The Impact of Digitalization Practices on Supply Chain Sustainability and Organizational Sustainability

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Abstract: - The objective of this research is to examine the influence of digital transformation on the sustainability of both the organization and its supply chain. A sample of 100 workers from the company was chosen randomly to complete an online survey (questionnaire) to obtain numerical data. The findings reveal that digitalization practices have a statistically significant positive correlation with supply chain longevity, indicating that digitization within firms enhances supply chain efficiency and positively affects long-term business viability. The study also highlights that the widespread adoption of digital methods increases the likelihood of an organization's survival. This research underscores the importance of digitalization and its potential benefits for enhancing both supply chain and organizational sustainability. As a result, businesses that embrace digitalization methods, including social media, can improve their long-term prospects for success.

Key-Words: - Digitalization, Social Media, Supply chain sustainability, Organizational sustainability, Performance

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1 Introduction

The purpose of this research is to investigate the effects of digital transformation (DT) on supply chains (SCs) in the digital era. Technical acceleration has been a top concern for corporations, although it requires more than simply technology. The process of digital transformation involves a range of factors, such as enhancing the capabilities of employees, modifying organizational structures and management approaches, empowering leaders, taking cultural aspects and values into account, addressing issues related to business strategies and processes, considering customer journeys and experiences, and utilizing technology as a means to drive and facilitate the organization's business models. However, the deployment of technology alone does not constitute a transformational process unless it leads to changes in the organization's entire strategy, system, culture, and mindset and ultimately drives the evolution of the overall business model, [1]. To remain competitive, organizations must adapt and improve their processes when new technologies arise. DT has had a good effect on businesses and even helps enhance their performance. However, there is still much to be learned about the concepts of digitization, digitalization, and digital transformation, [2]. DT can turn traditional supply chains into digital and smart supply chains by linking all operations and processes, including product creation, procurement, production, logistics, suppliers, consumers, and services. The conceptual research model is presented in Figure 1.

2 Literature Review

The digital transformation (DT) framework spans a vast array of themes, such as enterprises, business models, partnerships, process workflows, and the adoption of new technology. It also necessitates the participation of diverse stakeholders, including customers, suppliers, governments, retailers, and financial institutions. It is by separating the usage of organizational assets into static and dynamic capabilities businesses can establish a rare and difficult-to-replicate competitive edge. Dynamic capabilities relate to the application of technology in the production of a computer-aided design (CAD) that can be maintained over the long term by carefully managing external interactions. This strategy can greatly assist businesses in establishing a lasting competitive edge, [3].



Fig. 1: The conceptual research model

2.1 Digitalization in Supply Chain

The term "digitization" refers to the use of new technologies to streamline the supply chain (SC) connections between producers and consumers. Many previous studies have addressed the effects of digitalization in SC (DSC). To coordinate SC stakeholder and improve action corporate collaboration, the DSC utilizes hardware, software, and worldwide communication networks. In contrast, however, the concept of "digitalization" is still in its infancy as a theoretical framework. Digitalization rests on the development of information and communication technology, [4].

When a company undergoes digitalization, it undergoes a process, of organizational, and cultural transformation in response to market demands. With this perspective, traditional SC can be remodeled completely into a system in which activities at the societal, organizational, and human levels are all seamlessly interrelated.

DSC could increase the SC's utility, make it more widely available, and lower its price. DSC enables digital platforms for the sharing, collaboration, and communication of data, improving reliability, agility, and efficiency. Companies are beginning to think about digitalization because of the numerous advantages it offers when applied to SC. There has been a radical shift in how businesses and people interact with one another and their environments as a result of the advent of digital technology. The interconnection inside SC necessitates cooperation across many technologies, such as sensors, cloud processing, cyber-physical practices, and highperformance computing, to drive management change toward Industry 4.0. The incorporation of DSC allows for improved economic performance and has long-term positive effects on sustainability, adapting to changing circumstances through the use of digital tools and up-to-the-minute data on processing times and due dates. However, there are obstacles in constructing DSCs because of the precision of the information, and the necessary data must be gathered from a wide range of sources. To achieve sustainable development, businesses need to build on their existing SC by including the use of digital technologies. This means that for businesses to achieve their expansion goals, they need to reconceive their SC process as a DSC network, [5].

Many businesses have, up until recently, viewed technology largely as a tool for improving communication and sharing information to increase productivity. The COVID-19 pandemic, however, has made digital transformation a top priority for many businesses. Businesses have learned the hard way from the COVID pandemic's repercussions and consequences that technology should be viewed as a tool for preventive management. DT relies heavily on information technology and analytic services, and modern tools make it possible to respond to situations quickly and creatively. There is increasing evidence to support the notion that digital transformation (DT) can have a positive impact on operational and financial performance, customercentricity, multi-supplier partnering relationships, and CAD within supply chains. New DTs can be incorporated into procurement procedures to better assist SCs, and this can show how procurement can develop into an essential role in SCs that use DT, [6]. A more open and auditable procurement system is digital impossible without change. More transparency and traceability between buyers and sellers can help businesses succeed by boosting trust and cooperation between the two parties, which in turn will help procurement departments become more strategic and contribute to the achievement of the organization's overarching objectives. When applied correctly, DT in procurement can produce CADs that are both long-lasting and difficult to replicate. Improved data obtained through digital procurement's expanded access innovative suppliers. to collaborative platforms, innovation laboratories, advanced analytics, enhanced processing power, and visualization tools can greatly enhance improved strategic decision-making. This underscores the importance of utilizing digital procurement to obtain better data for strategic decision-making purposes. Due diligence (DT) is essential in humanitarian SCs because it speeds up the distribution of tracked logistics aids and support to those who need them most, [7].

2.2 Sustainable Supply Chain Capabilities (SSCC)

The concept of sustainable development can be described as pursuing growth that satisfies present needs while preserving future generations' ability to meet their own needs. Corporate sustainability pertains to an organization's capacity to meet the needs of both direct and indirect stakeholders (such as shareholders, employees, customers, pressure groups, communities, etc.) without compromising this ability in the future. The underlying principle of this concept is that businesses, their supply chains, the environment, and society are all interconnected and interdependent, such that companies cannot prioritize short-term profits for shareholders at the expense of the planet's long-term health, [8].

To meet the challenge posed by various stakeholders, businesses must incorporate sustainability into their strategy-forming process in supply chain/network management, moving beyond just economics, [9].

Hart's (1995) original research, which extended the RBV and suggested that a firm's competitive advantage was based on internal resources, is an example of how SSCM capabilities have their origins in environmental management. A new viewpoint, the NRBV of the firm, was offered as an advancement of the RBV. A firm's ability to implement SSCM practices like stakeholder integration, continuous improvement, and shared vision, he claimed, grows out of its commitment to creating novel and integrated environmental solutions.

Pollution prevention is the initial tactic, and it necessitates the ability to constantly innovate. The second tactic, known as product stewardship, calls for the cultivation of a skill known as stakeholder integration. The third strategy involves collaborating with diverse stakeholders and committing to a shared objective of reducing the company's environmental footprint through the adoption of low-impact technologies and products over the long haul. The sustainability dimensions should reflect:

• Economic: a low-cost system that functions well, provides cooperative solutions and provides a variety of transport mode options while supporting the local economy.

• Environmentally friendly, as they produce less pollution, waste, and greenhouse gases; use less nonrenewable energy; and repurpose and recycle their materials.

• Social: ensuring fundamental access requirements of individuals/communities are satisfied in a secure manner that promotes healthy lifestyles and promotes intergenerational equity, [10].

2.3 Social Media

The term "social media" is used to describe any online medium that actively seeks to foster communication and involvement among its audience members in real time. The first defining feature of social media is that it encourages active participation from its users. While some social media platforms, like Facebook, encourage user participation in the form of comments and likes, the vast majority of social media sites restrict users to merely viewing the content posted by others. Moreover, in order to encourage participation and communication, it is essential to set up a profile page. Second, communicating with others online, whether they be friends, family, or strangers who share interests, requires interaction, [11].

Promoting a business or cause via social networking sites is called daily social media (SM), and it is becoming increasingly popular. Social media's end goal is to supply the type of content that users will want to share with their friends and followers, which is what consumers hope to see from businesses when they visit social networking sites. This is why the rise in popularity of Google, Facebook, Twitter, and YouTube highlights the need for a social networking strategy, a tactic increasingly employed in social media marketing. Shared content posted online helps bring in new customers and boosts a company's ranking in search results. These online platforms can be undeniably used as a reliable means of communication for interacting with clients, building relationships, and resolving issues in a timely manner. By outlining the types of content you will produce and posting on each platform, you can formulate a social media strategy, [12].

The usage of social media is especially highly prevalent among small and medium-sized businesses (SMEs) for product and service promotion in addition to communication. Immediacy provided by social media allows businesses to keep a direct and healthy relationship with their online customers. Customers can talk to one another and share feedback about the goods and services they have purchased. The vast majority of businesses that have embraced social media do so to listen in on the industry, product, and competitor-related conversations, [13].

2.4 Organizational Sustainability Performance

Sustainability performance indicators and their connection to environmental management practices. Stakeholders' growing environmental consciousness may encourage businesses to prioritize enhancements to their environmental performance management systems (EMPs). Greenhouse gas emission reduction, carbon trading, investments in pollution-free technology, measurable environmental goals, and waste management are all examples of what we mean when we say that an organization's EMPs include these things. The available literature suggests that an organization's EP may lead to improved CVP, EVP, cost-effective operation, and a better social responsibility image. Customers who care about the environment are more likely to be satisfied with a business if they know that the company operates (and produces its products and services) sustainably. This reputation will help the company keep its current clientele and attract new ones, giving it a useful edge in the marketplace, [14].

2.4.1 Environmental Performance

Attaining environmental efficiency requires a meticulous interpretation of environmental undertakings and effective evaluation and execution of environmental responsibilities. In particular, organizations should act with responsibility towards safeguarding living organisms, ensuring the efficient use of resources, adopting appropriate waste disposal employing sustainable practices, energy consumption, minimizing risks and losses, acquiring adequate insurance coverage, marketing products safely, and practicing effective environmental management. Monitoring environmental performance indicators can assist in guaranteeing those basic human requirements are satisfied, living standards are enhanced, and resource consumption is decreased and optimized, enhancing the organization's sustainability. Environmental performance indicators can help achieve this by measuring the organization's influence on natural systems, identifying important impacts, connecting environmental objectives with organizational and employee development, and creating fair pricing. Sustainable supply chain management strategies, such as clean production, green management, and supply chain management, can improve an organization's efficiency and reduce resource waste, overconsumption, and related expenses, offering a competitive edge, [15].

In sustainable internal supply chain management, environmental design plays a pivotal role by prioritizing waste reduction and material optimization to improve an organization's environmental performance and lower costs. It ensures this by prioritizing the implementation of eco-friendly manufacturing practices, and sustainable internal supply chain management aims to achieve these objectives.

Examples of environmental performance indicators are:

- Improvements in the company's operations to lower their environmental impact fall under the purview of operational management. It lessens the environmental toll of manufacturing by controlling variables like waste generation, pollution, emissions, and power consumption.
- Features of a product are its unique qualities and characteristics. The indicator takes into account several different factors, such as the percentage of recycled materials used and the presence of environmental labels.
- Effective recycling includes factors like reprocessing time, energy use, and waste produced.
- The phrase "environmental technology" is used to describe the process of creating innovative technological solutions to reduce negative effects on the natural environment and the general ecosystem, [16].

2.4.2 Economic Performance

When a business has good economic performance, it is able to meet the monetary goals of its satisfied shareholders and stakeholders through profitable investment returns. Financial and promotional gains attributable to more environmentally responsible supply chain management constitute economic performance. Reduced expenditures on raw materials, energy, waste treatment and disposal, and clean-up after environmental mishaps all contribute to financial gain. The average marketing share, average marketing profit, and average marketing profit growth all increase as a result of the enhanced marketing performance. The economic dimension can be seen as a tool for gauging an organization's long-term viability by contrasting it to competitors in the same market and assessing its immediate and future capabilities. As a regulatory concept, sustainable supply chain practices are connected to the business's capacity to grow revenues and market share by putting in place a risk-reduction plan that also improves productivity, [17]. From a purely economic vantage point, indicators of economic performance include:

- Cost to the environment the sum of all expenses incurred by the company as a result of greening its conventional supply chain. Include things like the price of recycling, the price of electricity, and the price of environmentally friendly building supplies and waste removal.
- Costs incurred by the supply chain in the normal course of business; cover everything from the initial purchase of raw materials to the final sale of a product to the consumer. Eco-friendly supply chain procedures have an impact on the standard supply chain's bottom line. Delivery and stocking expenses, for instance, are predicted to decrease as a result of eco-friendly SCM procedures.
- Quality: This relates to the product itself and has a huge bearing on supply chain efficiency. The number of customer complaints, the length of time a product is guaranteed to last, the amount of waste diverted from landfills, and the consistency with which packages are delivered are all included in this metric.
- The term "flexibility" refers to the supply chain's adaptability to a variety of circumstances that may arise as a result of variations in the typical processes along the chain.
- The response is a measure of the supply chain's ability to respond promptly to demands for specific goods or services. It encompasses various factors, such as manufacturing and purchasing lead times, on-time delivery, product return time, and the overall supply chain cycle time, [18].

3 Research Methodology

For studies involving sizable populations, questionnaires are among the most reliable data collection tools. The fundamental purpose of this research is to examine how digitalization policies and procedures affect long-term organizational and supply chain viability. Quantitative information was gathered using a questionnaire distributed online. The study's sample, consisting of 100 employees, was drawn at random.

3.1 Result

- Demographic:

To see how the study's sample breaks down by sex, see Table 1. From the data in the table, we can see

that males make up 96% of the sample, while females account for only 4%. The largest proportion of the study population (60%) is comprised of those aged 36–45; the next largest (22%) are those aged 25–35; and the smallest (18%) are those aged 45 and up. According to the data, the category "More than 10 years" had the largest proportion in the Work Experience section of the study sample, at 80%, followed by the category "6 to 10 years," at 20%.

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	Male	96	96.0	96.0	96.0		
	Female	4	4.0	4.0	100.0		
	Total	100	100.0	100.0			
Age	Age						
		Frequency	Percent	Valid Percent	Cumulative Percent		
	25-35 years old	22	22.0	22.0	22.0		
Valid	36-45 years old	60	60.0	60.0	82.0		
vanu	More than 45 years old	18	18.0	18.0	100.0		
	Total	100	100.0	100.0			
Work Experience							
		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	6 to 10 years	20	20.0	20.0	20.0		
	More than 10 years	80	80.0	80.0	100.0		
	Total	100	100.0	100.0			

Table 1. The distribution	of the study	v sample t	ov gender
			J D

Table 2. The relationship	between the impact of	of digitalization	practices and	supply chain	sustainability of	capabilities

ANOVAa							
Model		Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	2.872	1	2.872	15.606	.000b	
	Residual	18.038	98	.184			
	Total	20.910	99				
a. Dependent Variable: The impact of digitalization practices							
b. Predictors: (Constant), supply chain sustainability capabilities							

3.2 Hypotheses

There is a statistically significant relationship between the impact of digitalization practices and supply chain sustainability. Table 2 indicates a significant correlation between the adoption of digitalization practices and the sustainability of the supply chain capabilities, with a significance ratio of less than 0.05. This finding highlights the substantial contribution of digital transformation in enhancing the effectiveness of supply chain sustainability capabilities within the organization.

ANOVA ^a							
Model		Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	.091	1	.091	.225	.000	
	Residual	39.749	98	.406			
	Total	39.840	99				
a. Dependent Variable: organizational sustainability							
b. Predictors: (Constant), The impact of digitalization practices							

 Table 3. The relationship between organizational sustainability performance and the impact of digitalization practices

There is a statistically significant relationship between the impact of digitalization practices and organizational sustainability. According to the information in the table, there is a statistically significant correlation between how employees evaluate organizational sustainability and how digitalization initiatives have affected that sustainability. Given that the significance ratio was less than 0.05, a significant association was discovered to exist. The results also show a correlation between improved organizational sustainability and greater adoption of digitalization techniques. The ANOVA chart shows that there is a positive relationship between digitization methods and supply chain longevity. This highlights the significance digitization of in encouraging environmentally responsible supply chain management. The regression model reveals that the predictor variable (supply chain sustainability) has a coefficient of 2.872 and a significant F-statistic of 15.606 at a significance level of less than 0.05, indicating a robust positive correlation between the adoption of digitalization practices and supply chain sustainability. These findings underscore the notion that companies that prioritize digital transformation initiatives are more likely to enhance the sustainability of their supply chain. Similarly, the study discovered a sizeable link between the impact of digitization methods and the longevity of businesses. The coefficient for the predictor variable (organizational sustainability) is less than 0.05 and statistically significant, with an F-statistic of 19.486 displayed in the ANOVA table. These findings point to a correlation between digitalization practices and organizational sustainability, with greater adoption of digitalization methods being associated with higher levels of organizational sustainability.

Overall, the statistical analysis provides evidence to support the argument that digitalization practices can contribute significantly to enhancing the effectiveness of supply chain sustainability and organizational sustainability. Organizations that invest in digital transformation initiatives are more likely to improve their sustainability performance, resulting in long-term benefits such as reduced costs, improved efficiency, and increased competitiveness. The study's findings provide valuable insights for organizations seeking to improve their sustainability performance and enhance their digitalization practices. The relationship between organizational sustainability and the impact of digitization practices is presented in Table 3.

4 Discussion

Environmentally friendly policies and processes must be implemented for businesses to retain solid connections with stakeholders and customers. Stakeholders may feel driven to create their own rules and processes if there is no clear emphasis on environmental sustainability.

The findings of the study show a substantial and favorable relationship between digitization methods and supply chain sustainability. These findings lend support to the theoretical paradigm that posits a positive relationship between digitalization efforts and organizational sustainability. Furthermore, the study uncovers significant connections between digitalization strategies and organizational sustainability.

Digitalization strategies dramatically can improve the efficiency and sustainability of supply chain operations, allowing businesses to integrate their environmental goals with their overall business objectives. As a result, as a basic part of sustainability. organizational integrating digitalization methods into sustainable supply chain management should be prioritized. Businesses should constantly look for new methods to use technology to fulfill their sustainability goals. This will allow them to improve their brand and strengthen connections with stakeholders and customers, all while encouraging environmental sustainability.

5 Conclusion

The primary purpose of the present study was to explore the influence of sustainable supply chain management methods on the performance of enterprises. However, in future research initiatives, it would be helpful to widen the field of inquiry and study the possible impact of other sustainable supply chain management methods on organizational performance. Although there is an increasing interest in both sustainable supply chain management and digitalization, there is currently a scarcity of research that studies the interrelationship between these two concepts or explores connected supply chain practices. Therefore, expanding the measurement of the impact of sustainable supply chain practices on organizational performance is essential, and utilizing the indicators presented by sustainable performance dimensions would provide a reliable approach to accomplish this. Further research in this area would provide important insights into the effective implementation and optimization of sustainable supply chain techniques to improve organizational performance. As a result, firms will be able to better match their sustainability objectives with their business goals, leading to a better understanding of how these practices may be used to improve overall performance.

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The author has no conflicts of interest to declare.

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