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INCREASING THE MANIFESTATION OF THE SUSTAINABLE DEVELOPMENT PRINCIPLES IN LOGISTICS ORGANIZATIONS

Rimantas Dapkus and Jeals Jaison. *«Increasing the Manifestation of the Sustainable Development Principles in Logistics Organizations».* The logistics sector is increasingly pressured to integrate sustainable development principles to align with their corporate goals. This paper reviews theoretical and practical frameworks of the logistics industry to examine how service providers in the sector can achieve a balanced economic, environmental, and social sustainability. Businesses are purposely created to maximize profits; however, increased awareness of corporate social responsibility and environmental sustainability has made them to look beyond that. Logistics service providers that adopt sustainable practices stand to benefit from long-term cost savings, improved brand reputation, and enhanced stakeholder relationships.

Performed research leads us to point out that IoT, big data and blockchain are a some of the digital enablers that improve sustainability. Such advancements are necessary to minimize carbon emission, enhance the transparency of supply chain, and minimize negative effects on environment. At the same time, the literature analyzes emphasizes the fact that collaboration between various actors also contributes to the creation of incentives for achieving the goal of creating sustainable logistics systems. The literature points to stakeholder theory whose focus is on the issues of transparency, cooperation, and novelty in managing supply chains. The model gives a structure for achieving business objectives of generating returns without considering environmental and social factors.

Obtained results also highlights those policies such as tax incentives given to companies that meet environmental standards weigh in greatly. Such measures have the potential to steer the logistics sector towards more sustainable operations with a corresponding competitiveness and economic growth. However, it is important to point out that more radical changes are required for reaching the desired state of sustainable development. Consequently, continuous investment in sustainable technologies, supportive government policies, and stakeholder collaboration are key to fostering a profitable logistics industry

Keywords: Logistic services, management of the supply chains, implementation of the innovations, sustainable development, competitiveness, economy grow

Рімантас Данкус та Джилс Джайсон. «Посилення прояву принципів сталого розвитку в логістичних організаціях». Логістичний сектор зазнає дедалі більшого тиску щодо інтеграції принципів сталого розвитку для узгодження з корпоративними цілями. У цьому документі розглядаються теоретичні та практичні засади логістичної галузі, щоб з'ясувати, як постачальники послуг у цьому секторі можуть досягти збалансованої економічної, екологічної та соціальної сталості. Підприємства створюються з метою максимізації прибутку, однак підвищення рівня обізнаності про корпоративну соціальну відповідальність та екологічну стійкість змусило їх вийти за рамки цієї мети. Постачальники логістичних послуг, які впроваджують сталі практики, отримують вигоду від довгострокової економії витрат, покращення репутації бренду та зміцнення відносин із зацікавленими сторонами.

Проведене дослідження дозволяє нам стверджувати, що Інтернет речей, великі дані та блокчейн є одними з цифрових інструментів, що сприяють підвищенню сталого розвитку. Такі досягнення необхідні для мінімізації викидів вуглецю, підвищення прозорості ланцюгів постачання та мінімізації негативного впливу на навколишнє середовище. Водночас в аналізі літератури підкреслюється, що співпраця між різними учасниками також сприяє створенню стимулів для досягнення мети створення сталих логістичних систем. У літературі вказується на теорію зацікавлених сторін, яка фокусується на питаннях прозорості, співпраці та новизни в управлінні ланцюгами поставок. Модель дає структуру для досягнення бізнес-цілей отримання прибутку без урахування екологічних та соціальних факторів.

Отримані результати також підкреслюють, що така політика, як податкові пільги, що надаються компаніям, які дотримуються екологічних стандартів, має велику вагу. Такі заходи мають потенціал спрямувати логістичний сектор до більш сталих операцій з відповідною конкурентоспроможністю та економічним зростанням. Однак важливо зазначити, що для досягнення бажаного стану сталого розвитку потрібні більш радикальні зміни. Отже, постійні інвестиції у сталі технології, сприятлива державна політика та співпраця із зацікавленими сторонами є ключовими факторами для створення прибуткової логістичної галузі.

Ключові слова: Логістичні послуги, управління ланцюгами поставок, впровадження інновацій, сталий розвиток, конкурентоспроможність, зростання економіки.

Introduction. In today's world, the logistics sector is facing new demands to ensure sustainable economic development. With sustainability at the heart of corporate governance, Logistics Service Providers (LSPs) are under increasing pressure to adopt practices that reduce environmental damage and increase social responsibility, while at the same time stimulating economic growth. Traditionally, the logistics sector has focused on maximising profits. However, the shift towards sustainability has led to a "triple bottom line" approach, emphasising not only economic value but also social and environmental aspects.

In the series of scientific studies there have been analyzed the complexities and challenges associated with integrating sustainable development principles into logistics operations. Notably, Koberg & Longoni (2019) established the notion of sustainable supply chain management with more focus on the part played by logistics in the improvement of environmental, social and economic sustainability. The study argues that for logistics organizations, there is the dual imperative of increasing profitability while at the same time minimizing carbon emissions, waste, and improving working conditions along the supply chain.

Jazairy & von Haartman (2020) researched the challenges that logistics service providers experience when implementing green logistics practices. The report found out that some challenges which hinder sustainability in the logistics industry are: high fixed costs, low technology advancement and a lack of governmental support. Despite these challenges, LSPs that prioritize sustainability often experience long-term cost savings, improved brand reputation, and enhanced stakeholder relationships. This suggests that the industry is slowly adopting sustainable measures, it stands to gain significantly from fully integrating these practices.

A further contribution to the existing literature is Cebir & Akkartal (2024) who identified digitalization at the heart of sustainable logistics. Technological advancements including Internet of Things, data analytics and the use of blockchain increase the supply chain visibility. These advancements have since increased operational productivity and decrease the utilization of resources (Cebir & Akkartal, 2024). The tracking of consignments in real time makes it possible for companies to reduce fuel use which is environmental sustainability. In addition, through decentralisation, supply chains can become more secure and pass less through ethnic abuses such as abuse of labour.

The study therefore seeks to assess how the logistics sector needs to improve its sustainability practices in order to be more in line with global efforts towards sustainable economic development. It lays down the basis of underlining the fact that the industry has the capacity to exert the impact of sustainability on the environment. Although companies such as DHL, UPS and others have made progress in implementing sustainability initiatives, this discussion of the various studies focuses on the global logistics sector, highlighting the need for systemic changes that can benefit both the environment and the economy.

Research Object - the manifestation of the principles of sustainable development in logistics organisations.

Aim - to investigate the application of sustainable development principles in the logistics sector and to identify opportunities to improve development practices in a way that maximises the contribution to sustainable economy growth.

Objectives:

1. To identify the current situation and the challenges faced by logistics organisations in contributing to sustainable economies.

2. To analyse the theoretical underpinning of sustainable economy growth and to explore ways to ensure that the logistics sector's services meet the requirements of sustainability.

3. Propose solutions and policy recommendations to governments, logistics companies and other stakeholders on how to improve sustainable development practices in the logistics sector so that it makes an appropriate contribution to sustainable economy growth.

Research methods: the study uses an analysis of scientific literature to identify the determinants of sustainable economy development by the influence of the logistics sector, as well as a synthesis of proposals for the modernisation of the logistics sector in line with modern economic development trends.

Sustainability of the economy growth and analysis of the challenges of the logistics sector adequate development. To foster sustainability within the logistics industry, governments should prioritize awarding contracts to companies that place a strong emphasis on sustainability (Agrawal & Singh, 2019), eco-friendly practices (Afif et al., 2022), or the "go green" initiative (Baganha, 2020). This can be achieved through coming up with tender policies which embrace logistic and production companies willing to factor in environmental issues. In this way, governments would not only provide funding to sustainable development focused

businesses but would also promote green initiatives across industries to foster systemic improvements at a global supply chain level.

Another effective policy would be tax exemptions on pollution for firms that conform to particular environmentally friendly standards. These incentives would encourage businesses to adopt new cleaner technologies and renewable energy sources that reduce their carbon emissions. Also, pollution tax reductions might spur innovation as companies seek for unique ways of addressing these standards like switching to hydrogen fuel cells, bio fuels, or electric cars among others in transportation.

Incentives such as the provision of tax incentives to production companies who adopt sustainable policies would ensure massive adoption of sustainable policies. Businesses that wish to achieve effective management systems that address issues of the environment, including pollution control, efficient use of natural resources, or adopting better energy consumption standards would secure increased returns on investment. This policy could also be extended to promote sustainability in packaging and such other concepts as green supply chain management.

Collectively, these measures would enhance sustainability of the global logistics sector. Governments, companies, and stakeholders can work together to reduce environmental harm while simultaneously maintaining economic growth, competitiveness, and social responsibility. They would also fall in line with the goals set in the United Nations Sustainable Development Agenda or more specifically the 12th goal, which calls for sustainable consumption and production (Centobelli et al., 2020).

Logistics Systems. Logistics comprise management activities that exist in the attainment, support, and movement of assets, personnel, and equipment. These processes revolve on managing and co-owns of operation in order to fulfill the needs of the buyers on time as planned (Lazar et al., 2021). Tuittu (2022) describes a logistics system

where some important activities consist of client service management, inventory tracking, transportation, order processing and procurement, warehousing, material handling and data security. Logistics is thus an important element of an organization's strategy since it affects business success. To rent an adequate competitive edge it becomes crucial to effectively manage logistics planning to offer outstanding services (Nilsson & Christopher, 2018). Moreover, there should be insight in the transportation arrangements that will benefit logistics practice and sustainability.

Another important aspect within logistics systems is the choice of the transportation model even as the right decisions have been noted to contribute to both environmental and economic sustainability (Tran et al., 2019; Ren et al., 2020). Any strategic decisions relating to routing and freight capacity have the tendency of enhancing the costs and complexity but are crucial for operations (Aloui et al., 2021). In recent years, the concept of meeting customer requirements has emerged as a significant aspect in the logistics strategies. Warehouse management and supplier evaluation also offers a remarkable opportunity to develop logistics operations that contribute to the overall improvement of competitive factors (Mota et al., 2018).

Sustainability. Sustainability is arguably one of the critical concerns of today's logistics practices based on the triple bottom line (TBL) concept that seeks to address the economic, environmental and social aspects of the systems in question (Agrawal & Singh, 2019). Sustainability efforts not only work to reduce the utilization of resources but also must comprise strategic management. Environmental and economic, sometimes referred to as eco-efficiency, and social and economic sustainability aspects such as occupational health and safety are critical initiatives in sustainable logistics (Khan et al., 2020).

Sustainability in Logistics Organizations.

Logistics has therefore become a crucial issue for giant International transport companies such as FedEx, DHL, and UPS; which provide logistics services across more than 200 economy. These firms play an important role in the development of the economy but their activities, transport and storage are responsible for approximately 5.5 percent of global carbon emissions (Herold, 2018). These logistics firms have vast networks of warehouses, other facilities, planes and trucks and significant workforce worldwide. The company noted the need for efficient shipping between different continents. For example, in 2008, DHL became the first in the industry to support an environmental initiative, reducing CO₂ emissions by more than 75% compared to 2007 (Baganha, 2020). Their efforts to minimize their negative effect on the environment and implement a consistent corporate responsibility strategy are remunerated by customers and suppliers who view global logistics corporations as reliable logistics partners (Tran et al., 2019). With a turnover of 61.55 billion euros and EBIT of 3.162 billion euros in 2018, DPDHL has proven that with good marketing, a coherent and effective corporate strategy, it is possible to create added value for society and the environment while maintaining profitability (Baganha, 2020). This demonstrates the sector's commitment to managing costs and achieving profitability but at the same time having to be efficient in satisfying the clients. The environmentally efficiency in transportation and distribution tends to be few and fairly slow. The move by key players in the industry to being more sustainable faces a series of issues and needs a closer look. Therefore, these organisations experience more and more pressure to respond not only for their environmental effects but also to remain financially sustainable (Khan et al., 2020). These companies tried to develop legitimacy and avoid reputational risks and therefore current sustainability reports contain emissions data.

Such sustainability in supply chain management indicates the use of the supply chain concept to manage the balancing material, information, and capital flows with regards to environmental, economic, and social objectives. Studies show that sustainable logistics can enhance business performance hence competitive edge. For instance, Karaman (2020) concluded that firms having sustainability awards in logistics such as DHL enjoyed positive market returns which suggest that shareholders value sustainability.

Panigrahi et al. (2019) also notes that internal operations (including communication) and external stakeholders (with subcontractors or clients and suppliers) are crucial in defining operational sustainability. Subsequent studies indicate that sustainable innovations in the logistics field like the eco-design also known as sustainable product-service system design and carbon management have the potential to enhance the performance of the logistic chain (Tran et al., 2019; DeWeerd et al., 2022). However, one of the challenges in this area is the absence of clear scientific protocols for the environmental cost estimation of logistics that hampers the sharing of costs besides hindering the promotion of sustainable processes and systems (Masih, 2024).

Finally, external pressures from stakeholders, including environmental and social concerns, which shape companies' sustainability strategies (Agyabeng-Mensah et al., 2020; Herold, 2018). As businesses increasingly prioritize sustainability, they continue to seek innovative ways to improve their environmental footprint and operational efficiency in logistics.

The Logistics Stakeholders and Sustainability Challenges. Seuring and Müller (2008) contributed to the understanding of sustainable logistics by emphasizing the importance of collaboration among stakeholders. Their work underscores the necessity of joint efforts between governments, companies, and non-governmental organizations (NGOs) to create

a regulatory framework that incentivizes sustainable practices. Governments play a crucial role in shaping industry-wide regulations and offering incentives, while NGOs can help monitor and enforce compliance with environmental and social standards. The systemic strategic alignment of strategies between conventional business tasks and those in a particular company and between those in logistics, with the goal of heightening the long-term performance of specific firms and the entire supply chain.

Therefore, a logistics business consists of a company (often called a central company) that coordinates many suppliers and clients to offer products or services of anticipated quality at the anticipated time and rapidity (Hajian, M., & Kashani, 2021; Fritz, 2022). In fact, the integration of sustainable development practices in sustainable development is often the result of the so-called "green bullwhip effect" (Tamayo et al., 2023), that is, LSPs response approaches to stakeholder pressure (causing).

Stakeholder theory implies that a corporation exists not only to make profit but it is ethically required to be responsible to its customers, employees, suppliers, and communities around it (Mahajan et al., 2023). This perspective aligns closely with sustainable development goals of the logistics sector where operations often have far-reaching social and environmental impacts. The theory can help companies navigate the complex landscape of sustainability by considering how their actions affect a wide array of interest groups rather than focusing solely on financial performance.

The theory encourages logistics firms to maintain transparent information flow with their public. This is particularly important in addressing environmental concerns. For instance, a firm that set ambitious carbon reduction goals must work closely with their suppliers and subcontractors to ensure these initiatives are feasible and effective across the entire supply chain. This is consistent with Stadtler & Lin (2019) call for collaborative

efforts which are essential for achieving sustainable outcomes in logistics.

The theory provides a framework for companies to understand the long-term benefits of sustainability initiatives. While adopting green technologies and reducing emissions may require significant upfront investment, such strategies often lead to long-term financial benefits. Organizations enjoy cost savings from improved energy efficiency and enhanced brand value (Koberg & Longoni, 2019). With more investors and clients now pressuring corporations to act sustainably, those of businesses who pursue stakeholder-centered approaches enjoy competitive advantage in the marketplace.

These responsive strategies show that stakeholders' failure to consciously energetically engage in supply chain development practices often lead to unsustainable and unethical exercises in various logistics processes (Bocken, 2020). Another important issue is the pressure exerted by the procurement department of the focal company on suppliers to prioritize low-cost, fast delivery of goods or services at the cost of social, ethical or environmental considerations (Negri et al., 2021). Another example involves shop floor employees who are barely not committed to improving logistics sustainability (Mota et al., 2018). These LSPs-particular functions and roles highlight the need for stakeholder theory to regard various forms of workers and sections (rather than a single wide class of "employees").

According to Nilsson and Christopher (2018), appropriate documentation and commitment of logistics stakeholders will prevent both internal supply chain (such as key companies or suppliers involved in the production and distribution process) and external supply chain (such as policy makers, and clients) stakeholders from unethical and unsustainable practices impacted by resolutions of SC partners). Nevertheless, this perspective has not yet been fully theorized.

Conceptual development of sustainable logistics provides an opportunity to address

this lack of knowledge (Ren et al., 2020). Accordingly, there is a need to further theorize the concept of sustainable logistics because research in the area is often overly simplistic and provides neither a representative nor a practical understanding of the subject.

Ultimately, integrating stakeholder theory into global corporate strategies present the opportunity for logistics organizations to achieve a balance between business profitability and the fulfillment of social and environmental obligations. This approach not only makes an effective contribution creating a less negative impact in the environment of logistics operations but also aligns with broader corporate goals of long-term profitability and reputation building.

The Stakeholder Theory and Global Corporate Strategy. Governments and companies can implement sustainability-focused strategies by prioritizing green initiatives in logistics and production processes. When awarding contracts, governments should favor companies that integrate environmentally sustainable practices into their operations. This can be achieved by giving preference to logistics or production companies that are committed to reducing their carbon footprint and adopting renewable energy sources. This approach not only promotes environmental responsibility but also encourages other businesses to invest in greener alternatives.

Stakeholder theory calls for companies to not only pay attention to shareholders but governments, customers and local communities in order to come up with better practices. For instance, the logistic companies can partner with the government to ensure that they are aligned with various regulatory measures such as the emissions and energy efficiency standards (Wojewnik-Filipkowska & Węgrzyn, 2019). Such partnerships may enable the delivery of sustainable technologies and encourage new development within logistics' markets. Furthermore, Stadtler & Lin (2019) the public

increasingly expect companies to operate with a high degree of environmental and social responsibility. Businesses that apply stakeholder theory in their logistics strategies have good reputations, strong customer loyalty, and differentiate themselves in a competitive market.

Programs like DHL Express Italy have shown that sustainability can be successfully implemented by modernizing infrastructure and utilizing hybrid or electric vehicles (DPDHL, 2018). Governments could thus develop tendering policies that include such approaches where the bidders are assessed on their sustainability measures which may include matters of renewable energy, energy efficient means of transport or least CO2 emissions.

Besides, governments could impose more stringent emission thresholds for example, setting conditions in relation to suppliers and subcontractors regarding environmental requirements (such as the EURO 5 emission standard engines). This would in turn force organisations to update the fleets and improve operations with supply chains having sustainable objectives and goals.

This way, authorities can make a significant contribution to effective control of the sector's overall impact on the environment by using motivation for or discouragement of those strategies by regulation. Consequently, some companies would gain competitive advantage to drive sustainability-driven operations that attract clients who value corporate responsibility. Government and company partnership through policy and stewardship strategies that create more sustainable environments will guarantee long term improvement to environmental standings of developed economies.

Conclusions and suggestions. 1. The increased consumer awareness on sustainability has cause logistics companies to meet the relevant expectations. The literature has indicated that the sector is currently unable to meet the emerging

demands in the economy, social and environmental contexts. Theoretical models assessing economic growth still fall short in revealing the logistics sector's progress toward sustainability. These propose that more enhance knowledge is required to understand how sustainable logistics contributes to economic development.

2. Even though the need for sustainable development grows, many studies highlight a disconnect between the sector's current capabilities and the broader requirements of the global economy. There is especially insufficient alignment with environmental standards and societal needs. This gap raises a need for more integrated perspective towards analyzing the role of the logistics sector in the sustainable economic growth.

3. Existing theoretical frameworks used to evaluate sustainable economic development do not accurately portray the sectors' journey toward sustainability. There is thus the need for stronger connections between economic growth indicators and the logistics industry's environmental and social impacts. A more profound theory is required to provide clarity of actual role of logistics for sustainability.

This is where corporate and governmental actions come in to play to ensure and fill this gap. The challenges call for relevant service providers to invest in

sustainability solutions, and governments to improve on the current laws and finance sustainability. A closer link between corporate initiatives in the logistics industry and political actions would lead to appropriate solutions for the further continuous improvement of people's quality of life and the globalization of the economy.

4. Moving forward, there is a need for all players in the logistics sector to start viewing sustainability from a broader perspective. Companies need to realize the importance of innovation and incorporate sustainable development as a core component of their strategic objectives. This translates to continuous investment in green technologies, improving relations with the clients and being open about their progress toward sustainability goals.

Governments must implement supportive policies and create a regulatory environment that incentivizes sustainable logistics practices. Authorities can drive the entire sector toward greener and more socially responsible operations by establishing clear sustainability standards and offering financial incentives. At the same time, the administrations should adopt adequate policies and establish a favorable environment for promoting sustainable logistics systems.

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