

Analyzing the Barriers of Sustainable Supply Chain Fashion Sector in Egypt: A Systematic Literature Review

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Received on: 10 March 2022

Accepted on: 07 July 2022

Published on: 30 July 2022

Abstract

Purpose: This research aims to identify barriers to sustainable supply chain management implementations in the Egyptian fashion industry.

Design/Methodology/Approach: A systematic literature review over a period of 17 years was conducted to identify the barriers to the implementation of a sustainable supply chain in Egypt, which included 29 publications published in peer-reviewed journals, conference proceedings, and book chapters.

Findings: The economic, social, and environmental barriers to sustainable supply chain management were highlighted and summarized from previous studies indicating whether these barriers are inside or outside each organization. However, it was discovered that most of the production is carried out by the developing countries where limited research on sustainable supply chain barriers and consequently in the fashion industry in particular. This gap is considered the main research findings, where authors worked on highlighting and classifying sustainable supply chain barriers in the fashion industry in developing countries.

Research Implications/Limitations: Due to the limited studies on both topics, barriers to sustainable fashion supply chain and sustainability barriers in Egypt as a developing country, this study is a systematic review of the literature; nevertheless, an empirical study may be undertaken in the future. The systematic review covers the years 2005 to 2022, and identifies the barriers to implementing sustainable supply chain management in the Egyptian fashion industry.

Practical Implications/Limitations: This study provides academics with a consistent representation of sustainability barriers in the Egyptian fashion sector to motivate additional academic research and assistance for managers to create company sustainability competency by highlighting economic, social, and environmental challenges to implementing sustainable supply chain.

Originality: This research classifies the sustainable supply chain barriers into internal and external barriers and moreover as economic, social, and environmental at the same time. It is one of the few studies that explore

sustainable fashion supply chain management in developing countries, particularly Egypt. Also, this is the first research about Egypt that classifies sustainability barriers into economic, social, and environmental barriers, and discusses the Egyptian sustainable supply chain barriers for implementation.

Keywords: Fashion, Sustainable development, Sustainability, Sustainable supply chain, Sustainable fashion, Supply chain barriers, Sustainability barriers, Economic barriers, Social barriers, Environmental barriers.

Introduction

The Fashion Industry especially textile speaks to a fundamental aspect of individuals' regular daily existence and its products are considered the second most significant object of human craving. The business itself has encountered broad development and accomplishment in the last decades, making it one of the biggest, yet in addition, most polluting, worldwide ventures. Its huge size, an assortment of cycles, and complex worldwide creation networks cause major environmental and social effects. The business consistently gets negative consideration in light of helpless working conditions, low wages, and abuse of labor, particularly in low-cost countries, where most of the production is outsourced (Peters and Simaens, 2020).

The ever-expanding utilization of textile merchandise escalates the current social and environmental issues. As a result of expanding mindfulness, a developing discourse in regards to sustainability emerged inside the textile community. Organizations' overall industry segments have begun to actualize sustainable methodologies and adjust economic, social, and environmental obligations, thinking about expanded benefits and diminished expenses, yet additionally the sustainable development of the organization itself and its environment. It implies logically moving to business sustainability which centers on the requirements of the general public and the planet (Peters and Simaens, 2020).

Based on the above discussion, the research aims to figure out the barriers and factors that mostly affect the sustainable fashion supply chain to develop the industry in Egypt.

Objectives have been identified to achieve this aim:

- 1- To collect a range of previous studies focusing on barriers to sustainable supply chain implementation.
- 2- To identify sustainable Fashion supply chain barriers in developing countries especially Egypt.

Literature Review

Sustainable Development

In the last four decades, companies have been facing considerable challenges in satisfying customer needs, paying for materials, utilities, and wages while gaining profits at the same time. According to undisputed demographic growth, the human population is expected to increase by 50% by 2050 compared to 7.5 billion in 2017 (UN/DESA, 2017). In 2020, 7.8 billion inhabitants of the earth struggled with coronavirus and gained new marbles towards the contribution of population density which is expected to reach 9.9 billion by 2050, a rise of more than 25% compared to 2020 (population change, 2020). Despite of the last expectations towards inhabitants' growth rate, organizations still work more on sustainable development and keep on conserving environmental resources from exhaustion.

The Brundtland Report in 1987 proposed the most widely used concept of sustainability, a

development that satisfies the requirements of the current without jeopardizing future generations' capacity to fulfill their own needs (Ashby et al., 2012). The first steps toward sustainable development were taken in the 1970s when the limits to growth demonstrated the need for a growing population when resources were in short supply. Sustainable development has been built on science and environmental crusade since the 1970s. After that time, several projects have been implemented in the sector but have not been labeled as "Sustainable Development". The ecosystem has been impacted as a result of the construction process, which has been noted by the international community. (Isa et al., 2021)

In the early 1970s, the United Nations Conference on Human Environment, popularly known as the Stockholm Conference, was convened. The conference was being hailed as a watershed moment in international environmental politics. The Brundtland study, released in 1987, was the next major step on the road to sustainability, emphasizing that "Humanity has the potential to make growth sustainable to ensure that it meets the needs of the present without jeopardizing future generations' ability to meet their own needs". Purvis, Mao, and Robinson (2019) claim that the three pillars of sustainability did not originate from a single source, the definition of sustainable development is now predominantly recognized as a three-dimensional concept. The literature initially characterized sustainable development as a three-dimensional concept: economic, social, and ecological, the triple bottom line or the 3P approach of profit, planet, and people were later expanded into a 5P model, which included partnership and peace as well (Redek et al., 2020).

Economic Sustainability is tied in with rousing organizations and associations to watch and obey sustainability rules past their typical authoritative necessities. It ought to likewise motivate the normal individual to do their bit any place they can; one individual seldom accomplishes a lot, however as a group people can go further. Social Sustainability is tied in with keeping up admittance to fundamental assets without trading off personal satisfaction. Environmental Sustainability

is affiliated with instructing and urging individuals to contribute to it and tutoring them about the impacts of environmental security (Chokshi, 2020).

The Sustainable Development Agenda began to take shape around the time of the Kyoto Protocol, which was adopted in 1997 and was later revised in Doha and Paris, as well as at a number of other meetings. The Sustainable Development Goals (SDGs) have begun to be introduced in 1992, 178 countries signed the so-called Agenda 21, which aimed to improve global life quality by emphasizing the position of developing and developed countries. Combating was one of the key objectives. Poverty, evolving consumption habits, long-term demographic growth, improving and promoting health, and housing and settlement quality are all issues that need to be addressed. Advancement Environmental concerns were a major part of the debate. Agenda 21, which focuses on resource protection and management, has also defined major groups and their positions, stakeholders, as well as methods of execution that were crucial for achieving the desired outcomes (The United Nations, 2019).

Sustainable Supply Chain Management

The supply chain is a complicated system with numerous actors involved at various levels of interaction and decision-making (from suppliers to their services, transportation, manufacturers, warehouses, retailers, and consumers). As a result, sustainability in the supply chain refers to the activities of all the participants in the chain who work together harmoniously to offer products and services that are regarded not just from an economic but also from an environmental and social standpoint (Tipi and Elgazzar, 2021). The term "sustainability" has been defined in a variety of ways, ranging from an intergenerational philosophical viewpoint to a multi-dimensional corporate management term. Early sustainability programs tended to focus on environmental concerns, but they have increasingly

incorporated environmental, economic, and social perspectives-driven approaches to sustainability over time (Tseng et al., 2015).

Haake and Seuring (2009) described SSCM as the set of supply chain management policies, actions, and relationships that are implemented in response to environmental and social concerns in the design, acquisition, manufacturing, distribution, use, reuse, and disposal of a business's goods and services.

Presently, operations, purchasing, and supply chain managers are seeing the incorporation of environmental and social concerns into their everyday activities, including those contained in relevant standards e.g., ISO 9001 and ISO 14001 (Tseng et al., 2015).

SSCM is concerned with the current concept of SCM, which includes practices such as green sourcing, green construction, waste management, reverse logistics, product recycling, pollution mitigation, energy usage, and resource conservation, among others to ensure an environmentally sustainable supply chain (Pietanza et al., 2018). The "triple bottom line" approach underpins the incorporation of societal, cultural, and economic values into the conception of sustainability. While SSCM practices are thought to be connected to environmental performance and social engagement, they have also been linked to improved economic performance (Zayed and Yaseen, 2020). According to Carter and Rogers (2008), SSCM has been characterized as a strategic, transparent, and achievable alignment of social, environmental, and economic objectives for a corporation by systematically coordinating important inter-organizational business operations to improve the long-term economic efficiency of the individual firm and its supply chain.

Sustainable development and the efficient use of natural resources (fuel, land, and water) are incorporated into the implementation of a strategic plan, transparent incorporation, life cycle assessment, and the accomplishment of an organization's social, environmental, and economic goals through the systemic coordination

of internal business processes aimed at improving the individual firms and economy's long-term performance (Tseng and Geng, 2012).

Fast fashion and just-in-time production are presently dominating the apparel sector, resulting in increased fashion trends. This, in turn, has led to overconsumption, in which people buy more than they need, resulting in fashion waste (Pookulangara, 2013). Wherefore sustainable supply chain has been applied to the fashion industry to mitigate fashion wastes such as fuel, water, energy, and material usage and maintain life cycle assessment of the industry.

Sustainable Fashion Supply Chain Management

A supply chain in the fashion industry includes the whole phase of production and delivery, including the transition of raw materials to finished goods ready for market launch. It is a structure made up of commodity manufacturers, manufacturing plants, storage processes, and customers (Basak et al., 2014). The supply chain has become fundamentally important in modern retailing in terms of efficient organization, teamwork, and cooperation with the chain's organizations, as well as dexterity and cooperation (Moon et al., 2017).

The difficulty of supply chains has increased due to the emerging trend in the fashion industry of expanding product range, a limited product life cycle, increased outsourcing, and technical advancement (Barnes and Lea-Greenwood, 2006). It has been updated to meet the demands of fashion consumers for new items while retaining fast manufacturing lead times (Lee, 2002). Because of the lengthy, dynamic processes in the clothing industry supply chain, as well as the internet's strong presence, strategic steps have been made and applied to solve long purchasing times and increasingly competitive fashion customers. With new goods being designed every second to meet market needs, new supply chain systems can be built to directly service these demanding consumers (Lee, 2002).

Ethical fashion, eco-fashion, and sustainable fashion: all these terms have become familiar within the media over the last few years. Sustainable fashion is a bit of the slow fashion movement, developed over the previous decades, and used variably with eco, green, and ethical fashion (Carey and Cervellon, 2014). It is often misleadingly substantive as the opposite of fast fashion. Slow fashion relies on a philosophical ideal that compresses sustainability values, such as good working conditions and decreasing environmental demolition (Pookulangara and Shephard, 2013).

Clark (2008) defined Sustainable fashion as an oxymoron since fashion implies that something comes and goes out of vogue, which contradicts the long-term visions of sustainability. The basics of sustainability in general are the foundations of which this concept appears.

Fashion, particularly fast fashion, places a premium on speed and economy to offer new collections regularly. Nonetheless, the difficulty with this business is its harmful influence on the environment. On the one hand, it employs harmful chemicals that contribute to water contamination and may contaminate soils if improperly shaken off.

Otherwise, there is a great deal of textile waste, and many garments are composed of synthetic fibers that escape into the water as microplastics during the washing process. Thus, if a firm produces clothing using sustainable materials, employs sustainably grown cotton, adheres to circular economy concepts across its value chain, and uses less hazardous chemicals, it is environmentally responsible.

Simultaneously, sustainability is also about being socially responsible. Generally, the fashion industry is not a very responsible one. If one observes most labels show that clothes are being made in remote places such as China, Bangladesh, or Vietnam.

Aside from the contamination of transporting these things, the labor behind the assembling of these garments is what is generally stressed.

Individuals in these nations typically get truly low wages and work under awful conditions. They can barely improve their social circumstance and on most occasions continue working just to take care of the tabs and endure. This generally adds to the imbalance people find on the planet since in 2018 the rich went more extravagant and the poor less fortunate.

Additionally, at the vehicles level, the prevalence and industry improvement of choices like electric vehicles (or even hydrogen vehicles) or electric bikes are developing at a high rate. Simultaneously, arrangements like carpooling, through which drivers can get their vehicles filled and set aside some cash and contamination is another option. Also, more organizations are letting their representatives telecommute to spare the quantity of km voyaged as well.

The textile sector has a high embodied energy and natural resource demand, which leads to the rapid development of post-consumer waste. According to current industrial studies, \$400 billion in clothes is wasted each year, and the typical Australian purchases 27 kg of new textiles each year, 23 kg of which is tossed into the garbage. Man-made fibers, including natural fibers that take decades to degrade, account for two-thirds of the waste materials. Polymer-based clothes will take 200 years to degrade in a landfill.

With a growing concern about environmental and social sustainability, energy and water consumption, pollution, scarcity of natural resources, and greenhouse gas emissions, the textile industry, which generates a significant environmental footprint from cultivation to the fabric manufacturing to landfill disposal of post-consumer items, is confronted with enormous environmental and resource challenges. As a result, adopting more sustainable behavior in the sector is critical (Shirvanimoghaddam et al., 2020).

Textile reuse and recycling can be a sustainable alternative for decreasing solid waste in landfills, lowering the creation of raw materials and energy consumption, and generating a reduced

environmental imprint due to the huge amount of textile waste created across the world. The relevance of textile waste recycling from an economic, social, and environmental standpoint has been examined in this study, and numerous ways for reusing textile waste have been emphasized. In addition, various technological uses of textile waste have been studied to give more insight into the textile and fashion circular economy approaches to sustainability (Shirvanimoghaddam et al., 2020).

Egyptian Fashion Sector

The apparel sector is extremely important to the Egyptian economy, and it has recently seen a resurgence and a new spurt of growth. Egypt has around 4800 apparel factories, about %73.1 of these factories are located in Cairo, Alexandria, Al qalyoubia, Al sharkia, and Al gharbia, and the apparel industry is considered the first industry in terms of the labor force, with 1.5 million employees, half of which are women (youm7, 2020). In addition, the apparel sector is the country's most significant manufacturing sector, accounting for about \$1.6 billion in exports in 2018; it accounts for 6.5 percent of overall non-petroleum exports. Apparel exports totaled \$1.604 billion in 2018, up from \$1.459 billion in 2017, representing a 10% increase, with 50% of apparel demand exported to the United States and 30% exported to Europe (Statista, 2019).

According to Mohamed Abdel Salam, Chairman of the Chamber of Readymade Garments, the decline of the ready-made garment sector in China is due to the increase in the cost of production as a result of the high wages, as the average wage of a worker in this industry became from 1000 to 1200 dollars per month, with a lack of labor, in addition to the American trade war against the Chinese. Abdel Salam added that this represents a golden opportunity for Egypt to attract the largest possible number of Chinese investors in the ready-made clothes and textiles sector to invest in Egypt, which would benefit the Egyptian economy. He explained that Egypt is characterized by the abundance of manpower, the availability of all services and the industry

requirements (water - gas - electricity), and the achievement of gains for the Egyptian economy in terms of increasing job opportunities and reducing unemployment, transferring the technology of this industry to Egypt, as well as increasing the volume of exports and reducing imports, which all lead to increasing investment and confidence in the Egyptian economy. The apparel industry is one of the labor-intensive industries, as it employs more than one and a half million workers, its exports are close to 30 billion pounds, and the domestic product is close to 250 billion pounds.

It also has the infrastructure that qualifies it to increase the volume of exports, thus creating new job opportunities for young people, including Approximately 500 thousand job opportunities (Mohamed Abdel Salam, 2019). So Egypt as a developing producing country is in a great need to integrate sustainability in the Egyptian supply chain especially in the fashion industry to order to decrease waste and energy consumption, produce up to standard products to satiate the Egyptian consuming market, and compete in the international market.

Since academic papers on sustainable fashion supply chain barriers are limited, the researchers compiled a list of barriers relevant to the sustainable supply chain in general, whether in the fashion sector or other sectors.

Sustainable Supply Chain Barriers

According to a study of the literature on SSCM, far fewer researchers have discussed barriers to Sustainable Supply Chain Management. This can be explained by the fact that researchers sometimes prefer to report positives rather than negatives, or by social desirability bias, in which companies participating in such studies emphasize mainly drivers (Zayed and Yaseen, 2021). SSCM barriers are divided into three main sustainability barriers, Economic Barriers, Social Barriers, and Environmental Barriers. Also, previous research has identified barriers to SSCM adoption, which have been categorized as internal barriers -

People-related concerns have been identified as internal barriers to SSCM implementation – and external factors – those beyond the firm's borders, regulatory difficulties in particular (Oelze, 2017).

Table I summarizes all sustainable supply chain management barriers whether Economic, Environmental, and Social, further outlining the internal (by employees) and external (by supply chain members) hurdles to SSCM deployment.

Table I: Previous Studies on Sustainable Supply Chain Management Barriers

Source: Authors (2022)

<i>Economic Barriers</i>		
Sustainable supply chain implementation faces:	Type	References
Financial challenges such as high initial costs	Internal	(Ayati et al., 2022) (Menon and Ravi, 2021)
Lack of loans to fund sustainability projects	Internal	(Akbar and Ahsan, 2020) (Esen et al., 2017)
Large capital commitment with a poor return	Internal	(Movahedipour et al., 2017) (Ghadge et al., 2017)
High execution costs	Internal	(Mangla et al., 2017) (Sajjad et al., 2015) (Elbarky, 2015) (Elbarkouky, 2013)
Insufficient funding for implementing SSCM	Internal	(Govindan et al., 2014) (Faisal, 2010)
Lack of strategic planning	Internal	(Akbar and Ahsan, 2020) (Muduli et al., 2013) (Faisal, 2010)
Inadequate infrastructure for implementing SSCM	Internal	(Ayati et al., 2022) (Govindan et al., 2014) (Faisal, 2010)
Difficulty in performance assessment processes	Internal	(Movahedipour et al., 2017) (Sajjad et al., 2015)
Lack of appropriate tangible/financial indicators	Internal	(Elbarkouky, 2013)
Higher costs of access to qualified experts	Internal	(Menon and Ravi, 2021) (Mangla et al., 2017) (Esen et al., 2017) (Movahedipour et al., 2017)
Inadequate government funding	External	(Narayanan, Sridharan and Kumar, 2019)
Insufficient incentives to support SSCM adoption	External	(Esen et al., 2017) (Mangla et al., 2017) (Ghadge et al., 2017) (Sajjad et al., 2015) (Elbarkouky, 2013) (Walker and Jones, 2012) (Walker and Sisto, 2008)
Lack of monitoring and control	External	(Govindan et al., 2014) (Muduli et al., 2013) (Zhu and Geng, 2013)

<i>Social Barriers</i>		
Sustainable supply chain Implementation faces:	Type	References
Lack of motivation in SSCM implementation	Internal	(Govindan et al., 2014) (Muduli et al., 2013)
Lack of SSCM recognition	Internal	(Kashyap and Shukla, 2022)
Lack of information about the gains of sustainability	Internal	(Menon and Ravi, 2021) (Esen et al., 2017) (Movahedipour et al., 2017)
Lack of policies and procedures aimed towards retaining talented and experienced employees	Internal	(Menon and Ravi, 2021) (Akbar and Ahsan, 2020) (Muduli et al., 2013) (Ravi et al., 2005)
Fear of failure in employees' satisfaction	Internal	(Govindan et al., 2014) (Mathiyazhagan et al., 2013) (Luthra et al., 2011)
Absence of well-defined policies and practices	Internal	(Menon and Ravi, 2021) (Mathiyazhagan et al., 2013) (Muduli et al., 2013)
Lack of corporate encouragement: lack of educational courses and seminars	Internal	(Menon and Ravi, 2021) (Movahedipour et al., 2017) (Esen et al., 2017)
Low level of employee engagement	Internal	(Elbarky, 2015) (Elbarkouky, 2013)
Lack of senior management support, lack of involvement on the part of top and middle management	Internal	(Movahedipour et al., 2017) (Esen et al., 2017) (Sajjad et al., 2015) (Elbarkouky, 2013)
Lack of engagement on the part of responsible actors	Internal	
Weak human resources quality	Internal	(Mangla et al., 2017) (Esen et al., 2017) (Movahedipour et al., 2017)
Employees accept working in dangerous conditions	Internal	(Campos Franco, Hussain and McColl, 2019)
Employees accept to be paid low wages	Internal	
Companies follow gender inequity	Internal	
Child and bonded labor exist in companies	Internal	(Movahedipour et al., 2017)
Aversion of change	Internal	(Esen et al., 2017) (Elbarkouky, 2013)

Inadequate laws and policies	External	(Narayanan, Sridharan and Kumar, 2019) (Esen et al., 2017) (Mangla et al., 2017) (Ghadge et al., 2017) (Sajjad et al., 2015) (Elbarkouky, 2013) (Walker and Jones, 2012) (Walker and Sisto, 2008)
Lack of cooperation with suppliers	External	(Menon and Ravi, 2021) (Mangla et al., 2017)
Difficulties tracking suppliers' activities	External	(Ghadge et al., 2017) (Movahedipour et al., 2017) (Elbarkouky, 2013) (Walker and Sisto, 2008)
Lack of mutual trust between members of the supply chain	External	(Mathiyazhagan et al., 2013) (Zhu and Geng, 2013) (Faisal, 2010)
Lack of supply chain support	External	(Zhu and Geng, 2013) (Faisal, 2010) (Ravi et al., 2005)
Lack of supply chain members' performance	External	(Tay et al., 2015) (Govindan et al., 2014) (Luthra et al., 2011)
Customers are unaware of sustainability benefits	External	(Mangla et al., 2017) (Movahedipour et al., 2017)
Egyptian culture is not able to accept sustainability practices	External	(Sajjad et al., 2015) (Elbarkouky, 2013)
Lack of benchmark	External	(Bhanot et al., 2015) (Luthra et al., 2011)

Environmental Barriers

Sustainable supply chain Implementation faces:	Type	References
Design complexity required to reuse and recycle old products	Internal	(Govindan et al., 2014) (Mathiyazhagan et al., 2013)
Organizations access to unique and rare materials	External	(Lisa Westover, 2022) (Tello and Yoon, 2008)
Suppliers with a negative attitude toward supplying sustainable raw materials	External	(Govindan et al., 2014) (Mathiyazhagan et al., 2013)
Difficulty of engagement to circular economy, recycled to be part of a new product	External	(Lisa Westover, 2022) (Ayati <i>et al.</i> , 2022) (Mathews, 2018)
Hazardous waste disposal is costly	External	(Menon and Ravi, 2021) (Bhanot et al., 2015) (Govindan et al., 2014) (Mathiyazhagan et al., 2013)
Lack of markets for recycled products	External	(Faisal, 2010) (Ravi et al., 2005)

It was noticed that there is a shortage of studies on SSCM barriers in Egypt, a developing country with a limited number of studies, particularly in the fashion sector. Because of internal and external barriers, firms are still hesitant to implement sustainable practices. So, this research aims to identify the barriers to sustainable supply chain management implementation in the Egyptian fashion sector.

Methodology

Systematic literature review and investigation is a type of secondary research that involves locating, assessing, and interpreting relevant material for a certain topic or phenomena of interest. Planning, doing the review, analyzing the results, and reporting the findings are all important elements of the process. They help the researcher in demonstrating a clear and repeatable procedure of selecting, analyzing, and reporting past research on a certain topic as well as the review at hand. Figure (1) shows the literature review steps.

The researcher initially discussed and determined the article inclusion and exclusion criteria after collecting materials and before relevant publications selection. The timeframe of 2005 to 2022 was chosen following the research topic, as evidenced by the substantial amount of academic literature published during this period on the subject. Academic journal papers give rich material on a wide range of topics that is sufficient for achieving research objectives, and peer-review assures a certain degree of quality. Some have also been informed by industry reports, book chapters, and conference proceedings. Articles were found using keywords like "Fashion, Sustainable development", "Sustainability", "Sustainable supply chain", "Sustainable fashion", "Supply chain barriers", "Sustainability barriers", "Economic barriers", "Social barriers", and "Environmental barriers" in the fashion industry.

Web of Science, Science Direct, Scopus, Emerald Insight, and Springer Links were used to compile a list of published publications. As a consequence, this review includes a number of 29 publications.

The publications were then thoroughly analyzed to determine conformity with the study's scope after careful reading of titles and abstracts. A previous study on the topic aided in the evaluation of internal validity. Duplicates and non-relevant publications were excluded for adequate reasoning and valid reasons, such as papers that were not in the scope of the study, did not meet the quality criteria or were not completely accessible. Selected publications were imported to Mendeley reference management software to help with data management.

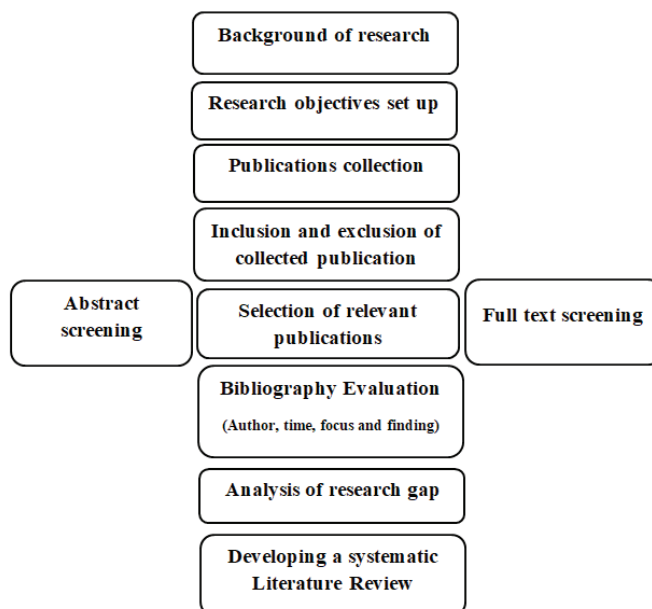


Fig. 1: Systematic literature review process

Source: Authors (2022)

After selection of the relevant 29 publications to the research area based on Figure 1, Table II evaluates each paper in the systematic literature review in terms of author names, year of publication, paper title, the aim of each paper, and findings for the sake of achieving the research objectives. Publications are evaluated also to find the area for future work and identify research gap.

Table II: A Systematic Literature Review on Sustainable Supply Chain Barriers Source: Authors (2022)

No	Author & Year	Paper Title	Focus	Finding
1	Abhishek Kashyap & Om Ji Shukla (2022)	Analysis of critical barriers in the sustainable supply chain of MSMEs: A case of Makhana (Foxnut) industry	Barriers to sustainable supply chain of the Makhana industry in northern India were investigated.	There are seven key barriers to sustainable supply chain adoption, such as lack of sufficient knowledge. These essential barriers must be addressed first since they have the most driving power and are directly driving other barriers.
2	Sayed Mohammad Ayati, Ehsan Shekarian, Jukka Majava & Brian Vejrums Waehrens (2022)	Toward a circular supply chain: Understanding barriers from the perspective of recovery approaches	The impact of barriers from the standpoint of reusing, remanufacturing, and recycling recovery methodologies was conceptualized.	The findings show that restrictions connected to economics and finance, governments and regulations, and society and culture have a significant impact on businesses' ability to implement recovery measures in the early stages.
3	Lisa Westover Piller (2022)	Designing for circularity: Sustainable pathways for Australian fashion small to medium enterprises	It investigates how Australian fashion SMEs are overcoming the obstacles to run fashion businesses based on the basic principles of product stewardship and circularity.	This study investigates the obstacles to a circular economy (CE) in the Australian fashion sector as well as the practices of Australian SMEs with a circular economy in overcoming these constraints.
4	Rakesh R. Menon & V. Ravi (2021)	An analysis of barriers affecting the implementation of sustainable supply chain management in the electronics industry: a Grey-DEMATEL approach	It investigates constraints in the context of the electronics sector for businesses to better develop sustainable supply chain initiatives.	It has been discovered that the biggest causal obstacle influencing operations of sustainable supply chain management is lack of legislation and direction from authorities.
5	Suraiyah Akbar & Kamrul Ahsan (2020)	Investigation of the challenges of implementing social sustainability initiatives: A case study of the apparel industry	Obstacles Bangladesh apparel supplier firms encounter when developed safety procedures were examined.	Key hurdles for garment supplier organizations in implementing social sustainability programs are related to resources and institutional issues.
6	Gunjan Soni, Surya Prakash, Himanshu Kumar, Surya Prakash Singh, Vipul Jain & Sukhdeep Singh Dhami (2020)	Interpretive structural modeling of drivers and barriers to sustainable supply chain management	The sustainability aspects of supply chain management strategies were investigated in this study.	According to the findings of this research, society, government, and commercial banks need to pay greater attention to the unorganized state of the stone and marble industry.
7	Esraa Osama Zayed & Ehab A. Yaseen (2020)	Barriers to sustainable supply chain management implementation in Egyptian industries: Interpretive structural modeling (ISM) approach	Barriers to sustainable supply chain management adoption in Egyptian businesses were investigated as well as the interrelationships between these barriers, to give a structured detailed model for barriers and suggest ideas to address these barriers.	Other than the previously indicated impediments to SSCM adoption in Egyptian businesses, the results revealed minor variances. ISM analysis aided in the formation of obstacles into a detailed structured model with well-defined interrelationships.
8	Kamyar Shirvanimoghaddam, Bahareh Motamed, Seeram Ramakrishna & Minoos Naebe (2020)	Death by waste: Fashion and textile circular economy case	The importance of circular fashion and textile was emphasized in this paper as well as numerous techniques for reuse, recycling, and repurposing textile waste. Also, disruptive scientific advances, inventions, and initiatives toward a circular textile economy were highlighted.	The findings suggest that fabrics reuse and recycling can be a sustainable alternative for reducing solid waste in landfills, as well as reducing the creation of virgin materials, energy consumption, and environmental footprint.
9	Jacqueline Campos Franco, Dildar Hussain & Rod McColl (2020)	Luxury fashion and sustainability: Looking good together	Significant sustainability difficulties that luxury fashion enterprises face were highlighted and examples of best practices in reacting to these challenges were illustrated.	The findings indicate that six critical lessons concerning sustainable practices have been established, with significance for managers in luxury apparel and other industries.

10	Selin Kucukkancabas Esen & Sahar Sobhy El Barky (2019)	Drivers and barriers to green supply chain management practices: The views of Turkish and Egyptian companies operating in Egypt	Literature on GSCM drivers and impediments from a new cultural context, particularly in Egypt, was added in this article.	According to the findings of this study, there are numerous motivators, but opposition to GSCM methods by internal and external stakeholders is unquestionably a problem.
11	Anilkumar Elavanakattu Narayanan, Rajagopalan Sridharan & P.N. Ram Kumar (2018)	Analyzing the interactions among barriers to sustainable supply chain management practices	Hurdles to implementing sustainable practices in the rubber goods manufacturing business in Kerala, India were identified, modeled and prioritized in this article.	According to the hierarchical connection developed using ISM methodology, the primary challenges to implementing sustainable practices in the rubber products manufacturing industry are lack of government initiatives and lack of benchmarks on sustainability measurement in Indian settings.
12	Abhijeet Ghadge, Merilena Kaklamanou, Sonal Choudhary & Michael Bourlakis (2017)	Implementing environmental practices within the Greek dairy supply chain Drivers and barriers for SMEs	The important factors influencing the environmental performance of SMEs in the Greek dairy supply chain was investigated.	The report highlights five barriers and six drivers for green practice implementation within the dairy SC. While external variables have a substantial impact on market structure and logistics network, the government, rivals, and customers are the driving forces behind improved environmental performance.
13	Sachin Kumar Mangla, Kannan Govindan & Sunil Luthra (2017)	Prioritizing the barriers to achieving sustainable consumption and production trends in supply chains using fuzzy Analytical Hierarchy Process	The obstacles to achieving sustainable production and consumption trends in a supply chain were identified and prioritized.	The findings revealed that the primary barriers and their sub-barriers were identified using both literature and expert feedback.
14	Nelly Oelze (2017)	Sustainable supply chain management implementation– Enablers and barriers in the textile industry Germany	Reasons for and procedures for implementing environmental and social supply chain policies were examined.	The findings indicate that the industry plays an important role in building alignment concerning observed barriers and enablers in sustainable policy adoption along the supply chain.
15	Aymen Sajjad, Gabriel Eweje & David Tappin (2015)	Sustainable supply chain management: Motivators and barriers	Drivers and impediments to SSCM adoption in the New Zealand corporate sector were investigated for better understanding of the motivators and challenges to SSCM implementation.	The findings show that senior management's sustainability principles, a desire to decrease risk, and stakeholder management are key motivators for SSCM adoption. In contrast, hurdles to SSCM implementation include lack of supplier awareness, negative attitudes, and insufficient government backing.
16	Mee Yean Tay, Azmawani Abd Rahman, Yuhanis Abdul Aziz, & Shafie Sidek (2015)	A review on drivers and barriers towards sustainable supply chain practice	Obstacles and drivers to implementing sustainable supply chain management were identified.	The findings indicate that a variety of factors have been established to impact an organization's decision to employ SSCM.
17	Sahar Elbarky & Sara Elzarka (2015)	A green supply chain management migration model based on challenges faced in Egypt	Limitations and challenges that Egyptian firms experience were identified, while implementation of green supply chain management to serve as the foundation for a GSCM migration model was discussed..	The researchers discovered many hurdles that were shared by businesses from various industries. They also discovered that education was the fundamental cause of the observed restrictions.
18	Bhanot et al. (2015)	Enablers and barriers of sustainable manufacturing: Results from a survey of researchers and industry professionals	The perspectives of many scholars and industry professionals on the main enablers and barriers of sustainable manufacturing were discussed.	Presents the perspectives of many scholars from around the world and industry professionals on the key enablers and hurdles, and analyses them using statistical approaches to reveal disparities in perspectives for strategic SM implementation.

19	M. M. G. Elbarkouky & G. Abdelazeem (2013)	A green supply chain assessment for construction projects in developing countries	Through a review of the literature and conversations with experts, a framework for determining critical GSCM criteria for the construction industry was proposed.	According to the findings, the key drivers of GSCM implementation in Egypt are ISO 14001 certification and market competitiveness, whereas the main impediment is lack of legislation.
20	Kamalakanta Muduli, Kannan Govindan, Akhilesh Barve & Yong Geng (2013)	Barriers to green supply chain management in Indian mining industries: A graph-theoretic approach	Variables and sub-factors that are impeding GSCM deployment were identified.	To assess the negative impact of these hurdles on GSCM implementation, a graph theoretic and matrix approach was adopted. An assessment of the barriers' impeding strength assists decision-makers in ranking them and deciding on a course of action that will make the best use of resources during times of scarcity.
21	K. Mathiyazhagan, Kannan Govindan, A. NoorulHaq & Yong Geng (2013)	An ISM approach for the barrier analysis in implementing green supply chain management	Barriers among the indicated obstacles and the imperative and mutual interaction of the twenty-six hurdles for GSCM were identified.	According to the findings of this study, the problem of maintaining suppliers' environmental awareness (B1) barrier is a major impediment to the adoption of GSCM. Industries must pay special attention and prioritize removing this barrier.
22	Kannan Govindan, Mathiyazhagan Kaliyan, Devika Kannan & A.N. Haq (2013)	Barriers analysis for green supply chain management implementation in Indian industries using analytic hierarchy process	Procurement-related impediments to the adoption of a green supply chain management were identified.	The outcome demonstrates that a total of 47 barriers was discovered through a comprehensive literature review and discussions with industry experts, as well as a questionnaire-based survey of several industrial sectors. The analytic hierarchy approach is used to identify critical barriers/priorities. A sensitivity study is also performed to assess the stability of priority ranking.
23	Helen Walker & Neil Jones (2012)	Sustainable supply chain management across the UK private sector	Sustainable SCM difficulties in companies that have been regarded as industry leaders as well as the factors that influence SSCM were discussed.	The results indicated the classification of: Internal focusers, Reserved performers, External respondents, and Agenda setters as the four types of businesses. Predictions regarding the future of SSCM in businesses was also investigated.
24	Sunil Luthra ¹ , Vinod Kumar, Sanjay Kumar & Abid Haleem (2011)	Barriers to implementing green supply chain management in the automobile industry using interpretive structural modeling technique-An Indian perspective	A structural model of the constraints to GSCM implementation in the Indian automobile sector was proposed.	Eleven impediments to implementing GSCM in the Indian automobile sector have been identified, according to the findings. The (ISM) methodology was used to identify contextual linkages between several hurdles to GSCM implementation in the Indian automobile industry.
25	Qinghua Zhu & Yong Geng (2010)	Drivers and barriers of extended supply chain practices for energy saving and emission reduction among Chinese manufacturers	Types of drivers motivate ESC practices for Sustainable Energy and Emission Reduction program goals were investigated, and whether impediments affect successful ESC practice adoption.	This study has policy implications for Chinese governments in terms of developing laws and standards for their ESER program, which can be utilized to promote relevant sustainable practices among Chinese manufacturers.
26	Mohd. Nishat Faisal (2010)	Analysing the barriers to corporate social responsibility in supply chains: An interpretive structural modelling approach	The impediments to (CSR) in supply chains were identified and analyzed.	According to the findings, not all supply chain CSR barriers demand the same level of attention. There are barriers with high driving power but low dependency demanding maximal concentration, and barriers with high dependence but low driving power.
27	Helen Walkera, Lucio Di Sistob & Darian McBain (2008)	Drivers and barriers to environmental supply chain management practices: Lessons from the public and private sector	Factors that motivate or discourage organizations from implementing GSCM efforts were investigated.	This study discovered that organizational drives and impediments can be both internal and external. External instead of internal drivers appear to have a greater influence on organizations.

28	Steven F. Tello & Eunsang Yoon (2008)	Examining drivers of sustainable innovation	Perspectives and driving factors of sustainable innovation offer a future research program and the relative importance and interplay of the sustainable innovation drivers were investigated.	This study proposes a methodology for investigating the relationship between a company's perspectives on economic development and environmental responsibility, the mechanisms that require company reaction, and the interaction between the firm, the drivers, and stakeholder groups.
29	V. Ravi, Ravi Shankar (2005)	Analysis of interactions among the barriers of reverse logistics	Interaction of the primary constraints that impede or inhibit the use of reverse logistics in the automobile industry was examined.	The findings indicate that by assessing the barriers using the ISM model, the researchers may identify critical barriers that impede reverse logistics processes. It can be shown that some barriers have both strong driving power and reliance, requiring additional attention.

To perform a comprehensive literature review on the desired topic, the researchers began to search for sustainable fashion supply chain barriers in the Egyptian fashion sector but it was in vain. So, the researchers decided to break down the concept into simple terms to locate academic articles, such as supply chain barriers, sustainability barriers, fashion barriers, Egyptian supply chain barriers, Egyptian fashion barriers, sustainable supply chain barriers, and sustainable fashion barriers. Consequently, 29 relevant academic publications were used to conduct a systematic review of these previous studies.

Previous researchers have identified many barriers to SSCM adoption, which have been categorized as internal factors – those related to situations within the company – and external factors – those beyond the firms' boundaries. Other researchers also divided sustainability barriers into three main categories; Economic barriers, Social barriers, and Environmental barriers. But some publications are not divided into categories, only hanging out general sustainability or sustainable supply chain barriers. Surprisingly, the very recent publications have a unique and updated categorization for the barriers.

□ Based on the systematic Table II, around 11 publications out of 29 divided the barriers either sustainability barriers or sustainable supply chain barriers into Internal and External categories, starting from 2008 till 2020. Zayed and Yaseen (2020) divided the barriers into seven internal barriers such as financial constraints and three external barriers like lack of sustainability awareness. Elbarkouky and Abdelazeem (2013)

divided a green supply chain barriers into ten internal barriers like high initial cost and 13 external barriers such as resistance to change, while Walker and Sisto (2008) divided the green supply chain management barriers into around seven internal barriers including lack of management and five external barriers such poor supplier commitment.

□ About 16 academic articles during the period of 2005 – 2022 are dividing sustainable supply chain barriers either into main sustainability barriers without categorization or categorizing them into Economic barriers, Social barriers, and Environmental barriers.

- Economic barriers such as lack of financial indicators, large capital commitment with a poor return, high cost to access qualified experts, lack of loans to fund sustainability projects, and subsidy from the government to the firm that is required for investment in R&D so that the company may survive in the future. Lack of government support may lead to poor performance in this sector and reluctance on the part of businesses to apply SSCM practices, which aids in responsible production and consumption. Furthermore, a bank loan is required for the continuation of business operations, the purchase of new equipment, the development of the business, and the reduction of unforeseen expenditures, all of which contribute to the company's stability. To implement SSCM techniques, large amounts of funding are necessary. One of the greatest obstacles is the commercial bank's non-supportive

character.

- Social barriers such as the pressure of job creation is regarded as one of the most important impediments since employment is the most important aspect of an individual's growth. Furthermore, because of their workability and strength, women are compensated less than their male spouses. Weak government regulations as government rules are a collection of laws that regulate how a company can function. It is an important social element in SSCM. Government rules should guarantee that no unlawful or unethical action occurs. As a result, it is regarded as one of the primary impediments. Child and bonded labor have been discovered in numerous mining, according to various accounts, and are still in use. All of the previous points and many more are considered social barriers that hinder sustainable supply chain implementation.
- Environmental barriers such as the design complexity required to reuse and recycle old products, lack of markets for recycled products, the difficulty of engaging in a circular economy, information on new technology, and how to utilize it are all part of the environmental barriers for sustainable supply chain implementation.

□ The Remaining two recent publications created their own unique and updated categorization for the barriers. According to Ayati et al. (2022), circular supply chain barriers are divided into seven main categories of barriers, each one has some related barriers. However, Menon and Ravi (2021) divided sustainable supply chain management barriers into four main categories containing another 11 barriers. Technology and financial barriers are common between both of them.

□ Despite the fact that more than one academic research have shown that there is a shortage in research about the sustainable supply chain in developing countries, India possessed ten out of 29 publications from 2005 through 2022 about sustainable supply chain barriers in several industries such as rubber product manufacturing,

auto components, mining industries, automobiles, electronics and stone, and marble sector. Other ten publications out of 20 are about barriers to implementing sustainable supply chain in different sectors like fashion, textile, and dairy products industries in countries like Bangladesh, Greek, New Zealand, Egypt, the UK, and China.

□ Only four publications were found about sustainable or green supply chain management barriers in Egypt from 2013 to 2020 dividing barriers into two categories; internal and external.

- First, Zayed and Yaseen (2020) explored the seven internal and three external barriers to sustainable supply chain management implementation, a sample of 14 companies, ten local Egyptian companies, and four Multinational, the sample distribution of automotive, fast-moving consumer goods, food industry, heavy industry, and pharmaceutical industries.
- Second, Esen and ElBarky (2019) identified five main internal and three external barriers to the green supply chain in two different countries, Egypt and Turkey.
- Third, Elbarky and Elzarka (2015) identified barriers that face Egyptian organizations during implementing green supply chain management into six main internal barriers containing 36 sub barriers, and three major external barriers consisting of 15 sub-barriers.
- Fourth, Elbarkouky (2013) identified the barriers to implementing green supply chain management as ten internal and 13 external barriers.

□ From the systematic Table II, the researchers found that there are only five publications about sustainable fashion from 2017- to 2022, which indicates rareness in the fashion sector academic research worldwide and researchers have recently started to highlight the sector's importance and its barriers to being sustainable. These five publications starting from the newest to the oldest are as follows:

- Lisa Westover (2022) examines the barriers to a circular economy that exist in

- the Australian fashion sector such as circular purpose drives new business models.
- Akbar and Ahsan (2020) focus on the social barriers to a sustainable Bangladesh apparel sector such as financial barriers and resources management.
 - Shirvanimoghaddam et al. (2020) suggest that textile reuse and recycling can be a long-term option for reducing solid waste in landfills, as well as reducing the creation of virgin materials, energy consumption, and environmental footprint.
 - Franco et al. (2019) highlight the main sustainability challenges and barriers to addressing luxury fashion manufacturers.
 - Oelze (2017) highlights the barriers and drivers for a sustainable textile supply chain in Germany.

From the previous fashion sector publications, the authors found only one publication on the developing country, Bangladesh; however, the developing countries are the greater in need of such research as most of the production worldwide takes place in them. The authors also did not find any previous academic research on the Egyptian fashion sector or the sustainability in the Egyptian fashion sector, which is considered the research gap, so the authors had to highlight sustainable supply chain barriers in general and search further on the sustainable fashion barriers. The main contribution of this research paper is:

- 1- This research combines the two classifications of the previous studies from 2005 to 2022; classifying the sustainable supply chain barriers into internal and external barriers and also into economic, social, and environmental barriers at the same time.
- 2- This study is one of the few that explore sustainable fashion supply chain management in developing countries, particularly Egypt.
- 3- The first paper that discusses sustainable supply chain barriers in terms of sustainability on three bottom lines; economic, social, and environmental in the Egyptian sector.
- 4- The first academic paper to discuss the Egyptian sustainable supply chain barriers for implementation.

Conclusion and Future Research

The difficulty of supply chains has increased due to the emerging trend in the fashion industry of expanding product range, a limited product life cycle, increased outsourcing, and technical advancement. It has been updated to meet the demands of fashion consumers for new items while retaining fast manufacturing lead times. Because of the lengthy, dynamic processes in the clothing industry supply chain as well as the internet's strong presence, strategic steps have been made and applied to solve long purchasing times and increasingly competitive fashion customers. With new goods being designed every second to meet each customer's needs, new supply chain systems can be built to directly serve these demanding consumers.

Fast fashion, Ultra-fast fashion, and just-in-time production are presently dominating the fashion sector, especially in developing countries like Egypt, resulting in increased fashion trends. This, in turn, has led to overconsumption, in which people buy more than they need, resulting in fashion waste (Pookulangara, 2013). Wherefore sustainable supply chain has been applied to the fashion industry to mitigate fashion wastes such as fuel, water, energy, and material usage and maintain life cycle assessment of the industry. So this research aims to figure out barriers to sustainable supply chain management implementations in the Egyptian fashion industry. Consequently, this research fills in the gaps of sustainable fashion supply chain barriers in the Egyptian industry since there is very limited research focusing on this topic in developing countries, especially in Egypt.

Based on the results and conclusion, the researchers suggest that future research could conduct empirical research whether using an interview to discuss the main results of this research or to use a questionnaire. The future research could consider the comparative study on social sustainability barriers between Egypt with Bangladesh as two developing countries.

Reference List

- [1] Ashby, A., Leat, M. & Hudson-Smith, M. (2012) Making connections: A review of supply chain management and sustainability. *Supply Chain Management*. 17(5), 497–516. Available at doi: 10.1108/13598541211258573.
- [2] Akbar, S. and Ahsan, K. (2020) Investigation of the challenges of implementing social sustainability initiatives: a case study of the apparel industry. *Social Responsibility Journal*. 17(3), 343–366. Available at doi: 10.1108/SRJ-09-2019-0291.
- [3] Ayati, M. S. et al. (2022) Toward a circular supply chain: Understanding barriers from the perspective of recovery approaches. *Journal of Cleaner Production*. 359 (3), 131775. Available at doi: 10.1016/j.jclepro.2022.131775.
- [4] Basak, A. et al., (2014) Supply chain management in garments *Global Journal of Management and Business Research: A. Administration and Management*. 14(11), 94–97.
- [5] Bhanot, N. et al., (2015) Enablers and barriers of sustainable manufacturing: results from a survey of researchers and industry professionals. *Procedia CIRP*. 9(2015), 562–567. Available at: <https://www.sciencedirect.com/science/article/pii/S2212827115000451>.
- [6] Camargo, L. R., Pereira, S. C. F. & Scarpin, M. R. S. (2020) Fast and ultra-fast fashion supply chain management: an exploratory research. *International Journal of Retail and Distribution Management*. 48(6), 537–553. Available at doi: 10.1108/IJRDM-04-2019-0133.
- [7] Carter, C. R. & Rogers, D. S. (2008) A framework of sustainable supply chain management: Moving toward new theory. *International Journal of Physical Distribution and Logistics Management*. 38(5), 360–387. Available at doi: 10.1108/09600030810882816.
- [8] Elbarkouky, G. A. (2013) A green supply chain assessment for construction projects in developing countries. *witpress.com*. 2(179), 1331–1340. Available at doi: 10.2495/SC131132.
- [9] Elbarky, S. (2015) A green supply chain management migration model based on challenges faced in Egypt. *International Conference on Industrial Engineering and Operations Management (IEOM)*. 1–8. doi: 10.1109/IEOM.2015.7228093
- [10] Esen, S. K. et al., (2017) Drivers and barriers to green supply chain management practices: the views of Turkish and Egyptian companies operating in Egypt. *igi-global.com*. 232–260. Available at: <https://www.igi-global.com/chapter/drivers-and-barriers-to-green-supply-chain-management-practices/173949>.
- [11] Faisal (2010) Analyzing the barriers to corporate social responsibility in supply chains: an interpretive structural modelling approach. *International journal of logistics research and application*. 13(3), 179–195. Available at doi: 10.1080/13675560903264968.
- [12] Franco, J., Hussain, D. & McColl, R. (2019) Luxury fashion and sustainability: looking good together. *Journal of Business Strategy*. 41(4), 55–61. Available at doi: 10.1108/JBS-05-2019-0089.
- [13] Galal, S. (2019) Value of manufactured clothing exports from Egypt between 2013 and 2018, Statista, online article, Available at: <https://www.statista.com/statistics/1005228/egypt-value-of-manufactured-clothing-exports/>. Accessed: 26 May 2021.
- [14] Ghadge, A. et al., (2017) Implementing environmental practices within the Greek dairy supply chain Drivers and barriers for SMEs. *Industrial Management and Data Systems*. 117(9), 1995–2014. Available at doi: 10.1108/IMDS-07-2016-0270/FULL/HTML.
- [15] Govindan, K. et al., (2014) Barriers analysis for green supply chain management implementation in Indian industries using analytic hierarchy process. *International journal of production economics*. 147 (2) 555–568. Available at: <https://www.sciencedirect.com/science/article/pii/S0925527313003733>.
- [16] Haake, H. & Seuring, S. (2009) Sustainable procurement of minor items - Exploring limits to sustainability. *Sustainable Development*. 17(5), 284–294. Available at: doi: 10.1002/sd.424.
- [17] Kashyap, A. and Shukla, O. J. (2022) Analysis of critical barriers in the sustainable supply chain of MSMEs : a case of Makhana (Foxnut) industry. *Benchmarking: An International Journal*. ahead of print No. ahead of print. Available at: doi: 10.1108/BIJ-11-2021-0696.

- [18] Lee, H. L. (2002) Aligning Supply Chain Strategies with Product Uncertainties. *California management Review*. 44(3), 105–119.
- [19] Lisa Westover (2022) Designing for circularity: sustainable pathways for Australian fashion small to medium enterprises fashion. *Journal of Fashion Marketing and Management: An International Journal*. ahead of print No. ahead of print. Available at: doi: 10.1108/JFMM-09-2021-0220.
- [20] Luthra, S. et al., (2011) Barriers to implement green supply chain management in automobile industry using interpretive structural modeling technique: An Indian perspective. *Journal of industrial engineering and management*. 4(2), 231–257. Available at: doi: 10.3926/jiem.v4n2.
- [21] M. Shahbandeh (2022) Global apparel market - statistics & facts. Statista. online article Available at: <https://www.statista.com/topics/5091/apparel-market-worldwide/>. Accessed: 30 May 2021.
- [22] Mangla, S. K. et al. (2017) Prioritizing the barriers to achieve sustainable consumption and production trends in supply chains using fuzzy Analytical Hierarchy Process. *Journal of cleaner production*. 151(2017), 509–525. Available at: <https://www.sciencedirect.com/science/article/pii/S095965261730313X>.
- [23] Mathews, J. (2018) Implementing Green Management in Business Organizations. *the IUP Journal of Business Strategy*. 15(2), 46–62. Available at: <http://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=09729259&AN=130845869&h=DkYcC18UhQlu9s7Bygl4z92GQ-G%2F7767%2BMm8E2Nwpa%2BQWq9XuV3M-YQH4khEk9aOdOzooOhszzU6PYdSKqfMGn-Bw%3D%3D&crl=c>.
- [24] Mathiyazhagan, K. et al., (2013) An ISM approach for the barrier analysis in implementing green supply chain management. *Journal of clearer production*. 47(2013), 283–297. Available at: <https://www.sciencedirect.com/science/article/pii/S0959652612005744>.
- [25] Menon, R. R. and Ravi, V. (2021) An analysis of barriers affecting implementation of sustainable supply chain management in electronics industry: a Grey-DEMATEL approach. *Journal of Modelling in Management*. ahead of print No. ahead of print. Available at doi: 10.1108/JM2-02-2021-0042.
- [26] Moon, K. L. K., Lee, J. Y. & Lai, S. Yeung C. (2017) Key drivers of an agile, collaborative fast fashion supply chain: Dongdaemun fashion market. *Journal of Fashion Marketing and Management*. 21(3), 278–297. Available at doi: 10.1108/JFMM-07-2016-0060.
- [27] Movahedipour, M. et al. (2017). An ISM approach for the barrier analysis in implementing sustainable supply chain management: An empirical study. *Management Decision*. 55(8), 1824–1850. Available at doi: 10.1108/MD-12-2016-0898/FULL/HTML.
- [28] Muduli, K. et al. (2013) Barriers to green supply chain management in Indian mining industries: a graph theoretic approach. *Journal of clearer production*. 47(2013), 335–344
- [29] Narayanan, A. E., Sridharan, R. & Kumar, P. N. R. (2019) Analyzing the interactions among barriers of sustainable supply chain management practices: A case study. *Journal of Manufacturing Technology Management*. 30(6), 937–971. Available at doi: 10.1108/JMTM-06-2017-0114/FULL/HTML.
- [30] Pietanza, M. C. et al. (2018) Randomized, double-blind, phase II study of temozolomide in combination with either veliparib or placebo in patients with relapsed-sensitive or refractory small-cell lung cancer. *Journal of Clinical Oncology*. 36(23), 2386–2394. Available at doi: 10.1200/JCO.2018.77.7672.
- [31] Pookulangara, A. S. (2013) Slow fashion movement: Understanding consumer perceptions—an exploratory study. *Journal of retailing and consumer services*. 20(2), 200–206. Available at: https://www.sciencedirect.com/science/article/pii/S0969698912001506?casa_token=dS1NAj9t9jwAAAAA:wwKJFxOTb5aljbVE-CEEyG1nodSSgoLAW9TT8b5wcaF2Bm9i0op-PJiMnHG30ViWHV_AJTxDempJM.
- [32] Pookulangara, S. & Shephard, A. (2013) Slow fashion movement: Understanding consumer perceptions—An exploratory study. *Journal of Retailing and Consumer Services*. 20(2), 200–206. Available at doi: 10.1016/j.jretconser.2012.12.002.
- [33] Purvis, B., Mao, Y. & Robinson, D. (2019) Three pillars of sustainability: in search of conceptual

- origins. *Sustainability Science*. 14(3), 681–695. Available at: doi: 10.1007/s11625-018-0627-5.
- [34] Ravi, V. et al., (2005) Analysis of interactions among the barriers of reverse logistics. *Elsevier*. 27(8), 1011–1029. Available at: <https://www.sciencedirect.com/science/article/pii/S0040162504000897>.
- [35] Redek, T., Domadenik, P. & Koman, M. (2020) Sustainable Development Goals in the EU and the Challenges in Their Implementation. *Challenges on the Path toward Sustainability in Europe*. 11–29. Available at doi: 10.1108/978-1-80043-972-620201003.
- [36] Sajjad, A. et al., (2015) Sustainable supply chain management: motivators and barriers. *Business strategy and the environment*. 24(7), 643–655. Available at doi: 10.1002/bse.1898.
- [37] Shirvanimoghaddam, K. et al., (2020) Death by waste: Fashion and textile circular economy case. *Science of the Total Environment*. 718, 137317 Available at doi: 10.1016/j.scitotenv.2020.137317.
- [38] Tay, M. Y. et al., (2015) A review on drivers and barriers towards sustainable supply chain practices. *International journal of social science and humanity*. 5(10), 892–897. Available at doi: 10.7763/IJSSH.2015.V5.575.
- [39] Tello, S. & Yoon, E. (2008) Examining drivers of sustainable innovation. *International journal of business strategy*. 8(3), 164–169. Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.556.3152&rep=rep1&type=pdf>.
- [40] Tipi, N. & Elgazzar, S. (2021) Considerations Towards a Sustainable and Resilient Supply Chain: A Modelling Perspective. *International Business Logistics Journal*. 1(1), 10–15.
- [41] Tseng, M. L. & Geng, Y. (2012) Evaluating the green supply chain management using life cycle assessment approach in uncertainty. *WSEAS Transactions on Environment and Development*. 8(4), 133–157.
- [42] Tseng, M., Lim, M. & Wong, W. P. (2015) Sustainable supply chain management: A closed-loop network hierarchical approach. *Industrial Management and Data Systems*. 115(3), 436–461. Available at doi: 10.1108/IMDS-10-2014-0319.
- [43] Walker, H. & Jones, N. (2012) Sustainable supply chain management across the UK private sector. *Supply Chain Management*. 17(1), 15–28. Available at doi: 10.1108/13598541211212177/FULL/HTML.
- [44] Walker, H. & Sisto, L. Di (2008) Drivers and barriers to environmental supply chain management practices: Lessons from the public and private sectors. *Journal of business and supply management*. 14(1), 69–85. Available at: <https://www.sciencedirect.com/science/article/pii/S1478409208000083>.
- [45] World Population (2020) World population data sheet. 1–19. Available at: <https://www.prb.org/2020-world-population-data-sheet/>. (Accessed: 5 June 2021).
- [46] Youm7 (2020). Available at: <https://www.youm7.com>. (Accessed: 1 June 2021).
- [47] Zayed, E. O. & Yaseen, E. A. (2020) Barriers to sustainable supply chain management implementation in Egyptian industries: an interpretive structural modeling (ISM) approach. *Management of Environmental Quality: An International Journal*. 32(6), 1192–1209. Available at doi: 10.1108/MEQ-12-2019-0271
- [48] Zhu, Q. & Geng, Y. (2013) Drivers and barriers of extended supply chain practices for energy saving and emission reduction among Chinese manufacturers. *Journal of cleaner production*. 40(2013), 6–12. Available at: <https://www.sciencedirect.com/science/article/pii/S0959652610003732>.