18] Li, G., Yang, H., Sun, L., Sohal, A.S., 2009. The impact of IT implementation on supply chain integration and performance. *International Journal of Production Economics* 120 (1), 125–138.
- [19] Swink M, Narasimhan R, Wang C. Managing beyond the factory walls: effects of four types of strategic integration on manufacturing plant performance. *Journal of operations management*. 2007 Jan 1;25(1):148-64.
- [20] Groznik A, Maslaric M. Achieving competitive supply chain through business process re-engineering: A case from developing country. *African Journal of Business Management*. 2010 Feb 28;4(2):140-8.
- [21] Stank TP, Goldsby TJ, Vickery SK, Savitskie K. Logistics service performance: estimating its influence on market share. *Journal of business logistics*. 2003 Mar;24(1):27-55.
- [22] 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.
- [23] Porter ME, Millar VE. How information gives you competitive advantage.
- [24] Fleisher CS, Bensoussan BE. *Business and competitive analysis*. Financial Times Press,; 2007.
- [25] Kotler P. *Kotler on marketing*. Simon and Schuster; 2012 Dec 11.
- [26] Li S, Ragu-Nathan B, Ragu-Nathan TS, Rao SS. The impact of supply chain management practices on competitive advantage and organizational performance. *Omega*. 2006 Apr 1;34(2):107-24.
- [27] Tracey M, Vonderembse MA, Lim JS. Manufacturing technology and strategy formulation: keys to enhancing competitiveness and improving performance. *Journal of operations management*. 1999 Jun 1;17(4):411-28.
- [28] Stalk G, Evans P, Schulman LE. *Competing on Capabilities: The New Rules of Corporate Strategy*. In de Wit and Meyer. *Strategy: Process, Content, Context*. 1992:332.
- [29] Kotler P, Armstrong G. *Marketing principles*. Parsaian, Ali, Tehran, Adabestan Jahan e Nou publication. 1999;1389.
- [30] Habib, A., & Mucha Sr, M. (2018). The Lifecycle and Effective Communication of CSR to the Stakeholder and the Public. *International Journal of Economics, Business and Management Studies*, 5(1), 1-8.
- [31] Shapiro C. *The theory of business strategy*. The Rand journal of economics. 1989 Apr 1;20(1):125-37.

- [32] Barney J. Firm resources and sustained competitive advantage. *Journal of management*. 1991 Mar;17(1):99-120.
- [33] Teece DJ, Pisano G, Shuen A. Dynamic capabilities and strategic management. *Strategic management journal*. 1997 Aug;18(7):509-33.
- [34] Teece DJ. Explicating dynamic capabilities: the nature and micro foundations of (sustainable) enterprise performance. *Strategic management journal*. 2007 Dec;28(13):1319-50.
- [35] Fisher ML. What is the right supply chain for your product? *Harvard business review*. 1997 Mar 1; 75:105-17.
- [36] Wisner JD, Tan KC. Supply chain management and its impact on purchasing. *Journal of Supply Chain Management*. 2000 Sep;36(3):33-42.
- [37] Frohlich MT, Westbrook R. Arcs of integration: an international study of supply chain strategies. *Journal of operations management*. 2001 Feb 1;19(2):185-200.
- [38] Pagell M. Understanding the factors that enable and inhibit the integration of operations, purchasing and logistics. *Journal of operations management*. 2004 Oct 1;22(5):459-87.
- [39] Olhager J. Evolution of operations planning and control: from production to supply chains. *International Journal of Production Research*. 2013 Nov 18;51(23-24):6836-43.
- [40] Kanda A, Deshmukh SG. Supply chain coordination: perspectives, empirical studies and research directions. *International journal of production Economics*. 2008 Oct 1;115(2):316-35.
- [41] Ponis ST, Koronis E. Supply Chain Resilience? Definition of concept and its formative elements. *The Journal of Applied Business Research*. 2012;28(5):921-35.
- [42] Hallunovi, A., & Berdo, M. (2018). The Relationship between Risk Management and Profitability of Commercial Banks in Albania. *Asian Themes in Social Sciences Research*, 1(2), 44-49.
- [43] Li L. Introduction: advances in e-business engineering. *Information Technology and Management*. 2011 Jun 1;12(2):49-50.
- [44] Ivanov D. DIMA—A research methodology for comprehensive multi-disciplinary modeling of production and logistics networks. *International Journal of Production Research*. 2009 Mar 1;47(5):1153-73.
- [45] Lin CC, Lin CW. Defective item inventory model with remanufacturing or replenishing in an integrated supply chain. *International Journal of Integrated Supply Management*. 2011 Jan 1;6(3-4):254-69.
- [46] Savino MM, Neubert G. A faster enterprise resources planning implementation for Euro coin supply chain within the SCOR model. *International Journal of Integrated Supply Management*. 2007 Jan 1;3(4):385-405.
- [47] Chopra S, Meindl P. Supply chain management. *Strategy, planning & operation*. In: *Das summa summarum des management 2007* (pp. 265-275). Gabler.
- [48] Stank TP, Keller SB, Daugherty PJ. Supply chain collaboration and logistical service performance. *Journal of Business logistics*. 2001 Mar 1;22(1):29-48.
- [49] Flynn BB, Huo B, Zhao X. The impact of supply chain integration on performance: A contingency and configuration approach. *Journal of operations management*. 2010 Jan 1;28(1):58-71.
- [50] Van der Vaart T, van Donk DP. A critical review of survey-based research in supply chain integration. *International journal of production economics*. 2008 Jan 1;111(1):42-55.
- [51] Rungtusanatham M, Salvador F, Forza C, Choi TY. Supply-chain linkages and operational performance: A resource-based-view perspective. *International Journal of Operations & Production Management*. 2003 Sep 1;23(9):1084-99.
- [52] Narasimhan R, Kim SW. Effect of supply chain integration on the relationship between diversification and performance: evidence from Japanese and Korean firms. *Journal of operations management*. 2002 Jun 1;20(3):303-23.
- [53] Priem RL, Swink M. A demand-side perspective on supply chain management. *Journal of Supply Chain Management*. 2012 Apr;48(2):7-13.
- [54] Droge C, Jayaram J, Vickery SK. The effects of internal versus external integration practices on time-based performance and overall firm performance. *Journal of operations management*. 2004 Dec 1;22(6):557-73.
- [55] Koufteros X, Vonderembse M, Jayaram J. Internal and external integration for product development: the contingency effects of uncertainty, equivocality, and platform strategy. *Decision Sciences*. 2005 Feb;36(1):97-133.
- [56] Zhang M, Huo B. The impact of dependence and trust on supply chain integration. *International Journal of Physical Distribution & Logistics Management*. 2013 Aug 2;43(7):544-63.
- [57] Huo B. The impact of supply chain integration on company performance: an organizational capability perspective. *Supply*

- Chain Management: An International Journal. 2012 Sep 21;17(6):596-610.
- [58] Stevens GC. Integrating the supply chain. *International Journal of Physical Distribution & Materials Management*. 1989 Aug 1;19(8):3-8.
- [59] Wook Kim S. Effects of supply chain management practices, integration and competition capability on performance. *Supply Chain Management: An International Journal*. 2006 May 1;11(3):241-8.
- [60] Samuel KE, Goury ML, Gunasekaran A, Spalanzani A. Knowledge management in supply chain: An empirical study from France. *The Journal of Strategic Information Systems*. 2011 Sep 1;20(3):283-306.
- [61] Vrdoljak Raguž I, Borovac Zekan S, Peronja I. KNOWLEDGE AS A SOURCE OF COMPETITIVE ADVANTAGE IN KNOWLEDGE BASED COMPANIES. InDIEM: Dubrovnik International Economic Meeting 2017 Oct 9 (Vol. 3, No. 1, pp. 533-544). Sveučilište u Dubrovniku.
- [62] Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152.
- [63] 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.
- [64] Jabarullah, N.H. and Hussain, H.I. (2019) The Effectiveness of Problem-Based Learning in Technical and Vocational Education in Malaysia, *Education + Training*, <https://doi.org/10.1108/ET-06-2018-0129>.
- [65] Abdul Hadi, A.R., Zainudin, Z., Husain, H.I. & Rehan, R., (2019) Interaction of Short-Term and Long-Term Interest Rates in Malaysian Debt Markets – Application of Error Correction Model and Wavelet Analysis, *Asian Academy of Management Journal*, (forthcoming).
- [66] Kovács, G., & Kot, S. (2016). New logistics and production trends as the effect of global economy changes. *Polish Journal of Management Studies*, 14 (2), 115 – 126.
- [67] Ahmed, U., Abdul Majid, A. H., Mohd Zin, M. L., Phulpoto, W., & Umrani, W. A. (2016). Role and impact of reward and accountability on training transfer. *Business and Economics Journal*, 7(1).
- [68] 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.
- [69] Suryanto, T., Haseeb, M., & Hartani, N. H. (2018). The Correlates of Developing Green Supply Chain Management Practices: Firms Level Analysis in Malaysia. *International Journal of Supply Chain Management*, 7(5), 316.
- [70] Haseeb, M., Abidin, I. S. Z., Hye, Q. M. A., & Hartani, N. H. (2018). The Impact of Renewable Energy on Economic Well-Being of Malaysia: Fresh Evidence from Auto Regressive Distributed Lag Bound Testing Approach. *International Journal of Energy Economics and Policy*, 9(1), 269-275.
- [71] Haseeb., H. Z., G. Hartani., N.H., Pahi., M.H. Nadeem., H. . (2019). Environmental Analysis of the Effect of Population Growth Rate on Supply Chain Performance and Economic Growth of Indonesia. *Ekoloji*, 28(107).
- [72] Kadhim, R., Mohammed, M., & Gremikh, H. (2018). Empowerment as a strategy to achieve the competitive advantage of organizations: A mediating role of organizational learning. *Management Science Letters*, 8(9), 903-912.
- [73] Samad, S. (2018). Examining the effects of environmental strategy and competitive advantage on business performance. *Management Science Letters*, 8(9), 891-902.
- [74] Kadhim, R., Mohammed, M., & Gremikh, H. (2018). Empowerment as a strategy to achieve the competitive advantage of organizations: A mediating role of organizational learning. *Management Science Letters*, 8(9), 903-912.
- [75] Purwanto, S. (2019). The effect of competitive advantage and commodity strategic supply chain on Indonesia textile industry. *Uncertain Supply Chain Management*, 7(2), 133-144.