BALTIC JOURNAL OF LAW & POLITICS
A Journal of Vytautas Magnus University
VOLUME 14, NUMBER 2 (2021)
ISSN 2029-0454

Cite: *Baltic Journal of Law & Politics* 14:2 (2021): 332-346
DOI: 10.2478/bjlp-2021-00024

Role of education management to expedite supply chain management: a case of Indonesian Public Sector Universities

Sunda Ariana
Universitas Bina Darma
Sunda_ariana@mail.binadarma.com

Obsatar Sinaga
Universitas Padjadjaran

Received: November 8, 2021; reviews: 2; accepted: December 10, 2021

Abstract

The current study evaluated the role of education management in expediting supply chain management in Indonesian public sector universities. The current trends in today's globe demonstrate the relevancy of this research study. Universities significantly contribute to the development of these SCM skills and abilities. Organizations can enhance their capacities by creating and using effective SCM procedures. Adopting effective SCM practices can help organizations perform better and keep their competitive advantage while integrating internal operations with external parties like clients and suppliers. Supportive university education systems show positive results in SCM, with supply chain education as a mediating factor. The data extraction method employed in the study was the questionnaire methodology. The administrator employees were given access to 300 questionnaires, of which 276 proved suitable for the study. Various units for the variables are used in the questionnaire development, which aids in assessing the variable using measurement scales. The analysis of the questionnaires showed a substantial connection between supply chain education and supply chain management. In contrast, there is no significant relationship between university and supply chain management.

1. Introduction

Every organization aspires to make money out of its current assets and investments. They can achieve their desired output by effectively applying the supply chain management process. As a result, firms across all sectors are quickly increasing their demand for supply chain executives. The COVID-19 pandemic has caused an exponential growth in the demand for supply chain specialists as

businesses experience the risk of having insufficient supply chains. The majority of supply chain managers base their work on prior experiences. Students who study supply chain management get the opportunity to learn about the industry-specific best practices used by diverse firms. Agricultural transitioned into the industrial and digital revolutions in human civilization. Rising enrollment rates in higher education result from a worldwide dedication to large-scale higher education. For instance, the percentage of people in the United States who have some access to a college education has increased from 4% in 1900 to about 70% in 2000. With a 30% increase in enrollments among marginalized communities, which accounted for 38% of U.S. college enrollments, the growing complexity within student populations is equally impressive (Penprase & Gleason, 2018). Usually, supply chains include the steps of obtaining inputs from suppliers, processing them, and then delivering them to clients for manufacturers or service providers. Academic SCM, also known as Educational SCM, attempts to improve social values by creating qualified graduates and insightful research. Customers themselves are one of the leading suppliers of process inputs in academics. Their bodies, souls, thoughts, possessions, or information are provided as inputs to the service operations. Figure 1 shows the education supply chain comprising various activities, people, organizations, data, and resources.

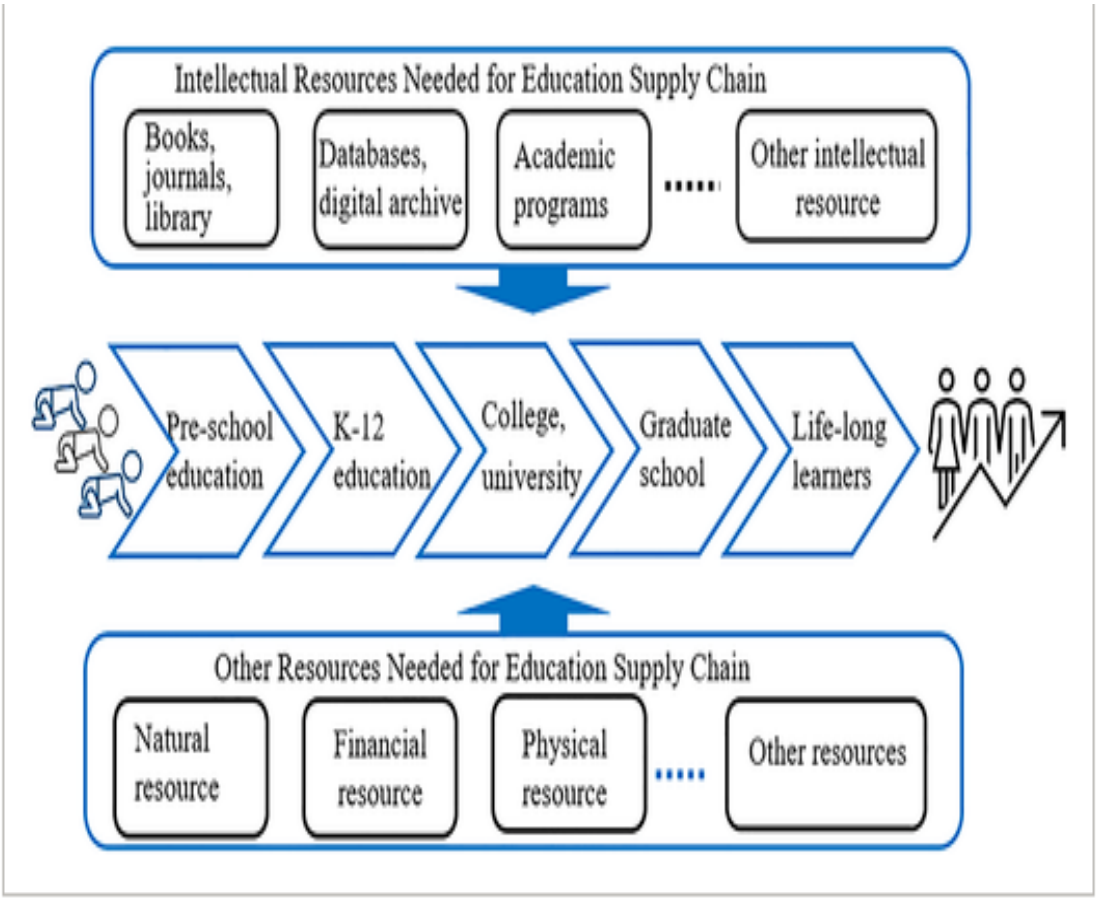

Figure 1. Interactions in an education supply chain
Source: (Li, 2020)

The years 1920–1944 fall between the two world wars. The university was active in the education supply chain during this period. Fivefold more people attended college, from 250,000 to 1.3 million (Thelin, 2011). The global higher education system is changing. Higher education urgently has to adapt to the paradigm shift for both positive social consequences and the enormous environmental problem (Gleason, 2018; Xing et al., 2018).

Additionally, due to the rapid changes and intense competition, firms had to build their capacity for reaction and the ability to offer their clients high-quality goods and services. Universities play a significant role in providing these SCM talents and competencies. Organizations can improve their capabilities by establishing and utilizing efficient SCM practices. Adopting efficient SCM procedures can aid businesses in maintaining their competitive edge and organizational performance while also integrating internal operations with external parties like suppliers and clients. With supply chain education playing a mediating function, supportive university education systems demonstrate sound effects in SCM. Higher education has a strong positive impact on advancing supply chain education.

Nevertheless, a good education system may cause pupils to do better in supply chain education. The SCM in Indonesia grows as supply chain education rises. In order to improve SCM, supply chain education should be offered in universities. The field of supply chain management (SCM) research has been around for a while. Instead, the fundamental idea permeates every civilization but receives no official acknowledgment. However, educational supply chain management (EduSCM) is still being introduced (Ishah et al., 2022).

This study aims to identify the role of education management in the supply chain management of public sector universities in Indonesia. Every nation recognizes the value of the education field, and higher education institutions, in particular, are crucial (Ha & Quyen, 2017). These institutes are crucial for young kids to learn SCM and other skills. As a result, the educational system at universities plays a significant role in supply chain management and education. There needs to be more literature on the connection between supply chain education and universities precisely, which the present study fills. It is evident from the literature that there are multiple types of research on supply chain education accessible (Jauhar et al., 2018).

2. Literature Review

Even though the literature highlights the significance of SCM to organizational success, there needs to be more research on the role of higher education institutions in SCM. Particularly in Indonesia, the analysis of prior research suggests that there need to be more studies that attempt to explore SCM techniques in connection to universities. One of the limitations in SCM education is the need for more information and expertise about SCM practices among Indonesian institutions as a consequence of this restriction (Alansaari et al., 2019; Nadeem et al., 2018). The shortage of data and research revealed that additional

research in this field of study was necessary. There are numerous studies on SCM that look at the service and manufacturing sectors, but prior research did not consider universities' roles in SCM. Because universities play a key part in many supply chain operations, it should be taken into consideration to emphasize the significance of academic institutions in SCM.

2.1. Supply Chain Management (SCM)

The most thorough examination of the topic to date is provided by one of the top consultants, authors, and executives in the field of supply chain management worldwide. William Copacino presents his perspective and suggestions on Supply Chain Management based on his more than 18 years of experience in various industries in logistics, production, procurement, customer support, and supply chain management (Copacino, 2019).

Numerous global supply chains need more tools to survive in the world we are entering. Because of this, supply chain managers must focus less on reducing costs and more on supporting innovative processes, increasing corporate connectivity, and fostering greater organizational agility. Daily new digital innovations are on the verge of upending almost all facets of conventional corporate operations. Nearly every industry's top business concern will be at the center of the approaching digital era. The digitization process has an enormous impact on supply chain management in today's firms and places tremendous pressure on them to adapt. Therefore, managers must comprehend how digitalization affects their business and workforce (Agrawal & Narain, 2018). Operating a safe, effective, and efficient educational business depends on a high-performing procuring and supply chain function, which can significantly improve operational and financial outcomes. Since adopting the semiautonomous advertising model, Indonesia's higher education institutions have undergone significant transformations (Sulaeman et al., 2019).

2.2 University Education System

The causes of the poor academic performance in Indonesia and Uzbekistan were compared in a comparative analysis (Shaturaev, 2021) of both nations' compulsory education systems. Researchers have spoken with school administrators, principals, and other authorities throughout the study as they have examined the data to determine the root causes of the issues. In order to achieve prospective milestones, findings pointed to the necessity of altering the teaching-learning process and making the appropriate investments in public education. The government is undergoing recent policy changes in the education industry as a system response to a transformation plan. In contrast, far away in South-East Asia, Indonesia has made notable strides in expanding educational opportunities by funneling massive funding toward formal education over the past few decades. However, the learning goals still need improvement.

In general, the university education system offers a variety of programs, among which SCM is one. Universities that do not offer supply chain education typically have less impact on students' SCM abilities (Marcus & Zambre, 2019; Treshchevsky et al., 2019). Thus, supply chain education and SCM play a significant role in the university education system (Hussain, 2018). Because the educational system plays a part in understanding, it also plays a part in supply chain management education.

2.3 Supply Chain Education

The application of systems ideas and approaches as a foundation for curriculum development or instructional strategy has yet received very little attention in the literature. In order to close this gap, a study (Li, 2020) that used systems theory and thinking to examine problems in higher education has produced several advances. Industry 4.0 is realigning education in the future, which broadens our perspective and forces us to think about what skills and competencies students should have after graduating from college when to expedite employment retraining, and what the components and contacts of the education supply chain are. This study introduced and defined the term "education supply chain" for the initial time. Additionally, this study has prompted us to see educational systems and arrangements as the results of maintaining sustainability associated with industrial upheavals, such as international migration and trans nationalization.

Consequently, a network that the universities administer well has a favorable impact on the SCM. Once students thoroughly understand the supply chain, firms may educate them realistically, which helps students acquire and produce high-caliber abilities. Previous research has also demonstrated that supply chain education is crucial in operations (Jauhar et al., 2018). The following hypothesis is proposed:

H1: Supply chain education is significantly related to supply chain management

2.4 University management system

The management of universities plays a vital role in providing supply chain education and other programs that can impact SCM and improve students' supply chain abilities. The university offers a place to develop fresh ideas (Schultz et al., 2019; Ul-Hameed et al., 2019). University management is the crucial factor influencing supply chain education and SCM interaction. Similar to how firms' management substantially impacts their operations, several studies have demonstrated that university management is crucial to SCM education. For both the public and private sectors, universities are seen as the core company and service supplier of human resources. University serves as the focal company in the education supply chain and ensures that there is two-way contact between the upstream (suppliers), downstream (customers), and customer parties (society). Via effective educational S.C. administration, the university may deliver

results of high value for the entire civilization (Basu et al., 2017). University organizational procedures must be sensitive and adaptable in adapting to market developments to achieve competitive advantage over dramatic changes. Before engaging in external coordination, an organization's internal operations are the foundation for achieving exceptional supply chain performance. University effectiveness is a metric that assesses how successfully the institution achieves its goals. Nevertheless, the effectiveness of the university's performance is dependent on the caliber of its students, the results of its research, and how effectively it implements its supply chain management concepts and practices. The following hypothesis is proposed:

H2: University management system has a positive effect on supply chain management

3. Methodology

The research's technique is based on quantitative investigations that take an explanatory approach. To obtain the results, the researchers used a questionnaire survey. The research's focus is on higher education administrators at Indonesian universities. The statistics for the results are extracted using SPSS and AMOS. Lastly, the study's variables were scaled using various metrics. The study methodology, which includes the sample, the assessment of the parameters, and the method used to interpret the data, is based on statistics. The research's descriptive methodology broadened the research arena for the already-existing parameters. Utilizing measuring scales, the study also looked at the relationships between variables in several aspects. Based on how many things there are, these scales are chosen. The study also supports utilizing a questionnaire survey to evaluate the variables. To guarantee the validity of the results, the data gathered from the surveys are entered into the SPSS and AMOS. The research was conducted using a quantitative methodology.

3.1 Questionnaire design

The target population determines the specificity of the research. The administrative personnel is the primary audience for the current study, which has concentrated on the higher education university sector. Indonesia is the study's target country. In order to gather data for the study's purpose, a questionnaire was employed in the research. Three hundred questionnaires were distributed, of which 320 were helpful in the research. The questionnaires are developed using different variable items, which help measure the variable through measurement scales. The measurement scales of each variable are discussed below;

Table 1: Measurement Items

Variables	No. of items	Measurement scale	Reference
Supply chain education	Five	1-5	(Marbun et al., 2020)
University performance	Seven	1-5	(Yusoff et al., 2013)
Supply chain management	Eight	1-5	(Dewi et al., 2018)

3.2.1. Supply chain education

Marbun et al. (2020) used the five-item scale and examined the relationship between higher education institutions and SCM. Various key university-related factors were considered, namely, the university education system, supply chain education at the university level, and the role of university management. Data were collected from university teachers in Indonesia. Moreover, the items provide the conceptual framework for the research, including literature, to expand the body of knowledge on the subject.

3.2.2. University performance

The scale adopted for measuring university performance is from Yusoff et al. (2013). The researcher has used seven items. In order to analyze the findings, the quantitative technique is used for each component. Each item represents a distinct variable dimension, aiding the researcher in producing reliable data.

3.2.3. Supply chain management

The scale used to measure cyberchondria is adapted from the research of Dewi et al. (2018) eight items to analyze and measure supply chain management in its current state. The items are also studied to suggest future recommendations to adopt and improve supply chain management in educational institutions.

3.2 Data Collection Process

The research's variables are employed to determine its findings. Various variables were employed in the research to examine their relationship. The study focuses on the linear relationship between the variables' individual effects. The study examines the connections between supply chain education, management, and university administration. A cross-sectional time horizon has also been used to address the time-related problem. Data collection could have been challenging with a longitudinal study; hence a cross-sectional time range was used in this investigation.

Moreover, scales with a precise number of items were used in the questionnaire development. In order to define the variables and their relationships with one another, care is made to consult the literature and earlier studies. Therefore, every measure is considered. The research is carried out using every protective precaution conceivable. The research's findings are guaranteed to be accurate.

4. Results

4.1. Respondent's characteristics

This research has been conducted by targeting the administrative employees of higher education universities in Indonesia. Three hundred questionnaires have been distributed among the university's administrator employees, of which 276 were found useful in the research. The respondents belonged to the administration block of the university, and they were first informed properly regarding the purpose and concept of this research. And the response was quite appreciative as the students cooperated to a great extent. Almost 276 questionnaires were utilized in the research. 47.5% of the respondents were female employees, and 52.5% percent were male employees. After observing the questionnaires, it was found that 30 employees were of baccalaureate. The second category of 123 employees falls in the 3rd-4th Master's degree. The third category of 102 employees falls in the Ph.D. degree category, whereas the last category was Post Doctorate with 18 employees.

Table 2: Demographic characteristics of respondents

	Frequency	**Percent**
Gender		
Male	145	52.5
Female	131	47.5
Total	276	100.0
Age		
21-30	53	19.2
31-40	77	27.9
41-50	97	35.1
50+	49	17.8
Total	276	100.0
Education		
Valid Baccalaureate	33	12.0
Masters	123	44.6
PhD	102	37.0
Post Doctorate	18	6.5
Total	276	100

4.2. Measurement results: Cross-loading tests

The rotating component matrix tests provide the researcher with information about the validity of the survey. It implies informing the researcher that the questionnaire items did not correspond to the definition or context of cross-loading. Information about the questionnaire items is provided in Table 3.

Table 3: Rotated Component Matrix

	Component		
	1	2	3
SCE1	.750		
SCE2	.767		
SCE3	.796		
SCE4	.759		
SCE5	.811		
UP1		.792	
UP2		.593	
UP3		.586	
UP4		.618	
UP5		.578	
UP6		.802	
UP7		.834	
SCM1			.801
SCM2			.775
SCM3			.754
SCM4			.785
SCM5			.819
SCM6			.784
SCM7			.619
SCM8			.567

SCE= Supply chain education, UP= University performance, SCM= Supply chain management

The table demonstrated that there was no cross-loading in the display of questionnaire constructs and that each item was displayed in its appropriate column. The researcher can ensure no cross-loading in the data from questionnaires for the relevant construct by looking at the items for parameters like supply chain education, university performance, and supply chain management that appear in their respective categories.

4.3. Descriptive Results

Descriptive statistics can be used to evaluate the strength of the relationships between different constructs. Table 4 provides a statistical summary that explains the quantitative aspects of this study's knowledge-gathering process. The mean values for SCE, UP, and SCM are almost near or above 3. This illustrates the normality of data as the skewness threshold value also falls between -1 to +1.

Table 4: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
SCE	276	1.00	5.00	3.6290	1.04225	-.907	.147
UP	276	1.00	5.00	3.6429	.94474	-.894	.147
SCM	276	1.00	5.00	3.5290	.87980	-.641	.147
Valid N (listwise)	276						

SCE= Supply chain education, UP= University performance, SCM= Supply chain management

4.4. Validity Results

Table 5 explains the discriminant validity of variables, which is the finding that the measurements of variables that theoretically should not be connected or linked to one another are precisely not correlated. The value of discriminant validity for supply chain education is 0.851, written in bold, and it is distinct from UP and SCM, respectively. The value for UP is 0.707, which is distinct by 0.652 of SCM. Whereas the convergent validity here in table 5 describes how closely the novel scale is linked to the other variables and other measures of the similar construct

Table 5: Discriminant and convergent validity

	CR	AVE	MSV	CCM	SCE	UP
SCE	0.801	0.696	0.327	0.851		
UP	0.823	0.741	0.310	0.713	0.707	
SCM	0.911	0.806	0.431	0.705	0.549	0.652

SCE= Supply chain education, UP= University performance, SCM= Supply chain management

4.5. Model Fitness

Modern methods for assessing the accuracy of generated hypothesized models include model fitness. In order to evaluate the measurements of variables consistent with the researcher's attention and understanding of the nature of that variable, it is a specific method for determining factor analysis that is commonly used in business research.

Table 6: Confirmatory factor analysis

CFA Indicators	CMIN/DF	GFI	IF	CFI	RMS
Threshold Value	≤ 3	≥ 0.80	≥ 0.90	≥ 0.90	≤ 0.08
Observed Value	1.590	0.816	0.808	0.710	0.073

The standard or threshold values for CFI, GFI, RMSEA, and IFI have been listed above with a tabular explanation of the result calculated through analysis showing that all the values lie within the precise spectrum of threshold deciding the model fitness of this research via confirmatory factor analysis. The values reported for these indicators are 0.816 for GFI, 0.808 for IFI, 0.710 for CFI, and for RMSEA, the observed value has been reported to be 0.073. The postulated model's authenticity and dependability were further supported by Figure 1. The graphic shows that irrespective of their standing, the researched model fits their connection

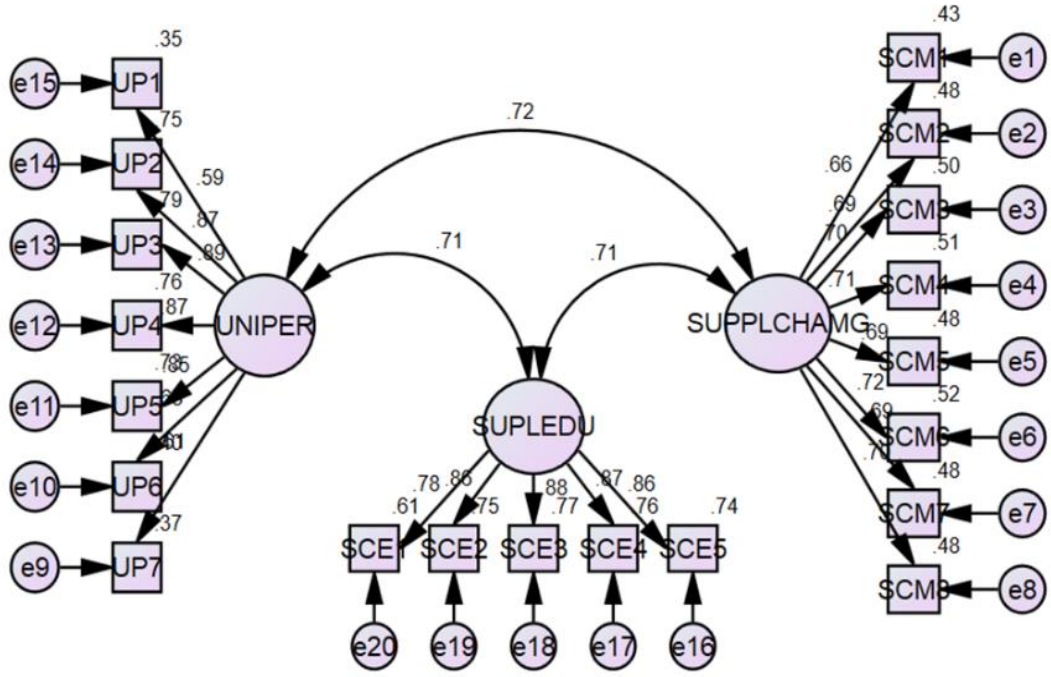

Figure 2. The goodness of fit model

4.6. Structure Equation Modeling

Structural equation modeling is a vital and valuable technique for figuring out the results of linear and indirect effects of various relationships. Table 7 presents the status of the hypothesis. The first hypothesis postulated that "Supply chain education is significantly related to supply chain management." Table 7 shows that there is a significant and direct association between supply chain education and supply chain management. A unit increase in supply chain education will increase supply chain management of public sector universities by 15.4%, indicating that the hypothesis is accepted.

Table 7: SEM results

Effects	Hypothesized Path	B	S.E	P value	Conclusion
Direct Effects					
Hypothesis 1	SCE-→ SCM	.154	.044	0.03	Accepted
Hypothesis 2	UP→ SCM	-.134	.023	0.68	Rejected

SCE= Supply chain education, UP= University performance, SCM= Supply chain management

The second hypothesis propositioned that the "University management system has a positive effect on supply chain management." Table 7 shows that $p>0.05$ and $p>0.1$; therefore, the hypothesis is rejected.

5. Discussion

Results of the present study show that supply chain education has a significant role in SCM in Indonesian educational institutions. The analysis revealed that supply chain education has a significant positive relationship with SCM. An increase in education suppliers and research suppliers increases the SCM. Thus, supply chain education is the major driver of SCM in Indonesian educational institutions. However, a decrease in this major driver will decrease the overall performance of SCM. In contrast, university management was found to have no significant relation with supply chain management.

Putro et al. (2020) examined and contrasted the use of e-learning in the Physical Education (P.E.) Departments of public and private colleges in their research. A questionnaire derived from e-learning readiness characteristics and national e-learning implementation regulations was used to gather data. The adoption of e-learning is accelerating as industry 4.0 has an impact on the educational sector as well. The E-learning system needs to be well prepared; educational institutions cannot just start using it. Indonesian education, particularly higher education, ought to be conducted domestically.

Different educational institutions' educational systems significantly affect students' learning. A supportive educational system improves students' abilities, which plays a good function in supply chain education and, as a result, improves abilities related to SCM. Every nation recognizes the value of the education sector, and higher education institutions, in particular, are crucial (Halim et al., 2019). These institutes are crucial for young kids to learn SCM and other skills. As a result, the educational system at universities plays a significant role in supply chain management and education.

Cankaya and Sezen (2018) investigated how the three pillars of business sustainability—economic, environmental, and social performance—are impacted by the eight facets of green supply chain management (GSCM). Environmental education, internal environment protection, green product, green marketing, green production, green distributing, inside environmental management, and investment recovery are considered in this study. Environmental education is one of the key instruments for assuring the development of human resources and laying the foundation for a more sustainable society. Recent empirical research highlighted the significance of education for the success of green management in the workplace. Because the supply chain needs to be supplied with various components to meet input requirements, education and research suppliers are crucial to improving SCM in Indonesian educational institutions. Distribution networks are also crucial for disseminating various SCM-related services (Hameed et al., 2017). The term "supply chain" refers to a group of firms that are fundamentally connected

by several upstream and downstream flows of goods, different services, money, other relevant materials, and information from a source to a customer.

6. Conclusion

Universities are shown to play a crucial role in SCM. University students get information and abilities in the SCM essential to their employment in enterprises. Supportive university education systems demonstrate good effects in SCM through supply chain education playing a mediating function. Higher education has a strong positive impact on advancing supply chain education. Nevertheless, a poor education system may cause pupils to poorly in supply chain education. The SCM in Indonesia grows as supply chain education rises. Universities must offer courses on supply chain management to advance SCM. Supply chain education is discovered to represent the impact of the higher education system on SCM.

Additionally, top university administration plays a critical part in SCM. Universities' administration also helps develop the link between supply chain education and SCM. To promote SCM, Indonesian universities should establish a good educational system and offer supply chain education. This study can help universities to adapt supply chain management.

Data gathering is complicated by respondents' understanding of the subject or general circumstances. Time considerations also limited the investigation. The study's conclusions would aid university management in modifying their tactics and policies to enhance performance at the institution.

7. References

Agrawal, P., & Narain, R. (2018). Digital supply chain management: An Overview. IOP Conference Series: Materials Science and Engineering,

Alansaari, O., Yusoff, R., & Ismail, F. (2019). Exploring the link between employee commitment, recruitment process, and performance of internal supply chain of manufacturing firms in UAE. *Uncertain Supply Chain Management*, *7*(2), 237-250.

Basu, G., Jeyasingam, J., Habib, M., Letchmana, U., & Ravindran, R. (2017). The impact of supply chain management practices on the performance of private universities in Malaysia. *International Journal of Supply Chain Management*, *6*(3), 22-35.

Cankaya, S. Y., & Sezen, B. (2018). Effects of green supply chain management practices on sustainability performance. *Journal of Manufacturing Technology Management*.

Copacino, W. C. (2019). *Supply chain management: The basics and beyond*. Routledge.

Dewi, M. P., Rahmatunnisa, M., Sumaryana, A., & Kristiadi, J. (2018). Supply chain management drivers and public policy of private partnership in Indonesian higher education sector. *Int. J. Supply Chain Manag*, *7*(5), 325-335.

Gleason, N. (2018). Higher Education in the Era of the Fourth Industrial Revolution; Palgrave Macmillan: Singapore.

Ha, N. T. T., & Quyen, P. G. (2017). The relationship between state ownership and tax avoidance level: empirical evidence from Vietnamese firms. *Journal of Asian Business Strategy*, *7*(1), 1-12.

Halim, P., Setiawan, M., Sukoco, A., Nasihien, R., Badruddin, S., & Bon, A. (2019). Researches on sociology and sustainable management for future trend. *Int J Innov Creat Change [Internet]*, *9*(6), 165-174.

Hameed, W. U., Azeem, M., Ali, M., Nadeem, S., & Amjad, T. (2017). The Role of Distribution Channels and Educational level towards Insurance Awareness among the General

Public. *International Journal of Supply Chain Management*, *6*(4), 308-318.

Hussain, A. (2018). Education system of Pakistan: Issues, problems, and solutions. 2015. *Retrieved September*, *16*.

Ishah, N. S. B. M., Lee, K. L., & Nawanir, G. (2022). Educational Supply Chain Management: A Review Paper. International Conference on Business and Technology,

Jauhar, S. K., Pant, M., & Dutt, R. (2018). Performance measurement of an Indian higher education institute: a sustainable educational supply chain management perspective. *International Journal of System Assurance Engineering and Management*, *9*(1), 180-193.

Li, L. (2020). Education supply chain in the era of Industry 4.0. *Systems Research and Behavioral Science*, *37*(4), 579-592.

Marbun, D. S., Effendi, S., Lubis, H. Z., & Pratama, I. (2020). Role of education management to expediate supply chain management: a case of Indonesian Higher Educational Institutions. *International Journal of Supply Chain Management (IJSCM)*, *9*(1), 89-96.

Marcus, J., & Zambre, V. (2019). The effect of increasing education efficiency on university enrollment evidence from administrative data and an unusual schooling reform in Germany. *Journal of Human Resources*, *54*(2), 468-502.

Nadeem, S., Alvi, A. K., & Iqbal, J. (2018). Performance indicators of e-logistic system with mediating role of Information and Communication Technology (ICT). *Journal of Applied Economics & Business Research*, *8*(4), 217-228.

Penprase, B., & Gleason, N. (2018). Higher education in the era of the fourth industrial revolution. *BE Penprase, Higher Education in the Era of the Fourth Industrial Revolution. Soka University of America, Aliso Viejo, CA, USA: NW Gleason*.

Putro, B. N., Pratama, H. G., Prasetyo, W., & Doewes, R. I. (2020). E-learning implementation in physical education department in higher education during COVID-19 pandemic. *Information Technology, Education and Society*, *17*(2), 67-80.

Schultz, C., Graw, J., Salomo, S., & Kock, A. (2019). How project management and top management involvement affect the innovativeness of professional

service organizations—an empirical study on hospitals. *Project Management Journal*, *50*(4), 460-475.

Shaturaev, J. (2021). A Comparative Analysis of Public Education System of Indonesia and Uzbekistan. *Bioscience Biotechnology Research Communications*, *14*(5), 89-92.

Sulaeman, A. S., Waluyo, B., & Ali, H. (2019). Making dual procurement and supply chain operations: Cases in the indonesian higher education. *Int. J Sup. Chain. Mgt Vol*, *8*(6), 595.

Thelin, J. R. (2011). *A history of American higher education*. JHU Press.

Treshchevsky, Y., Igolkin, S. L., & Shatalov, M. (2019). Internationalization of the educational services market through development of the system of remote education: Possibilities and barriers. *International journal of educational management*.

Ul-Hameed, W., Mohammad, H., Shahar, H., Aljumah, A., & Azizan, S. (2019). The effect of integration between audit and leadership on supply chain performance: Evidence from UK based supply chain companies. *Uncertain Supply Chain Management*, *7*(2), 311-328.

Xing, B., Marwala, L., Marwala, T., & Gleason, N. (2018). Higher education in the era of the fourth industrial revolution. *Adopt fast, adapt quick: Adaptive approaches in the South African context*, 171-206.

Yusoff, R. M., Khan, F., Mubeen, A., & Azam, K. (2013). A study about factors influencing the university performance. *Sains Humanika*, *64*(2).