

THE IMPACT OF THE GLOBAL PANDEMIC (COVID-19) ON OPERATION AND ENVIRONMENT SUPPLY CHAIN PERFORMANCE

Ammar Bashatwah, Luminus Technical University College

ABSTRACT

This study aims to identify the impact of the global pandemic on supply chain performance in Jordanian commercial sectors. The independent variable is covid-19 pandemic and the dependent variables are Operation supply chain Performance and Environment supply chain performance. covid-19 pandemic was shown to impact supply chain performance (operation and environment). To answer the problem of the study a questionnaire was developed and distributed 150 questionnaires, 30 of which were unreturned, and 20 of which were deleted because of missing data or unsuitability for research, as a result, 100 surveys are acceptable. The study found a statistically significant impact of covid-19 on Operation and Environment supply chain performance.

Keywords: Global Pandemic (Covid-19), Supply Chain Performance, Operation Supply Chain Performance, Environment Supply Chain Performance, Jordanian Commercial Sector.

INTRODUCTION

The global economy has been thrown into disarray with the emergence of COVID-19 in China. The worldwide economy has been harmed as a result of the COVID-19 epidemic. The comprehensive lockdown enforced by virtually all governments has greatly reduced global economic activity. According to the International Economic Organizations, the majority of nations are anticipated to have negative GDP growth in the Pandemic year of 2020. Worldwide economic growth, the global maritime sector, international trade, and economic development have all been greatly influenced as a result of COVID-19. During the epidemic, banks. Narasimha et al. (2021). The Coronavirus disease 2019 (COVID-19) outbreak has recently damaged the global supply chain of many items. The effects of COVID-19 on the global economy were significant, and various industries were devastated as a result of the disruptions. Khan et al. (2022). The pressure of enhancing corporate operations has increased due to shifting customer consumption habits in a dynamic environment. Increased internet sales of critical items are upsetting the demand-supply role. In response to the dynamic social and economic situations, new company strategies must be introduced. Sharma et al. (2021)

Businesses dependent on global sourcing are forced to make difficult decisions in crisis management as a result of COVID-19 supply chain disruptions. The influence of the coronavirus pandemic on global supply chains is similar to that of an earthquake or a tsunami. The primary goal of supply chain management is to identify and eliminate supply chain uncertainty Kumar & Mishra (2020).

Supply chains are getting more dynamic in today's commercial environment as corporate settings and technology advance. Because of ongoing internal and external challenges that continue to impede supply chain operations. In light of the closures during and after the Coronavirus epidemic, Jordan experienced the closure of numerous commercial firms in Jordan, hence this research aims to investigate the influence of the Coronavirus pandemic on supply chain

performance in the Jordanian commercial sector. The primary study question is: is there an impact of global pandemic on supply chain performance in Jordanian commercial sector? Two sub-questions for the study have been established Bechtel & Jayaram (1997):

1. Is there an impact of global pandemic on operation supply chain performance in Jordanian commercial sector?
2. Is there an impact of global pandemic on Environment supply chain performance in Jordanian commercial sector?

LITERATURE REVIEW

During the COVID-19 pandemic, supply chain analysts concentrated on researching the detrimental effects of regulations enacted throughout the world to mitigate the implications of this disaster. Making optimal judgments in evaluating the level of demand for services and commodities is one of the most significant risks faced by supply chains during the COVID-19 pandemic era in numerous domains. It is worth mentioning that the occurrence of interruptions in supply chains leads to a drop in performance, emphasizing the need of analyzing how such disruptions are handled to ensure the effective and successful functioning of the supply stages. Grida et al. (2020).

The Covid-19 crisis has enormous social, and significant effects on corporate, and individual consequences. The pandemic has clearly altered the way business is done, emphasizing the significance of effectively managing operations and supply chains not just for researchers and professionals, but also for the public. Significant interest has been shown, as well as in the inability of retail supply chains to meet unprecedented demand from and customers. Micheli et al. (2021).

Supply chain managers, according to Pakurár et al. (2019), have a complete view of key actions of the supply chains and attempt to increase performance by combining their operations to satisfy consumers (Tan et al., 2002, Yousuf et al. (2019). As supply chain integration improves, an enterprise's performance improves Frohlich & Westbrook (2001).

Due to severely low demand at the outset of the virus, several firms ceased operations. As a result, many people were laid off, the company lost a large market share, and it went bankrupt. However, other firms took advantage of the circumstances and expanded their services and market share. Furthermore, the pandemic drove firms to reduce operational expenses by offering work-from-home options. In addition, corporations used electronic meetings and collaboration technologies to get the finest services from geographically scattered staff in different time zones. Farooq et al. (2021). (Navavongsathian, et al. 2020) The term "*environment*" refers to actions that include the recycling and recovery of goods, and another advantage is that product chain operation, both forward and reverses logistics, is considered part of the chain. Green supplies are required for upstream, midstream, and downstream operations in the development of green logistics. However, all of these actions must lead to the green standard practice on three levels:

1. All departments and activities in the supply chain must transition to a green standard.
2. should establish a joint project across departments within the business to develop greens in order to generate a green supply chain throughout the firm.
3. Converting operations to green manufacturing and maximizing reverse logistics to achieve efficiency and effectiveness in the reverse mechanism.

METHODOLOGY

Conceptual Framework

Figure 1 illustrates the conceptual framework of the study, which determines the connection of variables that are used. The independent variable of the research is covid-19, as shown in Figure 1. The study's dependent variable is supply chain performance. This demonstrates how the covid -19 might affect the Jordanian commercial sector's supply chain performance. The framework is as follows Figure 1:

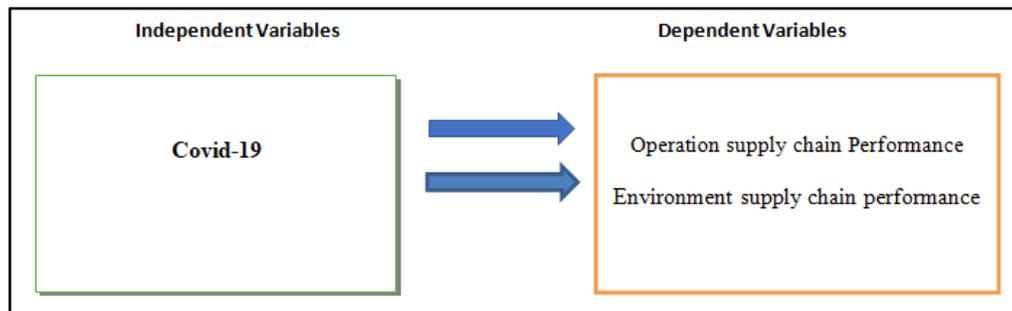


FIGURE 1
STUDY FRAMEWORK / RESEARCH DESIGN

Hypothesis

H₁: There is no statistically significant at the (0.05) level for Covid-19 Pandemic on operation supply chain performance in Jordanian commercial sector.

H₂: There is no statistically significant at the (0.05) level for Covid-19 Pandemic on Environment supply chain performance in Jordanian commercial sector.

Population and Samples

The Jordanian commercial sector is the study's population. All managerial and non-managerial levels are included in the unit of analysis (managers and employees). The authors of the study distributed 150 questionnaires, 30 of which were unreturned, and 20 of which were deleted because of missing data or unsuitability for research, as a result, 100 surveys are acceptable for further study.

Data Collection

To achieve the study's aim, descriptive and analytical methodologies were applied. The study gathered data from two major sources: prior studies, books, periodicals, scientific journals, and publications related to the subject of the investigation were used for secondary data. In terms of primary data, the study relied on a questionnaire designed to gather the information required for the inquiry.

Data Analysis Methods

The authors applied the Statistical Software Package for Social Sciences (SPSS) to assess and evaluate hypotheses with the following statistical techniques: Cronbach alpha, Descriptive Statistics, and Regression.

Goodness of Data

Before analyzing the research hypotheses, it is critical that the data gathered be examined for validity and reliability. The content validity of the instrument was validated by collecting expert views from numerous Jordanian university academics.

Reliability of Measurement

According to Nunnally (1978), the inter-item analyses could be utilized to evaluate the validity of a questionnaires. As a result, Cronbach's alpha is thought to be an adequate measure of the survey instrument's internal consistency (Sekaran & Bougie, 2010) Table 1.

Variables	Cronbach's Alpha	N of Items
Covid-19	0.772	5
Operation supply chain Performance	0.773	5
Environment supply chain performance	0.863	5

Cronbach's alpha ranges between 0.772 to 0.863, which is more than the lowest allowable value of 0.60. This shows that the approaches used to measure the variable were suitable (Sekaran & Bougie, 2010).

Sample Characteristics

To define the characteristics of the study's sample, the frequency and percentage of the demographic variables were identified for the study's sample as follows Table 2:

	Response	Frequency	Percentage %
Gender	Male	51	51
	Female	49	49
Experience	Response	Frequency	Percentage %
	1 – 4 Years	25	25
	5 – 9 Years	20	20
	10 – 19 Years	33	33
	20 Years or above	22	22
Qualification	Response	Frequency	Percentage %
	Bachelor	74	74
	Master	17	17
	PhD	9	9
Job Position	Response	Frequency	Percentage %
	Logistics Specialist	20	20
	Purchasing manager	35	35
	Logistics manager	20	20
	Procurement Specialist	25	25

Table 2 shows the frequencies analysis for the study sample:

1. shows that 51% of the sample a male. and 49% female.

2. In relation to experience, Table 2 shows that 33% of the sample had 10-19 years of work experience, and 22% had experienced over 20 years.
4. shows that 74% of the sample held a Bachelor's degree. Those with a master's degree were only 17 %, and Ph.D. degree 9%.
5. In relation to Position, Table 2 shows that 35% of the sample had Purchasing manager Position, 20 % had Logistics manager Position, a Procurement Specialist Position 25%, and 20% of the sample had Logistics Specialist Position` Table 3.

Hypothesis Testing

Variables	Operation supply chain Performance		Environment supply chain Performance	
	t	Sig -t	t	Sig -t
C	5.558	0.000	6.058	0.000
Covid-19	8.120	0.000	4.312	0.000
R ²	0.402		0.224	
F	65.933		28.219	
Sig F	0.000		0.000	
D-W	1.646		1.949	

Table 3 displays the results for the two models.

Model 1 (operation supply chain performance) shows covid -19 outcomes on operation supply chain performance, indicating that covid -19 had a significant influence on operation supply chain performance in Jordanian commercial sectors. According to Table 3, the Significant model has a F (65.933) value and a R square of (40.2%). The variation in operation supply chain performance may be explained by the variation in the variables in total while holding all other factors constant. In terms of regression coefficients, the value of T for the covid-19 was 8.120 with a significance of sig= 0.000, confirming the aspect's positive relevance.

Model 2 (Environment supply chain performance) shows covid -19 outcomes on Environment supply chain performance, indicating that covid -19 had a significant influence on Environment supply chain performance in Jordanian commercial sectors. According to Table 3, the Significant model has a F (28.219) value and a R square of (22.40%). The variation in Environment supply chain performance may be explained by the variation in the variables in total while holding all other factors constant. In terms of regression coefficients, the value of T for the covid-19 was 5.312 with a significance of sig= 0.000, confirming the aspect's positive relevance.

CONCLUSION AND RECOMMENDATIONS

This study aims to identify the impact of the global pandemic on supply chain performance in Jordanian commercial sectors. The independent variable is covid-19 pandemic and the dependent variables are Operation supply chain Performance and Environment supply chain performance. covid-19 pandemic was shown to impact supply chain performance (operation and environment). This shows that covid -19 is one most of problem to be tackled and this virus enhances corporate failure, which shows a significant challenge to the operation and environment supply chain performance. Therefore, the state must provide opportunities to avoid this epidemic more, allowing companies to continue to work and not be exposed to failure increasing their market share and strengthening market competitiveness.

This study has certain limitations. This study's conclusions cannot be generalized beyond the Jordanian commercial Sector, and this study recommends researchers prepare this study for other sectors and use new variables of supply chain performance.

REFERENCES

- Bechtel, C., & Jayaram, J. (1997). Supply chain management: a strategic perspective. *The international journal of logistics management*, 8(1), 15-34.
- Farooq, M.U., Hussain, A., Masood, T., & Habib, M.S. (2021). Supply chain operations management in pandemics: a state-of-the-art review inspired by COVID-19. *Sustainability*, 13(5), 2504.
- Frohlich, M.T., & Westbrook, R. (2001). Arcs of integration: an international study of supply chain strategies. *Journal of operations management*, 19(2), 185-200.
- Grida, M., Mohamed, R., & Zaied, A.N.H. (2020). Evaluate the impact of COVID-19 prevention policies on supply chain aspects under uncertainty. *Transportation Research Interdisciplinary Perspectives*, 8, 100240.
- Khan, S.A.R., Piprani, A.Z., & Yu, Z. (2022). Supply chain analytics and post-pandemic performance: mediating role of triple-A supply chain strategies. *International Journal of Emerging Markets*, (ahead-of-print).
- Kumar, R., & Mishra, R.S. (2020). COVID-19 global pandemic: impact on management of supply chain. *International Journal of Emerging Technology and Advanced Engineering*, 10(4), 132-139.
- Micheli, P., Johnson, M., & Godsell, J. (2021). Editorial How the Covid-19 pandemic has affected, and will affect, operations and supply chain management research and practice. *International Journal of Operations & Production Management*.
- Narasimha, P.T., Jena, P.R., & Majhi, R. (2021). Impact of COVID-19 on the Indian seaport transportation and maritime supply chain. *Transport Policy*, 110, 191-203.
- Pakurár, M., Haddad, H., Popp, J., Khan, T., & Oláh, J. (2019). Supply chain integration, organizational performance and balanced scorecard: An empirical study of the banking sector in Jordan. *Journal of international studies*, 12(2).
- Sharma, M., Luthra, S., Joshi, S., & Kumar, A. (2021). Accelerating retail supply chain performance against pandemic disruption: adopting resilient strategies to mitigate the long-term effects. *Journal of Enterprise Information Management*.
- Yousuf, A., Haddad, H., Pakurár, M., Kozlovskyi, S., Mohylova, A., Shlapak, O., & János, F. (2019). The effect of operational flexibility on performance: a field study on small and medium-sized industrial companies in Jordan.

Received: 19-Sep-2022, Manuscript No. AMSJ-22-12576; **Editor assigned:** 22-Sep-2022, PreQC No. AMSJ-22-12576(PQ); **Reviewed:** 21-Aug-2022, QC No. AMSJ-22-12576; **Revised:** 22-Sep-2022, Manuscript No. AMSJ-22-12576(R); **Published:** 14-Nov-2022