



Midocean University

College of Management

Department of Business Administration

Proposal Title:

**The Impact of Globalization on Operations and Supply
Chain Management at Saudi Airlines (Saudia)**

Prepared by: Majid Hawsawi

Supervised by: Dr.Fayez Jrad

Dr. Alfaisal Hasan

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Introduction

Globalization, a complex and multifaceted process characterized by the increased interconnectivity and interdependence of economies, cultures, and societies across the globe, has significantly reshaped the landscape of operations and supply chain management. In recent decades, businesses have increasingly expanded beyond local and national markets to embrace global networks, driven by technological advancements, liberalized trade policies, and competitive market forces. This evolution has created both opportunities and challenges for organizations striving to maintain efficient and resilient supply chains (Adeitan et al.,2021).

Globalization has emerged as one of the most influential forces shaping the modern business environment, impacting virtually every aspect of how organizations operate and manage their supply chains. This dynamic and multifaceted process, characterized by the rapid movement of goods, services, capital, technology, and ideas across international borders, has revolutionized the strategies and practices employed in operations and supply chain management. As the world has become increasingly interconnected, the traditional barriers of distance and national boundaries have diminished, allowing businesses to expand their markets, source materials globally, and tap into new opportunities for growth and innovation (Vidrova, 2020).

The impact of globalization on operations and supply chain management is profound. Companies now have access to a broader array of suppliers, resources, and markets, enabling them to optimize costs, improve product quality, and enhance customer service. However, this global reach also exposes supply chains to a range of complexities, such as geopolitical risks, cultural differences, regulatory variations, and logistical hurdles. Additionally, factors such as sustainability concerns and the need for agility in response to global disruptions have further underscored the importance of adaptive and strategic approaches to supply chain management. The influence of globalization on operations and supply chain management cannot be overstated. With the advent of advanced communication technologies, improved logistics, and more sophisticated transportation networks, companies now have the capability to establish highly

complex and geographically dispersed supply chains. These global supply networks enable organizations to reduce costs through outsourcing and offshoring, improve product quality by leveraging specialized expertise from around the world, and enhance their competitiveness by reaching a broader consumer base. For example, global sourcing allows companies to benefit from cost-effective raw materials and labor, while international production facilities can enable firms to respond more swiftly to regional market demands (Kazancoglu et al.,2024).

However, this global expansion comes with a set of challenges that require meticulous planning and strategic decision-making. One of the primary challenges is managing the inherent complexity of global supply chains. Factors such as diverse regulatory standards, political instability, currency fluctuations, and differences in business culture can create significant hurdles. The COVID-19 pandemic exemplified how global disruptions can reverberate throughout supply chains, causing delays, shortages, and financial losses. Additionally, recent geopolitical tensions, trade wars, and evolving protectionist policies have underscored the vulnerabilities of global supply chains and the need for risk mitigation strategies (Singh & Kumar,2020).

Understanding how globalization affects operational processes and supply chain structures is essential for businesses aiming to achieve competitive advantages and long-term success in the global marketplace. This analysis explores the key implications of globalization on operations and supply chain management, examining both the opportunities it presents and the challenges it poses to organizations worldwide.

Problem Statement

The rapid pace of globalization has significantly transformed the aviation industry, presenting both opportunities and challenges for major airlines, including Saudi Airlines (Saudia). While globalization has enabled Saudia to expand its operations, connect with a wider network of international suppliers, and serve a more diverse customer base, it has also introduced a complex set of operational and supply chain management issues that threaten its efficiency and competitive positioning. One of the core problems facing Saudia is the increased complexity of managing a global supply chain that spans different regions, each with its own regulatory requirements, economic fluctuations, and geopolitical risks. The airline's supply chain must balance the demands of sourcing parts and services internationally while maintaining strict adherence to safety, quality,

and operational standards. Additionally, disruptions caused by global events—such as pandemics, geopolitical conflicts, and trade restrictions—have exposed vulnerabilities in Saudia’s ability to maintain uninterrupted supply chain operations and meet customer expectations.

Furthermore, globalization has intensified competition in the aviation sector, compelling Saudia to innovate and optimize its supply chain to remain cost-effective and agile. However, this need for efficiency often conflicts with the push for sustainability and adherence to environmental regulations, which are becoming increasingly important in global business practices. Saudia faces the challenge of incorporating sustainable practices into its supply chain while also managing costs and maintaining high service standards.

Despite advancements in technology that could help streamline operations and enhance supply chain visibility, integrating these digital solutions into Saudia’s legacy systems poses another layer of complexity. The airline must navigate challenges associated with adopting new technologies that facilitate real-time data management, predictive analytics, and transparency across the supply chain, all while aligning with global standards and practices.

Research Significance

Theoretical Significance

The theoretical significance of researching the impact of globalization on operations and supply chain management at Saudi Airlines (Saudia) lies in contributing to the broader understanding of how globalization reshapes the aviation industry. This research provides valuable insights into the unique challenges and opportunities that globalization presents to airlines operating in regions with distinct regulatory, cultural, and economic contexts. The study enriches the existing body of knowledge by examining how global interconnectedness influences operational strategies, risk management, and supply chain structures in the aviation sector, particularly within a leading Middle Eastern airline.

Additionally, this research adds depth to theories of supply chain management and international business operations by applying them to the context of a national carrier that operates globally. It explores the interplay between globalization, sustainability initiatives, and

technological advancements, enhancing existing models of supply chain resilience, flexibility, and integration. By investigating the specific impacts on Saudia, the research can also contribute to the development of frameworks that inform best practices for airlines facing similar global challenges.

Practical Significance

From a practical standpoint, this research is critical for decision-makers at Saudia and other airlines seeking to optimize their operational efficiency and build more resilient supply chains in an increasingly interconnected world. Understanding the impacts of globalization can help Saudia's management identify specific areas where strategic improvements can be made, such as diversifying supplier bases, strengthening risk mitigation strategies, and integrating advanced digital tools to enhance supply chain visibility and adaptability.

Moreover, the findings can assist Saudia in aligning its supply chain practices with global sustainability standards, ensuring compliance with international environmental regulations while maintaining competitiveness. The research can guide operational leaders in balancing cost-efficiency with ethical and sustainable supply chain practices, fostering a competitive edge in a global market where consumers and stakeholders prioritize corporate responsibility.

For industry professionals and policymakers, the research offers a practical roadmap on how to navigate the complexities of operating within a global supply chain network, particularly in the context of emerging economies and regions facing unique geopolitical and logistical challenges. By outlining strategies that can be implemented to enhance supply chain resilience, this study provides actionable recommendations that can be adapted by other airlines and sectors facing similar globalization-induced pressures. the theoretical significance of this research lies in its contribution to scholarly understanding of globalization's influence on operations and supply chain management in the aviation industry, while its practical importance is rooted in its ability to inform and improve strategic decisions, resilience planning, and sustainability initiatives for Saudia and similar organizations operating globally.

Research Objectives

1. To examine the impact of globalization on the operations and supply chain management of Saudi Airlines (Saudia).

2. To identify and analyze the key challenges Saudi Airlines (Saudia) faces in its operations and supply chain management as a result of globalization.
3. To propose strategies for Saudi Airlines (Saudia) to enhance the resilience and adaptability of its operations and supply chain management in the context of globalization.

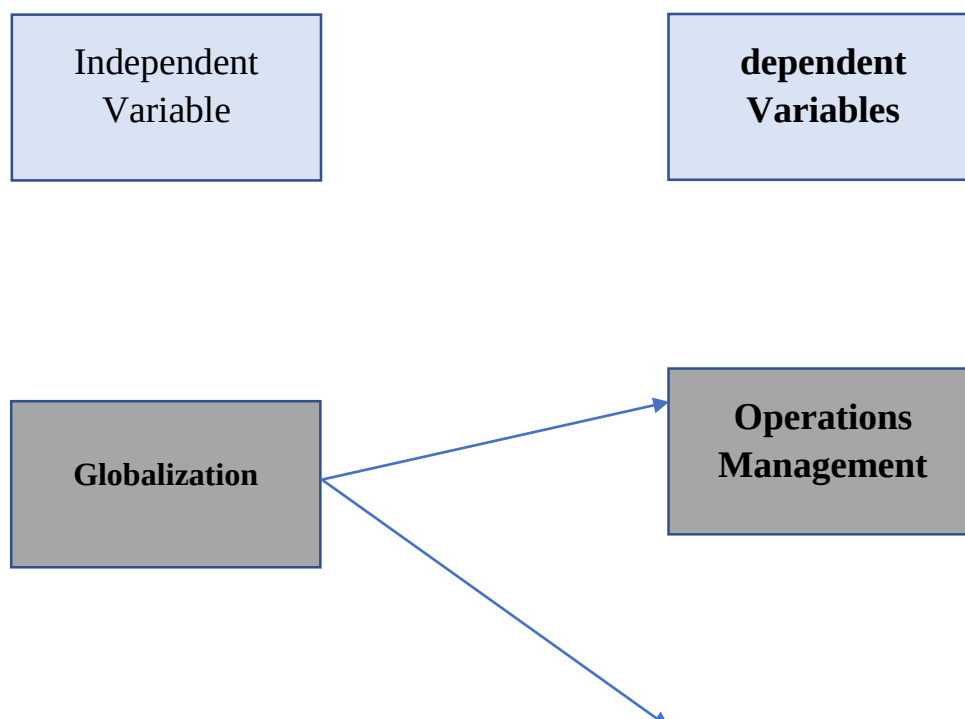
Research Questions

1. The Impact of Globalization on Operations and Supply Chain Management at Saudi Airlines?
2. What are the key challenges that Saudi Airlines (Saudia) faces in its operations and supply chain management due to the impacts of globalization?
3. What strategies can Saudi Airlines (Saudia) implement to enhance the resilience and adaptability of its operations and supply chain management to better navigate the complexities of a globalized market?

Research Hypotheses

is clear to us from the earlier figure, that the current research attempts to The Impact of Globalization on Operations and Supply Chain Management at Saudi Airlines (Saudia)

- Independent Variable : Globalization
- Dependent Variables: Operations Management and Supply Chain Management



Literature review

The study by Hu and Haddud (2020) aimed to explore the combined effects of globalization and technological advancements on supply chain management within the context of international e-commerce businesses. Specifically, the research sought to understand how global interconnectedness and emerging digital tools reshape supply chain strategies, enhance efficiency, and address logistical challenges unique to e-commerce. The study focused on analyzing the impacts on supply chain performance, customer satisfaction, and operational flexibility in an increasingly globalized and technology-driven business environment. The researchers employed a qualitative case study approach, examining an international e-commerce business to provide insights into the effects of globalization and technology on supply chain practices. The methodology involved in-depth interviews with key personnel within the organization and analysis of secondary data, such as company reports and industry publications, to gain a comprehensive understanding of the organization's supply chain dynamics. The case study provided detailed insights into the operational challenges, technological tools employed, and strategic responses to globalization. The findings of the study highlighted several key impacts of globalization and technology on supply chain management: The e-commerce business was able to streamline operations through digital tools, such as inventory management software, real-time tracking, and automated ordering systems. These advancements reduced lead times and minimized stockouts. Technology allowed the company to offer real-time order updates, improve delivery accuracy, and personalize services, leading to higher customer satisfaction levels. Globalization enabled the company to diversify its supplier base, thereby reducing risks associated with supply disruptions. Technology facilitated agile responses to changing customer demands and seasonal fluctuations. Automation and digitalization helped in reducing labor costs and inefficiencies in the supply chain, ultimately lowering overall operational expenses. The use of predictive analytics allowed the company to foresee and address potential disruptions, such as delays in shipments or demand fluctuations, contributing to a more resilient supply chain. This study contributed to the existing

body of literature by offering empirical evidence on the positive effects of globalization and technology in enhancing supply chain efficiency and flexibility within the e-commerce sector. The research underscored the importance of integrating digital tools in managing global supply chains, particularly for businesses with a substantial online presence. Additionally, the study highlighted practical implications for e-commerce businesses, demonstrating how a global supplier network and technological advancements can drive both customer satisfaction and operational efficiency. The findings provided valuable insights for managers seeking to adopt globalization strategies and advanced technologies to improve supply chain resilience and competitiveness in the global market.

The study by (Glushkova et al., 2019) aimed to examine how globalization affects the economies of developing countries, with a particular focus on the implications for global supply chain management. The research sought to understand the unique challenges and opportunities globalization presents for developing nations as they integrate into global supply chains. Additionally, the study aimed to explore how developing countries could improve their competitiveness and economic resilience through effective supply chain practices in a globalized economy. The researchers conducted a qualitative analysis, drawing on data from multiple developing countries to assess the impacts of globalization on their economies and supply chain practices. The study relied on secondary data sources, including reports from international organizations, economic data, and case studies of developing nations actively participating in global supply chains. This data-driven approach allowed the authors to identify common trends and issues faced by developing countries, as well as the strategies they employ to navigate the complexities of globalization. The findings of the study revealed several critical aspects of globalization's impact on supply chain management in developing countries: Globalization has facilitated greater access to international markets for developing countries, allowing them to participate more actively in global supply chains and increase exports. Many developing countries face limitations in infrastructure and technological capacity, which can hinder their ability to effectively manage supply chains and meet the demands of international standards. Developing countries often compete on the basis of cost efficiency, providing cheaper labor and resources. While this can attract foreign investment, it also puts pressure on local industries to maintain low-cost structures, potentially affecting wages and working conditions. This study contributed to the understanding of how globalization reshapes the economies of developing countries by positioning

them within global supply chains. The authors provided insights into the competitive advantages and challenges that these countries face, highlighting the importance of infrastructure development, technology adoption, and workforce training in enhancing supply chain capabilities. Furthermore, the research emphasized the potential vulnerabilities associated with heavy reliance on foreign investment and competitive cost advantages. The findings serve as a valuable guide for policymakers and business leaders in developing countries, suggesting that investing in supply chain infrastructure and workforce development can enhance resilience and improve integration into the global economy.

The study by Kokodey et al. (2020) aimed to analyze how globalization and global supply chains influence socio-economic processes at the national level. Specifically, it sought to understand the ways in which the global economy affects local economic conditions, industries, labor markets, and socio-economic development through the lens of supply chain integration. This research used a qualitative approach to assess the socio-economic impacts of global supply chains on national economies. The study analyzed secondary data, including reports, economic indicators, and case studies from multiple countries, to examine the interactions between national economies and global supply chains. This approach allowed the researchers to identify broad trends in the impact of globalization on socio-economic processes. The study found several key effects of globalization and supply chain integration on national socio-economic processes: Countries involved in global supply chains experienced growth in trade volumes and economic output, as they gained access to larger markets. Integration into global supply chains affected local labor markets, leading to increased demand for skilled labor and changes in wage structures, which varied by country. Participation in global supply chains encouraged technological advancement and industrial growth in many nations as companies upgraded their processes to meet international standards. While globalization provided economic opportunities, it also increased disparities between regions and industries, with some sectors benefiting more than others. Nations integrated into global supply chains became more susceptible to external economic fluctuations, which could impact their socio-economic stability. This study contributed to the understanding of globalization's role in reshaping national economies through supply chain integration. It highlighted both the economic benefits and potential socio-economic risks, including increased dependence on global markets and regional disparities. These insights are valuable for

policymakers aiming to leverage globalization for sustainable development while managing associated risks.

The research by (Orlanyuk-Malitskaya et al. 2024) aimed to examine how globalization processes affect supply chain management across industries. The study focused on identifying the main challenges and transformations in supply chain practices due to globalization, particularly in response to economic, technological, and environmental factors in a globalized world. This study employed a comprehensive literature review and case study approach, analyzing recent developments in supply chain management within a globalized context. The researchers reviewed academic papers, industry reports, and case studies to explore the evolving landscape of supply chain management, focusing on industries with high levels of global integration. The findings highlighted several important trends and impacts of globalization on supply chain management. Globalized supply chains have become more complex, with greater exposure to risks such as geopolitical tensions, trade restrictions, and natural disasters. Technology, such as AI, IoT, and blockchain, has become essential for managing complex global supply chains, enabling real-time tracking, data sharing, and enhanced visibility. Globalization has pushed supply chains to adopt sustainable practices, driven by environmental regulations, consumer expectations, and corporate social responsibility (CSR). The need for agile and flexible supply chains has grown, as companies must adapt to changing market conditions, demand patterns, and disruptions in real time. This study contributed to the literature on supply chain management by illustrating how globalization has transformed supply chains, increasing their complexity and prompting the need for advanced technological solutions and sustainability efforts. The findings underscore the importance of agility, collaboration, and technology in modern supply chains, providing valuable insights for supply chain managers and industry leaders looking to navigate the challenges of globalization effectively.

Theoretical foundations of the study

Introduction to Globalization

Globalization is a multifaceted process that connects economies, cultures, and societies across borders through trade, communication, and technology. It signifies the increased interdependence and integration of global economies, resulting in the free flow of goods, services,

information, and capital. Although globalization is often associated with economic growth and the spread of technological innovations, its impact extends to various sectors, including cultural exchanges, political cooperation, and environmental awareness. In the modern context, globalization has been fueled by advancements in technology, particularly in transportation and communication, which have reduced the barriers of time and distance. This development has made it easier for businesses to expand their operations internationally, enter new markets, and source materials from across the world. For many industries, including aviation, globalization is essential, as it allows for access to new customer bases and more efficient supply chains (Oláh et al.,2018).

Scope of Globalization

The scope of globalization encompasses a wide range of dimensions that influence almost every aspect of society, from economic interactions to cultural exchanges. Its reach has grown significantly in recent decades due to technological advancements, liberalization of trade policies, and increased mobility. Below are the primary areas in which globalization exerts its influence (Zinn & Golsby,2020).

1. Economic Globalization

Economic globalization refers to the integration of national economies into a global economy, allowing for the free flow of goods, services, labor, and capital across borders. This aspect has led to the establishment of multinational corporations, outsourcing of production, and increased foreign investments. Economic globalization fosters competitive markets, enhances trade relations, and contributes to economic growth. However, it also brings challenges, such as economic dependence, competition for local industries, and financial vulnerabilities due to global market fluctuations.

2. Cultural Globalization

Cultural globalization involves the spread and exchange of ideas, values, beliefs, and lifestyles across different regions. This exchange occurs through media, tourism, migration, and the internet, making cultures more accessible globally. While cultural globalization promotes diversity and intercultural understanding, it can sometimes lead to cultural homogenization, where local traditions and identities are overshadowed by dominant global cultures.

3. Technological Globalization

Technological globalization is driven by the advancement and spread of technology worldwide, facilitating communication, data sharing, and innovation across borders. This aspect of globalization has accelerated the pace of information exchange, enabling businesses to operate in real time, regardless of location. Technologies like the internet, smartphones, and cloud computing have transformed industries, especially aviation, where real-time tracking, online booking, and automated systems streamline global operations (Gupta & Gupta, 2019).

4. Political Globalization

Political globalization is the growing influence of international organizations, such as the United Nations, World Trade Organization, and International Monetary Fund, in shaping policies that affect multiple nations. It promotes cooperation and dialogue among countries, leading to the formation of international agreements, regulations, and standards. This political interconnectedness helps address global challenges, like climate change, human rights, and global security, but may also limit individual countries' autonomy in policymaking.

5. Environmental Globalization

Environmental globalization reflects the recognition of the world's shared environmental resources and the collective impact of environmental challenges, such as climate change, pollution, and biodiversity loss. This dimension emphasizes the need for global cooperation in environmental protection and sustainable development. Airlines, for instance, face increasing pressure to adopt environmentally sustainable practices, reduce carbon emissions, and comply with international environmental regulations.

6. Globalization in Business Operations and Supply Chains

For businesses, globalization expands the possibilities for sourcing raw materials, labor, and production facilities from various parts of the world, often allowing for cost savings and efficiency improvements. Supply chain globalization enables companies to optimize their production processes by leveraging resources across countries. However, it also introduces complexities, such as managing cross-border logistics, navigating trade regulations, and mitigating risks associated with global disruptions.

7. Globalization in Education and Knowledge Exchange

Globalization facilitates the exchange of knowledge and educational resources across borders, promoting academic and research collaborations. Students and professionals can access international education, training, and information, leading to a more interconnected and skilled workforce. This exchange of knowledge fosters innovation and supports industries like aviation, where technological advancements and specialized training are crucial.

8. Health and Medical Globalization

Globalization also affects public health, enabling the exchange of medical knowledge, research, and practices on a global scale. This aspect of globalization allows countries to share strategies for combating diseases, respond to pandemics, and access medical advancements. However, it also increases the risk of global spread of infectious diseases, emphasizing the need for international health standards and cooperative measures.

Historical Context of Globalization

Globalization is often seen as a contemporary phenomenon, but its origins trace back to ancient times when trade routes, exploration, and exchanges connected distant regions. While modern globalization accelerated significantly in recent decades due to advances in technology, transportation, and communications, it is built upon centuries of increasing interconnectivity. Understanding this historical context provides valuable insights into the forces that shaped the current global landscape (El Khatib et al.,2022).

1. Early Trade Routes and Cultural Exchange

The earliest forms of globalization can be traced back to ancient trade routes, such as the Silk Road (circa 130 BCE – 1453 CE), which connected China, the Middle East, and Europe. These routes facilitated the exchange of goods, such as silk, spices, and precious metals, as well as ideas, religions, and cultural practices. Maritime trade between the Arabian Peninsula, India, and East Africa further expanded cross-cultural exchanges. This early globalization laid the groundwork for economic and cultural interactions across continents.

2. Age of Exploration (15th to 17th Centuries)

The Age of Exploration marked a new phase in globalization, as European explorers and traders sought new routes to Asia and the Americas. Pioneers like Christopher Columbus and Vasco da Gama discovered previously unknown lands, establishing direct maritime routes for trade and initiating a period of European colonial expansion. This period enabled the exchange of goods, crops, and resources, as well as the spread of new technologies, religions, and cultural practices. However, it also had profound consequences, including the displacement of indigenous populations and the beginning of the transatlantic slave trade.

3. Industrial Revolution and Economic Globalization (18th to 19th Centuries)

The Industrial Revolution, beginning in the late 18th century, revolutionized manufacturing processes and transportation. Steam engines, mechanized factories, and advancements in iron and steel production transformed economies, enabling mass production and reducing costs. With the advent of steamships and railways, goods could be transported more quickly and efficiently over long distances, further integrating global markets. This era saw the rise of international trade and the growth of capitalist economies, establishing the foundations of modern economic globalization (Kaditi,2013).

4. The 20th Century: Global Conflicts and Economic Integration

The early 20th century was marked by two World Wars that, while causing significant economic and social disruptions, ultimately fostered new forms of global cooperation. Post-World War II saw the establishment of international institutions like the United Nations, World Bank, and International Monetary Fund, designed to promote peace, stability, and economic collaboration. This period also saw the creation of global trade organizations and regional alliances, such as the European Union and the General Agreement on Tariffs and Trade (GATT), which later evolved into the World Trade Organization (WTO). These organizations encouraged free trade, reduced tariffs, and established a rules-based international trade system.

5. Technological Advancements and the Digital Era (Late 20th to Early 21st Century)

The late 20th century witnessed unprecedented technological advancements that propelled globalization to new heights. The invention and widespread use of computers, the internet, and telecommunications allowed for instantaneous communication and information exchange, creating a truly interconnected global economy. Advances in air travel made international travel faster and

more accessible, transforming industries like tourism and aviation, and enabling businesses to operate on a global scale. This period also saw the rise of multinational corporations and the outsourcing of production and services to regions with lower costs, which reshaped the global workforce and supply chains (Kushwaha, 2011).

6. Globalization in the Post-Cold War Era

After the Cold War, there was an acceleration of political and economic liberalization, especially in formerly communist regions. Countries such as China and Russia began to open their markets and integrate into the global economy. With the spread of neoliberal policies, free-market principles dominated global economic policies, promoting deregulation and privatization. These changes spurred the rise of emerging markets, creating new opportunities for global trade and investment.

7. Globalization in the Aviation Industry

The aviation industry played a critical role in shaping modern globalization, providing the infrastructure for global mobility and trade. The post-World War II era saw significant developments in commercial aviation, including the introduction of jet airliners that reduced travel times across continents. International agreements, such as the Open Skies policy, further liberalized the industry, allowing airlines to expand their routes globally. For airlines like Saudi Airlines (Saudia), these developments created opportunities to serve a global customer base, collaborate with international partners, and enhance their operations to meet international standards.

8. The 21st Century: Challenges and Transformations in Globalization

The 21st century brought new challenges and transformations to globalization, including economic crises, geopolitical tensions, and the COVID-19 pandemic. These events exposed vulnerabilities in global supply chains and led to a reevaluation of globalization's sustainability and resilience. At the same time, digital transformation continues to reshape globalization, enabling remote work, digital services, and e-commerce. Industries like aviation are now focusing on enhancing flexibility, sustainability, and risk management in response to these new global dynamics.

Global Supply Chain Theories and Models

Understanding global supply chains requires an exploration of theories and models that explain the design, management, and optimization of these interconnected systems. These frameworks help organizations navigate the complexities of sourcing, production, and distribution across borders, with a focus on efficiency, risk management, and customer satisfaction. Here are some key theories and models that underpin global supply chain management (Agrawal & Narain, 2018).

1. Supply Chain Management Theory

Supply Chain Management (SCM) Theory emphasizes the efficient integration of suppliers, manufacturers, warehouses, and retailers to ensure the timely delivery of goods to customers. It underscores the importance of collaboration, resource sharing, and strategic partnerships. This theory focuses on balancing supply and demand, managing inventory effectively, and creating value at each stage of the supply chain. In the global context, SCM theory also addresses the challenges of coordinating diverse suppliers and logistics networks across various countries, which is crucial for companies like Saudi Airlines (Saudia) to meet global operational standards.

2. Resource-Based View (RBV)

The Resource-Based View (RBV) theory suggests that a company's competitive advantage is derived from its unique resources and capabilities. In global supply chains, firms leverage their specific assets such as technological expertise, logistical infrastructure, and strong supplier relationships to maintain a competitive edge. RBV encourages companies to identify and invest in resources that are valuable, rare, inimitable, and non-substitutable (VRIN). Saudia, for instance, could use RBV to focus on enhancing its international logistics network or investing in specialized technology that supports its unique operational requirements (Njualement & Ogundare, 2021).

3. Network Theory in Supply Chains

Network Theory views supply chains as a network of interconnected relationships rather than linear paths from supplier to customer. This perspective is particularly relevant in global supply chains, where complex networks span multiple countries and involve a wide range of

stakeholders. Network Theory emphasizes the importance of connectivity, trust, and relationship management among partners within the supply chain. Companies using this model aim to create resilient, adaptable supply networks that can withstand global disruptions, an essential approach in industries like aviation where supply chains are sensitive to global events.

4. Lean and Agile Supply Chain Models

The Lean and Agile supply chain models are two contrasting approaches that are often combined in global supply chains to create a “leagile” strategy.

- Lean Supply Chain: The Lean model focuses on reducing waste and optimizing resources to achieve cost efficiency. It uses principles like just-in-time (JIT) inventory and continuous improvement (kaizen) to streamline processes. Lean models work well in stable markets with predictable demand. For Saudia, lean strategies may help reduce costs in regions with consistent demand patterns.
- Agile Supply Chain: The Agile model is designed to respond quickly to market changes and customer demands. This model prioritizes flexibility, responsiveness, and the ability to handle variability. Agile supply chains are especially valuable for managing uncertain demand and adapting to disruptions, such as those seen in global markets. Saudia may use agile practices to quickly adapt to changes in international regulations or shifts in customer preferences.

5. Global Value Chain (GVC) Theory

Global Value Chain (GVC) Theory examines the value creation process across different geographic locations, focusing on how each stage in the supply chain contributes to a product's overall value. This theory helps organizations understand where to locate specific activities (e.g., manufacturing, R&D) based on factors like cost, expertise, and market access. By leveraging GVC theory, companies can optimize each link in the supply chain to maximize value. Saudia can apply this by strategically locating maintenance hubs and sourcing components from regions that provide cost advantages or superior quality (Jaboob et al.,2024).

6. Transaction Cost Economics (TCE)

Transaction Cost Economics (TCE) explains how companies make decisions regarding sourcing and outsourcing in their supply chains. TCE suggests that firms should either make or buy components based on transaction costs, which include search, bargaining, enforcement, and transportation costs. When transaction costs are high, it may be more cost-effective to produce in-house; when they are low, outsourcing becomes attractive. For Saudia, TCE can guide decisions on whether to source internationally or domestically, based on costs and the need for control over critical operations.

7. Risk Management and Resilience Models

Global supply chains are inherently exposed to risks, including geopolitical issues, economic fluctuations, and natural disasters. Risk Management and Resilience Models emphasize identifying, assessing, and mitigating these risks to ensure continuity. Resilience models focus on building flexible supply chains that can recover quickly from disruptions. These models are especially important for airlines like Saudia, which operate in a highly regulated and dynamic environment. By implementing risk assessment tools and developing contingency plans, Saudia can build a more resilient global supply chain.

8. Triple-A Supply Chain Model

Developed by Hau Lee, the Triple-A (Agility, Adaptability, and Alignment) Supply Chain Model highlights three critical attributes needed for effective global supply chain management:

- **Agility:** The ability to respond quickly to short-term changes in demand or supply, which is essential for managing fluctuations in a global market.
- **Adaptability:** The capability to adjust the supply chain to long-term shifts in the market environment. This involves updating processes, technologies, and supplier relationships to remain competitive.
- **Alignment:** Ensuring that all partners within the supply chain share objectives and incentives, facilitating collaboration and efficiency.

The Triple-A model offers a balanced approach for managing global supply chains by combining flexibility with strategic alignment, making it a valuable framework for Saudia to enhance its international supply chain operations (Hu & Haddud, 2020).

9. Total Cost of Ownership (TCO) Model

The Total Cost of Ownership (TCO) Model goes beyond the purchase price, considering all costs associated with acquiring, operating, and disposing of a product or service over its life cycle. For global supply chains, TCO is critical because hidden costs, such as customs fees, transportation, and regulatory compliance, can significantly impact profitability. Using TCO, Saudia can evaluate suppliers based on the complete cost structure, ensuring that global sourcing decisions are economically sustainable.

10. End-to-End Supply Chain Visibility Model

The End-to-End Visibility Model emphasizes real-time tracking and transparency across the supply chain. With modern digital tools, companies can monitor each step in the supply chain, enabling proactive management of disruptions and inventory. This model supports improved decision-making, demand forecasting, and customer satisfaction. For an airline like Saudia, end-to-end visibility can improve the efficiency of parts procurement, maintenance schedules, and logistical coordination across international routes.

Strategic Sourcing and Outsourcing Frameworks

Strategic sourcing and outsourcing are key components of modern supply chain management, particularly in a globalized business environment. These frameworks help organizations optimize their supply chains by identifying the most efficient, cost-effective, and reliable sources for goods and services. Strategic sourcing focuses on selecting suppliers who align with long-term organizational goals, while outsourcing allows firms to delegate specific functions to external providers. Some essential frameworks and models that guide strategic sourcing and outsourcing decisions (Glushkova et al., 2019).

1. Kraljic's Purchasing Portfolio Matrix

Kraljic's Matrix is a strategic tool for categorizing and managing supplier relationships based on the importance of the purchased item and the complexity of the supply market. It divides items into four categories:

- **Non-Critical Items:** Low importance and low supply complexity, often standardized products where cost is the primary consideration.

- Leverage Items: High importance but low supply complexity, where buyers have power and can seek competitive pricing from suppliers.
- Bottleneck Items: Low importance but high supply complexity, requiring careful management due to supply risks and potential disruptions.
- Strategic Items: High importance and high supply complexity, where partnerships and long-term relationships with suppliers are essential.

Using this matrix, organizations like Saudi Airlines (Saudia) can prioritize strategic partnerships for critical components, while leveraging competitive pricing for standardized parts or services.

2. Total Cost of Ownership (TCO) Framework

assesses all costs associated with acquiring, using, and maintaining a product or service over its lifecycle, beyond just the purchase price. TCO includes factors like transportation, customs fees, maintenance, and disposal costs. For global sourcing, TCO helps identify hidden costs and supports more accurate financial decision-making. Saudia can use TCO to evaluate international suppliers and choose sourcing options that minimize long-term costs, aligning with financial and operational efficiency goals.

3. The Make-or-Buy Analysis

The Make-or-Buy Analysis framework aids organizations in deciding whether to produce goods or services in-house (make) or source them from external suppliers (buy). This analysis considers factors such as:

- Cost: Comparing production costs versus procurement costs.
- Capacity: Assessing whether internal resources can meet demand.
- Quality Control: Evaluating the importance of maintaining direct control over quality.
- Risk: Identifying potential risks of outsourcing, including supply disruptions and loss of intellectual property.

For Saudia, the Make-or-Buy Analysis can guide decisions about sourcing maintenance services, software development, or in-flight catering. By using this analysis, Saudia can determine which functions are best suited for internal operations versus those that can be outsourced to specialized providers.

4. The Strategic Sourcing Process Model

This model outlines a structured approach to sourcing based on identifying, evaluating, and engaging suppliers. Key steps in the strategic sourcing process include:

- **Assessment of Needs:** Understanding organizational requirements and specifications.
- **Market Research:** Analyzing the supplier market to identify suitable options.
- **Supplier Selection:** Evaluating suppliers based on criteria like cost, quality, and reliability.
- **Negotiation and Contracting:** Establishing terms and agreements that align with long-term goals.
- **Implementation and Integration:** Ensuring a smooth transition and integration of the sourced goods or services.
- **Performance Monitoring:** Regularly evaluating supplier performance and making adjustments as necessary.

For an organization like Saudia, this model provides a comprehensive approach to finding and managing suppliers, ensuring alignment with strategic goals, especially when sourcing components for aircraft maintenance or in-flight services.

5. Core Competency Theory

Developed by Prahalad and Hamel, suggests that companies should focus on activities that are central to their competitive advantage and outsource non-core activities to third parties. Core competencies are unique strengths, such as specialized knowledge or processes, that provide value to customers and differentiate a company from its competitors. By focusing on core competencies, Saudia can concentrate on critical functions like customer service and operational excellence while outsourcing non-core activities, such as non-essential maintenance or auxiliary services.

6. The Outsourcing Relationship Model (ORM)

Highlights the importance of establishing strong relationships with outsourcing partners to ensure successful outcomes. This model emphasizes collaboration, trust, and clear communication between the client and provider, which are crucial for long-term partnerships. The ORM consists of three main types of outsourcing relationships:

- Transactional: Focused on short-term, cost-focused engagements with minimal collaboration.
- Relational: Involves closer collaboration, with both parties working towards mutual benefits and sharing risks.
- Strategic Partnerships: Deep, long-term partnerships where both parties are aligned in strategy, share objectives, and often innovate together.

For Saudia, strategic partnerships with suppliers who handle critical components or specialized services, such as aircraft engine suppliers, can create a competitive advantage and improve operational resilience.

7. The Multi-Sourcing Model

framework where a company works with multiple suppliers for different aspects of its operations, rather than relying on a single provider. This model diversifies the risk and allows companies to benefit from the unique strengths of different suppliers. Multi-sourcing can increase resilience and reduce dependency on a single supplier, which is particularly valuable for global companies like Saudia that may face diverse regulatory, economic, and operational challenges across different markets.

8. The Outsourcing Decision Matrix

Helps organizations decide which activities to outsource based on strategic importance and the complexity of the task. The matrix categorizes tasks into four quadrants:

- Strategic Alliances: High strategic importance and high complexity, best suited for strategic partnerships.
- Retain In-House: High strategic importance but low complexity, suggesting that the organization should keep these functions internal.
- Outsource: Low strategic importance but high complexity, ideal for outsourcing to specialists.
- Transactional Outsourcing: Low strategic importance and low complexity, where simple transactional outsourcing is appropriate.

Using this matrix, Saudia can decide which functions to keep in-house (such as customer relations) and which to outsource to specialized providers (such as IT infrastructure or payroll management).

9. Vendor Management Framework

The Vendor Management Framework (VMF) provides a structured approach to managing and optimizing relationships with suppliers. This framework includes:

- Vendor Selection: Choosing vendors based on capabilities and alignment with strategic goals.
- Contract Management: Establishing and monitoring contracts to ensure compliance and performance.
- Risk Management: Identifying and mitigating risks associated with vendor relationships.
- Performance Evaluation: Regularly assessing vendor performance using KPIs and metrics.

For Saudia, a VMF can ensure that each supplier or outsourcing partner meets quality, cost, and performance standards, essential for a smooth and efficient supply chain.

Impact of Globalization on Operations Management in Airlines

Globalization has transformed the aviation industry, creating both opportunities and challenges for operations management in airlines. As airlines expand their services across borders, they face a range of operational demands, from managing diverse regulatory standards to optimizing global supply chains. Here is an in-depth look at the key impacts of globalization on operations management within airlines, with a focus on cost efficiency, standardization, localization, technology, and workforce management.

- 1. Enhanced Operational Efficiency and Cost Savings:** Globalization enables airlines to take advantage of economies of scale, reducing costs by consolidating operations and leveraging international partnerships. Airlines can now source fuel, parts, and other operational necessities from a global network of suppliers, which can lower costs and increase efficiency. Many airlines also establish maintenance and repair facilities in regions where labor and materials are less expensive, further driving down costs.
- 2. Standardization of Processes and Services:** To operate efficiently on a global scale, airlines have adopted standardized processes and service models. Standardization involves

implementing consistent operational practices, safety protocols, and customer service standards across all routes and regions. This not only improves operational reliability but also ensures a cohesive brand experience for passengers regardless of location.

3. **Localization of Services to Meet Regional Demands:** While standardization is essential, globalization also requires airlines to adapt to local preferences and regulatory requirements. Localization involves tailoring services, such as in-flight meals, customer service language, and marketing strategies, to suit specific cultural and regional demands. This balance between standardization and localization is critical to ensuring operational success and customer satisfaction.
4. **Advanced Technology Integration and Digital Transformation:** Globalization has accelerated the adoption of advanced technologies, which play a crucial role in modern airline operations. Technologies like real-time tracking, big data analytics, and automation enhance efficiency and allow airlines to manage global operations more effectively. Digital tools enable more accurate demand forecasting, optimized scheduling, and improved customer service through data-driven insights.
5. **Complexity in Supply Chain Management:** Globalization has expanded airlines' supply chains, making them more intricate and susceptible to international challenges. Airlines now rely on a diverse range of suppliers for everything from fuel to aircraft parts. However, managing a global supply chain also exposes airlines to risks such as geopolitical tensions, economic instability, and supply chain disruptions. Operations managers must account for these risks by developing robust supply chain strategies and contingency plans.
6. **Increased Regulatory and Compliance Challenges:** Operating internationally means adhering to diverse regulatory frameworks and aviation standards in different countries. Airlines must comply with varying environmental regulations, safety standards, and labor laws. These compliance requirements can add complexity and increase operational costs, as airlines must regularly update their policies to stay in line with international regulations.
7. **Workforce Diversity and Management:** Globalization has led to a diverse workforce in the aviation industry, requiring airlines to implement inclusive and adaptive management practices. Airlines now employ staff from various cultural and linguistic backgrounds, which presents both opportunities and challenges in communication, training, and customer service.

Effective management of a diverse workforce enhances operational harmony and improves service quality, as staff can cater to the needs of a global customer base.

- 8. Improved Customer Experience through Global Connectivity:** Globalization has increased customer expectations for seamless, accessible travel options worldwide. Airlines must focus on delivering a smooth customer experience across their global network, from booking to baggage handling. Airlines achieve this through partnerships with other carriers (such as codeshare agreements) and improved customer service technologies that allow for better coordination of flights, luggage handling, and personalized services.
- 9. Strategic Alliances and Partnerships:** To expand their global reach, many airlines engage in strategic alliances and partnerships. These collaborations allow airlines to share resources, routes, and costs, ultimately enhancing their operational capabilities. Alliances such as SkyTeam, one world, and Star Alliance enable airlines to offer a broader network of destinations, streamline operations, and reduce redundancies.
- 10. Enhanced Risk Management and Crisis Response:** Globalization requires airlines to prepare for various global risks, including political instability, natural disasters, economic downturns, and health crises like the COVID-19 pandemic. Effective operations management in a global context includes proactive risk assessment, crisis response planning, and recovery strategies to ensure resilience and continuity.

Globalization and Supply Chain Management

Globalization has greatly expanded the scope and complexity of supply chain management, especially in industries like aviation that depend on a highly coordinated network of suppliers, partners, and logistics providers worldwide. For airlines, globalization presents both opportunities and challenges in sourcing, logistics, risk management, and sustainability. Here's an in-depth look at how globalization impacts supply chain management in the airline industry, focusing on areas such as cost efficiency, resilience, collaboration, and technological advancements. (Adeitan et al.,2021).

1. Global Sourcing and Supplier Networks

Globalization has opened access to a vast array of suppliers worldwide, allowing airlines to source products and services from regions that offer cost advantages or specialized expertise.

By leveraging global sourcing, airlines can procure fuel, spare parts, and in-flight supplies at competitive prices, improving operational efficiency.

2. Supply Chain Resilience and Risk Management

With the increased interconnectivity of global supply chains, airlines face risks such as political instability, economic fluctuations, and natural disasters that can disrupt the supply chain. Global supply chains are also vulnerable to events like trade disputes and pandemics. As a result, effective supply chain management in a globalized environment requires proactive risk assessment, diversification of suppliers, and contingency planning.

Logistics and Cross-Border Compliance

Operating across borders requires compliance with varying customs regulations, tariffs, and standards in each country. Effective global supply chain management involves ensuring that goods move smoothly across borders, minimizing delays and avoiding unexpected costs associated with customs and tariffs (Kokodey et al.,2020).

4. Inventory Management and Cost Efficiency

Globalization allows airlines to optimize inventory management by balancing supply levels across multiple regions, reducing costs, and improving resource utilization. Airlines can use centralized or regionalized inventory hubs to maintain a balance between availability and cost-effectiveness. Inventory management technologies, such as real-time tracking, are especially useful for monitoring global stock levels and anticipating demand.

5. Technological Advancements and Digital Supply Chains

Globalization has accelerated the adoption of digital technologies in supply chain management, allowing airlines to achieve end-to-end visibility and optimize decision-making. Tools such as real-time tracking, artificial intelligence, and big data analytics enable airlines to monitor shipments, predict demand, and make data-driven decisions, ultimately enhancing efficiency.

6. Supplier Collaboration and Strategic Partnerships

Globalization encourages airlines to collaborate with suppliers and logistics providers worldwide, forming strategic partnerships that add resilience and flexibility to the supply chain. Collaborations may involve co-investing in facilities, sharing technology, or aligning on sustainability initiatives, creating synergies that benefit both parties.

7. Environmental Sustainability and Global Standards

The airline industry faces growing pressure to adopt sustainable practices and reduce its environmental impact. Globalization allows airlines to adopt internationally recognized sustainability standards, such as emissions reduction targets and waste management protocols. Sustainable supply chain practices, such as sourcing from eco-friendly suppliers and optimizing fuel efficiency, help airlines meet global environmental expectations.

Technological Advancements and Digital Transformation

Technological advancements and digital transformation have revolutionized supply chain management and operations in the airline industry. From data analytics and artificial intelligence to automation and IoT, these technologies enable airlines to streamline operations, enhance decision-making, and improve customer experiences. Here is a closer look at the key areas where technology and digital transformation impact airlines' operations and supply chain management, especially in a globalized context (Orlanyuk-Malitskaya et al.,2024).

- 1. Real-Time Data and Analytics** The ability to collect and analyze real-time data has become a cornerstone of effective supply chain management. Advanced data analytics enable airlines to monitor the movement of goods, anticipate demand, and optimize routes, resulting in better decision-making and resource allocation. Real-time data allows for immediate adjustments in supply chains, enhancing responsiveness to disruptions or changes in demand.
- 2. Artificial Intelligence (AI) and Machine Learning (ML)** play a significant role in predicting demand, optimizing flight schedules, and enhancing supply chain efficiency. Predictive analytics powered by AI help airlines anticipate future demand, allowing for efficient capacity planning and inventory management. Machine learning algorithms can also identify patterns in maintenance needs, enabling proactive servicing that minimizes downtime.

3. **Internet of Things (IoT) and Asset Tracking** IoT technology enables airlines to monitor assets in real time, providing visibility into every part of the supply chain. IoT sensors track the condition, location, and movement of assets such as aircraft parts, luggage, and cargo. This technology ensures operational transparency, reducing the risk of loss or damage and improving the efficiency of logistics and inventory management.
4. **Automation and Robotics** is transforming repetitive tasks within airline operations and supply chains. Robotics and automation tools are used in various areas, from automated check-ins and baggage handling to warehouse management and inventory tracking. Automating these processes reduces human error, speeds up operations, and allows employees to focus on more strategic tasks.
5. **Blockchain for Supply Chain Transparency** Blockchain technology enhances transparency and traceability across the supply chain by creating immutable records of each transaction. In the airline industry, blockchain can be used to track parts through each stage of procurement, ensuring that suppliers meet regulatory standards and minimizing the risk of counterfeit components. This transparency is crucial for regulatory compliance and quality assurance.

Methodology and research methods

This study adopted a descriptive analytical approach to comprehensively explore the impact of globalization on the operations and supply chain management of Saudi Airlines (Saudia), focusing on how global integration has influenced its processes and the specific areas most affected. It seeks to identify and analyze the key challenges Saudia faces as a result of globalization, including regulatory, geopolitical, and economic obstacles that complicate its global operations, as well as issues such as cultural differences, currency fluctuations, and global disruptions. By understanding these challenges, the study aims to propose strategic solutions to enhance Saudia's resilience and adaptability in the face of globalization. This includes recommending measures for diversifying supplier bases, developing risk mitigation strategies, and integrating advanced technologies and sustainable practices to improve supply chain efficiency and ensure long-term competitiveness.

Study tools

To achieve the objectives of this study on The Impact of Globalization on Operations and Supply Chain Management at Saudi Airlines (Saudia), a questionnaire will serve as the primary tool for data collection, designed to gather comprehensive and detailed insights from participants regarding their perspectives and experiences related to the topic. This approach ensures that the data reflects firsthand insights, providing a robust foundation for analysis. The collected data will be analyzed using various statistical methods to ensure precision and reliability. To assess the reliability and stability of the questionnaire, Cronbach's alpha coefficient will be employed as a key indicator for measuring internal consistency, verifying that the instrument is dependable for gathering consistent data. Furthermore, the arithmetic mean and standard deviation will be calculated to explore the central tendency and dispersion within the dataset, allowing for an understanding of response patterns and the identification of overall trends. To evaluate the relationships between different variables, linear regression analysis will be conducted, enabling the determination of the extent to which the independent variables (various aspects of globalization and related challenges) influence the dependent variable (Saudia's operations and supply chain performance). This comprehensive statistical analysis approach will provide a deeper and more accurate interpretation of the data, strengthening the validity of the study's findings and enhancing the overall reliability and effectiveness of the results.

Study limitations

1. Temporal Limitations: This study will be conducted over the course of 2024, ensuring that the data collection and analysis reflect current practices and challenges in operations and supply chain management at Saudi Airlines (Saudia) during this period. The findings will be specific to this timeframe and may not fully capture changes in practices or external conditions beyond 2024, including evolving global market trends, new technological advancements, or subsequent economic developments.
2. Spatial Limitations: The research will be confined to the operations and supply chain management practices of Saudi Airlines (Saudia). It will focus specifically on how globalization impacts Saudia's processes, supply chain structures, and overall performance. The study will not extend to other airlines or sectors within the aviation industry, nor will it include comparisons with global counterparts or regional variations outside Saudia's network and operational scope.

3. Objective Limitations: The study aims to explore and analyze the impact of globalization on the operations and supply chain management of Saudia, providing insights into specific challenges, strategies, and outcomes. However, it will not comprehensively cover all possible variables affecting the airline's operations or delve into broader aspects of business management not directly related to supply chain and operational responses to globalization.
4. Human Limitations: The study will involve a targeted sample of Saudia's employees, including supply chain managers, operational leaders, logistics coordinators, and other relevant staff members who are integral to the supply chain and operations. These individuals will provide essential insights into the real-world impact of globalization on their work practices. However, the findings may be limited by the perspectives and experiences of the selected sample and may not represent the views of all employees or external stakeholders, potentially limiting the generalizability of the conclusions.

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