HOLISTICA Vol 14, Issue 1, 2023, pp.173-185 DOI:10.2478/hjbpa-2023-0010

HOW WELL IS THE COFFEE BUSINESS SUPPLY CHAIN PERFORMING IN WEST JAVA?

Maya IRJAYANTI[1]*
Anton Mulyono AZIS[2]

Received: January 2023 | Accepted: February 2023 | Published: April 2023
Please cite this paper as: Irjayanti, M., Azis, A.M (2023) How well is the coffee business supply chain performing in West Java?, *Holistica Journal of Business and Public Administration*, Vol. 14, Iss. 1, pp.173-185

Abstract

Coffee grown in Indonesia has been proven for its quality made Indonesian coffee consumption continues to increase from year to year in many countries. However, the coffee business has not reached its maximum potential due to numerous barriers and supply chain management is one of them. This research aimed to identify the potential cause for blocked chains as one of the business threats that will significantly impact the entire business process in the long term also identifies the success factors related to the coffee supply chain to improve the performance of the business processes. This research utilized an inductive study with quantitative and qualitative approaches using primary and secondary data collection strategies. The research result indicated the low weight for dimensions in "Deliver" and "Return" performance with indicators including "Shipping", "Good relation with customers", "Mutual relation with suppliers", "Return procedure", "Processing time", "Ease of process", and "Complaints that quickly resolved". Therefore, to the result, the factors that are considered as a direct risk to the blocked chains are "Shipping", "Processing time", and "Ease of process". While the score for supply chain performance in West Java Coffee is 71% for KPIs in Reliability and Responsiveness. This research also provides a coffee supply chain model that will positively contribute to knowledge especially for identifying potentially blocked chains in the coffee business.

Keywords: supply_chain_operation_reference; KPI

1. Research Background

Coffee is one of the important commodities in Indonesia, the third largest country in the world after Brazil and Vietnam as coffee-producing countries (Sudjarmoko, 2013). This fact not only places coffee as a type of beverage as part of the social culture of the

[1] *STIE Ekuitas School of Business, Jl. PHH Mustofa 31 Bandung, Indonesia, Email: maya.irjayanti@ekuitas.ac.id*
[2] *STIE Ekuitas School of Business, Jl. PHH Mustofa 31 Bandung, Indonesia, Email: anton.mulyono@ekuitas.ac.id.*
** Corresponding author*

Indonesian people but also as an economic activity that has a significant contribution to economic growth. Starting from coffee plantations, it has had an economic function, namely as a source of income and absorption of coffee workers for the community around the plantation. Further, in the downstream industry, the development of the coffee industry has also spawned many creative entrepreneurs as a cafe or coffee shop owners ranging from small, medium, to large scales spread across various regions in Indonesia from small towns to big cities (Widayanto, 2018). Even with the creativity of coffee entrepreneurs, many coffee drink variant menus have been born, making it a sociocultural drink and a work of art.

The coffee industry in Indonesia continues to show a positive increase in terms of market demand, even during the Covid-19 Pandemic, coffee plantations are one of the economic sectors that have increased (Bappenas RI, 2020). In addition, coffee is one of Indonesia's export commodities. Most of the exported coffee products are processed coffee products which become instant coffee products, extracts, essences, and coffee concentrates that are spread to various destination countries, but most of them are still limited in the Asian region (Widayanto, 2018).

Based on the importance of the role of coffee as one of Indonesia's economic commodities, the specific objective of this study is to identify the potential for blocked chains to become one of the business threats that will have a significant impact on the overall business process (Thiruchelvam et al., 2018). Preventing blocked supply chains in the coffee industry is supply chain management's goal (SCM) goal. The role of SCM is important to help monitor the course of industrial business processes from upstream to downstream so that the potential for blocked chains can be anticipated so that the flow of goods, the flow of money, and the flow of information can run well. Therefore, it is important to identify specific performance indicators that are used within the scope of SCM so that they become the standard for measuring coffee industry performance. This system will be integrative by covering a series of business processes starting from suppliers, factories, distributors, and end sellers to the consumers to achieve a successful supply chain operation.

Publications and research related to supply chain management performance in Indonesia are limited, thus, this research will contribute knowledge related to key success factors in the SCM model in the coffee industry/business, especially in the West Java region to improve business performance. The questions in this research will identify several important things such as:

1. The parties involved in supply chain management (SCM) of the West Java coffee industry
2. Constraints related to supply chain management
3. Model for supply chain management
4. Coffee industry performance management related to supply chain management
5. Key performance indicators related to supply chain management

The outcome of this research is the published SCM model to contribute theoretically as well as practically through a model that can be implemented by the coffee industry not only for the coffee industry in West Java but also in other regions.

2. Supply Chain in Coffee Businesses

Coffee is the second most popular beverage in the contemporary world (Bae et al., 2014; Esquivel & Jiménez, 2012; Shanker et al., 2022). Most of the coffee plantations in various countries in the world come from Ethiopia (Shanker et al., 2022). In the colonial era, immigrants brought their seeds to be planted in countries that could grow coffee plants, and one of those countries was Indonesia. In 1696 the Dutch brought coffee seeds from India to be planted in Indonesia (Widayanto, 2018), in fact, the coffee grown in Indonesia has very good quality so since then it has become one of the important commodities from Indonesia (Noviantari et al., 2015; Sudjarmoko, 2013). Coffee consumption continues to increase from year to year in various countries (Bae et al., 2014; Esquivel & Jiménez, 2012; Macdonald, 2007) making the coffee business one of the potential incomes in Indonesia and its sustainability must be maintained.

With the importance of the coffee business, there are potential risks in the future, especially challenges from supply chain management including a fragmented production process, climate change, and market instability (Thiruchelvam et al., 2018). Currently, the transformation of digital-based information systems has not been widely used by the coffee industry (Li et al., 2017), whereas information systems in supply chain management can increase transparency and traceability in the supply chain (Li et al., 2017). Based on research results from more than a decade ago, the coffee supply chain in Indonesia involves a complex network that includes relationships between roasters, traders, processors, farmers, plus information about products, stakeholders, and costs (Ibrahim & Zailani, 2010; Noviantari et al., 2015). The related information in the coffee supply chain requires multi-level data (Shanker et al., 2022). The first level is to identify supply chain stakeholders to the source, the second level allows suppliers to communicate with customers and share information, and the next level involves analysis and various facilities to facilitate business processes (Shanker et al., 2022).

Based on the results of previous research, there are two sectors in the coffee supply chain, namely:

1. The first sector is the sector that focuses on the core production network and involves coffee farming, innovation and new technological advances in agriculture (Grabs & Ponte, 2019; Ho et al., 2018; Jezeer et al., 2019; Shanker et al., 2022).
2. Other sectors that focus on logistics functions which are generally carried out by government agencies and third-party logistics providers (Agrawal et al., 2016; Esquivel & Jiménez, 2012; Grabs & Ponte, 2019; Shanker et al., 2022).

Various findings from the literature that have been carried out by many previous researchers on the coffee supply chain indicate that a lot of research has been done on how production starts from coffee plantations to the technology involved (Agrawal et

al., 2016; Grabs & Ponte, 2019; Ho et al., 2018; Shanker et al., 2022; Thiruchelvam et al., 2018). Despite the supply is being an important element of the coffee industry, there is limited research in Indonesia that addresses the key success factors of the coffee supply chain in Indonesia. The following table summarizes various findings from the literature related to success factors in supply chains that are relevant to business conditions in Indonesia, especially the coffee supply chain.

Table 1. Supply Chain Success Factors

Success Factors	Article sources
Trust	(Grimm et al., 2014; Shanker et al., 2022)
Mutual relations with suppliers	(Grimm et al., 2014; Yadav & Barve, 2018)
Location	(Govindan et al., 2016; Miller et al., 2016; Ramaa et al., 2012)
ICT	(Gopal & Thakkar, 2016; Maskey et al., 2020; Yadav & Barve, 2018)
Regulations	(Gandhi et al., 2016; Luthra et al., 2016; Mangla et al., 2016)
Logistic	(Gandhi et al., 2016; Mangla et al., 2016; Maskey et al., 2020)
Transportation system	(Maskey et al., 2020; Takayama et al., 2020)
Inventory management	(Kumar et al., 2017; Pundir et al., 2019)
Global competitiveness	(Macdonald, 2007; Mangla et al., 2016; Sudjarmoko, 2013; Torga & Spers, 2020; Wang et al., 2020)
Environmental factors	(Agarwal et al., 2020; Raut et al., 2017)

The important factors in the supply chain identified in the table above serve as the basis for identifying the existing conditions of the coffee industry in Indonesia and at the same, time it is hoped that it will explore new factors that have not been identified in the existing literature. Coffee research both in Indonesia and overseas that discusses specifically the coffee supply chain is still limited (Ibrahim & Zailani, 2010; Jaya, 2013; Jaya et al., 2014; Noviantari et al., 2015; Sudjarmoko, 2013).

This research was conducted to support government programs in food supply and security as well as poverty alleviation through the use of resources in Indonesia where coffee is one of the natural resource products that make a significant contribute on to gross domestic product in Indonesia starting from the upstream industry (coffee plantations and supplying agents) to downstream involving retail coffee sellers to cafe/coffee business owners.

4. Research Method

This research is an inductive research with quantitative and qualitative research methods. Supply chain performance is assessed based on measurements using supply chain operations reference using standard performance attributes consisting of reliability, responsiveness, flexibility, cost and assets. However, access to data will affect the dimensions of the attributes chosen to be measured where each selected attribute will be reduced to several aspects of measurement whose achievement will be measured. Before measuring performance attributes, activity data from the supply chain needs to be obtained from sources to assess the current supply chain situation based on six core processes, including: Plan, Source, Make, Deliver, and Return is an aspect that consists of planning, ordering, inventory and purchasing goods. Source relates to the source from which the goods will be obtained involving suppliers. Make is when the company processes raw materials into semi-finished products or finished products. Deliver is the process of distributing goods to consumers. Return is the return of goods (if any) from the consumer to the cony, or the return of defective raw materials to the supplier, or the return of goods between departments within the company.

Meanwhile, the qualitative approach uses several strategies including constructivist grounded theory which is supported by archives study with primary and secondary data collection techniques. Primary data was obtained by semi-structured interviews, while secondary data was obtained from related document in the field relevant to this research.

Sampling for quantitative data is representative parties in the coffee supply chain from several distributors and coffee plantations in the West Java area (Bandung Raya and surrounding areas in West Java) who can answer the level of performance in the attributes measured in the supply chain operations reference based on the percentage of achievements confirmed in the Interview.

In general, the number of samples or participants in qualitative research depends on the saturation of the data. Interview results usually achieve data saturation at an average number of 10 to 12 participants (Saunders et al., 2016). If after 12 participants the data obtained has not reached saturation, then the research process will be continued so that no more newness is found during the data collection process through interviews. In addition to interviews, this research is also planned to conduct observations on work processes in the coffee industry, especially those related to business processes.

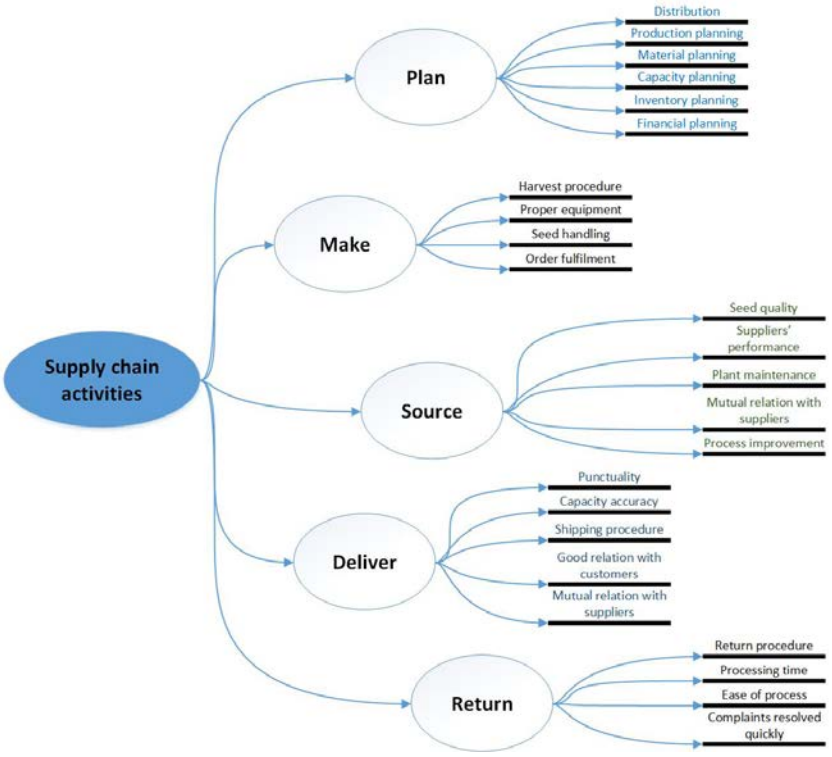
5. Finding and Discussion

Coffee in West Java has been declared as one of the superior-tasting coffees and has marketed its products to many overseas countries (Ginanjar et al., 2020; Zakaria et al., 2017). With the location that is close to plantations and coffee production sites, West Java has the largest population of coffee drinkers in Indonesia (Aulia, 2018). However, the problem of the slow growth of the agricultural sector can be seen from the main problem which lies in the limitations of managed land and the status of farmers where

most of whom are only farm workers (Ginanjar et al., 2020). This causes their farming to be inefficient because they did not fit the economies of scale where most farmers in average held the land less than 5000 m2 (Ginanjar et al., 2020).

The access to the participants of this study was not become a problematic element as West Java is one of the potential coffee-producing areas besides Sumatra and other islands in Indonesia. This study involved coffee farmers, collectors, distributors, cooperative, and another agent as participants. Based on the interviews, the participants indicated several constraints that were directly or indirectly related to supply chain performance. In the production process at coffee manufacturers, the identified internal constraints are: (1) delays in raw materials due to various constraints outside the factory, (2) non-standardized handling of raw materials, (3) lack of machine maintenance that causes machine breakdowns several times (4) accumulation of work in progress at a certain process level, (5) most of the machines used are relatively old, (6) lack of planning in machine capacity, (7) non-standardized layout of the floor, (8) labor is not recruited with certain skills or qualifications, (9) the work environment is not well managed. In particular, efforts to optimize the supply chain are to ensure that the flow of goods, information flow, and money flow is well managed.

Figure 1 Model of Coffee Supply Chain



That is, all parties must at least have a flow of information that moves easily and accurately between networks or links to ensure the movement of goods according to

plans that have an impact on the satisfaction of the relevant stakeholders. With the achievement of coordination of the supply chain of each related party, each supply chain channel will not experience congestion, excess, or shortage of goods. The following model is designed based on the data construction from various sources in this study.

After conducting semi-structured interviews, this study identified many factors from SCMs dimensions Plan, Make, Source, Deliver, and Return. Indicators are related the to "Plan" dimension involving: distribution, production planning, material planning, capacity planning, inventory planning, and financial planning. The "Make" dimension, indicators related include harvest procedure, proper equipment, seed handling, and order fulfilment. The "Source" dimension includes seed quality, suppliers' performance, plant maintenance, mutual relation with suppliers, and process improvement. The "Deliver" dimension reflected indicators such as punctuality, capacity accuracy, shipping procedures, good relation with customers, and mutual relation with suppliers. The last dimension "Return" consisting factors: return procedure, processing time, ease of the process, and complaints resolved.

The approach used to measure supply chain performance in this study consisted of several stages, involving collecting data using a questionnaire supported by an interview process with related parties in coffee plantations and factories in the West Java region (Bandung city and surrounding areas). Based on the results of data collection, the process for measuring performance is carried out by weighting three levels:

1. Level one weighting is for each supply chain performance perspective, namely plan, source, make, deliver, and return.
2. Two-level weighting for each dimension from each supply chain perspective. As for this study, the data that can be accessed by the researcher consists of two main dimensions, namely reliability and responsiveness.
3. Third-level weighting is the weighting of each key performance indicator from each perspective.

The key performance indicators identified from the results of data collection and literature studies in each supply chain perspective are designed as follows:

Table 2. Key Performance Indicators Identified

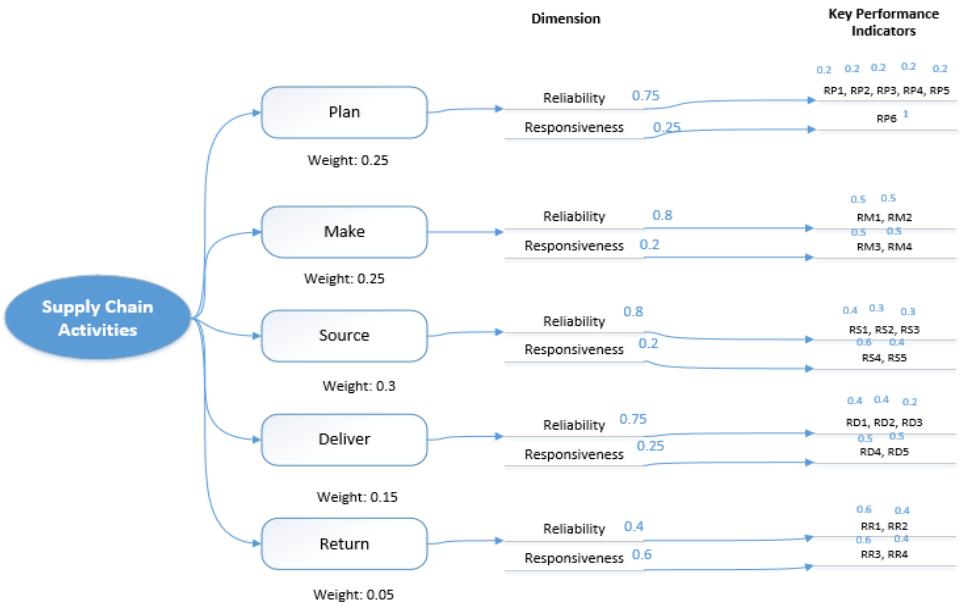
Plan	Make	Source	Delivery	Return
RP1: Distribution	RM1: Harvest procedure	RS1: Seed quality	RD1: Punctuality	RR1: Return procedure
RP2: Production planning	RM2: Proper equipment	RS2: Suppliers' performance	RD2: Capacity accuracy	RR2: Processing time

RP3:	RM3:	RS3:	RD3:	RR3:
Material planning	Seed handling	Plant maintenance	Shipping procedure	Ease of process
RP4:	RM4:	RS4:	RD4:	RR4:
Capacity planning	Order fulfilment	Mutual relations with suppliers	Good relations with customers	Complaints resolved quickly
RP5:		RS5:	RD5:	
Inventory planning		Process improvement	Mutual relation with suppliers	
RP6:				
Financial planning				

Note: Blue: KPI for Reliability Dimension; Green: KPI for Responsiveness Dimension

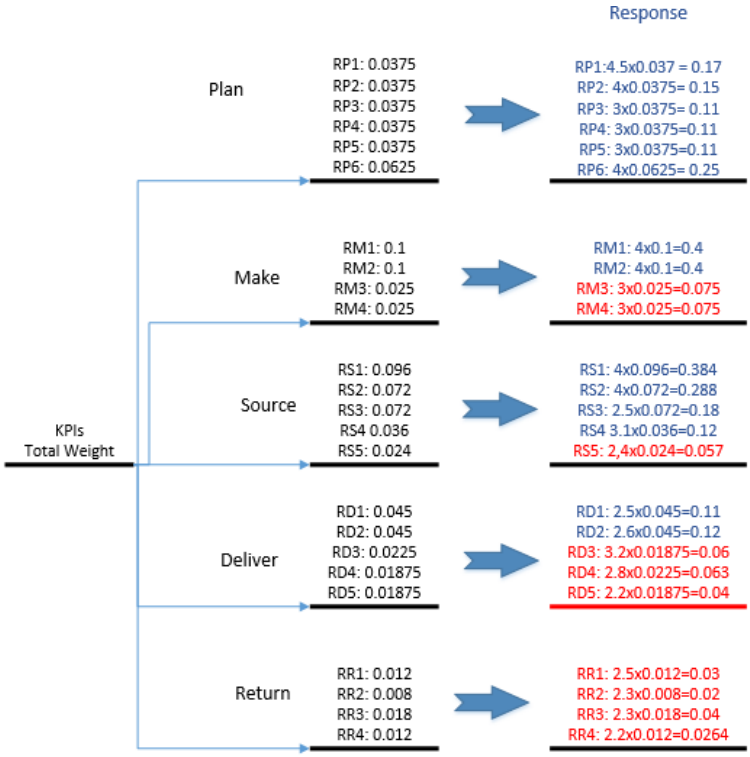
Furthermore, as is the procedure for determining the performance of each supply chain, the first step is to weigh supply chain perspective by discussing with the parties involved in the supply chain, especially at the managerial level. In addition, the dimensions and KPIs from each perspective are selected and weighted as a representation of the level of importance for each supply chain perspective which is then submitted back for scoring of each KPI through questionnaire questions using a scale of 1-5 with a scale of 1: Strongly disagree, up to scale 5: Strongly agree.

Figure 2. Perspective Weighting and Supply Chain Dimensions



Based on the weighting results, a relatively low weight value is shown the coffee supply chain sourced from various KPIs, especially from the Source, Deliver, and Return perspective. Only two KPIs in the Source perspective show a relatively low weight, especially in both reliability and responsiveness dimensions in "Deliver" and "Return" performance. Low Low-performance for "Deliver" were shown indicators including "Shipping (with score: 0.06)", "Good relation with customers (with score: 0.063)", and "Mutual relation with suppliers (with score: 0.04)". Meanwhile, for "Return" dimension, most indicators indicated the low score level involving the KPIs of "Return procedure (with score: 0.03)", "Processing time (with score: 0.02)", "Ease of process (with score: 0.04)", and "Complaints that quickly resolved (with score: 0.0264)". However, there were other indicator which also indicated the lowest value in "Make" dimension include: Seed handling and Order fulfilment, and the indicator of Process improvement in the dimension of "Source".

Figure 3. Total Weight of Supply Chain KPIs Based on Questionnaire



Utilizing the data collected, based on the KPIs in Reliability and Responsiveness, the total score for total dimension identified is 71% which indicates a good position in particular aspects such as "Plan", "Make", and "Source" dimensions for their "Reliability" performance as shown at the following table.

Table 3. Supply Chain Performance

	Reliability	Responsiveness
Plan	0.82	0.25
Make	0.80	0.15
Source	0.85	0.17
Deliver	0.29	0.10
Return	0.05	0.07
Average in %	56%	15%
Total Score	71%	

Supported by interview data, various obstacles were identified in the coffee supply chain in West Java from many sources. Agent who became a coffee middleman in the West Java area specifically identified the behavior of maintaining plant seeds that do not have special standards such as checking seed quality, application of fertilizer, nitrogen and calcium requirements that affect coffee quality fertilization, irrigation systems, and post-harvest. Farmers do not have special knowledge regarding the maintenance of coffee plants or the picking process, so the process of picking coffee beans in some cases is done earlier than it should cause the coffee beans to have low quality. For example, farmers pick young coffee beans so that the color changes and the taste becomes bland and affects the quality of the coffee beans produced.

The equipment utilized is traditional tools without certain scheduled maintenance. In the distribution chain, the problem that occurs is the length of the distribution chain which affects time, cost, and information so that it has an impact on low income at the farmer level. Another factor comes from the collectors where the maintenance costs of the machines utilized in the operational process are relatively expensive, and the distribution of coffee still uses traditional trucks in the delivery of coffee products. Coffee in West Java area, is partly taken by cooperatives as agents and has not yet optimized cooperation with agents outside the company.

From the results of the interview data, it can be concluded that the major problems that have not been optimally resolved at this stage are the standard quality of the products and the quantity to meet market needs. Many coffee farmers obtained the seeds without any cost involved from the government, however, the amount of production have not meet global demand, even though Indonesia is one of 75 coffee-producing countries. Most of the coffee industry is on a small and medium scale, making capital as one of the other obstacles, especially in the adoption of technology in coffee processing and packaging. Most of the operations are still carried out in a traditional manner so that the quality of the coffee is not well standardized.

6. Conclusions

The consumer market demand for coffee is relatively high, but unfortunately not all of them can be fulfilled by coffee farmers. On yearly average, farmers harvested coffee only once; during the waiting period the coffee farmers switched their professions to grow other crops that have a high selling value according to the season. This also affects the depth of knowledge and awareness of farmers about the importance of the quality of coffee beans where consumers in urban areas already have knowledge about the quality of coffee beans. Coffee farmers still expect that there will be assistance in free coffee seeds supplies (which are currently being obtained), knowledge related to maintenance and handling, as well as a transparent distribution process to the final consumer.

This study has limitations including access to data related to other dimensions in the supply chain that have not been investigated. In addition, research participants were not representing the population located in the greater Bandung area even though the distribution channel covers the West Java area. In the future, it is expected that there will be further research involving more stakeholders to support data triangulation.

This research provides a theoretical contribution to the model development of the coffee supply chain in Indonesia along with the key performance indicators which allows the business to anticipate the area that need to get special attention.

The implication of this research to the business and public administration is the improvement in certain indicators to increase the performance in the supply chain management of coffee business not only in West Java area but also applied in another region.

Reference

Agarwal, S., Kant, R., & Shankar, R. (2020). Evaluating solutions to overcome humanitarian supply chain management barriers: A hybrid fuzzy SWARA–Fuzzy WASPAS approach. *International Journal of Disaster Risk Reduction*, *51*, 101838.

Agrawal, S., Singh, R. K., & Murtaza, Q. (2016). Prioritizing critical success factors for reverse logistics implementation using fuzzy-TOPSIS methodology. *Journal of Industrial Engineering International*, *12*(1), 15–27. https://doi.org/10.1007/s40092-015-0124-8

Aulia, M. R. (2018). *Pengaruh kompetensi kewirausahaan terhadap kinerja usaha kedai kopi skala mikro dan kecil di kota Bogor*. Bogor Agricultural University (IPB).

Bae, J.-H., Park, J.-H., Im, S.-S., & Song, D.-K. (2014). Coffee and health. *Integrative Medicine Research*, *3*(4), 189–191. https://doi.org/10.1016/j.imr.2014.08.002

Bappenas RI. (2020). Perkembangan Ekonomi Indonesia dan Dunia untuk Triwulan I 2020. *Bappenas RI*, *4*(1), 1–89. https://www.bappenas.go.id/files/4215/9236/1094/ND_269_Penyampaian_Laporan_Perkembangan_Ekonomi_Indonesia_dan_Dunia_untuk_Triwulan_I_Tahun_2020.pdf

Esquivel, P., & Jiménez, V. M. (2012). Functional properties of coffee and coffee by-products. *Food Research International*, *46*(2), 488–495. https://doi.org/10.1016/j.foodres.2011.05.028

Gandhi, S., Mangla, S. K., Kumar, P., & Kumar, D. (2016). A combined approach using AHP and DEMATEL for evaluating success factors in implementation of green supply chain management in Indian manufacturing industries. *International Journal of Logistics Research and Applications*, *19*(6), 537–561.

Ginanjar, Y., Apiatno, A., & Amanda, H. (2020). *Kinerja Rantai Pasokan Kopi Arabika Java Preanger Di Kabupaten Sumedang Jawa Barat*. Udayana University.

Gopal, P. R. C., & Thakkar, J. (2016). Analysing critical success factors to implement sustainable supply chain practices in Indian automobile industry: a case study. *Production Planning & Control*, *27*(12), 1005–1018.

Govindan, K., Garg, K., Gupta, S., & Jha, P. C. (2016). Effect of product recovery and sustainability enhancing indicators on the location selection of manufacturing facility. *Ecological Indicators*, *67*, 517–532.

Grabs, J., & Ponte, S. (2019). The evolution of power in the global coffee value chain and production network. *Journal of Economic Geography*, *19*(4), 803–828. https://doi.org/10.1093/jeg/lbz008

Grimm, J. H., Hofstetter, J. S., & Sarkis, J. (2014). Critical factors for sub-supplier management: A sustainable food supply chains perspective. *International Journal of Production Economics*, *152*, 159–173.

Ho, T. Q., Hoang, V.-N., Wilson, C., & Nguyen, T.-T. (2018). Eco-efficiency analysis of sustainability-certified coffee production in Vietnam. *Journal of Cleaner Production*, *183*, 251–260.

Ibrahim, H. W., & Zailani, S. (2010). A review on the competitiveness of global supply chain in a coffee industry in Indonesia. *International Business Management*, *4*(3), 105–115.

Jaya, R. (2013). Model pengelolaan pasokan dan risiko mutu rantai pasok kopi Gayo. *Jurnal Teknologi Dan Industri Pertanian Indonesia*, *5*(3), 61–71. https://doi.org/https://doi.org/10.17969/jtipi.v5i3.1981

Jaya, R., Machfud, S. R., & Marimin, T. I. P. (2014). Analisis dan mitigasi risiko rantai pasok kopi Gayo berkelanjutan dengan pendekatan Fuzzy. *Jurnal Teknologi Industri Pertanian*, *24*(1), 61–71.

Jezeer, R. E., Verweij, P. A., Boot, R. G. A., Junginger, M., & Santos, M. J. (2019). Influence of livelihood assets, experienced shocks and perceived risks on smallholder coffee farming practices in Peru. *Journal of Environmental Management*, *242*, 496–506.

Kumar, V., Verma, P., Sharma, R. R. K., & Khan, A. F. (2017). Conquering in emerging markets: critical success factors to enhance supply chain performance. *Benchmarking: An International Journal*, *24*, 570–593.

Li, Z., Liu, G., Liu, L., Lai, X., & Xu, G. (2017). IoT-based tracking and tracing platform for prepackaged food supply chain. *Industrial Management and Data Systems*, *117*(9), 1906–1916. https://doi.org/10.1108/IMDS-11-2016-0489

Luthra, S., Garg, D., & Haleem, A. (2016). The impacts of critical success factors for implementing green supply chain management towards sustainability: an empirical investigation of Indian automobile industry. *Journal of Cleaner Production*, *121*, 142–158.

Macdonald, K. (2007). Globalising justice within coffee supply chains? Fair Trade, Starbucks and the transformation of supply chain governance. *Third World Quarterly*, *28*(4), 793–812. https://doi.org/10.1080/01436590701336663

Mangla, S. K., Govindan, K., & Luthra, S. (2016). Critical success factors for reverse logistics in Indian industries: a structural model. *Journal of Cleaner Production*, *129*, 608–621.

Maskey, R., Fei, J., & Nguyen, H.-O. (2020). Critical factors affecting information sharing in supply chains. *Production Planning & Control*, *31*(7), 557–574.

Miller, D., Steier, L., & Le Breton–Miller, I. (2016). What can scholars of entrepreneurship learn from sound family businesses? In *Entrepreneurship Theory and Practice* (Vol. 40, Issue 3, pp. 445–455). SAGE Publications Sage CA: Los Angeles, CA.

Noviantari, K., Hasyim, A. I., & Rosanti, N. (2015). Analisis rantai pasok dan nilai tambah agroindustri kopi luwak di provinsi lampung. *Jurnal Ilmu Ilmu Agribisnis: Journal of Agribusiness Science*, *3*(1), 10–17.

Pundir, A. K., Jagannath, J. D., Chakraborty, M., & Ganpathy, L. (2019). Technology integration for improved performance: A case study in digitization of supply chain with integration of internet of things and blockchain technology. *2019 IEEE 9th Annual Computing and Communication Workshop and Conference (CCWC)*, 170–176.

Ramaa, A., Subramanya, K. N., & Rangaswamy, T. M. (2012). Impact of warehouse management system in a supply chain. *International Journal of Computer Applications*, *54*(1), 14–20.

Raut, R. D., Narkhede, B., & Gardas, B. B. (2017). To identify the critical success factors of sustainable supply chain management practices in the context of oil and gas industries: ISM approach. *Renewable and Sustainable Energy Reviews*, *68*, 33–47.

Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research methods for business students*. Pearson education.

Shanker, S., Sharma, H., & Barve, A. (2022). Analysing the critical success factors and the risks associated with third-party logistics in the food supply chain: a case of coffee industry. *Journal of Advances in Management Research*, *19*(2), 161–197. https://doi.org/10.1108/JAMR-11-2020-0307

Sudjarmoko, B. (2013). Prospek pengembangan industrialisasi kopi Indonesia. *Sirinov*, *1*(3), 99–110.

Takayama, Y., Ikeda, K., & Thisse, J.-F. (2020). Stability and sustainability of urban systems under commuting and transportation costs. *Regional Science and Urban Economics*, *84*, 1035–1053.

Thiruchelvam, V., Mughisha, A. S., Shahpasand, M., & Bamiah, M. (2018). Blockchain-based technology in the coffee supply chain trade: Case of burundi coffee. *Journal of Telecommunication, Electronic and Computer Engineering*, *10*(3–2), 121–125.

Torga, G. N., & Spers, E. E. (2020). Perspectives of global coffee demand. In *Coffee Consumption and Industry Strategies in Brazil* (pp. 21–49). Elsevier.

Wang, K.-H., Su, C.-W., Tao, R., & Hao, L.-N. (2020). Are there periodically collapsing bubble behaviours in the global coffee market? *Agrekon*, *59*(1), 65–77.

Widayanto, G. T. (2018). Kontribusi Ekspor Kopi Terhadap Pertumbuhan Ekonomi Indonesia. *Skripsi Pendidikan Ekonomi Universitas Sanata Dharma Yogyakarta*, 1–37.

Yadav, D. K., & Barve, A. (2018). Segmenting critical success factors of humanitarian supply chains using fuzzy DEMATEL. *Benchmarking: An International Journal*, *24*, : 400-425.

Zakaria, A., Aditiawati, P., & Rosmiati, M. (2017). Strategi pengembangan usahatani kopi arabika (kasus pada petani kopi di Desa Suntenjaya Kecamatan Lembang Kabupaten Bandung Barat, Provinsi Jawa Barat). *Jurnal Sosioteknologi*, *16*(3), 325–339.