

Logistics Efficiency, Supply Chain Finance, and Firm-Level Financial Outcomes: Evidence from Indonesia and Uzbekistan

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Abstract

This study examines the impact of logistics efficiency on firm-level financial outcomes in Indonesia and Uzbekistan. These outcomes include on working capital, pricing, profitability, as well as the adoption of supply chain finance (SCF). The study is motivated by the importance of logistics performance in shaping financial conditions, particularly in emerging economies with different structural characteristics. A comparative cross-sectional survey was conducted involving 40 practitioners (20 respondents from each country) working in logistics, supply chain, and finance-related functions. Data were analysed using the Mann-Whitney U test and Cohen's d to identify differences between the two countries. The results show that firms in Uzbekistan experience higher working capital pressure due to logistics delays and are more likely to pass freight costs on to product prices compared to firms in Indonesia. These differences are associated with higher inflation rates and stronger import dependence in Uzbekistan. Meanwhile, perceptions related to profitability and risk reduction tend to be similar across both countries. In addition, SCF adoption remains relatively low in both contexts, with a higher proportion of non-users in Uzbekistan. This study highlights that logistics efficiency is closely linked to financial resilience. Expanding access to SCF instruments, such as factoring and reverse factoring, can help firms manage financial pressure, especially in environments where logistics systems are still developing

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Introduction

The relationship between logistics performance and firm-level financial outcomes has received increasing attention in recent studies (Atayah et al., 2022; Lückner et al., 2025). Efficient logistics systems help firms reduce inventory costs, shorten the cash conversion cycle, and lower financing needs (Atayah et al., 2022; Song et al., 2021). In contrast, weak logistics performance—such as delays, port congestion, and high freight costs—can increase working capital requirements, reduce profit margins, and raise financial risk (Baghersad & Zobel, 2021; Atayah et al., 2022).

Emerging markets offer an important context for examining these issues. Indonesia and Uzbekistan are both undergoing economic transformation and logistics sector development, but they face different structural challenges. Indonesia, as the largest economy in Southeast Asia, still experiences high logistics costs, estimated at around 23 percent of GDP. Its Logistics Performance Index (LPI) declined from 3.15 in 2018 to 3.0 in

2023, indicating that improvements remain limited despite ongoing infrastructure development (Republic of Indonesia, 2020; World Bank, 2023).

In contrast, Uzbekistan is a landlocked country that depends heavily on transit routes. The country faces a trade deficit, inflation above 9%, and a logistics system that is still developing. This condition is reflected in its lower LPI score of 2.6 (World Bank, 2020; World Bank, 2024). These differences suggest that logistics conditions may affect financial outcomes in different ways across countries.

Supply chain finance (SCF) has emerged as a potential solution to improve financial flows within supply chains. SCF includes instruments such as factoring, reverse factoring, and inventory financing (Jia et al., 2020; Tanveer et al., 2025). These instruments allow firms, especially smaller suppliers, to access funding based on the creditworthiness of larger buyers. However, in many emerging markets, the use of SCF is still limited. This is often caused by low levels of digitalisation, weak financial infrastructure, and information gaps between firms and financial institutions (Lou et al., 2024; Tanveer et al., 2025).

Although previous studies have explained the relationship between logistics and finance, several gaps remain. First, comparative evidence across countries with different logistics conditions is still limited. Most studies focus on single-country settings or developed economies, so the situation in emerging markets is less explored (Baghersad & Zobel, 2021). Second, existing research often treats logistics as an operational issue and does not fully examine its financial implications, such as working capital and financing costs. Third, there is limited evidence on whether firms that experience financial pressure due to logistics constraints actually adopt SCF instruments.

To address these gaps, this study uses a comparative cross-sectional survey involving 40 practitioners in logistics, procurement, and finance, consisting of 20 respondents from Indonesia and 20 from Uzbekistan. The analysis applies the Mann-Whitney U test and Cohen's d to examine differences between the two countries. The study is supported by secondary data from the World Bank to provide macroeconomic context.

This study offers three main contributions. First, it provides comparative evidence on the relationship between logistics and financial outcomes in two emerging markets with different structural conditions. Second, it examines the level of SCF adoption among practitioners and identifies a gap between financial needs and actual usage. Third, it highlights the role of macroeconomic factors, such as inflation and import dependence, in shaping the financial impact of logistics performance.

This paper is organised as follows. Section 2 discusses the literature and theoretical background. Section 3 explains the research methodology. Section 4 presents the results and discussion. Section 5 concludes the study and outlines directions for future research.

Method

Research Design

The population in this study consists of professionals who are directly involved in logistics and financial activities. These include individuals working in logistics, supply chain management, procurement, finance, and operations in Indonesia and Uzbekistan.

A purposive sampling method was used to select respondents. This approach ensures that participants have relevant experience and knowledge. A total of 40 respondents were included in the study, with 20 respondents from each country.

One respondent provided incomplete answers on the Likert-scale items. Therefore, the inferential analysis is based on complete data from 39 respondents (Indonesia = 20; Uzbekistan = 19). However, descriptive analysis uses the full sample (n = 40).

Most respondents are between 30 and 39 years old. The average age is similar in both countries. Respondents mainly work in logistics and supply chain functions, followed by operations, procurement, and finance. Most firms in the sample are small and medium-sized enterprises.

Population, Sampling, and Data Collection

The target population of this study consists of professionals who have direct experience with logistics costs, financing constraints, and related operational risks. These include individuals working in logistics, supply chain management, procurement, finance, trade finance, and operations in Indonesia and Uzbekistan.

A purposive sampling method was used to select respondents who meet these criteria. A total of 40 respondents were included in the study, with 20 respondents from each country. This sampling approach is appropriate because the study requires participants with specific knowledge and experience, rather than a general representation of the workforce (Saunders et al., 2019).

One respondent provided incomplete answers on the Likert-scale items. Therefore, inferential analysis is based on complete responses from 39 respondents (Indonesia = 20; Uzbekistan = 19). However, descriptive and categorical analyses use the full sample of 40 respondents.

The sample size is relatively small, and the study is exploratory in nature. Therefore, the findings should be interpreted as indicative rather than generalisable to the broader population. The sample is evenly distributed between Indonesia and Uzbekistan. Most respondents are in the 30–39 age group (52.5%). The average age is similar across both countries, indicating comparable levels of professional experience. Respondents are mainly employed in logistics and supply chain management (27.5%), followed by operations (20.0%), procurement (12.5%), and finance (12.5%). These roles are directly related to logistics and financial decision-making. In terms of firm size, the sample includes micro, small, medium, and large enterprises. However, most respondents come from small and medium-sized firms (72.5%).

Survey Instrument

The survey instrument consists of two sections. The first section collects general information about respondents and firms. This includes country, age group, job role, firm size, current use of supply chain finance (SCF), and perceptions of national logistics costs as a share of GDP. These data are used to describe the characteristics of respondents in each country and to support the comparison analysis. All information is reported in aggregated form to ensure respondent confidentiality.

The second section measures five key variables using a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). These variables represent the financial impact of logistics performance. They include cost of capital (L1), working capital (L2), pricing or freight cost pass-through (L3), firm profitability (L4), and risk reduction through digital visibility (L6). Item L5 was not included in this study.

The measurement items were adapted from previous studies in supply chain and financial management (Jia et al., 2020; Baghersad & Zobel, 2021). The questions were reviewed to ensure clarity and relevance to the research objectives.

Secondary Data Sources

Secondary data are used to support the analysis and provide macroeconomic context. The data are obtained from publicly available sources, mainly from the World Bank. These

include the World Development Indicators, which provide information on GDP, trade structure, inflation, and unemployment (World Bank, 2024). In addition, data from the Logistics Performance Index (LPI) are used to describe overall logistics performance and its key components (World Bank, 2023). A country report on transport and logistics development in Uzbekistan is also used to provide additional context (World Bank, 2020).

These data are used to explain differences between Indonesia and Uzbekistan. They serve as supporting information and are not included as variables in the statistical analysis.

Analytical Approach

Data analysis was conducted in several stages. First, descriptive statistics were used to describe respondent characteristics and the distribution of responses. These include frequency distributions, mean values, and standard deviations.

The Shapiro-Wilk test was used to examine data normality (Razali & Wah, 2011). The results indicate that the data are not normally distributed. This is expected because the data are based on Likert scales and the sample size in each group is relatively small ($n \leq 20$).

The Mann-Whitney U test was applied to compare responses between Indonesia and Uzbekistan. This test is suitable for ordinal data and does not require normal distribution assumptions (Corder & Foreman, 2014).

Cohen's d was calculated to measure the magnitude of differences between groups (Cohen, 1988). This helps distinguish whether the observed differences are practically meaningful, not only statistically significant. All statistical tests were evaluated at a significance level of 0.05.

Ethical Note and Methodological Limitations

This study has several limitations. The sample size is relatively small ($n = 40$) and was selected using purposive sampling. As a result, the findings cannot be generalised to a broader population. In addition, the cross-sectional design limits the ability to draw causal conclusions, as the results only reflect differences in perceptions between countries.

The data used in this study are based on respondents' perceptions rather than objective financial indicators. This condition may introduce bias, including response bias and social desirability bias. Furthermore, the macro-level analysis is descriptive and does not include econometric modelling, which may limit the depth of the analysis.

Future research is encouraged to use larger and more representative samples, apply longitudinal or panel data, and incorporate objective financial measures. Further validation of the measurement instrument is also recommended.

Result and Discussion

Analisis Before analysing respondent perceptions, it is important to understand the macroeconomic and logistics conditions in each country. These conditions provide the context for interpreting the differences found in the survey results.

Indonesia and Uzbekistan show clear differences in economic and logistics characteristics. Indonesia has a large economy, with GDP reaching USD 1,396.3 billion. The country also records a small trade surplus (+1.8% of GDP) and relatively low inflation (2.2%). Its Logistics Performance Index (LPI) score is 3.0. However, domestic logistics

costs remain high, estimated at around 23.5% of GDP (World Bank, 2023; World Bank, 2024).

In contrast, Uzbekistan has a much smaller economy, with GDP of USD 115.0 billion. The country faces a significant trade deficit (–15.2% of GDP) and higher inflation (9.6%). Its LPI score is lower, at 2.6, indicating that the logistics system is still developing (World Bank, 2023; World Bank, 2024).

These differences help explain why the financial impact of logistics conditions may vary between the two countries. In particular, higher inflation and stronger dependence on imports in Uzbekistan may increase financial pressure on firms, especially in terms of working capital and pricing. This is consistent with the focus of this study on firm-level financial outcomes.

Table 4 shows that the use of supply chain finance (SCF) is still limited in both countries. More than half of the respondents (52.5%) report that they do not use any SCF instrument. The proportion of non-users is higher in Uzbekistan compared to Indonesia. In addition, Indonesian respondents tend to perceive logistics costs as higher (above 20% of GDP), while respondents in Uzbekistan are mostly in the 15–20% range.

Table 4. Aggregated Survey Response Categories by Country

Category	Response option	Indonesia (%)	Uzbekista (%)	Total (%)
SCF instrument	None	35.0%	70.0%	52.5%
	Factoring	25.0%	10.0%	17.5%
	Reverse factoring	15.0%	5.0%	10.0%
	Inventory financing	0.00	5.0%	2.5%
	Multiple	25.0%	10.0%	17.5%
Perceived national logistics cost	<10%	15.0%	0.00	7.5%
	10–15%	0.0	30.0%	15.0%
	15–20%	25.0%	50.0%	37.5%
	20%+	60.0%	20.0%	40.0%

Note. Percentages may not sum to 100 due to rounding. SCF = supply chain finance.

These findings show that the sample is relevant for the analysis and suitable for comparing the two countries.

Before comparing the results between countries, the data distribution was tested using the Shapiro-Wilk test (Table 5).

Table 5. Shapiro-Wilk Normality Test Results

Item	Statement	Indonesia		Uzbekistan	
		W	p	W	P
L1	Logistics improvement reduces cost of capital	0.7876	0.001	0.7076	<0.001

Item	Statement	Indonesia		Uzbekistan	
		W	p	W	P
L2	Delays increase working capital needs	0.7361	<0.001	0.6161	<0.001
L3	Freight rates pass through to product prices	0.6265	<0.001	0.6737	<0.001
L4	Disruptions reduce firm profitability	0.3512	<0.001	0.4622	<0.001
L6	Digital visibility reduces supply chain risk	0.7275	<0.001	0.2439	<0.001

Note. All tests are significant at $p < 0.05$, confirming non-normal distributions. Mann-Whitney U testing was consequently employed for between-group comparisons

The results indicate that the data are not normally distributed. All test values are below 1.0, and the p-values are at or below 0.001 in both groups. This result is expected because the data are based on Likert scales and the sample size in each country is relatively small ($n \leq 20$). Therefore, non-parametric analysis is considered more appropriate for this study.

The results of the Mann-Whitney U test are presented in Table 6. The table shows the differences in responses between Indonesia and Uzbekistan across the five variables analysed. The main findings from this analysis are discussed in the following sections.

Table 6. Mann-Whitney U Test Results and Effect Sizes

Item	Statement	Mean (SD)	U	p	Cohen's d
L1	Logistics reduces cost of capital	ID: 3.90 (0.64) UZ: 4.21 (0.54)	142.0	0.117	0.526 (Medium)
L2	Delays increase working capital	ID: 4.00 (0.56) UZ: 4.37 (0.50)	130.5	0.046*	0.695 (Medium)
L3	Freight pass-through to prices	ID: 3.40 (0.50) UZ: 3.84 (0.50)	112.0	0.012*	0.881 (Large)
L4	Disruptions reduce profitability	ID: 3.90 (0.31) UZ: 4.00 (0.33)	172.0	0.350	0.312 (Small)
L6	Digital visibility reduces risk	ID: 3.90 (0.55) UZ: 3.95 (0.23)	180.0	0.689	0.112 (Negligible)

Note. Values in parentheses are standard deviations. ID = Indonesia ($n = 20$); UZ = Uzbekistan ($n = 19$). * $p < 0.05$.

The main findings show that working capital is the most affected financial aspect of logistics inefficiency. There is a significant difference between the two countries.

Respondents in Uzbekistan show stronger agreement that logistics delays increase working capital requirements compared to respondents in Indonesia. The mean score in Uzbekistan is higher (mean = 4.37, SD = 0.50) than in Indonesia (mean = 4.00, SD = 0.56). The difference is statistically significant ($U = 130.5$, $p = 0.046$) with a medium effect size ($d = 0.695$).

This result is consistent with working capital management theory. Logistics inefficiency can extend the cash conversion cycle and increase the amount of capital tied up in inventory during transit (Baghersad & Zobel, 2021; Song et al., 2021).

The stronger perception among respondents in Uzbekistan may be related to the country's higher inflation rate (9.6%) and greater dependence on imports. Delays in cross-border logistics can increase financing costs more quickly and with greater impact compared to Indonesia, which has lower inflation and a more domestically integrated economy (World Bank, 2024; IMF, 2022).

These findings support previous studies on supply chain disruptions and financial performance (Atayah et al., 2022). In this study, the effect is more clearly reflected in working capital pressure, especially in landlocked emerging markets. In addition to working capital, another important financial impact is the transmission of freight costs to product prices. In addition to working capital, pricing is another important financial aspect affected by logistics conditions. The results show that this variable has the strongest difference between the two countries.

On item L3 (freight costs passed on to product prices), respondents in Uzbekistan report higher agreement than those in Indonesia. The mean score in Uzbekistan is 3.84 (SD = 0.50), while in Indonesia it is 3.40 (SD = 0.50). This difference is statistically significant ($U = 112.0$, $p = 0.012$) with a large effect size ($d = 0.881$).

This finding indicates that firms in Uzbekistan are more likely to transfer higher logistics costs to product prices. This result is consistent with cost-push inflation theory, which explains that increases in input costs, such as freight costs, can lead to higher product prices. The impact tends to be stronger in countries with higher inflation and greater dependence on imports (IMF, 2022; Carrière-Swallow et al., 2023).

The higher inflation rate and stronger dependence on imported goods in Uzbekistan create conditions where cost pass-through is more likely to occur. Firms in this context tend to transfer increases in freight costs directly to product prices.

In contrast, Indonesia has a lower inflation rate (2.2%) and a more stable trade balance. This condition reduces the pressure to pass logistics costs on to consumers, resulting in smaller pricing effects.

These differences help explain the variation observed between the two countries. While the results for working capital and pricing show clear differences, the other variables present a different pattern, as discussed in the next section.

In contrast to the divergence observed on L2 and L3, three items do not yield statistically significant between-country differences: L1 (logistics reduces cost of capital: $U = 142.0$, $p = 0.117$, $d = 0.526$); L4 (disruptions reduce profitability: $U = 172.0$, $p = 0.350$, $d = 0.312$); and L6 (digital visibility reduces financial risk: $U = 180.0$, $p = 0.689$, $d = 0.112$).

Both countries show similar responses for the three remaining variables. The average scores are above the neutral level, and the differences between the two countries are relatively small, with a gap of no more than 0.31 points.

For L1 (cost of capital), the difference is not statistically significant ($p = 0.117$). However, the effect size is moderate ($d = 0.526$). This suggests that the difference may still be meaningful, but the small sample size limits the ability to detect statistical significance.

For L4 (profitability) and L6 (risk reduction through digital visibility), the average scores in both countries are almost the same (L4: 3.90 vs. 4.00; L6: 3.90 vs. 3.95). This

indicates that respondents in both countries have similar perceptions. They recognise that supply chain disruptions affect profitability and that digital visibility can help reduce risk (Atayah et al., 2022; Lücker et al., 2025).

After discussing all five variables, the analysis continues with the adoption of supply chain finance (SCF) instruments, which provides additional insight into the relationship between logistics and financial outcomes.

In addition to the perception results, the data on supply chain finance (SCF) adoption show an important pattern. There is a gap between the financial pressure faced by firms and the actual use of SCF instruments.

More than half of the respondents (52.5%) report that they do not use any SCF instrument. The proportion of non-users is much higher in Uzbekistan (70.0%) compared to Indonesia (35.0%).

Among firms that use SCF, factoring is the most commonly used instrument (17.5% of respondents). The use of reverse factoring and inventory financing is still limited, each accounting for less than 11% of the sample.

Respondents in Indonesia show a more varied use of SCF instruments. This is reflected in a higher proportion of firms using multiple instruments (25.0%), compared to Uzbekistan (10.0%).

This finding is important because most respondents in both countries agree that logistics delays increase working capital needs (L2: mean = 4.00 in Indonesia and 4.37 in Uzbekistan). However, the use of SCF instruments remains low.

This indicates a gap between the financial pressure experienced by firms and the solutions they actually use. One possible explanation is related to information asymmetry. When trade documentation is not well digitalised and shipment information is not easily verified, financial institutions tend to perceive higher risk. As a result, smaller firms may face difficulties in accessing formal financing (Jia et al., 2020; Lou et al., 2024).

This finding is consistent with previous studies on SCF adoption. It shows that awareness of financing needs does not always lead to the use of financing instruments, especially in emerging markets with limited financial infrastructure (Tanveer et al., 2025). Overall, the results of this study provide important insights for both theory and practice.

Based on the results, this study provides several important contributions to theory and practice. The findings show that differences between countries, especially on working capital (L2) and pricing (L3), are influenced by macroeconomic conditions.

The impact of logistics inefficiency is not the same across countries. In particular, the effect on working capital and the transfer of freight costs to product prices depends on factors such as inflation, import dependence, and geographic conditions. These results are consistent with working capital management theory and cost-push inflation theory.

The results also show that respondents in both countries have similar perceptions for L1, L4, and L6. This indicates that some aspects of the logistics–finance relationship are widely recognised across different contexts. In particular, firms in both countries understand that supply chain disruptions can affect profitability and that digital visibility can help reduce risk (Atayah et al., 2022; Lücker et al., 2025).

In addition, the findings reveal a gap between financial needs and the use of supply chain finance (SCF) instruments. The availability of financial instruments alone is not sufficient to encourage adoption. Factors such as the level of digitalisation and the availability of reliable information play an important role. When trade data are not well documented and information is limited, financial institutions tend to perceive higher risk, making it more difficult for firms to access financing (Jia et al., 2020; Lou et al., 2024).

For practitioners, improving the reliability of logistics processes and increasing shipment visibility can help reduce working capital needs and stabilise pricing. These improvements can be achieved even without major infrastructure changes.

For policymakers and financial institutions, logistics reform and the development of supply chain finance (SCF) should be carried out together. Expanding access to financing instruments, such as factoring, reverse factoring, and inventory financing, can help firms manage financial pressure. This is particularly important in situations where improvements in transport infrastructure and customs processes are still limited (Lou et al., 2024; World Bank, 2023; Tanveer et al., 2025).

Conclusion

This study shows that logistics efficiency affects firm-level financial outcomes, not only operational performance. The results indicate that logistics delays and higher freight costs increase pressure on working capital and pricing. The strength of this impact depends on macroeconomic conditions, particularly inflation and import dependence.

Respondents in Uzbekistan report stronger effects, both in terms of working capital pressure and the transfer of freight costs to product prices. This reflects higher inflation and greater reliance on cross-border logistics. In contrast, respondents in Indonesia reflect the impact of domestic logistics challenges.

For practitioners, improving the reliability of logistics processes and increasing shipment visibility can help reduce financial pressure. For policymakers, logistics reform and the expansion of supply chain finance (SCF) should be implemented together. Instruments such as factoring, reverse factoring, and inventory financing can support firms, especially when infrastructure improvements are still limited.

Future research is encouraged to use larger samples, apply panel data, and incorporate objective firm-level financial indicators.

Reference

- Atayah, O. F., Dhiaf, M. M., Najaf, K., & Frederico, G. F. (2022). *Impact of COVID-19 on financial performance of logistics firms: Evidence from G-20 countries*. *Journal of Global Operations and Strategic Sourcing*, 15(2), 172–196. <https://doi.org/10.1108/JGOSS-03-2021-0028>
- Baghersad, M., & Zobel, C. W. (2021). *Extended impacts of supply chain disruption on firm performance*. *International Journal of Production Economics*, 231, Article 107862. <https://doi.org/10.1016/j.ijpe.2020.107862>
- Carrière-Swallow, Y., Deb, P., Furceri, D., Jiménez, D., & Ostry, J. D. (2023). *Shipping costs and inflation*. *Journal of International Money and Finance*, 130, Article 102771. <https://doi.org/10.1016/j.jimonfin.2022.102771>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Corder, G. W., & Foreman, D. I. (2014). *Nonparametric statistics: A step-by-step approach* (2nd ed.). Wiley.
- International Monetary Fund. (2022). *Shipping costs and inflation* (IMF Working Paper No. 2022/061). <https://doi.org/10.5089/9798400200793.001>
- Jia, F., Blome, C., Sun, H., Yang, Y., & Zhi, B. (2020). *Towards an integrated conceptual framework of supply chain finance: An information processing perspective*. *International Journal of Production Economics*, 219, 18–30. <https://doi.org/10.1016/j.ijpe.2019.05.013>

- Lou, Z., Xie, Q., Shen, J. H., & Lee, C.-C. (2024). *Does supply chain finance (SCF) alleviate funding constraints of SMEs? Evidence from China*. *Research in International Business and Finance*, 67, Article 102119. <https://doi.org/10.1016/j.ribaf.2023.102119>
- Lücker, F., Timonina-Farkas, A., & Seifert, R. W. (2025). *Balancing resilience and efficiency: A literature review on overcoming supply chain disruptions*. *Production and Operations Management*, 34(1), 1–25. <https://doi.org/10.1177/10591478241302735>
- Razali, N. M., & Wah, Y. B. (2011). *Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling tests*. *Journal of Statistical Modeling and Analytics*, 2(1), 21–33.
- Republic of Indonesia, Cabinet Secretariat. (2020). *Government creates National Logistics Ecosystem to reduce logistics cost to 17% of GDP*. Cabinet Secretariat of the Republic of Indonesia.
- Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.
- Song, H., Li, M., & Yu, K. (2021). *Big data analytics in digital platforms: How do financial service providers customise supply chain finance?* *International Journal of Operations & Production Management*, 41(4), 410–435. <https://doi.org/10.1108/IJOPM-07-2020-0485>
- Tanveer, I., Ahsan, T., & Mirza, S. S. (2025). *Reshaping global trade finance and supply chains through digital supply chain finance platforms*. *Journal of Business Logistics*, 46(2), e70022. <https://doi.org/10.1111/jbl.70022>
- World Bank. (2020). *Uzbekistan: Building blocks for integrated transport and logistics development*. World Bank Group.
- World Bank. (2023). *Connecting to compete 2023: Trade logistics in an uncertain global economy*. World Bank Group. <https://doi.org/10.1596/978-1-4648-1987-9>
- World Bank. (2024). *World development indicators*. World Bank Group. <https://databank.worldbank.org/source/world-development-indicators> Pelanggan Sebagai Variabel Mediasi. *Jurnal Mirai Management*, 8(2), 614-626