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Assessing Post-Pandemic Recovery Challenges in UAE's Supply Chain Industry: A Resource-Based Approach to Risk Management and Organizational Resilience

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Abstract. The COVID-19 pandemic has brought to light a variety of vulnerabilities across supply chains worldwide, and the logistics sector of the UAE has faced some singular challenges during its journey toward recovery. The present paper examines how resource constraints and lapses in risk management bear upon supply chain performance in accordance with the Resource-Based Theory. A mixed-method approach was followed, and data were collected through a survey and interviews with industry professionals and analyzed statistically and thematically. Strong positive effects of robust risk management strategies are evidenced on the resilience of supply chains, while adaptive resource use becomes a question of overcoming resource constraints. This study extends the application of RBT into crisis recovery, contributes to theory development, and provides practical recommendations to improve resilience, including predictive analytics and the adoption of digital tools. It also calls for policymakers to support digital transformation and capacity-building initiatives to make supply chains in the UAE resilient to any future disruption.

Keywords: Post-Pandemic Recovery, Risk Management, Organizational Resources, Supply Chain Resilience.

1 Introduction

The COVID-19 pandemic has caused unprecedented turbulences in most industries around the world. Among the worst-hit sectors so far, according to the views of Van Hoek (2020) and Alam (2021), have been supply chains. Besides, the situation has outlined the weaknesses of traditional supply chains, especially those based on lean management methods that were unprepared for such a sudden disruption of supplies. Indeed, all organizations worldwide, like those in the UAE, went through much pain during and after the pandemic in a bid to sustain operations and secure resources with mitigated risks. Since the supply chain sector in the UAE is a significant sector of the economy and is positioned to play a strategic function in regional and international trade, these disruptions have highlighted the timeliness of seeking out and trying to resolve recovery issues particular to this context (Goel et al., 2021). Particularly, issues that have arisen in the post-pandemic period related to risk management and the limitation of organizational resources have threatened supply chain resilience and efficiency. Comprehending and addressing these obstacles is crucial for the United Arab Emirates to preserve its status as a prominent center for logistics and supply chain operations (Albaloushi & Skitmore, 2014).

Despite the increased awareness about recovery-related issues, the number of academic structures which focus on post-pandemic challenges in UAE's supply chain industry remains minimal. Entities within the industry, particularly those engaged in logistics and freight activities, have encountered difficulties in developing effective methodologies for risk management and resource optimization aimed at ensuring operational continuity and resilience (al Naqbi et al., 2018; Ghadimi et al., 2019). While global research has examined the broader implications of the pandemic on supply chains (Aday & Aday, 2020; Novak & Loy, 2020), studies that concentrate on areas, especially within the UAE, remain limited. The present study addresses this imbalance by resting its analysis based on the Resource-Based Theory. RBT considers the key factor of organizational resources in driving a firm's competitive advantage and resilience; these resources encompass both tangible and intangible assets (Alvarez & Barney, 2017). Thus, in the context of post-pandemic recovery challenges, such a point of view will allow the researchers to show how resource optimization and risk management strategies affect supply chain efficiency in the turbulent environment. This therefore demonstrate the contribution of the current study.

Conception-wise, it uses RBT on a current crisis, further expanding its relevance toward discussions of supply chain resilience and recovery. Actionably, insights could be given in practical ways as to how managers and policymakers could devise means adequate for coping with challenges in post-pandemic recovery. For supply chain companies in the UAE, understanding the impact of risk management gaps and resource limitations is vital to fostering resilience and sustaining competitive performance in a post-pandemic world (Zhao & Fan, 2018; Goel et al., 2021). Furthermore, this study aims to inform government initiatives and industry stakeholders, highlighting areas where support, whether in funding, technology adoption, or policy frameworks, is needed to facilitate recovery efforts (Mirchandani, 2020; Hilmola & Tan, 2010). Thus, this study investigation has tried to find answers to the following questions: (1) What are the major challenges to post-pandemic recovery in UAE's supply chain industry? (2) How do risk management challenges influence supply chain performance? and (3) How do resource limitations influence the capacity for organizational resilience and recovery? Consequently, they align with the following objectives: identifying and accessing major challenges toward post-pandemic recovery in the UAE's supply chain sector, accessing what problems in risk management have impacts on performance inside a supply chain, and finally, accessing how organizational resources support the initiatives of resilience and recovery.

In line with the above purpose, the present study attempts further to examine the state of supply chain enterprises in the UAE economy in the post-pandemic period. These objectives are to be realized through the following structure of the study. Following this introduction, the literature review summarizes the existing studies, theoretical frameworks, and empirical evidence on thematic issues of post-pandemic challenges and supply chain resilience, with a particular focus on the UAE. In this work, the methodology elaborates on the sequential mixed-methods approach followed, tools for data collection, the methods of sampling adopted, and the analytical plans. The results and discussion section that follows will elaborate on in-depth data analysis of data so collected and the relationships existing amongst risk management-resource constraints-and the performance measures of supply chain performance. The conclusion and recommendations sum up the main findings, the theoretical contribution, implications for practice, go-ahead, and actionable strategies that may accrue to entities involved in supply chain operations and to policy makers. The contribution addresses an important literature gap in SCM, investigating barriers of recovery through the optics of Resource-Based Theory. This should be a very valued input, considering that the United Arab Emirates is recognized as one of the majors in the global logistics arena. It also invites

consideration from both an academic and practical point of view on suggestions for a framework that should permit the enhancement of organizational resilience to pursue optimal performance in the post-pandemic environment.

2 Literature Review

The COVID-19 pandemic brought a sea change in disrupting supply chain activities globally. Several researchers and practitioners focused on unraveling the issues concerning recovery in the post-pandemic scenario. The section now presents the critical review of the literature pertaining to the theoretical underpinning, the impact of a pandemic on international supply chains, the key issues concerning recovery, and the concept of resilience in supply chains. It further identifies relevant empirical research discussing recovery strategies, indicates what gaps in the literature exist, and identifies a rationale for conducting a study based in the United Arab Emirates, drawing on Resource-Based Theory.

2.1 Theoretical Framework

The Resource-Based Theory (RBT) has emerged as a critical lens for understanding organizational resilience, particularly in crises where resource management determines recovery outcomes (Zhao & Fan, 2018; Alvarez & Barney, 2017). RBT posits that an organization's resources, both tangible (e.g., finances, infrastructure) and intangible (e.g., knowledge, competencies), are key drivers of sustained competitive advantage (Alvarez & Barney, 2017). The theory emphasizes the value, rarity, inimitability, and non-substitutability (VRIN) of resources as central to a firm's success. Within the domain of supply chain recovery, Resource-Based Theory (RBT) provides a comprehensive framework for examining how organizations utilize their internal resources to adjust, react, and alleviate disruptions resulting from the pandemic (Ghadimi et al., 2019).

The use of RBT to address the supply chain post-pandemic challenge allows an expanded understanding of resilience as it considers the impact of resource presence on system performance (Bressanelli, 2019). For example, those firms that had strong technology infrastructure and financial strength managed more easily compared to other competitors that struggled with resource scarcity (Hilmola & Tan, 2010). Furthermore, intangible assets, including organizational agility and specialized knowledge, were instrumental in empowering companies to effectively navigate risks amid supply chain interruptions (Goel et al., 2021). This lays a foundational theoretical framework for assessing difficulties associated with risk management and resource constraints, thereby aligning cohesively with the aims of the study.

2.2 Impact of the Pandemic on Global Supply Chains.

The outbreak of the pandemic exposed underlying serious weaknesses that were structurally linked to dependence upon traditional lean management principles and just-in-time inventory systems. According to Aday & Aday (2020), this is exacerbated in achieving choppiness across supply chains that are marked by disruptions to logistical networks, imposition of trade restrictions, and shortage of labor. According to Mirchandani 2020, highly supplier-dependent supply chains based on geographical locations are those that easily succumb to vulnerability; common examples being the supply chains of healthcare products, food supplies, and manufacturing.

The United Arab Emirates, recognized as a regional trading hub, experienced significant repercussions due to these global disruptions. Among the challenges encountered by the supply chain sector in the UAE, as noted by Alam (2021) and Karunathilake (2021), were delays in freight transportation, limited access to primary markets, and resource constraints stemming from decreased economic activity. Although the world's supply chains have been slowly recovering piece by piece, the aftermath can still be felt in the developing world-including some regional hubs like the United Arab Emirates-which need new models and mechanisms of recovery that would fit into their own contingencies as agreed by Goel et al. (2021).

2.3 Post-Pandemic Recovery Challenges

The main factors that pressured the supply chains during the stage of recovery were related to inadequate risk management strategies, not having appropriate resources.

Risk Management Challenges. Risk management encompasses the methodical identification, evaluation, and diminishment of uncertainties that jeopardize the stability of supply chains. Throughout the pandemic, numerous organizations faced challenges in forecasting and addressing disruptions due to an absence of effective risk mitigation strategies (Wamba & Queiroz, 2020). Conventional risk management frameworks demonstrated their shortcomings in adequately addressing the severity of the crisis, especially for sectors functioning within streamlined operational models (Paul et al., 2021). The progression of digitalization and the implementation of technological innovations have emerged as critical enablers for diminishing risks, facilitating immediate monitoring, predictive assessments, and alternative sourcing strategies (Kumar et al., 2020). However, enterprises in emerging economies, exemplified by the UAE, often face challenges in adopting these technologies due to resource constraints (Ben-Daya et al., 2019).

Organizational Resource Issues. The organizational resources, especially financial, human, and technological re-sources, have been basic in driving the process of recovery from the pandemic. In this respect, Barbosa-Póvoa et al. (2018) narrates that resource constraints have competitively impaired business operations and investment in resilience building during the crisis period. At supply chains whose base falls within UAE, reduced income, interruption to work-force supply and delayed investment in capital became fundamental challenges to-wards recovery efforts for the firms concerned, Alvarez & Barney, 2017; al Naqbi et al., 2018. In cases where the organizations have limited accessibility to financial and technological re-sources adaptive approaches cannot be put into practice. As a result, frameworks that may enable optimized resource utilization during crises will become increasingly in demand (Bressanelli, 2019).

2.4 Supply Chain Resilience

The concept of supply chain resilience has gained prominence as a critical strategy for mitigating post-pandemic challenges. Resilience refers to a supply chain's ability to withstand disruptions, adapt to changes, and recover quickly to pre-crisis performance levels (Ghadimi et al., 2019). Resilient supply chains are characterized by flexibility, adaptability, and resourcefulness—qualities that enable organizations to respond effectively to unforeseen challenges (Van Hoek, 2020).

For the UAE, enhancing supply chain resilience involves adopting digital solutions, diversifying suppliers, and investing in workforce development to address systemic weaknesses (Litke et al., 2019; Mirchandani, 2020). Goel et al. (2021) suggested that resilience-building strategies, such as adopting blockchain technology and predictive analytics, have helped organizations manage risks and improve recovery timelines. However, the successful implementation of these strategies depends on firms' access to resources, reinforcing the relevance of RBT in evaluating resilience.

2.5 Empirical Studies of Post-Pandemic Recovery

Empirical research across the globe showed different directions that the recovery of supply chains has harnessed so far in a post-pandemic scenario. For example, Sharma et al. (2020) discussed the strategies of digital transformation for those specific firms which belong to NASDAQ 100 to mitigate the operational difficulties that would arise throughout the pandemic. Likewise, Wamba & Queiroz (2020) discussed the capabilities of blockchain technology in enhancing transparency and the resilience of the supply chain network.

In this respect, different studies carried out about the United Arab Emirates and the broader Gulf Cooperation Council region have identified government support and digital transformation as the key factors enabling recovery (Albaloushi & Skitmore, 2014; Hussain et al., 2020). However, although relevant, these studies do not consider the issue of resource limitations and deficiencies regarding risk management that might impact the supply chain industry of the UAE (al Naqbi et al., 2018). All these portend that focused research integrating empirical data within theoretical frameworks, such as RBT, becomes a precept, in case challenges will be put to rest.

2.6 Gaps in Literature

Despite advances that have so far been made in understanding disruptions to global supply chains, a host of knowledge gaps can be identified that remain a preserve of active scholarly research, especially in the UAE context. For instance, most of the current literature is focused on global recovery strategies and, as such, often does not have much to say regarding the challenges faced by regional supply chain hubs like the UAE (Karunathilake,

2021). Moreover, most of the literature has largely failed to consider how organizational resources influence post-pandemic resilience, a critical factor according to RBT (Zhao & Fan, 2018; Alvarez & Barney, 2017).

Other identifiable gaps are the lack of any empirical framework that addresses how juxtaposed risk management and resource optimization bear an impact on the performance of the supply chain. This study tends to bridge such gaps by applying RBT while analyzing challenges that face the post-pandemic recovery of the supply chain industry in the UAE, hence contributing to theory and practice.

This includes other areas, such as resource management and the mitigation of risks, being two major enabling factors that may facilitate supply chain recovery processes. The current study therefore addresses all post-pandemic challenges comprehensively while infusing the views of RBT, answering the calls for context-specific studies within the United Arab Emirates. Therefore, it has been an address to the literature gaps, hence an extension of the existing discourses and multiplication of actionable solutions which could thus be applied to enhance supply chain resilience within the United Arab Emirates.

3 Methodology

The study is aimed at post-pandemic recovery in the UAE supply chain industry, being cognizant of the Resource-Based Theory and structured approach, focused on inherent deficiencies of risk management and deployment of organizational resources. The methodology covers quantitative and qualitative approaches to the in-depth understanding of the problem statement. It also warrants validity, reliability, and ethical consideration.

The study adopts a mixed-method approach wherein quantitative survey analysis is combined with qualitative insights. This will provide an in-depth understanding of how post-pandemic challenges, such as risk management and resource limitation, affect the performance of supply chains in the United Arab Emirates. Whereas the quantitative part deals with numerical data explanation for the relationship of variables, the qualitative part adds depth to such findings through contextual and interpretative views from industry experts. With all these integrated, study related to the dynamics of supply chain recovery shall be comprehensive through focusing on three key variables, two independent variables discussing **Challenges in Risk Management** (assessed through measuring organizations' preparedness, their ability to conduct risk assessments, and the implementation of mitigation strategies according to Paul et al., 2021; Wamba & Queiroz, 2020) and **Organizational Resources** (assessed through concerning the accessibility of resources, namely financial, human, and technological, and their adequacy in supporting recovery efforts according to Barbosa-Póvoa et al., 2018; Alvarez & Barney, 2017), and one dependent variable discussing **Supply Chain Performance and Resilience** (assessed through evaluating with the help of operational efficiency analysis, delivery schedules, and the ability of organizations to get adapted post-pandemic according to Ghadimi et al., 2019; Goel et al., 2021).

Both primary and secondary data collection have been pursued to enhance the richness of the study findings. Primary data in shape of a structured questionnaire was issued to supply chain managers and senior officers working for logistics firms based in the UAE, such as Al-Futtaim Logistics and RAK Logistics. The tool had two clear divisions: one for demographic questions and the other for Likert-scale questions to measure the impacts resulting from issues concerning risk management, constraint of resources, and their impact on the efficiency of the supply chain.

The reason for the selection of the survey methodology is that it is appropriate for responses being gathered from a sizeable population within a limited period. It also involved semi-structured interviews with senior executives across different organizations to capture qualitative insights. This study examined how such firms perceive and address challenges toward recovery and therefore contextualized findings that are quantitative in nature. On the other hand, a secondary data has been focused on academic journals, industry reports, governmental documentation, and corporate information. The findings were validated, and to give weight to the data output, verification was done using the financial reports, functional analysis, and efficiency checks of the supply chain (Albaloushi & Skitmore, 2014; Ghadami, 2019).

The target population consists of all firms operating supply chain and logistics activities within the United Arab Emirates. Since the study is related to recovery issues, the scope was limited to the managerial personnel who have a role in the decision-making capacity. A non-probability purposive sampling method has been adopted in this study. This will ensure that the respondents have awareness about, and relevant experiences concerning, the issues of post-pandemic recovery. A total of 550 questionnaires were distributed to the supply chain managers of Al-Futtaim Logistics and RAK Logistics companies; out of those, 374 valid responses were received representing approximately 68% response rate which were used to conduct statistical analysis.

The data interpretation used both quantitative and qualitative methods. In the quantitative study, the findings are presented using descriptive statistics, such as mean and standard deviation, to summarize the data and indicate demographic trends among the respondents. Besides, the correlation analysis provided both the strength and the direction of the relationships standing among these variables, while the regression analysis has presented the influence of independent variables on the performance of supply chain including the risk management and organizational resources issues. This process was performed with the use of SPSS software to ensure validity and reliability of the statistical estimates. Qualitative data come to enrich these quantitative findings from these interviews through thematic analysis, allowing the identification of major trends and contextual insights from the post-pandemic recovery: strategies taken to reduce the risks, challenges in resource allocation put forward, and adaptive measures put forward by the organizations. The integration of quantitative findings with qualitative narratives not only validated findings but also deepened and heightened their significance; hence, such an approach aligns closely with the purpose and theoretical underpinning of the study by Sharma et al. (2020) and Hilmola & Tan (2010).

4 Findings and Discussion

As the aim of this study to provide a useful insight into the challenges encountered by the United Arab Emirates' supply chain industry during the post-pandemic recovery process and the important role of risk management and organizational resources in accomplishing supply chain performance. Such findings are supported by the analysis of the statistical data and qualitative findings, which further support the arguments represented in the literature review, creating consistency with the theoretical underpinning of Resource-Based Theory.

Quantitative analysis shows that risk management challenges have impacted supply chain performance greatly. The results of the correlation analysis indicated that effective risk management was positively related to improvement in supply chain performance, ($r = 0.970$, $p < 0.001$ see **Table 1**). Regression analysis also proved that poor risk management strategies have explained 94% of the decline in supply chain performance significantly, ($R^2 = 0.940$, $p < 0.01$ see **Table 2**).

Table 1. Risk Management Challenge Independent Variable Model Summary.

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.970	.940	.940	.209

The independent variable is Risk Management Challenge.

Table 2. Overall Statistics on Risk Management Challenge Analysis of Variance (ANOVA).

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	254.697	1	254.697	5838.916	.000
Residual	16.227	372	.044		
Total	270.924	373			

The independent variable is Risk Management Challenge.

Findings thus agree that risk management remains an important part of supply chain resilience during times of crisis, a fact confirmed by Paul et al. (2021) and Wamba & Queiroz (2020). Complementing the quantitative analysis, interviewees outlined that those organizations with digitalized monitoring systems and proactive risk-assessing frameworks were better placed in reducing the intensity of the disruptions. In contrast, organizations that relied on their old ways of operations experienced enhanced operational setbacks and, as such, proved the potential of sound risk management strategies.

The study also reflects an enlightening understanding of how organizational resources act in recovery after the pandemic. Considering the correlation analysis, there was a fair relation of resource availability with supply chain performance, ($r = 0.975$, $p < 0.001$ see **Table 3**), while from the regression analysis, their influence was smaller

as compared to the risk management strategies. It revealed a negative and statistically significant beta coefficient, (β = 0995, $p < 0.001$ see **Table 4**). That is, the absence of resources causes recovery more indirectly.

Table 3. Organizational Resources Independent Variable Model Summary.

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.975	.951	.951	.188

The independent variable is Organizational Resources.

Table 4. Overall Statistics on Organizational Resources Coefficients.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Organizational Resources	.995	.012	.975	85.248	.000
(Constant)	.016	.037		.432	.666

Qualitative thematic analysis added more context. Among the major challenges that faced firms were resource constraints. This ability of firms to adapt, for example, by shifting available resources within or finding appropriate external partnerships, had been an enabling factor toward their more appropriate response to the pandemic shock. This is sustained by Resource-Based Theory, focusing on the exploitation of every tangible and intangible asset to sustain the competitive advantages proposed by Barbosa-Póvoa et al. (2018) and Ghadimi et al. (2019).

These findings have thrown into focus a conceptual interlink between risk management and organizational resources in driving supply chain resilience. Several challenges related to managing risks have cropped up as the number one factor determining the variance in performance; hence, it is expected that those firms which are predictive analytics multi-sourcing and digital transformation-oriented will have greater chances of recovery. Resource limitations did feature, but the capability for optimization and flexing the use of resources was greater than the quantum of resources alone, hence underlining the strategic relevance of resource fluidity. Generally, such findings are supported by the literature that identifies adaptive capabilities as central in responding to disruptions in supply chains (Sharma et al., 2020; Mirchandani, 2020). The UAE context is different from that elsewhere, given the support of the government for digital infrastructure and logistics that counters some of the resource constraints observed elsewhere (al Naqbi et al., 2018; Goel et al., 2021).

This study contributes to the theoretical debate by applying the RBT to post-pandemic recovery contexts and hence demonstrates that the theory is a good framework for analyzing supply chain resilience. Results confirm that the value and effective deployment of organizational resources are paramount in sustaining competitive performance in the period of disruption. Practical implications are given to supply chain firms in UAE. Firms must develop an integrated risk management system that embeds various digital tools and predictive analytics in predicting and reducing the likelihood of disruptions. Besides, firms can develop resource agility through efficient redeployment of existing resources and build collaborative networks to surmount resource constraints. Thus, policymakers should encourage focused support for digital transformation initiatives and capacity-building programs so that companies could face future adversities better. In other words, results confirm that both risk management and organizational resources are vital in the post-pandemic recovery process. While risk management strategies stood out to be better determinants of performance, the optimum use and adaptation of resources underline strategic agility issues. The results derive validity not only from theoretical arguments but also add value to the development of resilience within the UAE's supply chain sector. The long-term impacts of such strategies or scalability across diverse contexts and industries remain as future study issues.

5 Conclusion

This paper elaborates on the challenges facing the UAE's post-pandemic supply chain industry recovery, focusing on the role of risk management and organizational resources. Applying the Resource-Based Theory, it has been revealed that effective mobilization and optimization of tangible and intangible resources play an important role in resilience and competitive performance when confronted with disruption. The specific findings showed that challenges in risk management influence the performance of the supply chain to a great extent, and with effective strategies, operational disruptions were considerably reduced. Though less direct, the organizational resources showed that the strategic deployment and adaptability of organizational resources hold an important key toward recovery. Those insights point to the fact that resource agility, along with strong risk management, forms the basic elements of supply chain resilience.

The theoretical implication of the present study extends the application of RBT to a modern crisis and reassures its relevance in supply chain resilience and performance during a post-crisis period. Some practical suggestions from their findings include integration of predictive analytics, digitized risk management systems, and collaboration networks that will help surmount resource limitations. This calls on policymakers to support digitization initiatives and capacity building for supply chain firms in UAE as a way of adapting to any future crisis. In this regard, it lays the foundation for other works to continue the research on the long-term sustainability of those strategies into various industries and contexts.

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