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BARRIER FACTORS OF SUPPLY CHAIN MANAGEMENT IMPLEMENTATION IN SMALL AND MEDIUM-SIZED ENTERPRISES: EVIDENCE FROM HUNGARY AND INDONESIA

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ABSTRACT. Small and Medium-Sized Enterprises (SMEs) have major difficulties in implementing Supply Chain Management (SCM) strategy. Previous studies show that different types of industries in size, focus, and location have different SCM implementation problems but there is a lack of research on the effect of supply chain structure. This paper addresses this gap by comparing the barrier factors of SMEs with different supply structures. The survey revealed the ranking of the barrier factors in two countries and analyzes the effect of the different SCM structures. With a more complex supply structure, the Indonesian companies suffer more from their organizational factors as their top barriers in the rank order: inadequate performance measure, and management capacity, lack of inter-departmental cooperation in communication, and unclear organization objective. While Hungarian SMEs, having a simpler supply structure, evaluated the lack of financial resources, employees, knowledge of SCM, and poor commitment from other SCM partners as their top barrier factors. The outcomes of this research provide valuable knowledge to managers in priorities of SCM strategy implementation depending on the complexity of their supply structure.

JEL Classification: M10, O57, L26

Keywords: strategy implementation, supply chain structure, survey, statistical analysis.

Introduction

Since the emergence of Supply Chain Management (SCM) in the 1980s scholars and practitioners have utilized this term continuously either for their research as well as in business practice (Manzouri et al., 2010). The concept of SCM can be summarized in five words, plan, source, make, deliver, and return. The procedure is interconnecting ultimate suppliers and customers (Blanchard, 2007). On the other hand, the SCM can be defined as a process to fulfill customer requests with several functions such as managing the flow of products, information, and funds (Chopra & Meindl, 2015). Several successful SCM strategies that can be applied by the companies include (1) market saturation driven, (2) agile

operational company, (3) freshness oriented, (4) logistic optimizer, (5) customer customizer, and (6) trade-focused (Bowersox, 2002). A strong SCM implementation results in several benefits such as an accurate forecasting process, reduced inventory level, improved planning, and scheduling, decreasing lead time, reduced logistic costs, and improved utilization of resources (Koech and Ronoh, 2015).

Despite all the important benefits mentioned above, many organizations, especially SMEs, are continuing to face barrier factors that prevent them from implementing the SCM strategy (Parmar & Shah, 2016). Resource gaps have been found in small enterprises such as lack of financial resources, skills, knowledge, technology, and employees. Consequently, the management of small enterprises depends on the suppliers or consumers that have already had strong access to those resources (Chin et al., 2012). The limitations of resources also include the quality and time that are crucial to measuring the waste of performance efficiency (Thakkar et al., 2009).

SMEs are the critical actors in the level of regional and national development in most countries. In Europe, SMEs represent 99% of all European Union (EU) enterprises and employed 100 million people. SMEs are very important in maintaining competitiveness and prosperity in Europe, economic and technological independence, and resilience to external shocks (European Commission, 2021). In addition, SMEs are also managing several problems in rural areas such as high unemployment level and increase income level (Straka et al., 2015). The European Commission's priorities are supporting SMEs including monetary expansion, improving employment innovation, and maintaining economic and social consistency (Keskin et al., 2010). In Southeast Asia, SMEs have been classified for 97.2% of all enterprises, 69.4% of the national workforce, and 41.1% of a country's gross domestic product (GDP) (ADB, 2020). Apart from economic development, SMEs are also the foundation of the invention and throughput improvement (Herr and Nettekoven, 2017). Therefore, having SCM strategies in the organization, will support the increment of profit and impact the country's economy.

The objective of this article is to analyze the barrier factors of SCM implementation in emerging markets with different supply structures. The barrier factors have been categorized based on a literature review. The study also aims to reveal the ranking of these factors within the emerging market itself. To measure the difference of perception towards these barriers a questionnaire was distributed to several SMEs in Hungary and Indonesia. These two countries have different geographical structures that may influence SCM strategy implementation. Hungary is a small landlocked country still with water connections. In the capital city of Budapest, the Danube river crosses in the middle of the city, an artery, traversed by bridges and transporting barges and boats (Alvarez, 2021). Indonesia is categorized as an archipelago country expanding around the equator and covers a distance comparable to one-eighth of Earth's perimeter (Legge, 2021).

This article contains five sections: (1) literature review of barrier factors of SCM implementation, (2) methodology of the study from data collection to the analysis tools evaluating the results, (3) comparison results from the managerial point of view regarding the barrier factors of SCM implementation, (4) discussion of the implication of results to theory and practice, and (5) conclusion with limitations and future research opportunities.

2. Literature review

The rapid rate of change in global markets causes many companies to work hard to be more responsive, try to meet customer needs and requirements for higher value-added products and services (Agus, 2015). The implementation of SCM has become an integral part and essential to a company's success and customer satisfaction. The reason is that this

strategy has the power to boost customer service, reduce operating costs and improve the financial status of the company (Kleab, 2017). The goal of SCM is to provide the right product at the right time in the right quantity and quality in the right status to the right location (called 6R) minimizing the total cost (Wei and Xiang, 2013). Despite emerging benefits that a company can get from SCM, different barriers prevent companies from implementing SCM successfully.

2.1. Barrier of SCM

Several studies have examined challenges that hinder SMEs from implementing SCM (Mafini, 2016; Manzouri et al., 2010; Dubihlela and Omoruyi, 2014). Govindan et al., (2013) divided the factors into five groups: organizational, financial, technology, knowledge, and outsourcing. The barriers of SCM implementation in SMEs are different from those of large enterprises. For SMEs, the personal views of owners are also becoming a factor that influences a company's performance, especially to initiate a new strategy for better results.

The organization is defined as a stable association of people engaged in concerted activities, stress over commonalities, and overlook diversity to achieve the goal (Wu, 2008). The organization itself is classified as an internal barrier factor of SCM implementation. Employees' SCM competencies and organizational SCM knowledge positively influence the successful SCM performance in a similar magnitude (Flöthmann et al., 2018), complemented by the resistance of changing from the employees (Kot et al., 2018). The interconnection between one party and another to exchange several resources is the foundation of achieving SCM's goals for customer satisfaction (Chopra & Meindl, 2015). Therefore, the lack of commitment from suppliers to exchange resources and deprived connection between departments inside the organization will influence the success of SCM implementation (Talib et al., 2011; Teller et al., 2016; Zachariassen & Liemp, 2010). Furthermore, the implementation can be more successful having the full support from top management (Majumdar and Sinha, 2018; Talib, et al., 2011). If the company initially does not have an SCM strategy, there is resistance from the whole management to start something new due to the complexity to install it (Manzouri et al., 2010; Halldórsson et al., 2008).

The success of an organization lies in how it can prioritize the money for the important stuff in the organization (Delkhosh and Mousavi, 2016). This is the reason why finance also becomes the barrier factor of SCM implementation as one of the key resources deficient for SMEs (Parmar and Shah, 2016). It is in line with Hoberg et al. (2017) affirming that inventory control is affected by financial constraints and the cost of capital for the company. At the beginning of SCM implementation, the company needs to adopt innovative technologies and strategies to stay competitive in the market. To install the technology that can connect with other parties needs a high financial investment from the beginning. Supply chain performance is a mediator factor towards the linkage between SCM and financial optimization according to Agus (2013). All in all, companies will achieve their financial goals through SCM implementation.

Several studies have been conducted related to knowledge management (KM) in SCM (Marra, 2012; Salazar et al., 2017). Companies' leadership is the driver of the SCM system. SCM knowledge that is possessed by the leader will be inspired and elevated to a senior management position (Terziovski & Hermel, 2011). There was a lack of understanding of the importance of SCM, which is shown in Huber and Sweeney (2007) based on the sample of Ireland's small firms, in which only 25 percent adopted SCM program, and only 9 percent of them have a dedicated supply chain or logistics manager. The gaps in SCM understanding are connected to the awareness of key supply chain costs. The low awareness of the SCM also

resulted in low employee motivation and involvement towards its implementation (Gorane & Kant, 2015).

To accommodate the flow of resources between the companies and trading partners or suppliers, information technology companies are developing numerous software tools (Ruppel, 2004). There is a small number of SMEs that can have the latest information systems or technology because of the expensive updates (Gorane & Kant, 2015). It is hard for SMEs to have a fast response in changing their current technology to a new one (Govindan et al., 2013). Other barrier factors include the fear of failure and the age-based self-image of entrepreneurs as mentioned in Yasir et al. (2018).

Outsourcing is a strategic development that creates integration with the company's partners (Borgström and Hertz, 2010). Supplier as a partner in the day-to-day process of integration has a key role in SCM implementation. However, the cooperation is not always smooth. Lack of standards between the two companies is becoming one of the barriers to collaborating (Ozen et al., 2020), including a customer satisfaction index (Gorane & Kant, 2015). To have a successful integration with partners, all parties need to build strong trust and commitment along with power, communication, uncertainty, and performance (Paluri & Mishal, 2020). Therefore, they need to understand the requirement of risk-sharing to implement SCM, not only the rewards such as more benefit, more demand, less production cost, etc. (Tse et al., 2018).

2.2. Gap in barrier factor research

In barrier factor research most research is on large enterprises in developed countries. One of the studies from Fawcett et al. (2008) conducted a quantitative and qualitative analysis in the USA regarding benefits, barriers, and bridges to successful collaboration in the strategic supply chain. They utilized 3 types of methods to gather the data such as literature review, cross-functional mail survey as well as in-depth case analysis. The study reveals that customer satisfaction and service are perceived as more important than cost savings. All managers agreed that technology, information, and measurement system are the major barriers to successful supply chain collaboration. Manzouri et al. (2010), Rahman et al. (2011), and Parmar and Shah (2016) are focusing on the analysis of barrier factors of SCM implementation. SMEs perceived SCM as a strategic tool for achieving customer satisfaction by higher investment in advanced information technology according to Kumar et al. (2015). Parmar and Shah (2016) reviewed 33 articles on the specific issue of finding barrier factors of SCM implementation. They group the barrier factors into five categories: strategic, individual, cultural, technology, and organizational barriers. Sajjad et al. (2019) used the interview method to gather information from 29 senior managers of New Zealand-based companies about the internal and external barrier factors of SCM implementation. The internal factors are the financial, organizational structure, and company behavior. The external factors are the supply and demand-side obstacles, government regulations, and cultural issues. Meehan and Muir (2008) evaluated the barriers to SCM implementation in the UK. They gathered responses by a questionnaire from 60SMEs and found that most of them agreed that lack of trust among SCM members, lack of employees' knowledge, and geographical distance from customers and suppliers were the main barrier factors of SCM implementation.

Only a few articles are specific for SMEs context for developing countries. We summarize them next. Dubihlela and Omoruyi (2014) utilized face-to-face interviews in South Africa using structured questions and successfully gathered 249 usable questionnaires. The main result is that SCM is not well adapted for SMEs in developing countries due to their size and shortage of investment in technology. Therefore, economies of scale, organizational structure, and technological challenges have a negative direct impact on the SCM

implementation. Another research in South Africa conducted by Masete and Mafini (2018) found a slightly different result. By managing qualitative interviews in 17 universities, they found that stakeholder buy-in, knowledge of SCM, supply chain systems and processes, procurement policy and practices, stakeholder change management, human resource management, and organizational culture are the barrier factors to implement SCM. Two studies were conducted in the developing country of India. Jayant and Azhar (2014) classified the barrier factors of SCM implementation by interviewing various department managers, successfully gathering 138 responses revealing that market competition and lack of top management support were the top barriers to implement SCM. On the other hand, Govindan et al. (2013) gathered the data from interviews with industrial experts in Indian manufacturing industries finding that the lack of technology is the most crucial obstacle to implement SCM strategy. Different type of research has been conducted by Manzouri et al. (2010) comparing manufacturing companies in two countries (Malaysia and Iran) and analyzed the barrier factors of SCM implementation. They surveyed 132 automotive companies and found similar obstacles in both countries such as lack of expertise and lack of awareness about SCM which became a major limitation to use SCM strategies.

Based on several studies mentioned above, different types of industries in size, focus, and location have different barriers related to SCM strategy implementation. Therefore, this study is essential in focusing on SMEs in developing countries and compares two of them with different SCM structures (Hungary and Indonesia). This paper addresses the gap through the identification of barrier factors by literature review and grouping them, conducting a survey, analyzing the perceptions about the barriers of SMEs, ranking, and comparing the barriers in Hungary and Indonesia.

3. Research methodology

3.1. Survey strategy

This study is based on a semi-closed survey where the questionnaire was distributed online. It has the advantage of a low budget and short duration and can easily plot the result by chart or graph with the ability to see real-time data (Nayak and Narayan, 2019). Historically, the survey research successfully applied in a large population of data gathering (Ponto, 2015). For this paper, we accommodate an online questionnaire with 33 questions regarding the barriers of SCM implementation in SMEs. Google form was used with two different links based on countries. For Indonesian respondents, the link is https://bit.ly/3enp12x-DriversandBarriersSCMIndonesianVersion, and for Hungarian respondents https://bit.ly/3fjbIBh-DriversandBarriersSCMHungarianVersion. The questionnaire was distributed online from September to December 2020 to top managers of Hungarian and Indonesian SMEs. The authors achieved 105 responses from Hungarian SMEs and 124 from Indonesian SMEs (see Figure 1).

Figure 1. Sample demographic Hungary and Indonesia
Source: *author's survey result*

The validity of the construct measurements is assessed in several ways such as factor analysis and measurement indicator reliability.

3.2. Measurement and analysis plan

The first eleven survey questions contain the basic information about the respective SMEs, including the location of the company, their product or service, the number of employees, net income in the past two years, and the respondent's job title in the company. The main 22question items (see Table 1) are evaluated on a seven-point Likert scale ranging from 1 = Not at all barrier, to 7 = Serious barrier. For the validity of the questions, Cronbach's α confirms the reliability (Huang, et al., 2015). Furthermore, to assess convergent validity (CV), we calculated Factor Loading (FL), Composite Reliability (CR), and Average Variance Extracted (AVE) measures in Table 2.

To analyze the results, descriptive analysis is utilized by engaging with the statistical software of Statistic Product and Service Solution (SPSS) version 20. Table 1containsthe means, standard deviations, and Cronbach's α. ANOVA was utilized to detect differences between experimental group means, in this case between Hungarian and Indonesian SMEs (Sawyer, 2009) in Table 4. While analyzing the data, the items require to be coded in SPSS. Consequently, 22 items (sub-factors) were labeled based on each barrier according to the group factors, for example, Org1, K2, OS2, etc. (see Table 1).

3.3. Data collection

The online questionnaire was pursued to the owners, directors, managers, senior employees as well as consultants who handle SMEs and understand SCM strategy. The target respondents are from two countries, Hungary, and Indonesia. To select the population, the authors targeted the government directory of the Hungarian Chambers of Commerce and Industry (https://mkik.hu/en), which publishes a list of around 1700 SMEs. In Indonesia, the sample was selected from Akseleran company (https://www.akseleran.co.id/), one of the crowd founding peers to peers lending companies in Indonesia that are connected to SMEs and has a list of around 300 SMEs. Besides, personal networking and the author's connection with other SMEs were also included.

A cover letter was attached to the questionnaire explaining the purpose of the study and the contents of the survey questionnaire. The data collection has been conducted within 4 months (September to December 2020). The authors achieved 105 responses from Hungarian

SMEs and 124 from Indonesian SMEs (see Table 2) representing a response rate of 11% for Hungary and 41% for Indonesia.

4. Data analysis

4.1. Measurement model assessment

To ensure that the construct measurements have sufficient quality, the measurement model is assessed in several ways such as factor analysis and measurement indicator reliability.

Table 1. Construct measures reliability

FACTOR	SUB FACTOR	HUN		IDN	
		Mean	Std.Dev	Mean	Std.Dev
Organization (HUN: α = 0.895, IDN: α = 0.922)	Lack of training courses/ consultancy/institutions to train, monitor/mentor progress specific to each industry (Org1)	3.83	1.55	4.77	1.55
	Poor supplier commitment/unwilling to exchange information (Org2)	4.43	1.55	5.29	1.44
	Lack of Inter-departmental co-operation in communication (Org3)	4.00	1.97	5.34	1.41
	Lack of involvement from top management (Org4)	3.82	2.01	5.14	1.52
	Inadequate management capacity (Org5)	4.13	1.69	5.34	1.38
	Big effort to change organizational strategy (Org6)	4.02	1.68	5.08	1.43
	Unclear organization objective (Org7)	4.26	2.05	5.32	1.57
	Inadequate performance measure (Org8)	4.23	1.79	5.35	1.32
Financial (HUN: α = 0.924, IDN: α = 0.867)	Financial constraint (F1)	4.59	1.57	5.12	1.82
	High investments and less return-on-Investments (F2)	4.42	1.61	5.06	1.64
	High implementation and maintenance cost (F3)	4.37	1.77	5.17	1.47
Knowledge (HUN: α = 0.923, IDN: α = 0.925)	Lack of supply chain management knowledge exposure to employee (K1)	4.47	1.67	4.98	1.49
	Lack of awareness and participation in supply chain management (K2)	4.32	1.64	5.16	1.46
	Lack of motivation and employee involvement (K3)	4.49	1.65	5.30	1.44
Technology (HUN: α = 0.799, IDN: α = 0.881)	Lack of new technology, materials and processes (T1)	4.04	1.57	4.75	1.63
	Current practice lacks flexibility to switch over to new system (T2)	4.00	1.65	4.86	1.53
	Lack of human resources (T3)	4.67	1.62	5.25	1.40
	Fear of failure (T4)	3.27	1.72	4.90	1.80
Outsourcing (HUN: α = 0.876, IDN: α = 0.933)	Lack of standard supply chain management system to collaborate with suppliers (OS1)	3.70	1.62	4.74	1.64
	Lack of Customer Satisfaction Index (OS2)	3.74	1.70	5.22	1.51
	Lack of Trust among supply chain management partners (OS3)	3.88	1.80	5.10	1.54
	Unwilling to share risk and rewards between Supply Chain Management partners (OS4)	3.90	1.76	5.17	1.46

Source: *author's survey result*

The construct reliability calculation is based on Cronbach's α value. It can be seen from Table 1 that each factor has a Cronbach's α greater than or equal to 0.7, suggesting that the factors are acceptable or reliable in terms of their construct for both countries.

Furthermore, to assess convergent validity (CV), we calculated Factor Loading (FL), Composite Reliability (CR), and Average Variance Extracted (AVE). CV refers to the extent to which a test measures the same thing as other tests intended to measure that construct (Thoma et al., 2018). It is assessed by examining the AVE that provides the total of the variance that a construct gain from its items concerning the amount of the variance due to the measurement error (Fornell and Larcker, 1981). In Table 2, all the AVEs for the two countries are greater than 0.50 at the construct level. It suggests that the discriminant validity of constructs has been established.

Table 2. Construct measures validity

FACTOR	SUB FACTOR	HUN			IDN		
		FL	CR	AVE	FL	CR	AVE
Organization	Org1	0.846	0.90	0.54	0.697	0.89	0.50
	Org2	0.772			0.563		
	Org3	0.609			0.671		
	Org4	0.686			0.773		
	Org5	0.732			0.767		
	Org6	0.699			0.612		
	Org7	0.761			0.803		
	Org8	0.725			0.759		
Financial	F1	0.819	0.88	0.71	0.875	0.79	0.57
	F2	0.878			0.821		
	F3	0.832			0.522		
Knowledge	K1	0.776	0.77	0.53	0.677	0.77	0.52
	K2	0.748			0.718		
	K3	0.654			0.771		
Technology	T1	0.768	0.80	0.50	0.766	0.81	0.52
	T2	0.79			0.854		
	T3	0.567			0.647		
	T4	0.689			0.573		
Outsourcing	OS1	0.557	0.81	0.51	0.679	0.84	0.57
	OS2	0.735			0.802		
	OS3	0.748			0.792		
	OS4	0.806			0.752		

Source: *author's survey result*

Having evaluated the measurement model and assessed its result, data evaluation can be continued with ANOVA as well as the top-ranked barrier in each country which is related to the country's characteristics.

4.2. Descriptive analysis

The mean score for each item was already specified in the previous Table 1, hence in below Table 3, the rank of the means has been measured from the lowest in importance to the highest (RANK). Furthermore, (%5-7) means the response ranking that is calculated from the

percentage of respondents that respond to the survey items a five or above (important barrier or above).

Table 3. Item rankings of barriers of SCM implementation

FACTOR	SUB FACTOR	HUN		IDN	
		RANK	%5-7	RANK	%5-7
Organization	Org1	18	34%	20	60%
	Org2	5	54%	6	77%
	Org3	14	46%	3	77%
	Org4	19	39%	12	76%
	Org5	11	44%	2	80%
	Org6	13	38%	15	74%
	Org7	9	51%	4	77%
	Org8	10	45%	1	79%
Financial	F1	2	57%	13	68%
	F2	6	53%	16	68%
	F3	7	52%	10	71%
Knowledge	K1	4	58%	17	63%
	K2	8	49%	11	69%
	K3	3	54%	5	75%
Technology	T1	12	42%	21	56%
	T2	15	42%	19	62%
	T3	1	67%	7	73%
	T4	22	28%	18	57%
Outsourcing	OS1	21	30%	22	57%
	OS2	20	36%	8	73%
	OS3	17	41%	14	68%
	OS4	16	38%	9	72%

Source: *author's survey result*

The result from this study can support the managers to implement better the SCM strategy in their organization by appropriate priority and resource allocation. Nearly 70 percent of the technology factor score for "Lack of Human Resource" (T3) a five or higher identified as the top barrier for Hungarian SMEs. On the other hand, Indonesian leaders identified "Inadequate Management Capacity" (Org5) and "Inadequate Performance Measures" (Org8) are the top barrier of SCM implementation for SMEs. It received a 79 percent score (Org5) and an 80 percent score (Org8). Overall, the top barrier factors of SCM implementation were identified to be relatively different based on each country. It is possibly due to different types of country's characteristics.

Based on the top 5 barrier factors to implement SCM in those 2 countries, we would like to see whether it has a statistically significant difference or not. Using one-way ANOVA will create a p-value that can be used to test the null hypothesis if the variances of the groups in this case Hungary and Indonesia are homogenous (Çavuş et al., 2016). The significance level is shown when the p-value < 0.05 of alpha (0.05 is universally used as border value for several practices including biostatistics, social science, and other implementations, Gelman,

2013). It resulted that all those 5 top factors have statistically significant differences between those countries. It supported the statement where the barrier in each country can be varied regarding SCM implementation.

Table 4. Top 5 barrier factors of SCM implementation

FACTOR	SUB FACTOR	HUN RANK	IDN RANK	F-Test	p-Value	Statistical Difference Result
Organization	Org8	10	1	29.42	1.5E-07	Significant
	Org5	11	2	35.25	1.1E-08	Significant
	Org3	14	3	35.71	8.8E-09	Significant
	Org7	9	4	19.82	1.3E-05	Significant
Knowledge	K3	3	5	15.84	9.3E-05	Significant
Technology	T3	1	7	8.53	0.00384	Significant
Financial	F1	2	13	5.48	0.02008	Significant
Knowledge	K1	4	17	6.12	0.0141	Significant
Organization	Org2	5	6	19.04	1.9E-05	Significant

Source: *author's survey result*

5. Discussion and conclusion

5.1. Managerial implication

The survey revealed that the ranking of the barrier factors in the two countries are statistically different that may be caused by the different SCM structures. Indonesian companies suffer more from their organizational factors as their top-ranked barriers show while Hungarian companies evaluated that lack of financial resources, employees, knowledge of SCM, and poor commitment from other SCM partners as their top barrier factors.

Four of the top-ranked barriers for Indonesian SMEs are in the Organization factor group in the rank order: Inadequate performance measure (Org8), Inadequate management capacity (Org5), Lack of Inter-departmental cooperation in communication (Org 3), and Unclear organization objective (Org7). These top barriers are based on internal system problems. This ranking is also supported by the effects of government policy toward SMEs. The Indonesian government has taken an action to empower SMEs from 1966-1988. The government assisted SMEs in numerous plans, such as capital or credit schemes support, technical assistance, and large corporate partnerships (Maksum et al., 2020). The government support accelerated the activity of SMEs by simplification of the licensing procedure to start a business, permit fee relief for SMEs' establishment, simplification of tax administration, and provision of special allocation funds. The government is also trying to increase business opportunities for SMEs with supply chain partnerships (Kemenkeu, 2020). Indonesia's government has already supported 100% of the collaboration in SCM. Hence, the main problem is inside the organization. This finding has implications for owners and managers to solve the internal problems, start to commit, and set a goal related to the implementation of SCM strategy emphasizing its several advantages.

The Lack of motivation and employee involvement (K3) is the fifth-ranked barrier in Indonesia. The limited number of human resources is a common issue for SMEs in Indonesia. Therefore, apart from focusing on the internal organization, managers should shape and

strengthen employees' mindset to always being innovative. The study from Games and Rendi (2019) found out that knowledge management and risk-taking are the ways to lower negative innovation results. The finding is also in line with the research from Hamdani and Wirawan (2012) that focuses on the open innovation framework. They resumed that the innovative supply chain framework can be one of the ways to succeed and sustain Indonesian SMEs.

Contrary to Indonesia, the top barriers of Hungarian SMEs are in several different factor groups. Lack of human resources (T3) as a part of the technology factor is the first-ranked barrier of SCM implementation. Based on the European Commission report (2020), in the economically active population, only 4.4 million people were employed. The qualified workforce has several advantages to work in larger enterprises, government institutions, rather than SMEs so they have shortages in qualified human resources.

Financial constraint (F1) is the second-ranked barrier factor in Hungary. The Lack of motivation and employee involvement (K3) is the third-ranked barrier in Hungary. This is the only barrier that is also top-ranked in Indonesia (# 5). Like the Indonesian government, the EU also subsidies to the economic development of Hungarian SMEs, in specific Structural Funds and the Cohesion Fund were available in the 2007–2013 period. Even though SMEs thought that this subsidy is still not enough to implement the SCM strategy. However, it was found that this fund had a substantial positive impact on the number of workers, sales income, gross value added as well as operational revenue (Banai et al., 2020).

Lack of supply chain management knowledge exposure to employees (K1) is the fourth-ranked barrier in Hungary. Hungarian SMEs can slowly invest in SCM either in the knowledge of SCM for their employee or in the technology. There is also a supporting statement from the study of Vécsey and Shehu (2016) that Hungarian SMEs have easier access to get a bank loan. There is strong advice from previous research that the Hungarian government needs to enhance the socio-economic element of the entrepreneurial atmosphere, having more entrepreneurial education, workshop, and conferences (Fogel and Zapalska, 2001).

Concerning the organization factor, it turns out that lack of commitment or unwillingness to share the information from the supplier (Org2) was classified as the fifth top barrier factor in Hungarian SMEs implementing SCM. This can be classified as an external system barrier. To have better information sharing, companies need strong trust. However, to strengthen trust, parties require a contractual-based partnership and sharing information decrease the partner's uncertainty behavior (Kwon and Suh, 2005; Shin et al., 2019). It is important to the top management level to prioritize their actions to improve the implementation of SCM in their business strategy based on the finding that has been achieved in this study.

The SMEs´ top managers in Hungary and Indonesia can prioritize their actions to improve the implementation of SCM strategy based on the findings of this study. These findings could also provide a benchmark to SMEs in other countries with different complexities in their supply structure. Indonesia has several types of transportation such as land, sea, and air transportation that categorize the complexity. The simpler the supply chain structure of a country, the more similarity it has with the Hungarian scheme rather than Indonesian, and vice versa.

5.1. Future research and limitation

The current study has several limitations. Firstly, it seems that the differences in supply chain structure might have a major effect on the ranking of the barrier factors of SCM implementation. This study delivers some understandings from Hungary and Indonesia with distinct characteristics, especially in their geographical structure that influences the SCM

structure. Adding more countries might provide support or reject the hypothesis. Secondly, even though the best visions come from the top-level managers of the companies, the insights from the middle and lower levels of management could enrich the information and strengthen the results of the study. Thirdly, this study is utilizing an online questionnaire and literature review methodology. Additional qualitative methods including interviews or case studies could extend the findings. On the other hand, a conceptual framework study can find how the different barrier factors influence each other regarding the success of SCM implementation. Further research could provide insight from the government's point of view why despite major governmental support, SMEs are still deficient in implementing SCM strategies.

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