CROSS-COUNTRY ANALYSIS OF SUPPLY CHAIN MANAGEMENT DRIVERS FOR SMALL AND MEDIUM-SIZED ENTERPRISES

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Abstract: Supply Chain Management (SCM) drivers are the key factors in successful SCM strategy implementation. SMEs with limited resources need to focus on the top drivers to improve performance and competitiveness. The paper explores which driver factors have the largest importance according to the opinion of the top managers of SMEs. Two developing countries were compared which have different supply chain environments mainly due to their geographical structure. Information from top managers of 105 Hungarian and 124 Indonesian SMEs was collected using an online questionnaire. The data was analysed using statistical methods. This study is the first to rank SCM drivers in a quantitative study comparing SMEs in different supply chain environments. The findings reveal that from 22 driver factors both countries perceive the same top 10, however in a different ranking order. Improvement of customer satisfaction and information dissemination are the top two drivers, which are highly correlated.

Key words: Supply Chain Management, Drivers, Small and Medium-sized Enterprises, Cross-country comparison.

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Introduction

Supply Chain Management (SCM) strategy implementation improves the company's competitive advantage (Xian et al., 2018; Govindan et al., 2013; Blanchard, 2007; Porter, 1998). The SCM drivers are key factors in successful SCM strategy implementation. Managers focus on the top drivers, which impact their competitive advantage and performance. Many large companies implemented SCM strategies early to keep up with globalization, but recently also small and medium-sized enterprises (SMEs) followed, intensively joining the international marketplace (Morais and Ferreira, 2019; Petrou et al., 2020). SMEs are a vital part

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of the economy in most countries. In Europe, 93% of the non-financial businesses are classified as SMEs and employ about 70% of the workforce (Eurostat, 2016). SMEs distinguish themselves from larger enterprises in business capabilities and practice, growth ambition, business environment, and business characteristics (Gherhes et al., 2016).

To advance a company in internationalization requires using business networks to join global supply chains, which will achieve better company performance (Wach et al., 2020). Trade fairs present chances to establish a business relationship that leads to global supply chain access (Measson and Hunt, 2015). However, there are still few SMEs that have achieved world-class status. The reason is that most SMEs still utilize simple procedures, immediate feedback, short-term decision-making (Singh et al., 2008), and whose main motivation is short-term profit (Wahjudi et al., 2020). An additional barrier that SMEs have, apart from the shortage of other resources, is the employees' knowledge due to fast employee turnover and lack of training (Long et al., 2013; Belitsli et al., 2020). To compete in a fast-changing competitive market, SMEs require advanced Information Technology (IT) for better internal efficiency (Singh et al., 2008). Even though lots of progress is already reported in the literature, still a low percentage of SMEs (28%) are utilizing full SCM strategy implementation. The reasons, according to Power (2008) are the fear of new adjustment, high satisfaction from the current business process, level of understanding of new technology, time-consumption and high expenses.

This paper's motivation is to understand how different supply chain environments influence the SCM drivers according to the opinion of the top managers of SMEs. The underlying hypothesis is that the supply chain structure influences the importance of drivers in SCM strategy implementation. Taking into consideration the effect that different types of geographical and SCM structures have, this will enhance the existing literature (Akhtar, 2019; Chand et al., 2018; Diabat et al., 2014; Givondan et al., 2013). This study analyses a sample of Hungarian and Indonesian SMEs from reputable institutions of those two countries representing all locations. The main goal is to expand the current literature by ranking the factors and sub-factors of the drivers; hence, the SMEs can prioritize SCM implementation. These factors are being measured and ranked for the first time in a quantitative study comparing SMEs in different supply chain environments.

Literature Review

Even though SCM has several functions, Tummala et al. (2006) stated that procurement, inventory management, and logistics are the most crucial. The literature review of Power (2005) summarized that the SCM strategy could boost the customer service level, bring cost-effectiveness, and share benefits from the companies that have been well integrated into the SCM link. Research that has been conducted in European companies found that Enterprise Resource Planning (ERP) systems have already been properly developed to provide electronic links with SCM partners. Collaboration between suppliers and customers towards

coordination of inventory management and supply chain design proved to improve company performance (Bagchi et al., 2005).

The literature on the drivers of SCM implementation mostly discusses larger organizations in developed countries. Tummala et al. (2006) assessed the SCM implementation based on a survey of 129 managers in the SCM area. The descriptive analysis revealed that performance measurement, the atmosphere of trust within SCM partners, and top management commitment were key SCM success factors for those midwestern companies in the USA. In another research done on New Zealand companies that had interviews with 29 senior managers in 23 companies revealed that customer pressure, and public networks pressure such as scientific communities, and research centres were the key external drivers (Sajjad et al., 2019). In addition, they verified that SCM implementation could enhance the competitive advantage of a company by cost reduction, operational effectiveness, sales increase, and long-term survival. Diabat et al. (2014) analysed the enablers of sustainable SCM in the textile industry in five textile plants using a questionnaire. The analysis used interpretative structural modelling (ISM) and it summarized 13 enablers as the influence factors of sustainable SCM implementation. The enablers that have a close relationship with SCM are customer satisfaction, employment stability, and improvement of product characteristics. A case study of German enterprises showed that data sharing from several parties in SCM integration affected the success of SCM implementation. Leyh and Thomschke (2015) used literature review and interviews to conclude that top management support, organizational structure, and organizational culture were the driver factors of SCM implementation.

Looking at the organizational characteristics, research has found the primary driver of SCM implementation depends on the industry sector (Walker et al., 2008), geographical location (Bai et al., 2014), position in the supply chain (Varsei et al., 2014) and the size of the company (Zhu and Sarkis, 2007). Both academics and practitioners were analysing the implementation of SCM in various aspects such as lean, digital, knowledge management, integration process, etc. for large enterprises in developed countries (Büyüközkan and Göçer, 2018; Ugochukwu et al., 2012; Hochrein et al., 2015; Marra et al., 2012; Power, 2005; Setyaningsih et al., 2020). Kot et al. (2020) summarized that SCM implementation can differ in the context of considered economies; in developed countries, the impact is higher than in developing countries. Though, we could only find a few papers focusing on the drivers of SCM implementation for SMEs in developing countries.

Looking into the Asian perspective, some research was conducted in India and Pakistan. Other research has been done on developing countries, including Brazil, Poland, and Kazakhstan. Chand et al. (2018) investigated the driver factors ranked for SCM implementation in mining equipment manufacturing of Indian companies. It used the Analytical Hierarchy Process (AHP) and summarized several factors of SCM such as laws and regulations, supplier capability, shorter product life cycle, and customer service expectancy. Research on the Pakistani fast-food industry by

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Hanif and Usman (2018) gathered data from a questionnaire given to 105 multinational and local companies in Rawalpindi and Islamabad. The comparison between multinational companies and local companies provided interesting insight. The research found several drivers on SCM implementation, such as top management commitment, customer focus, IT, and competitive advantage improvement. The second research from Pakistan by Akhtar (2019) focused on the manufacturing sector and emphasized green supply chain management in three specific fields, textile, chemical, and pharmaceutical industries. Partial least squares structural equation modelling was used to analyse the result from 263 respondents. Consumer, institutional, and competitor pressures were the significant enablers towards competitiveness within SCM.

Jabbour et al. (2011) identified the factors that affect SCM practices in the Brazilian electro-electronic sector through a survey conducted with 107 respondents. Using one-way ANOVA and Kruskal-Wallis tests, the results revealed that size, position, and bargaining power were the most important driver factors to implement SCM. Kot and Grondys (2018) summarized that for Poland and Kazakhstan´s SMEs the end customer is the main driver for SCM implementation. Kumar et al. (2015) identified the critical success factors and disclosed the impact on SMEs' performance but they did not analyse the determinants of the significant drivers. The single country case studies cannot be transferred to another type of supply chain structure (Tummala et al., 2006; Sajjad et al., 2019; Hanif and Usman, 2018; Akhtar, 2019; Jabbour et al., 2011). The larger the area for the business geographically, the more logistics is considered as the backbone for SCM strategy (Haag and Sandberg, 2020).

A literature gap has been revealed in cross-country comparison of SCM drivers, especially for SMEs in developing countries with different supply structures. Also, the ranking of the importance of drivers is an understudied area.

To fill in the above research gaps, SMEs in two developing countries were compared that have different supply chain structures mainly due to their different geographical structures. Hungary and Indonesia are two emerging markets with very different supply chain environments. Hungary is a landlocked country, adjacent to several countries, not connected to the sea, and located in central Europe at the crossroads of four main European transportation corridors (Alvarez, 2020). On the other hand, Indonesia is an island nation in South East Asia with 17,500 islands. The landscape varies from mountain to green fertile rice fields, tropical rainforest, savannahs, and beaches (Wolters, 2020). The difference in the geographical structure of Hungary and Indonesia results in a very different supply chain structure.

SMEs are important in both countries. Specifically, Hungarian SMEs employ 70% of the workforce. The number of SMEs is slightly higher than the average in Europe with 98% of the total number of firms (SBA, 2018). Similarly, in Indonesia, SMEs represent 90% of all firms outside the agriculture sector and provide a job for over 97% of the country's workforce (OECD, 2018). Currently,

both countries are classified as middle-income countries with growing economies based on the Global Competitiveness Report (GCR, 2019). Hungary and Indonesia are close in rank, Hungary is 47th meanwhile Indonesia has a rank of 50. Hungary, which is classified as a small country, is considered a growing market and classified as a commodity importer (GEP, 2020). Indonesia is strong in South East Asia based on its market size and macroeconomic stability (GCR, 2019).

Based on a survey given to SMEs we compared two countries with different types of geographical and supply chain structures. The main hypothesis for this research is that different SCM environments have a major influence on the ranking of driver factors of SCM implementation. Using statistical methods, the differences in the ranking of the drivers were analysed.

Research Methodology

The quantitative analysis of the research requires a larger sample size, so a survey questionnaire was deemed as the most appropriate way to capture a wider SME community with external reliability and validity, as was suggested by Roopa and Rani (2017). A questionnaire was distributed by email to compare SMEs' attitudes towards the driver factors of SCM implementation. The different locations of respondents of countries make it beneficial to use this type of survey.

Sample

The scope was limited to two countries, Hungary and Indonesia. The sample population consisted of top managers and strategic decision-makers of SMEs. The sample in Hungary is based on the government directory of the Hungarian Chambers of Commerce and Industry (https://mkik.hu/en), which has a list of around 1700 SMEs. In Indonesia, the sample was selected from the Akseleran company database (https://www.akseleran.co.id/), connected to SMEs providing loans to around 300 SMEs. An email was sent with an explanatory letter on the purpose of the research and a link to the online questionnaire to the respondents in both countries. Based on this, we filtered the invalid email addresses. Emails were sent out in two phases with follow-up text messages, resulting in 105 responses from Hungarian SMEs and 124 from Indonesian SMEs (see Table 1). This represents a response rate of 11% for Hungary and 41% for Indonesia. We received quite a low response rate for the Hungarian data. This is not uncommon as previous research from Bartholomew and Smith (2006) also found a low response rate from small businesses, especially using mail surveys compared to larger firms or the general industrial population.

Table 1. Sample Demographics

Measure	Items	Hungary (n_1 = 105)		Indonesia (n_2 = 124)	
		N	%	N	%
SME's Type	Micro	51	49%	71	57%
	Small	35	33%	39	31%
	Medium	19	18%	14	12%

Source: Own

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For SME types the Eurostat 2020 classification was used: micro-enterprises have up to 10 employees, small companies with 10 to 49 employees, and medium-sized companies with 50 to 249 employees. Lussier and Sonfield (2015) described small enterprises to be more likely to employ non-family member managers and engage in the formulation of a succession plan. Small enterprises utilize more outside advisory services, and the style of their operation is also more formal compared to micro-enterprises.

The respondents provided information on the market serviced, the number of employees, the net income in the past two years, and the role of responsibility within the organization. Additionally, they were required to analyse specific driver and barrier factors of SCM. Key informants in this research had to have relevant knowledge about the study and were willing to share their experiences. Also, they were required to hold a formal position in the company. They were the gatekeeper of deeper analysis relied on as an expert. In this case, owners, managers, or decision-makers were key representatives of SMEs (McKenna and Main, 2013). The majority of key informants from both countries were the owners of the businesses. A total of 55% of the respondents in Indonesia and 54% in Hungary were the owners of SMEs. Additionally, 26% of Indonesian respondents and 14% of Hungarian respondents had the title of director. The others were commissioners, managers, and professional employees connected to the SMEs.

Most of the SMEs in Hungary are in Budapest, as it is the capital city (43% of the respondents). Furthermore, 67% had less than 2 million euro net income, which classified them as micro-enterprises in Europe. In Indonesia, most companies are on Java Island, which is the centre of business. 68% of the SMEs have less than 1-billion-rupiah net income, and 21% receive in between 1-10 billion rupiah. In total nearly 90% of SMEs had less than 2-million-euro net income, which classifies them as micro-enterprises in Indonesia. In terms of the sector of industry, Indonesia is mostly dominated by food and beverage industries (32%), followed by trade (13%), and Hungary is dominated by trade (25%) and machine engineering (7%).

The Research Design

Based on the survey, we intend to identify the perceptions towards the drivers of SCM implementation focusing on SMEs. The selection of the survey questions is based on a literature review conducted in our previous research (Setyaningsih et al., 2020). Five main driver factors and 22 sub-factors have been identified from the extensive literature review research (see Table 2). By using the survey method, this approach allows the use of statistical calculation to objectively analyse the data where the results can be generalized to other populations (Johnson and Christensen, 2008). The application of a questionnaire facilitates finding the variability in distinct events (Saunders et al., 2009). A self-administered questionnaire was used in this research that was distributed by email.

Survey instruments

A 22 questions measurement was operationalized using previous studies (Fawcett et al., 2008 and Govindan et al., 2013). The original English questionnaire was

translated into Hungarian and Indonesian. The language comparability was tested by experts from the engineering logistics and management field resulting in minor changes in wording.

The data collection required four months total in 2020. Questions on general information and driver factors of SCM implementation were asked from the representative sample. Response options for the drivers were scored on a 7-point Likert scale (1 = Not at all, and 7 = Serious driver). Also, the background of the company's information and respondent's data was asked. Table 2 shows the construct items, the main factors, and the sub-factors (with brief notation); it contains their means, and standard deviation. Table 2 also includes the Cronbach's α values for the main factors showing that the reliability and internal consistency is appropriate (higher than 0.7 suggested by Bonett and Wright, 2014).

Table 2. Construct Measures

Factor	Sub Factor	HUN		IDN	
		Mean	Std. Dev	Mean	Std. Dev
Market Pressure (HUN: α = 0.77, IDN: α = 0.85)	Improve competitive advantage (ICA)	5.26	1.29	5.52	1.38
	Competitor's pressure (CP)	4.47	1.46	5.07	1.50
	Shareholder / investor pressure (SIP)	2.87	1.90	4.27	1.78
	Institutional pressure (IP)	2.76	1.72	3.84	1.91
	SCM partners pressure (SCMPP)	3.27	1.70	4.64	1.62
	Reputation/image of corporate (ROC)	4.83	1.68	5.52	1.48
	Globalization (G)	4.10	1.66	4.85	1.61
	Improve customer satisfaction (ICS)	6.07	1.26	6.05	1.24
Social Pressure (HUN: α = 0.60, IDN: α = 0.70)	Value based network (VBN)	4.19	1.74	4.03	1.76
	Consumer organization (CO)	3.87	1.80	4.16	1.68
	Direct benefit to business process (DBBP)	5.22	1.50	5.64	1.44
Organizational Culture (HUN: α = 0.70, IDN: α = 0.77)	Innovativeness (I)	5.18	1.38	5.84	1.39
	Information dissemination (ID)	5.72	1.32	5.91	1.21
Organizational Characteristic (HUN: α = 0.81, IDN: α =	Position in supply chain (PSC)	4.55	1.38	4.90	1.54
	Industrial sector (ISe)	4.14	1.55	5.05	1.42
	Industry size (ISi)	4.00	1.58	4.90	1.46

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0.87)	Geographical location (GL)	4.24	1.61	5.20	1.44
	Degree of internationalization (DOI)	3.81	1.76	4.45	1.71
Corporate Strategy (HUN: α = 0.80, IDN: α = 0.89)	Top management commitment (TMC)	5.58	1.52	5.59	1.36
	Cost related pressure (CRP)	5.26	1.39	5.65	1.23
	Operational/economic performance (OEP)	5.43	1.29	5.73	1.09
	Monitoring, evaluation, and development of implementation (MEDI)	5.08	1.47	5.56	1.31

Source: Own

In our case, only Hungarian data for social pressure factor has a less than 0.7 value of Cronbach's α, although it still can indicate an acceptable level of reliability according to Hulin et al., (2001).

Additional control variables contained general information including the location of the company, size of the firm by average number of employees within a one-year operation, their net income within two years of performance, as well as the type of industry sector. Respondents were required to specify their position to verify that they have an important managerial role in their company.

Results

The mean scores for each sub-factor are included in Table 2. The ranks from the highest in importance regarding the driver sub-factors of SCM have been calculated based on the responses of a five or above (%5-7) in the Likert scale. The ranks are listed in Table 3 with the sub-factor notation used in Table 2.

Table 3. Ranking of Driver Factors

Factor	Sub-Factor	HUN		IDN	
		Rank	%5-7	Rank	%5-7
Market Pressure	ICA	18	34%	9	83%
	CP	5	54%	12	69%
	SIP	14	46%	19	49%
	IP	19	39%	22	39%
	SCMPP	11	44%	17	60%
	ROC	13	38%	10	82%
	G	9	51%	16	62%
	ICS	10	45%	1	90%
Social Pressure	VBN	2	57%	21	44%

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	CO	6	53%	20	45%
	DBBP	7	52%	6	82%
Organizational Culture	I	4	58%	3	85%
	ID	8	49%	2	89%
Organizational Characteristic	PSC	3	54%	14	69%
	ISe	12	42%	13	73%
	ISi	15	42%	15	66%
	GL	1	67%	11	69%
	DOI	22	28%	18	51%
Corporate Strategy	TMC	21	30%	7	80%
	CRP	20	36%	5	85%
	OEP	17	41%	4	88%
	MEDI	16	38%	8	83%

Source: Own

Table 4 summarizes the top ten drivers that influence the implementation of SCM. It also includes the results of the F-test statistics and whether there is a significant statistical difference between the two countries in the perception of the importance of the drivers.

Table 4. Top 10 Ranked Drivers

Factor	Sub-Factor	HUN Rank	IDN Rank	F-Test	p-value	Statistical Result
Market Pressure	ICS	1	1	0.01	0.91	No Significant Difference
Organizational Culture	ID	2	2	1.26	0.26	No Significant Difference
Corporate Strategy	TMC	3	7	0.00	0.97	No Significant Difference
Corporate Strategy	OEP	4	4	3.76	0.05	No Significant Difference
Market Pressure	ICA	5	9	2.14	0.15	No Significant Difference
Corporate Strategy	CRP	6	5	5.03	0.03	Significant Difference
Social Pressure	DBBP	7	6	4.62	0.03	Significant Difference
Organizational Culture	I	8	3	12.86	0.00	Significant Difference
Corporate Strategy	MEDI	9	8	7.09	0.01	Significant Difference
Market Pressure	ROC	10	10	10.86	0.00	Significant Difference

Source: Own

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These 10 sub-factors from Table 4 (see Table 2 for full forms of abbreviations) are the most important factors as drivers to implement SCM. Surprisingly both countries have the same top 10 drivers although in a different ranking order. The improvement of customer satisfaction (ICS) and information dissemination (ID) are the top two drivers in both countries. For the statistical evaluation with one-way ANOVA, the p-value can be used to test the null hypothesis as the variances of the groups, in this case Hungary and Indonesia, are homogenous (Çavuş et al., 2016). It can be statistically stated that there is a significant difference if the p-value < 0.05, which is the alpha universally used in biostatistics, social science, and other parts of the implementation (Gelman, 2013). No statistically significant difference was found from the top 5 factors in Hungary. Those are the ICS, ID, TMC, ICA, and CRP factors.

Table 5. Correlation Matrices for Top 10 Driver Factors

	ICS	ICA	ROC	DBBP	I	ID	TMC	CRP	OEP	MEDI
HUN										
ICS	1.00	0.19	0.58*	0.32*	0.32*	0.62*	0.55*	0.23*	0.31*	0.49*
ICA	0.19	1.00	0.06	0.18	0.29*	0.21*	0.36*	0.35*	0.27*	0.26*
ROC	0.58*	0.06	1.00	0.20*	0.23*	0.40*	0.45*	-0.07	-0.10	0.26*
DBBP	0.32*	0.18	0.20*	1.00	0.30*	0.30*	0.34*	0.41*	0.50*	0.37*
I	0.32*	0.29*	0.23*	0.30*	1.00	0.52*	0.57*	0.16	0.27*	0.54*
ID	0.62*	0.21*	0.40*	0.30*	0.52*	1.00	0.60*	0.23*	0.31*	0.44*
TMC	0.55*	0.36*	0.45*	0.34*	0.57*	0.60*	1.00	0.39*	0.49*	0.57*
CRP	0.23*	0.35*	-0.07	0.41*	0.16	0.23*	0.39*	1.00	0.71*	0.38*
OEP	0.31*	0.27*	-0.10	0.50*	0.27*	0.31*	0.49*	0.71*	1.00	0.53*
MEDI	0.49*	0.26*	0.26*	0.37*	0.54*	0.44*	0.57*	0.38*	0.53*	1.00
IDN										
ICS	1.00	0.67*	0.67*	0.39*	0.54*	0.57*	0.52*	0.45*	0.56*	0.45*
ICA	0.67*	1.00	0.62*	0.46*	0.44*	0.47*	0.53*	0.35*	0.50*	0.40*
ROC	0.67*	0.62*	1.00	0.38*	0.58*	0.52*	0.51*	0.39*	0.53*	0.52*
DBBP	0.39*	0.46*	0.38*	1.00	0.32*	0.28*	0.63*	0.55*	0.58*	0.52*
I	0.54*	0.44*	0.58*	0.32*	1.00	0.63*	0.39*	0.36*	0.45*	0.49*
ID	0.57*	0.47*	0.52*	0.28*	0.63*	1.00	0.35*	0.29*	0.43*	0.42*
TMC	0.52*	0.53*	0.51*	0.63*	0.39*	0.35*	1.00	0.63*	0.68*	0.72*
CRP	0.45*	0.35*	0.39*	0.55*	0.36*	0.29*	0.63*	1.00	0.73*	0.60*

OEP	0.56*	0.50*	0.53*	0.58*	0.45*	0.43*	0.68*	0.73*	1.00	0.76*
MEDI	0.45*	0.40*	0.52*	0.52*	0.49*	0.42*	0.72*	0.60*	0.76*	1.00

Note: ICS, improve customer satisfaction; ICA, improve competitive advantage; ROC, reputation of corporate; DBBP, direct benefit to business process; I, innovativeness; ID, information dissemination; TMC, top management commitment; CRP, cost related pressure; OEP, operational/economic performance; MEDI, monitoring, evaluation, and development of implementation. *Correlation is significant if it is less than 0.05.

Conclusion

This study has expanded our prior literature review of driver factors in SCM implementation for SMEs (Setyaningsih et al., 2020) using survey research and by ranking the key drivers in two countries with different geographical structures and SCM environments. The results partly support our underlying hypothesis that the supply chain structure influences the importance of the selected 22 driver factors and their ranking. However, both countries have the same top ten driver factors in implementing SCM (see Table 2 for a review of the driver factors of SCM implementation), so the dependence on the SCM specifics is minor for the two compared countries.

This study contributes to the existing theory on the driver factors of SCM implementation. Although the literature has addressed drivers and critical success factors for implementing SCM systems (Leyh and Thomschke, 2015), limited research has been conducted when considering developing countries that have different SCM environments.

This study is also contributes to the managerial level. In practice, SMEs are still having difficulties in implementing SCM strategy. We provided major support by ranking the driver factors that can help allocate the resources of implementation. The top management of companies must keep in mind that these two countries, which have different geographical structures, still have similar top driver factors that influence the SCM implementation in SMEs. Half of the top drivers have no significant difference in top management's perception; those are Improve Customer Satisfaction (ICS), Information Dissemination (ID), Top Management Commitment (TMC), Improve Competitive Advantage (ICA), and Cost Related Pressure (CRP) factors. Both countries have the same top two drivers, which are ICS and ID, and those drivers have a significant correlation to one another. It means that to implement SCM, the company is required to strengthen its ICS and ID.

Interestingly, the research found that improvement of customer satisfaction (ICS) is the main factor for SCM implementation in SMEs in both countries. The finding is supported by a couple of studies that stated the importance of this factor. A company that has a high value of customer satisfaction is making an impact on day-to-day customer happiness that leads to long-term loyalty maintenance (Heikkilä, 2002; Sun et al., 2005; Sáenz et al., 2017). Customer satisfaction is

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largely described by attitudinal and emotional response (Ji and Prentice, 2021). Customer service is the main enabler of customer satisfaction. Competitors' pressure (CP) is another factor that forces a firm to give a better offer to the customer. It can support the company, firstly, by identifying customer requirements and develop strategies, and secondly, by allowing competitors to create a rivalry in the service levels (Sun et al., 2005). Continuous evaluation, improvement, and further implementation (MEDI) have been proven to be the predecessor of customer satisfaction and customer retention (Shokouhyar et al., 2020). It can be done by referring to customer inquiries and complaints, meeting customer satisfaction by changing the specification of current products or services or being innovative (I).

The most important factor that also supports the success of customer satisfaction improvement is information dissemination (ID) (Heikkilä, 2002; Yu et al., 2013; Sáenz et al., 2017). It is known from the results of its study that this factor is the second most important factor that influences SCM implementation in SMEs and influences the achievement of customer satisfaction. SCM links the internal functions within the company and integrates them with the external functions. In this case, suppliers and customers need to manage their information circulation. By exchanging the specific essential information, it can improve the effectiveness of SCM. The more symmetric the information is across stakeholders, the less uncertainty companies have (Shabbir and Kassim, 2018). Specifically, talking about ID, it is classified as crucial and proprietary information. Appropriate information spread across external parties will impact the decrement of operational cost and improve customer service levels such as product development lead times, new product flexibility, and low inventory (Pandey et al., 2010).

These two factors of ICS and ID have no significant differences statistically for the two countries. The results should be generalized in order to be implemented in other SMEs from other different geographical structures. Based on Table 5, it can be concluded that ICS and ID have a significant correlation in both countries. It means that these two factors influence each other so as to implement SCM in SMEs. The correlation value is classified as higher for Hungary compared to Indonesia.

Findings from the current study have further suggestions for the decision-makers in SMEs to implement SCM. The first step is to create an objective for customer satisfaction. The management of companies are required to collaborate with their partners (supplier, distributor, retailer, etc.) to have a similar objective. Hence, they require managing several operation processes in order to become lean and structured (Jayanth et al. 2020). Manufacturing flexibility is also one of the keys to a successful company. By collaborating with other company partners, management could identify the procedures and activities that are crucial to improve response rate and customer satisfaction (Sáenz et al., 2017). The collaboration itself cannot be separated from information sharing. However, SMEs need to identify their business environment and plans in order to avoid any unnecessary negative impact

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on the company itself (Kumar et al., 2016). Management requires professional practice to ensure the implementation and development of information and sharing in the support of collaboration.

Limitation and Further Research

This study compares SMEs in two countries with emerging markets that could extend to other emerging markets or be compared with other market types. The survey utilizes one respondent from each company. Often other decision-makers in top decisions could also be involved. There is an opportunity to increase the sample size by adding other companies from different databases to avoid bias in the results.

The European companies were restrained in providing very detailed information due to the requirements of the General Data Protection Regulation (GDPR) compliance implemented in 2018. Hence several companies avoided participating in this survey, which they thought would break the regulations. Also, this study utilizes only survey research; adding other methodologies such as qualitative interviews and case studies could expand the results.

The findings of this study will motivate further research. The improvement of customer satisfaction proved to be the major driver so it would be beneficial to create a model of SCM implementation based on the sub-factors of this driver. Various sectors of industries may have different preferences toward SCM strategy implementation. It would be beneficial to find industry-specific preferences of driver factors as well as the SCM implementation itself.

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MIĘDZYNARODOWA ANALIZA STEROWNIKÓW ZARZĄDZANIA ŁAŃCUCHEM DOSTAW DLA MAŁYCH I ŚREDNICH PRZEDSIĘBIORSTW

Streszczenie: Sterowniki zarządzania łańcuchem dostaw (SCM) są kluczowymi czynnikami udanego wdrożenia strategii SCM. MŚP dysponujące ograniczonymi zasobami muszą skoncentrować się na najważniejszych czynnikach napędzających, aby poprawić wydajność i konkurencyjność. W artykule zbadano, które czynniki napędowe mają największe znaczenie w opinii menedżerów najwyższego szczebla MŚP. Porównano dwa kraje rozwijające się, które mają różne środowiska łańcucha dostaw, głównie ze względu na ich strukturę geograficzną. Za pomocą kwestionariusza internetowego zebrano informacje od kierowników najwyższego szczebla 105 węgierskich i 124 indonezyjskich MŚP. Dane zostały przeanalizowane metodami statystycznymi. Niniejsze badanie jest pierwszym oceniającym czynniki SCM w badaniu ilościowym porównującym MŚP w różnych środowiskach łańcucha dostaw. Wyniki pokazują, że spośród 22 czynników napędzających oba kraje postrzegają tę samą pierwszą dziesiątkę, jednak w innym porządku rankingowym. Poprawa satysfakcji klientów i rozpowszechnianie informacji to dwa główne czynniki, które są silnie skorelowane.

Słowa kluczowe: zarządzanie łańcuchem dostaw, sterowniki, małe i średnie przedsiębiorstwa, porównanie między krajami.

中小企业供应链管理驱动因素的跨国分析

摘要：供应链管理(SCM)驱动因素是成功实施SCM战略的关键因素。资源有限的中小企业需要关注主要驱动因素，以提高绩效和竞争力。本文根据中小企业高层管理人员的意见，探讨了哪些驱动因素最重要。两个发展中国家的供应链环境因地理结构不同而有所不同。使用在线问卷收集了105家匈牙利和124家印度尼西亚中小企业的高层管理人员的信息。使用统计方法分析数据。这项研究是第一个在比较不同供应链环境中的中小企业的定量研究中对 SCM 驱动因素进行排名的研究。调查结果显示，从 22 个驱动因素中，两国都认为前10名相同，但排名顺序不同。提高客户满意度和信息传播是前两个驱动因素，两者高度相关。

关键词：供应链管理, 驱动因素, 中小企业, 跨国比较。