The Flexibility and Adaptability of Supply Chain Management Required to Ensure Security in the Black Sea Region

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Abstract
This paper examines the crucial role of flexibility and adaptability in supply chain management for ensuring security in the Black Sea region, a strategically important area exposed to multiple challenges and threats. In a context marked by geopolitical instability and hostile military actions, the ability to rapidly adapt supply chains is essential for maintaining regional stability. The paper analyzes the specific threats in the region and explores the flexible and adaptable components of supply chain management necessary to effectively respond to these challenges. It also discusses the elements of resilience and risk management that ensure operational continuity and the security of logistics chains. In conclusion, the paper emphasizes the need for innovative and proactive approaches to address the complexities of the Black Sea region. It provides recommendations for improving logistics security in this context.

Keywords
Logistics, Black Sea, supply chain, flexibility, adaptability.

Introduction

The Black Sea region, located at the crossroads of Eastern Europe, Central Asia, and the Middle East, holds significant strategic importance due to its geographical position, natural resources, and the essential trade routes that pass through it (see Figure 1). Throughout history, this region has been a meeting point of civilizations, a vital hub for maritime transport, and a gateway for oil and natural gas pipelines connecting the energy resources of the Caspian and the Middle East to European markets. Its strategic significance is underscored by the involvement of major powers in the stability and security of this region, as the Black Sea plays a crucial role in ensuring access to resources and influencing the geopolitical dynamics of this part of the world (Yu et al., 2013).

In the current context, marked by geopolitical instability, regional conflicts, and hostile military actions, the Black Sea region is exposed to various threats and challenges that test the capacity of the coastal states to maintain stability and security. This instability directly impacts supply and delivery chains, making them vulnerable to disruptions and disturbances, affecting not only the local economy but also global security. From this perspective, flexibility and adaptability in supply chain management are essential

for ensuring operational continuity and responding effectively to various challenges (Korucuk, 2023).

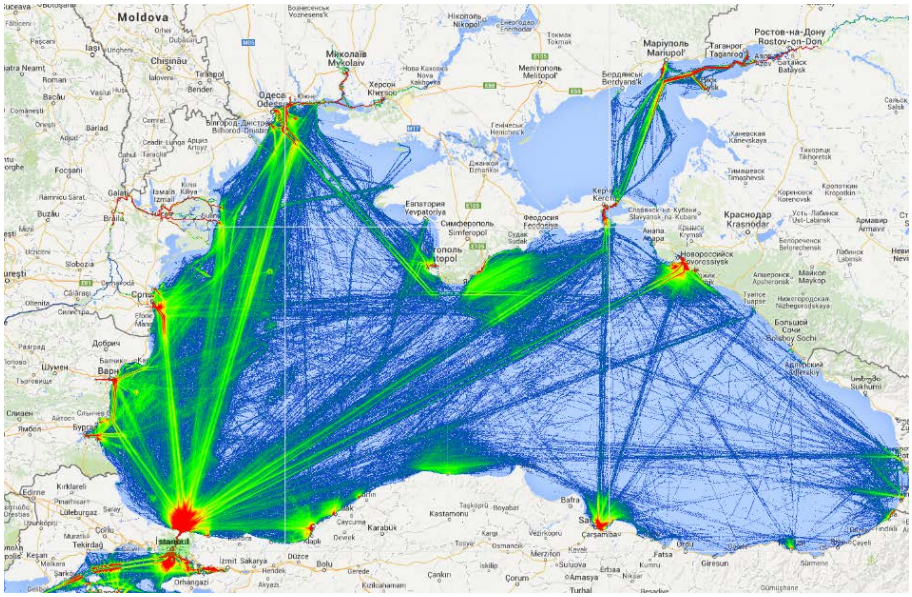

Figure 1. Maritime transport routes in the Black Sea, using traffic density from July to September 2024. Source: http://www.shiptraffic.net
(Color code: Red – very high maritime traffic density, Orange – high maritime traffic density, Yellow – medium maritime traffic density, Green – low maritime traffic density.)

The main objectives of this study are to analyze and assess the crucial role that flexibility and adaptability play in managing supply and delivery chains in the Black Sea region. The study will explore the specific threats unique to this region and examine how flexible and adaptable components of logistics management can effectively respond to these challenges. Additionally, the paper aims to identify and analyze the resilience and risk management elements necessary to ensure operational continuity and supply chain security in the face of emerging threats.

This research employs a mixed methodology, combining qualitative and quantitative approaches to explore the logistical challenges in the Black Sea region thoroughly. The quantitative methodology will focus on analyzing statistical data related to transport and trade flows in the Black Sea region and assessing the impact of geopolitical instability on these flows. Data will be collected from public sources, such as maritime traffic and regional economic reports. They will be analyzed using statistical modeling techniques to evaluate the degree of flexibility and resilience of supply chains.

In conclusion, the study will provide practical and strategic recommendations for improving logistics security in the Black Sea region, emphasizing the need for innovative and proactive approaches that enable adaptation to the complexity and volatility of the current geopolitical environment.

Literature review

The Black Sea region, characterized by its geopolitical significance and economic interdependencies, necessitates a robust framework for supply chain management (SCM) that emphasizes flexibility and adaptability. Recent literature highlights the critical role of supply chain resilience in navigating the complexities and uncertainties inherent in this region. Resilience is defined as the capacity of a supply chain to persist, adapt, or transform in the face of disruptions, which is particularly pertinent given the geopolitical tensions and environmental risks that can impact supply chain operations in the Black Sea area (Nikookar & Yanadori, 2021).

The intersection of supply chain resilience and agility is a focal point in contemporary SCM research. Zahid Piprani et al. (2022) posit that environmental risks significantly influence the relationship between supply chain agility and performance, underscoring organizations' need to develop resilience strategies that can mitigate unpredictable external risks. This is echoed by Zhao (Hsieh et al., 2023), who emphasizes that enhancing supply chain flexibility is crucial for improving resilience, particularly in the context of e-commerce enterprises responding to disruptions such as the COVID-19 pandemic. The findings suggest that organizations must prioritize agility and adaptability to maintain operational continuity and performance in turbulent environments.

Moreover, the concept of supply chain resilience is further explored through the lens of relational competencies and stakeholder engagement. Wieland and Wallenburg (2013) argue that resilience is not merely a function of internal capabilities but is also significantly influenced by external relationships and collaborations. This relational view is essential for understanding how supply chains can effectively respond to disruptions by leveraging partnerships and stakeholder engagement, particularly relevant in the context of the Black Sea, where cross-border collaborations are vital for economic stability and security (Wieland & Wallenburg, 2013).

Empirical studies have demonstrated that various factors contribute to developing supply chain resilience. For instance, Yamin Kazançoğlu et al. (2022) identify big data analytics, risk management orientation, and leadership commitment as critical drivers of resilience, particularly in emerging economies. These factors enable organizations to enhance their responsiveness and adaptability to changing conditions, thereby improving overall supply chain performance.

Integrating sustainability considerations into supply chain resilience is another emerging theme in the literature. Zhu and Wu Liu (Liu & Liu, 2023) explore the relationship between supply chain resilience and sustainability, finding that resilient supply chains are better positioned to achieve economic, social, and environmental sustainability. This is particularly relevant in the Black Sea region, where supply chain strategies increasingly prioritize environmental concerns and sustainability initiatives.

The literature underscores the critical importance of flexibility and adaptability in supply chain management, particularly in the context of the Black Sea region. The interplay between resilience, agility, and stakeholder engagement emerges as a central theme, with empirical evidence supporting the notion that organizations must cultivate these capabilities to navigate the complexities of their operating

environments effectively. As geopolitical tensions and environmental risks continue to shape the landscape, developing resilient supply chains will be paramount for ensuring regional security and stability.

Threats and challenges in the Black Sea region

The Black Sea region has been a complex and challenging geopolitical space since the 20th century, with a series of threats and challenges evolving in the context of political and social changes. After World War I, the Black Sea became a strategic point of interest for European powers, particularly due to its position as a crucial access point to the Mediterranean Sea. This dynamic was further heightened by internal and external conflicts, such as the Russian Civil War and the rise of the Soviet Union, which turned the region into a theater of military and political operations. During the Cold War, the Black Sea was a frontline between NATO and the Warsaw Pact, with security threats amplified by both blocs' military presence (Cross, 2015; Maisaia, 2024). After the fall of the Soviet Union, the regions around the Black Sea experienced significant political instability, with ethnic and territorial conflicts, such as those in Transnistria and Abkhazia, contributing to an atmosphere of uncertainty and ongoing security challenges (Cross, 2015; Demirel, 2020).

In the 21st century, challenges in the Black Sea region have intensified, particularly following Russia's annexation of Crimea in 2014. This event led to an escalation of tensions between Russia and Ukraine and prompted a reevaluation of security strategies among regional states and international organizations (Astutik & Özaltın, 2022). This action was perceived as a direct threat to Ukraine's sovereignty and generated international reactions, including economic sanctions against Russia and an increased NATO presence in the region. Additionally, challenges related to illegal migration, terrorism, and arms smuggling have become increasingly evident, undermining regional stability and placing pressure on national security systems (Demirel, 2020; Maisaia, 2024). In addition, environmental issues, such as pollution and invasive species, have added another threatening dimension, affecting the environment, the local economy, and fishing resources (Özkoç et al., 2007; Skolka & Preda, 2010). Thus, the Black Sea remains a space of complex challenges where geopolitical, economic, and environmental interactions intertwine, requiring the international community's coordinated and integrated approach (Koval et al., 2020).

The threats and challenges in the Black Sea region are extremely relevant in the context of the current geopolitical instability, significantly impacting supply chains. This region, located at the crossroads of Europe, Asia, and the Middle East, has become a focal point of geopolitical tensions, particularly following Russia's unjustified aggression against Ukraine. This aggression has not only destabilized regional security but also severely impacted local and global economies by disrupting supply chains, especially in the energy and agricultural sectors (Flanagan et al., 2020).

Geopolitical instability in the Black Sea region is driven by a range of threats, including armed conflicts, terrorism, illegal migration, and arms smuggling. These threats undermine regional security and contribute to an atmosphere of uncertainty that affects economic and commercial decisions. For example, recent studies suggest that

geopolitical risks significantly negatively impact tourism, with a direct correlation between the increase in geopolitical risks and the decrease in the number of tourists (Herman, 2023; Kazakova & Kim, 2021). This dynamic underscores the interdependence between regional security and economic stability.

Another important aspect of the instability in the Black Sea region is the geopolitical influence of major powers, particularly Russia and NATO. Russia, through its aggressive actions, has turned the Black Sea into a theater of military operations, leading to heightened tensions with NATO and a reconfiguration of regional alliances. (Flanagan et al., 2020). These tensions not only affect regional security but also have direct implications for supply and delivery chains, particularly regarding the transportation of energy resources and agricultural products (see Figure 2).

Additionally, the economic challenges generated by geopolitical instability are exacerbated by global economic uncertainty. Geopolitical risks have been correlated with fluctuations in commodity prices, particularly in the energy sector, where such events can cause significant volatility (Caldara & Iacoviello, 2022; Mutascu, 2024). This volatility affects not only local economies but also international markets, impacting global food and energy prices.

Figure 2. Wheat price on the stock exchange from 2021 to 2024.
Source: ***https://tradingeconomics.com/***

Significant increases in wheat futures prices can be observed immediately following the initiation of hostilities on February 24, 2022, by the Russian military in Ukraine, rising from USD 800/bu to nearly USD 1200/bu. (USD/bu - U.S. dollars per bushel; a bushel is an imperial volume unit commonly used in the U.S., approximately 27.2155 kg for wheat. Additionally, challenges related to illegal migration and border security are exacerbated by the instability in the region. Armed conflicts and humanitarian crises have led to an influx of refugees, placing additional pressure on the countries surrounding the Black Sea (Popescu, 2021). This complicates the management of regional security and impacts the economic stability of host countries, which face

challenges in integrating these populations and providing the necessary resources to support them.

Flexibility and adaptability in supply chain management

Flexibility and adaptability in supply chain management are essential concepts in military logistics, significantly impacting the efficiency of military operations. These concepts refer to the ability to respond quickly and effectively to environmental changes, operational requirements, and emerging challenges. Flexibility pertains to the ability to modify existing processes and structures to meet diverse demands, while adaptability involves the capacity to learn from past experiences and implement innovative solutions to address future challenges (Aćimović, 2021; Sokri, 2014).

A crucial aspect of flexibility in the military supply chain is the effective integration of resources and emerging technologies. For example, utilizing advanced transportation systems and high-performance vehicles can significantly enhance the speed and efficiency of military logistics (Halizahari et al., 2022). Additionally, technologies such as blockchain can enhance traceability and transparency in supply chains, facilitating better management of resources and information. These technological innovations not only improve operational efficiency but also contribute to increasing the supply chain's resilience, enabling it to adapt to disruptions and recover swiftly from crisis situations quickly (Carvalho et al., 2012).

Another essential element of flexibility and adaptability in military logistics is the collaboration between the civilian and military sectors. This integration allows for more efficient use of available resources and facilitates the exchange of information and best practices between the two domains (Qi, 2023; Wang, 2021). Collaboration not only enhances logistical performance but also contributes to the development of innovative solutions that can be applied in various operational contexts. For example, during the COVID-19 pandemic, military supply chains demonstrated remarkable flexibility by quickly adapting to new operating conditions and collaborating closely with civilian suppliers to ensure the necessary deliveries (Milandru & Alexandrescu, 2024).

Additionally, performance evaluation of the supply chain is a critical aspect of military logistics management. Utilizing modeling and simulation techniques to assess performance can help identify weaknesses and optimize logistical processes (Jones et al., 2021). These evaluations not only facilitate continuous improvement of operations but also help in developing proactive strategies to address future challenges. For instance, assessing the efficiency of military supply networks can provide valuable insights for logistical decisions, thereby contributing to better preparedness and response to emergencies (Xiong et al., 2017).

Risk management and resilience - strategies for ensuring operational continuity

Risk management and resilience within the flexibility and adaptability of supply chain management are essential for ensuring security in the Black Sea region, especially in the context of the current conflict between Russia and Ukraine. This strategic area

faces complex challenges, including direct military threats, political instability, and economic risks, which require viable and effective solutions (Dumitru, 2021).

A crucial aspect of risk management is continuously assessing threats and vulnerabilities specific to the region. In this regard, it is important to develop a monitoring system that allows for the rapid identification of emerging risks, such as cyberattacks or disruptions in supply chains caused by armed conflicts (Aldea, 2023). For example, the geopolitical analysis of Russia in the Black Sea highlights the importance of energy resources and military influence, suggesting that states in the region must be prepared for various crisis scenarios (Dumitru, 2021).

To build effective resilience, states in the region need to collaborate closely through joint security initiatives. These initiatives can include joint military exercises, information sharing, and the development of coordinated response protocols to address threats (Mănăilescu, 2023). Additionally, partnerships with international organizations, such as NATO, can provide Black Sea riparian states with a framework of support and the resources needed to address emerging challenges (Tatomir, 2022).
Another critical element is the diversification of supply sources and the establishment of strategic reserves. In the context of the conflict in Ukraine, it is crucial for states in the Black Sea region to diversify their energy and raw materials sources to reduce dependence on Russian resources (see Figure 3) (Aldea, 2023). This may include the development of alternative transportation and supply infrastructures, as well as investments in renewable energy sources (Manolache, 2023).

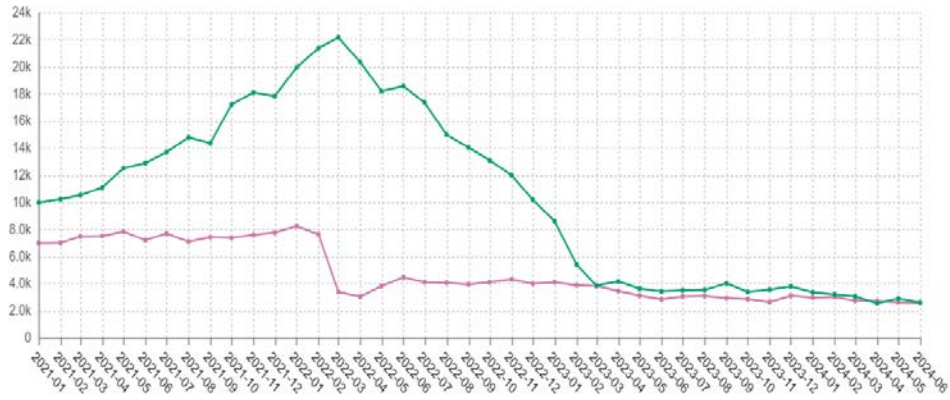

Figure 3. Value of international trade in goods between the European Union and Russia from 2021 to 2024. Source: chart generated by the author on the platform https://ec.europa.eu/eurostat

Emerging technologies can play a crucial role in enhancing risk management and resilience in the supply chain (Minculete et al., 2022). The use of artificial intelligence (AI) and data analytics systems can help anticipate risks and optimize logistical processes (Baboș, 2021). For example, implementing blockchain solutions can enhance transparency and security of information in the supply chain, thereby facilitating rapid response in the event of incidents (Atanasiu, 2023).

Additionally, risk management needs to be integrated at all decision-making levels within both military and civilian organizations involved in the supply chain (Minculete & Bârsan, 2023). This means leaders must be aware of potential risks and develop an organizational culture encouraging risk reporting and management (Bârcă, 2021). Such a culture can enhance the flexibility and adaptability of organizations, allowing them to respond quickly to environmental changes.

Strategies for ensuring operational continuity in the context of the Black Sea conflict include implementing business continuity plans that are tested and updated periodically. These plans should include crisis scenarios and well-defined response measures, which should be communicated to all involved parties (Bulat, 2017). Developing strategic partnerships with suppliers and other organizations is essential to ensure a rapid and coordinated response to crises (Vevera et al., 2022).

Conclusions and recommendations

The ongoing conflict between Russia and Ukraine has highlighted significant vulnerabilities within the management of supply chain and delivery systems in the Black Sea region. To ensure regional stability and security, it is essential to conduct continuous risk assessments, which should include monitoring military threats, cyberattacks, and economic instability. These assessments must be dynamic, adapting to the ever-changing geopolitical landscape and emerging risks. Developing a comprehensive regional risk monitoring system that involves collaboration among Black Sea states, international organizations, and security experts would facilitate periodic threat analyses and vulnerability assessments, thereby contributing to the effective coordination of responses and rapid preparedness of regional states in the face of crises.

Simultaneously, the conflict has underscored the necessity of diversifying supply sources to reduce dependence on resources from Russia. This diversification is crucial for both the energy security of Black Sea states and the enhancement of resilience in supply chain and delivery systems against disruptions caused by conflicts or political instability. To this end, regional countries should invest in alternative transportation and supply infrastructures and increase their reliance on renewable energy sources. Furthermore, partnerships with suppliers from other regions should be strengthened to facilitate a diversified and secure supply system capable of withstanding external shocks.

Another critical aspect in improving risk management and resilience in supply chain and delivery systems is the integration of emerging technologies, such as artificial intelligence and blockchain. These technologies have the potential to provide predictive analytics and enhance transparency within supply chains, allowing for quicker and more effective responses to challenges. Organizations in the Black Sea region, both military and civilian, should prioritize the integration of these advanced technological solutions into their risk management strategies. To ensure the successful implementation of these technologies, it is important to invest in training and development programs for personnel, equipping them with the necessary skills to fully leverage these tools in crisis management and operational risk reduction.

In conclusion, a proactive and coordinated approach is essential to address the Black Sea region's complex risks. By implementing continuous risk assessments, diversifying supply sources, and adopting emerging technologies, states in this area can enhance both their security and resilience. These efforts will not only help mitigate the impact of current geopolitical conflicts but also strengthen the region's long-term economic and social stability.

References

Aćimović, S. (2021). Military Logistics vs. Business Logistics. *Economic Analysis*, *54*(1), 118–138. https://doi.org/10.28934/ea.21.54.1.pp118-138

ALDEA, C.-C. (2023). Noi Ameninţări Şi Vulnerabilităţi La Adresa Securităţii Naţionale În Contextul Conflictului Din Ucraina. *Buletinul Universităţii Naţionale de Apărare „Carol I”*, *11*(4), 31–36. https://doi.org/10.53477/2065-8281-22-85

Astutik, Z. A., & Özaltın, M. A. (2022). The Legal Status of Azov Sea and the Kerch Strait: Ukraine v. Russia. *Indonesian Comparative Law Review*, *3*(2), 124–134. https://doi.org/10.18196/iclr.v3i2.11576

Atanasiu, M. (2023). Efectele Conflictului Armat Asupra Copiilor Şi Femeilor Din Ucraina. *Cs*, *10*(204). https://doi.org/10.53477/1842-8096-22-10

Baboş, A. (2021). Artificial Intelligence as a Decision Making Tool for Military Leaders. *Land Forces Academy Review*, *26*(4), 269–273. https://doi.org/10.2478/raft-2021-0034

Bârcă, V. (2021). Bucket-Shaped Pendants From the Sarmatae Environment. A Few Notes on the Origin, Dating and Use of These Amulets in the Barbarian World. *Cercetări Arheologice*, *28*(2), 411–438. https://doi.org/10.46535/ca.28.2.05

Bulat, D. (2017). *Ihtiofauna Republicii Moldova: Ameninţări, Tendinţe şi Recomandări de Reabilitare*. https://doi.org/10.53937/9789975890700

Caldara, D., & Iacoviello, M. (2022). Measuring Geopolitical Risk. *American Economic Review*, *112*(4), 1194–1225. https://doi.org/10.1257/aer.20191823

Carvalho, H., Azevedo, S. G., & Cruz-Machado, V. (2012). Agile and Resilient Approaches to Supply Chain Management: Influence on Performance and Competitiveness. *Logistics Research*, *4*(1–2), 49–62. https://doi.org/10.1007/s12159-012-0064-2

Cross, S. (2015). NATO–Russia Security Challenges in the Aftermath of Ukraine Conflict: Managing Black Sea Security and Beyond. *Journal of Southeast European and Black Sea Studies*, *15*(2), 151–177. https://doi.org/10.1080/14683857.2015.1060017

Demirel, N. (2020). Turkey and Russia as Major Players in the Black Sea: Challenges and Opportunities. *International Journal of Engineering Technologies and Management Research*, *7*(2), 22–30. https://doi.org/10.29121/ijetmr.v7.i2.2020.506

Dumitru, I. R. (2021). Determinări Geopolitice Ale Rusiei La Marea Neagră. *Buletinul Universităţii Naţionale de Apărare „Carol I”*, *9*(2), 28–41. https://doi.org/10.53477/2065-8281-21-03

et.al, S. S. (2021). Consortium Blockchain for Military Supply Chain. *Turkish Journal of Computer and Mathematics Education (Turcomat)*, *12*(3), 1825–1831. https://doi.org/10.17762/turcomat.v12i3.1011

Flanagan, S. J., Binnendijk, A., Chindea, I. A., Costello, K., Kirkwood, G., Massicot, D., & Reach, C. (2020). *Russia, NATO, and Black Sea Security*. https://doi.org/10.7249/rra357-1

Halizahari, M., Daud, M. F., & Sarkawi, A. A. (2022). The Impacts of Transportation System Towards the Military Logistics Support in Sabah. *International Journal on Advanced Science Engineering and Information Technology*, *12*(3), 1092. https://doi.org/10.18517/ijaseit.12.3.14516

Herman, S. (2023). Dynamic Common Correlated Effects of Geopolitical Risk on International Tourism Arrivals. *Folia Oeconomica Stetinensia*, *23*(2), 132–149. https://doi.org/10.2478/foli-2023-0023

Hsieh, C.-C., Chen, S.-L., & Huang, C.-C. (2023). Investigating the Role of Supply Chain Environmental Risk in Shaping the Nexus of Supply Chain Agility, Resilience, and Performance. *Sustainability*, *15*(20), 15003. https://doi.org/10.3390/su152015003

Jones, M., Mazzuchi, T. A., & Sarkani, S. (2021). A Simulation-Based Optimization Approach to Logistic and Supply Chain Network Design. *Defense Acquisition Research Journal*, *28*(97), 284–318. https://doi.org/10.22594/10.22594/dau.20-860.28.03

Kazakova, A., & Kim, I. (2021). Geopolitical-Risk and Economic Policy—Uncertainty Impacts on Tourist Flows From Neighboring Countries: A Wavelet Analysis. *Sustainability*, *13*(24), 13751. https://doi.org/10.3390/su132413751

Kazancoglu, Y., Sezer, M. D., Ozbiltekin-Pala, M., & Kucukvar, M. (2022). Investigating the role of stakeholder engagement for more resilient vaccine supply chains during COVID-19. *Operations Management Research*, *15*(1–2), 428–439. https://doi.org/10.1007/s12063-021-00223-x

Korucuk, S. (2023). Evaluating Logistics Flexibility in Istanbul-Based Companies Using Interval-Valued Fermatean Fuzzy SWARA. *Journal of Intelligent Management Decision*, *2*(4), 192–201. https://doi.org/10.56578/jimd020404

Koval, I., Коваль, І. М., Коваль, И. Н., Brusylovska, O. I., Udum, Ş., Брусиловская, О. И., Gaber, Y., Glebov, S., Сіновець, П. А., Sinovets, P., Maksymenko, I. V., Максименко, І. В., Максименко, И. В., Shelest, H., & Udovik, V. (2020). *Black Sea Region in World Policy: Actors, Factors, and Scenarios of the Future*. https://doi.org/10.18524/978-617-689-406-3

Liu, W., & Liu, Z. (2023). Simulation Analysis of Supply Chain Resilience of Prefabricated Building Projects Based on System Dynamics. *Buildings*, *13*(10), 2629. https://doi.org/10.3390/buildings13102629

Maisaia, V. (2024). The Black Sea Regional Security and Geostrategy Balance: A "New Cold War" Scenario. *Przegląd Strategiczny*, *16*, 141–153. https://doi.org/10.14746/ps.2023.1.10

MĂNĂILESCU, I.-C. (2023). Terorismul Rusesc– Un Pericol Real Asupra Securităţii Europene. *Impact Strategic*, *4*(84–85), 55–68. https://doi.org/10.53477/1842-810x-22-13

MANOLACHE, Lt. I. C. (2023). Relaţia Dintre China Şi Organizaţiile Internaţionale Generatoare De Securitate. *Buletinul Universităţii Naţionale de Apărare „Carol I"*, *12*(3), 100–108. https://doi.org/10.53477/2065-8281-23-38

Milandru, M., & Alexandrescu, M.-B. (2024). Theoretical Approaches Regarding Supply Within The Military Organization. *Scientific Research and Education in the Air Force*, *25*, 31–37. https://doi.org/10.19062/2247-3173.2024.25.3

Minculete, G., & Bârsan, G. (2023, March 6). Approaches Related to the Functioning and Digital Transformation within Supply Chain Management. International Management Conference. https://doi.org/10.24818/IMC/2022/01.04

Minculete, G., Stan, S. E., Ispas, L., Virca, I., Stanciu, L., Milandru, M., Mănescu, G., & Bădilă, M.-I. (2022). Relational Approaches Related to Digital Supply Chain Management Consolidation. *Sustainability*, *14*(17), 10727. https://doi.org/10.3390/su141710727

Mutascu, M. (2024). Oil Price and Geopolitics Risk: New Causality Insights in Frequency-Domain. *Ekonomický Časopis*, *71*(8–9), 489–513. https://doi.org/10.31577/ekoncas.2023.08-09.01

Nikookar, E., & Yanadori, Y. (2021). Preparing Supply Chain for the Next Disruption Beyond COVID-19: Managerial Antecedents of Supply Chain Resilience. *International Journal of Operations & Production Management*. https://doi.org/10.1108/ijopm-04-2021-0272

Özkoç, H. B., Bakan, G., & Ariman, S. (2007). Distribution and Bioaccumulation of Organochlorine Pesticides Along the Black Sea Coast. *Environmental Geochemistry and Health*, *29*(1), 59–68. https://doi.org/10.1007/s10653-006-9064-y

Piprani, A. Z., Jaafar, N. I., Ali, S. M., Mubarik, M. S., & Shahbaz, M. (2022). Multi-dimensional supply chain flexibility and supply chain resilience: The role of supply chain risks exposure. *Operations Management Research*, *15*(1–2), 307–325. https://doi.org/10.1007/s12063-021-00232-w

Popescu, A. I. C. (2021). The Black Sea Region – Geographical, Geopolitical, Geostrategic and Geoeconomic Identity –. *Romanian Military Thinking*, *2021*(3), 228–247. https://doi.org/10.55535/rmt.2021.3.13

Qi, N. (2023). Evolutionary Game of Vertical Cooperation and Innovation Between Civilian and Military Enterprises: A Civilian-Military Integration Supply Chain System With Chinese Characteristics. *Complexity*, *2023*, 1–23. https://doi.org/10.1155/2023/9963809

Skolka, M., & Preda, C. (2010). Alien Invasive Species at the Romanian Black Sea Coast—Present and Perspectives. *Travaux Du Muséum National D'histoire Naturelle "Grigore Antipa," 53*(1), 443–467. https://doi.org/10.2478/v10191-010-0031-6

Sokri, A. (2014). Military Supply Chain Flexibility Measures. *Journal of Modelling in Management*, *9*(1), 78–86. https://doi.org/10.1108/jm2-10-2011-0050

Tatomir, M. (2022). Dinamica Relațiilor Turco-Române În Regiunea Extinsă a Mării Negre. O Perspectivă Neoliberală. *Impact Strategic*, *81*(4). https://doi.org/10.53477/1842-810x-21-18

Vevera, A.-V., Georgescu, A., & Cîrnu, C.-E. (2022). Abordarea Amenințărilor Hibride din Regiunea Mării Negre din Perspectiva Cadrului de Protecție a Infrastructurilor Critice. *Gândirea Militară Românească*, *2022*(1), 64–81. https://doi.org/10.55535/gmr.2022.1.04

Wang, L. (2021). Key Technology and Application of Computer Artificial Intelligence Recognition Based on Machine Vision. *Journal of Physics: Conference Series*, *1982*(1), 012112. https://doi.org/10.1088/1742-6596/1982/1/012112

Wieland, A., & Wallenburg, C. M. (2013). The influence of relational competencies on supply chain resilience: A relational view. *International Journal of Physical Distribution & Logistics Management, 43*(4), 300–320. https://doi.org/10.1108/IJPDLM-08-2012-0243

Xiong, B., Li, B., Fan, R., Qingzhong, Z., & Li, W. (2017). Modeling and Simulation for Effectiveness Evaluation of Dynamic Discrete Military Supply Chain Networks. *Complexity*, *2017*, 1–9. https://doi.org/10.1155/2017/6052037

Yu, K., Cadeaux, J., & Hua, S. (2013). Distribution Channel Network and Relational Performance: The Intervening Mechanism of Adaptive Distribution Flexibility. *Decision Sciences*, *44*(5), 915–950. https://doi.org/10.1111/deci.12040