**South Asian Journal of Social Review**
*2022 Vol. 1, No. 2, pp. 1-15*
*DOI: 10.57044/SAJSR.2022.1.2.2209*


# Effect of Disruptive Factors on Green Supply Chain Management

**Imran Saeed Khan** [1*]

[*1] *Researcher, Department of Business Administration, Iqra University, Karachi, Pakistan*

**Corresponding Author Email: em.imransk@gmail.com*

**Article History**

Received: 11 September 2022
Revised: 28 September 2022
Accepted: 30 September 2022
Published: 01 October 2022

**JEL Classification**
N7
F64
J22
R41
L60

***ABSTRACT***

Businesses have traditionally focused on developing methods to reduce costs and increase revenues; much work is done to achieve this goal. However, a significant and positive step has now been taken by many organizations for the betterment of the environment; thus, they are now focusing on the implementation of green supply chain management practices. Green supply chain management practices allow companies to achieve larger sustainability objectives and boost sustainability awareness. In Pakistan, environmental issues are top of the list for Karachi'. Therefore, this study aims to raise awareness regarding the utilization of GSCM in the FMCG industries in Karachi. This adoption is significant because there will be adverse effects on the environment, operational efficiency, environmental performance, economic output, and social output for these polluting agents. For this purpose, a detailed questionnaire was sent to the FMCs via mail, and the responses were noted and analyzed; meanwhile, considering five critical variables, the five hypotheses were devised to gauge their significance and importance in the implementation of GSCM. This research is useful for the owners of the FMCGs as they develop their strategies and prescribing behaviour for GSCM performance after this study.

***Keywords:*** *Organizational obstacles, technology, working environment, financial barriers, information*

**Citation of this article:**

Khan, I. S. (2022). Effect of Disruptive Factors on Green Supply Chain Management. *South Asian Journal of Social Review, 1*(2), 1-15. DOI: 10.57044/SAJSR.2022.1.2.2209

# Effect of Disruptive Factors on Green Supply Chain Management

## 1. Introduction

Businesses have traditionally focused on devising techniques to reduce costs and increase revenues. They place a high value on this area since it may help the company achieve a competitive edge by reducing costs and increasing profits via efficient "Supply Chain Management" (Rashid et al., 2022; Rashid & Rasheed, 2022). It is also worth noting that many organizations' 20th-century plans focused more on decreasing waste than saving the environment. Green initiatives aim to maintain and enhance an organization's image and have recently gained traction in the twenty-first century (Khan et al., 2018). These practices, such as "Green Supply Chain Management (GSCM)," allow companies to achieve larger sustainability objectives and boost sustainability awareness across their industries and markets. "Fast Moving Consumer Goods (FMCGs)" in Karachi, Pakistan's food and beverage industry, has unique problems when seeking to adopt GSCM. The description of variables and thesis structure are also included. At 85,965 tones, the industrial sector accounts for 2.8 percent of Karachi's overall pollution (Khan et al., 2018).

The Pakistani government emphasizes manufacturing because it recognizes the vital role in building its industrial base. As a result, 2017 saw a 4.2 percent increase in Karachi's industrial production index, with the manufacturing sector seeing the most significant rise at 6.7 percent (RM 60.5 billion) over 2016. As the year advances, Pakistan's industrial sector is flourishing. Moreover, FMCG has a substantial impact on the economies of many countries throughout the world (Sambrani & Pol, 2016). In this regard, environmental issues are top of the list for Karachi, both people and politicians. In 1974, Karachi's ecological quality act was established, and it has since undergone several amendments, including the addition of 18 new laws that allow for projects involving sewage, clean air, and industrial seepage to be carried out. In addition, several further "Non-Governmental Organizations (NGOs)" have been established to keep track of and monitor the country's environmental difficulties and advancements (Mkansi et al., 2019).

Pakistan's economy would not function without the contributions of Karachi's FMCG firms, to which the federal government gives special attention and support. "National Economic Policy (NEP)" is a Karachi government policy established in 1971 to improve the lives of its population and reorganize the ethnic and economic imbalances in this country. In addition, the Karachi government is exhibiting its dedication to the growth of FMCG through the greening plan, a plan that will run from 2006 to 2020. As a result, 94.4 percent of Karachi's businesses are in the manufacturing industry (Khan et al., 2018). At the same time, more than a quarter of Pakistan's manufacturing FMCG is located in Karachi, with 8,314 FMCG. The manufacturing sector's growth is primarily driven by developing food, beverages, and tobacco items, electrical and electronic products, and petroleum, chemical, rubber, and plastic products.

It is projected that the Karachi "Food and Beverage (F&B): sector accounted for 9.8 percent of Karachi's export revenue in 2015. Investors in the "Euro money Institutional Investor Company (EMIIC)" about 17.8 percent of Karachi's manufacturing FMCG are involved in the food and beverage industry. Air pollution in Karachi is increasing due to the country's growing industrial sector (Mkansi et al., 2019). This approach can save lives, save resources, reduce pollution, and conserve energy. However, if an organization wants to reduce its environmental impact, it must boost its productivity and include environmental actions into its strategy. To do this, they must find a balance between serving the demands of their constituents and other stakeholders while still complying with legal regulations and maximizing revenues. However, if a corporation can achieve these goals while also serving the needs of its stakeholders, its value may rise. Yet, despite the rising importance of GSCM, organizations continue to struggle to apply it (Mkansi et al., 2019; Rasheed, 2022). In addition, when converting to GSCM, several hurdles must be addressed, which is why this shift failed. Barriers, as they are known in the business world, must be overcome for companies to succeed. During the early stages of GSCM

implementation, they should be aware of their challenges. Due to Karachi manufacturing, FMCG and F&B sectors make up most of Karachi's manufacturing industry, so understanding the challenges they face in implementing GSCM practices is crucial (Baloch & Rashid, 2022). There is a plethora of research that shows how implementing environmentally friendly practices may help firms. As a result, several European companies have begun to use the GSCM concept in recent years (Sambrani & Pol, 2016).

A rising trend may increase environmental protection expenditure by manufacturing FMCG yearly. For example, manufacturing FMCG's environmental protection expenditures grew consistently from 2014 to 2016. “Environmental Protection Agency (EPA)” figures show that in 2014, the percentage of environmental protection expenditure was 13.9 percent, and in 2015, it was 14.8 percent. As seen by the 15.2% rise in spending in 2016, it seems that the rising trend in spending will continue in 2016. Considering this, in manufacturing FMCG, environmental concerns are becoming more challenging to control, and the rise in expenditures indicates this. According to the projection, the manufacturing FMCG's environmental protection expenditure for 2017 is predicted to be greater than the previous year's spending because of the worsening ecological issues in manufacturing FMCG (Khan, 2020; Anwar, 2022). Data shows that the Karachi government has been increasing expenditure on environmental protection over the years, but progress in the adoption of GSCM in F&B manufacturing FMCG has not been as prominent as it could have been. The government of Karachi has recognized environmental issues and created a Green Technology strategy. Still, theoretically and empirically, the nation has only performed a tiny amount of study on FMCG greening (Sibghatullah et al., 2019; Amjad, 2022; Alam, 2022; Asif, 2022). It is unknown how Karachi F&B manufacturing FMCG is coping with their environmental responsibilities or improving their environmental understanding and behaviour. However, there's no denying that environmental degradation is becoming an increasing concern in Karachi. As of 2016, Karachi accounted for 0.7 percent of the world's CO2 emissions (Sambrani & Pol, 2016).

Karachi's FMCG has commonly been deliberated as the backbone of industrialized expansion and plays an essential role in the growth and development of the country's economy. Karachi's FMCG now accounts for 45% of the country's "Gross Domestic Product (GDP)," up from 33% in 2012, and the great majority of these businesses are dealers to “Multi-National Corporation (MNCs)” all over the globe. It is estimated that in Karachi, Karachi has a total of 8,514 manufacturing FMCG, which accounts for 32% of all manufacturing FMCG in Karachi (Khan, 2020). To raise their earnings and market share, businesses must do more to lessen their negative environmental impacts and expand their market share. Therefore, we need to understand why Karachi FMCG is slow to apply GSCM in their enterprises and devise solutions for this circumstance given local and international stakeholder groups (Shaheen, 2022). There is some evidence of analyzing greening aspects in the study described above. Still, none has mainly investigated the pattern and dimension of "Green Supply Chain (GSC)" adoption among FMCG in the food and beverage manufacturing business. Therefore, a research project on the F&B 6 manufacturing FMCG is worthwhile for several reasons: not only will it help us better understand the green behaviour of FMCG in general and F&B manufacturing FMCG in particular, but it will also help us add new insights into our understanding of the green behaviour of FMCG in general and F&B manufacturing FMCG in particular (Maaz et al., 2022; Victory et al., 2022; Hunaid et al., 2022). This is because environmental issues, including consumer health, "Greenhouse Gases (GHGs),” scarcity of resources, and global warming are causing people to pay greater attention. Consequently, many firms were forced to create goods that reduced pollution, were kind to the environment, and were secure for consumers to use (Sibghatullah et al., 2019; Ali, 2022).

## 2. Literature Review

### 2.1. Underpinning and Supporting Theories/Models

The use of the theories as well as models has allowed the researcher to explore the main goal of the research along with meaningful support for the execution of the research issue. In this regard, some of the theories have been represented below in order to develop the flow of the understanding of

these theories, including resources-based theory and stakeholder theory. With these theories, the researcher has explored the relationships with the management and the different function of the organization

### *2.1.1. Resource-based theory*

The resource-based theory is a paradigm that evolved with time which states that if a company has both material and intangible resources, it will have a competitive advantage. All physical and financial assets and reserves are referred to as tangible resources. Information, personnel talents, attributes, reputation, and business culture are intangible resources. According to Younis et al. (2016), if the firm manages these assets appropriately and effectively, it will improve its performance and surpass its competitors. These resources also enable the company to put strategies to fulfil its objectives and vision to gain a competitive edge. Evaluating a company only on its resources is impossible. The interplay of the company's precious assets with the market situation underlines the significance of the company's resources. These variables allow a company to fully exploit potential markets while avoiding competition or dangers to establish a competitive edge (Hashmi et al., 2021a). The study of Saad and Danish (2011) extended the resource-based theory by incorporating dynamic capacities, and Hart added natural resources to the approach. Higher management's capability to alter the firm's assets, such as allocating resources, merging, acquisitions, and designing new organizational strategies, is called dynamic capabilities. It demonstrates the wide range of expenditures that can improve a firm's environmental competency from a resource extraction standpoint.

These expenses include employees, systems, procedures, tactics, and technologies. As an outcome, environmental teaching and practices can consist of dynamic capacities and investment viewpoints in this theory (Younis et al., 2016; Hashmi et al., 2021b). The greening of SCM would be of worth, scarcity, non-substitutability, and individuality with the assistance of these resources and skills. The researcher further emphasizes that these possessions will offer value to the GSCM of the companies. Researchers have used the resource-based view theory to highlight the relevance of environmental elements in achieving competitive advantage. A resource-based approach has motivated earlier GSCM investigations. As an outcome, the purpose of this study is to see if organizational resources, such as perceptions of the firm's ecological effect and administrative, technical, intellectual, and economic resources, are relevant in determining whether they are a barrier to GSCM adoption.

### *2.1.2. Stakeholder theory*

Stakeholders are any group of people who can influence or are influenced by accomplishing an organization's goals. This concept depicts the advantages of integrating and working with other company activities. External stakeholders include customers, shareholders, government, and society; internal stakeholders have employees. As a result, companies must adhere to these environmental standards or face financial penalties, and these constraints and sanctions will harm the firm's reputation and brand image (Karimi & Rahim, 2015). Internal stakeholders necessitate substantial training because employees are both the initiators and recipients of any strategy and actions undertaken by the organization. Managerial perceptions, opinions, beliefs, and leaders influence management decisions about environmental operations. As per the study of Ayuso et al. (2014), this notion is linked to "Corporate Social Responsibility (CSR)," and it helps in the interaction between the corporation and society, as well as providing firm management with guidance. The researcher used a stakeholder approach to understand stakeholder influence and GSCM and discovered a substantial, strong relationship.

Wong et al. (2015) presented a theory that states that enterprises coordinate their environmental organization practices with critical investors to further contribute to green practices. The concept is significant in discussing GSCM difficulties instead of other management activities. As a result, because the stakeholders in the organization are vital in implementing these programs, correct perception, dedication, and awareness are required in implementing new environmental initiatives within the firm. In summary, it is critical to determine whether respondents' and the firm's perceptions of GSCM

adoption, particularly their dedication and mindsets, are barriers. The theoretical underpinning for this research is provided by the above-mentioned approaches, resource-based theory, and stakeholder theory. The following sections will review previous research on the topic and a literature evaluation of each independent and dependent variable (Karimi & Rahim, 2015).

### 2.2. Empirical Reviews

Green supply chain management has evolved throughout the years and is still growing. Environmental measures for economic growth in industrialized countries were first recognized in the 1960s. According to the researcher, many governments in affluent countries have reacted by emphasizing the environment and enacting legislation to protect it. Nevertheless, large firms with ample resources typically execute these green initiatives, while FMCG is frequently overlooked (Bhatia & Gangwani, 2021). One of the explanations provided by the researcher is that FMCG may be introduced to the concept of environmental management due to a lack of awareness. However, they also emphasized that FMCG should not be overlooked since they are crucial to growth and the environment. FMCG has a considerable effect on ecological systems due to their large quantity.

Furthermore, FMCG is a part of all nations' economic growth, and they are dealing with environmental challenges as globalization continues (Ahmed & Najmi, 2018; Muzammil, 2022). As a result, the FMCG needs more ecological and social management literature effort. However, many countries, including the United Kingdom, Europe, the United States, and Australia, have revealed some of the discoveries of FMCG and environmental activities. Apart from that, for starters, most company owners agree that the environment is essential and that preservation is necessary to maintain the environment. In addition, numerous experts' studies on the usage of GSCM in FMCG were increasing (Ahmed & Najmi, 2018; Basit, 2022). Additionally, Studies have looked at the internal and external challenges to implementing GSCM methods. The researcher explicitly analyses the external barriers, identifying that a lack of external participation will worsen GSCM performance. External hurdles include industry-specific barriers, legislation, and vendor commitment, while internal impediments include a lack of cost and credibility. Moreover, there is a study on ecological management in FMCG and the difficulties for FMCG in increasing environmental performance and the aspects that contribute to the increased adoption of the "Environmental Management System (EMS)" in FMCG. Regarding barriers to GSCM implementation, the research identified four significant challenges that impede GSCM performance among FMCG: technical, informational, resource, and attitudinal and perceptual constraints.

According to the researcher's results, FMCG does not understand that it is their responsibility to maintain the environment green. In addition, FMCG does not have significant and precise knowledge about the environmental advantages of greening its products. The researcher also finds that FMCG cannot develop a solution for green products and discovers difficulties for FMCG vendors to deliver green materials. Furthermore, some customers prefer standard items to green products, which creates a disincentive for businesses to use GSCM (Bhatia & Gangwani, 2021). Therefore, compared to multinational corporations and foreign-based organizations, Karachi enterprises participate in green practices at a lower rate. The report discovered that the most significant impediment to GSCM adoption amongst Karachi FMCG is a lack of resources, followed by a lack of technical expertise. Because study on this area in Karachi is rare, it presents a chance to explore further the connection between FMCG and the constraints to implementing GSCM in Karachi (Ahmed & Najmi, 2018; Uddin, 2022; Ayaz, 2022).

### 2.3. Hypothesis

- *H1: The organizational obstacles have a significant effect on green supply chain management.*
- *H2: The technological hurdles significantly effect green supply chain management.*
- *H3: The work environment significantly effects green supply chain management.*

- *H4: The financial barriers have a significant effect on green supply chain management.*
- *H5: The informational barriers have a significant effect on green supply chain management.*

## 3. Research Methodology

The research methodology is considered the central part of the research, which involves identifying the used research approaches, philosophers, data collection and data analysis (Hashmi et al., 2020a; Rashid et al., 2021; Khan et al., 2022a). The main reason for selecting the quantitative research design was based on the recommendation of Bloomfield and Fisher (2019). They indicated that statistical analysis leads to more functional results in testing the hypothesis. The in the past, multiple models, have been identified which tend to explore research methodologies and the combination for the execution of the research issue. Saunders et al. (2015) have represented the research model named a research onion which has been found involved in the formulating the strategies to identify the solution to the research issues. Based on the recommendations of Saunders et al. (2015), strategies have been formulated along with practical outcomes (Khan et al., 2022b, c).

The research strategy is a critical component of the study; it is the procedure by which the research variables are measured, and the research question may be answered successfully. The data gathered must be correct to prevent a negative influence on the study's outcome and the possibility of producing an invalid result. Accurate data collection is also necessary to protect the integrity of the research (Rahmi, 2018; Hashmi et al., 2020b). This research performed a survey to acquire quantitative data to evaluate the hypotheses statistically. To develop the nature of the study, quantitative data is beneficial as a research strategy, and it has shown an extension in recognizing the present nature that is required. The purpose of this research is to determine the effect of variables. In addition, the study is based on a review of existing research and theoretical models, which were used to establish the five hypotheses. Moreover, the study gathers primary data through the delivery of questionnaires to examine the current theory and the hypotheses derived from the conceptual framework. The selection criteria verified that respondents have the necessary expertise to answer their questions. The top executives all have sufficient knowledge and vision of their respective firms. This research relies on data collected from a random sample (Hashmi & Mohd, 2020; Rashid et al., 2021). Then, the final sample size was determined guided by comparative research carried out in a different environment.

Karachi-based FMCG provided the samples for this study (Lee et al., 2012). FMCG that are still in business and make food and beverage products are the primary focus of this study's sample. Karachi was chosen because it has Pakistan's greatest concentration of food and manufacturing FMCG. The food and beverage and tobacco industries account for 17.4 percent of Pakistani manufacturing growth to complicate matters. In comparison, computer / electronic items make up 8.9 percent of that, as petroleum, chemical, rubber, and plastics make up 6.2 percent (4.0 percent). In addition to this, the poll was taken by senior and mid-level managers, supervisors, and non-management personnel. The data included in this research was acquired from people who have a great lot of experience and skills in their respective fields. As in the quantitative study, the use of the maximum sample size helps the researcher to find out more adequate data; the researcher has decided to take 216 sample sizes for this study. Any study must have sufficient participants to draw valid conclusions from. The validity and reliability of the research will be improved if the sample size is large enough. A large enough sample must be used to ensure that the margin of error is kept to a minimum. Selection bias, under-coverage, insufficient data collecting quality, and inaccurate target populations may all come from a lack of sample size, and the sample size was this study was 216 participants.

### 3.6. Statistical Technique

All questions were coded with numeric values, and primary data was entered into the IBM SPSS (Statistical Package for the Social Science) version 22 statistical program for the study's analysis (Rashid, 2016). The use of the SPSS has helped the researcher to assess the validity of data and to test the hypothesis of the study. In the regression analysis, the use of the SPSS software helps the researcher

to inform about the p-value of variables. This study has used different techniques to analyze the collected data via a questionnaire.

## 4. Data Analysis and Results

In the research, the section on data analysis is considered the central part as it is based on the analysis of the collected data with the selected research techniques. In this research, to raise awareness regarding the utilization of GSCM in the FMCG industries in Karachi, the researcher has used the demographic study and regression analysis has been prioritized for effective outcomes. The developed hypothesis has been tested, and the results of the tested hypothesis have been represented along with the support.

### 4.1. Demographic Analysis

The participants involved in this research were required to account for their education, age and gender so that their behavioural patterns and demographic background could be evaluated (Rashid & Amirah, 2017; Rashid et al., 2020; Khan et al., 2020). Male participants were found to be in the majority of this research. The numbers reflect that 87% of the total sample population were male for this research; however, only 13% of the female respondents were among the research participants. In the research, 20.4% of the participants were between 41 to 50 years old. 42.6% were in between the age bracket of 31 to 40 years old, while 33.3% were in the age bracket of 21 to 30 years old. The results have displayed that three majorities of the participants were graduates, accounting for 60% of the total population. In addition, 16.7% have responded to being undergraduate, while 14.8% reported having a doctorate. Lastly, individuals who have completed matriculation are only 1.9% out of the total. Following are the generalized demographic analyses presented in table 1.

*Table1: Demographic analysis of the participants*

| Demographic | Group | (N=216) Frequency | Percentage |
|---|---|---|---|
| Gender | Female | 13.0 | 13 |
| | Male | 87.0 | 87 |
| Age | 21-30 | 72.0 | 66 |
| | 30-40 | 92.0 | 34 |
| | 41-50 | 44 | 20 |
| Education | Doctor | 32 | 14 |
| | Masters | 136 | 63 |
| | Graduate | 36 | 16 |
| | Other | 12 | 7 |

### 4.2. Reliability Statistics

Based on the 13 items developed and used in this research, the reliability of the variables denoted for this study has reflected the value of Cronbach's Alpha as 0.851. It implies that these variables are reliable as the value to depict reliability through Cronbach's alpha is above 0.7 (Rashid et al., 2019; Agha et al., 2021; Haque et al., 2021; Das et al., 2021; Alrazehi et al., 2021).

### 4.3. Regression Analysis

The above table depicts the value of the model summary, the purpose of which is to illustrate the impact of the dependent variable on an independent variable in a relationship. This can be achieved in a quantifiable manner through statistical analysis to analyze the significant relationship between variables. In this case, impulsive buying behaviour is dependent, and the independent variables are floor merchandising, forum display, and window display. In accordance with the findings as presented in the table 2, the variance is only 34%, as depicted by the value of r-square. Moreover, the impact of independent variables is 33% on dependent variables since the adjustment of error and considerations are reflected through the value of the adjusted r-square.

*Table2: Regression analysis*

| Variables | Model Summary | | Anova | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|---|
| | R | Adjusted R Square | F | Sig. | Beta | T | Sig. |
| Organizational obstacles | .785a | .524 | 88.416 | .000b | .741 | 2.979 | .003 |
| Technological Hurdles | | | | | .143 | .992 | .326 |
| Work Environment | | | | | .652 | 2.094 | .005 |
| Financial Barriers | | | | | .671 | 3.218 | .001 |
| Informational Barriers | | | | | .123 | .800 | .542 |

*Dependent Variable: Green supply chain management*

ANOVA Analysis is often used as an attempt to determine the reliability of the overall model that is bonded in a relationship, which involves independent and dependent variables. The value of F is noted for this purpose, which in the case of this research is 36.376. Hence, it can be said that the correlation between the Work environment, organizational obstacles, technological hurdles, financial barriers, informational barriers and green supply chain management practices exists. It also indicates that the association between independent and dependent variables is reliable. Moreover, the value of sig is 0.0000, which is above the threshold value of 0.05. The sig value represents whether or not the relationship between variables is significant. Therefore, it implies that the relationships between variables (independent and dependent) are reliable.

Regression analysis is referred to as a statistical tool or a statistical technique that is often performed in studies and research that involve the research testing relationships built through hypotheses using data that is quantifiable. The result obtained through regression analysis implies this research has identified independent variables which are required to be evaluated on the basis of their impact on the dependent variable. For this research work environment, organizational obstacles, technological hurdles, financial barriers, and informational barriers. In accordance with the table above, there are a total number of three independent variables, namely, work environment, organizational obstacles, technological hurdles, financial barriers, and informational barriers. In addition to this, the dependent variable of the research is green supply chain management practices. One of the primary purposes of the above-presented table is to verify if the relationship between these variables mentioned above is significant or not. Moreover, the table also indicates if the nature of these relationships is either positive or negative.

To present the results, the values depicted in the table above have been diagnosed. Therefore, values, there is a significant positive relationship between a window display and impulsive buying behaviour is not only significant but also the impact of the former on the latter is positive. It can be assumed that the t-value is 2.888 (above 0.00), and the sig value is 0.004 (below 0.05) for the relationship between the two variables. In addition, the relationship of forum display with impulsive buying behaviour as the value of sig is 0.062, and therefore, is found to be insignificant. On the other hand, the research has found that the relationship between floor merchandising and impulsive buying behaviour is significant as well as positive, as per the table above. The results indicate that the value of T is 4.496, and the value of sig is 0.000.

### 4.4. Summary of Hypothesis Testing

Table 3 illustrates hypotheses results, where hypothesis 1 is validated, and there is a statistically crucial helpful association between the adoption of GSCM and the hypothesis. Internal barriers provide a more substantial barrier than external obstacles, and many internal obstacles are related to perceptions and attitudes about the surroundings. GSCM adoption is associated with the endorsement of Hypothesis 2 and has a statistically significant positive connection with that acceptance. According to the study's findings, technology is one of the hurdles to implementing GSCM amongst businesses, which aims to develop hypothesis 3. In conclusion, the results demonstrate a statistically significant positive association between technical hurdles and the application of GSCM, and hypothesis 5 is thus supported.

*Table 3: Results of hypothesis*

| Hypotheses | Results | P-value |
|---|---|---|
| H1: The organizational obstacles have a significant effect on implementing green supply chain management practices. | Accepted | 0.003 |
| H2: The technological hurdles have a significant effect on implementing green supply chain management practices | Rejected | 0.326 |
| H3 The work environment has a significant effect on implementing green supply chain management practices. | Accepted | 0.005 |
| H4 The financial barriers have a significant effect on implementing green supply chain management practices. | Accepted | 0.001 |
| H5 The informational barriers have a significant effect on implementing green supply chain management practices. | Rejected | 0.542 |

## 5. Conclusion

The primary purpose of this study was to measure the association between the barriers and acceptance of GSCM amongst FMCG in Karachi, Pakistan. For this purpose, a resource-based model drafted by some scholars and a stakeholder theory was used to achieve the desired research outcome. With the help of these two models and theories, a planned conceptual model was developed. The entire research was evaluated and carried out using five factors: the impression of the firm's environmental impact, Organizational culture resistance to change, Lack of collaboration among supplies, unskilled workforce, financial constraints, Hurdles in Implementation, and Government Policies. The research followed the research strategy by surveying to acquire quantitative data to evaluate the hypotheses statistically. Considering the numerous variables, five hypotheses were developed to figure out the importance of those variables towards the successful implementation of green supply chain management in the fast-moving consumer goods industries of Karachi, Pakistan. Though there are various means to send the questionnaire to the company, the most suited method suggested was to send the questionnaire via email and wait for the responses. It has been developed and discovered through the research that green supply chain management is crucial to be implemented and can lead to a successful future along with numerous environmental barriers; however, few constraints need to be addressed. The results of this study confirm that there is a solid and adequate relationship between the company's environmental effect and green supply chain management practices. The company's environmental effect is defined as the impact created by the company or its production on the environment or, in other words, how it is responsible for polluting or contributing to the improvement of the environment. Numerous scholars carried out the research to identify the severity of environmental effects caused best ha the companies and their impact on the implementation of successful green supply chain management practices; all the studies and our research confirmed that the action of a company's environmental policies does have a significant impact on the implementation of green supply chain management.

The results of this study explored the organizational barriers that have a significant impact on the implementation of supply chain management practices; therefore, the hypothesis related to this assumption is accepted and validated. Organizational barriers are defined as the restrictions or hurdles faced by organizations in the flow of information or ideas from management to the workforce (Luthra et al., 2011). When there is an absence of support in the administration, enthusiasm, and leadership in the new procedures and performance, the organization is a barrier. Barriers, as they are known in the business world, must be overcome for companies to succeed. The assumption created for this variable is accepted, suggesting that the organizational hurdles or barriers significantly impact the implementation of successful green supply chain management practices. The results of this study clarified that technological hurdles do not have a lasting and significant impact on the performance and implementation of green supply chain management practices. Technology here is defined as the use of practical knowledge in the production, consumption, invention, and management of products and services; the full advantage of technology cannot be gained as it is an expensive area to work for. The hypothesis relating to this variable is therefore rejected in our research, confirming that due to the excessive cost associated with the latest technologies, they do not contribute to the implementation of green supply chain management; in fact, there are other variables that are significant contributors.

The results of this study explored that regulatory and financial barriers have a significant impact on the successful implementation of green supply chain management practices. According to business terms, financial barriers are defined as money management, such as budgeting and debt management. Some previous studies have measured that there is a significant relationship present between financial barriers and successful implementation of green supply chain management practices. This study also validated this point and revealed that both factors are strongly correlated and have a direct relationship; therefore, the hypothesis associated with this assumption or study is accepted. The results of this study ensured that there is no strong relationship between informational barriers and the adoption of GSCM. There are numerous sources of information, and according to the previous studies, they affect the adoption of green supply chain management practices; however, the current research negates such observations and concludes that there is a negative or negligible relationship between informational barriers and the adoption of GSCM. Therefore, the hypothesis created for this variable is rejected. This research contributed to relevant literature from various aspects. First, this research examined the possible variables which can contribute to the significant development and implementation of green supply chain practices and then worked on the actual data, which was sent to the companies via mail in the form of a questionnaire.

### 5.1. Discussion of the Finding

The primary purpose of this research is to figure out the relationship between the possible and relevant hurdles and the acceptance of Green Supply Chain Management among the leading fast-moving consumer goods industries of Pakistan, particularly Karachi, as it is one of the most polluted cities of the country. With the help of a resource-based model devised by some scholars, the findings and analyses have been developed. The research discussed various variables in association with the others in the form of hypotheses. The five variables have been used to evaluate green supply chain management practices in the FMCGs. They are namely: the observation of a company's environmental effect, organizational obstacles, the association between technological hurdles and sustainable supply, Regulatory and financial barriers and informational barriers. For the research purpose, five hypotheses have been developed. A detailed discussion and results of the drafted hypotheses are given below. The results are also compared with the study of famous scholars and researchers, along with the compression of the finding of this research with secondary sources. The difference has been represented as well. To conclude, the finding, as well as the results of this study, has been supported by the prior researcher, and some variables that were not identified as having an insignificant impact on the SCM have been explored in this research. These variables include informational barriers and technological hurdles.

#### *5.1.1. H1: The organizational obstacles have a significant effect on implementing green supply chain management.*

The above hypothesis suggesting that the organizational barriers have a significant impact on the implementation of the supply chain management practices is validated in this research. Thus, the above hypothesis is accepted, and the results validate the study of Jayant and Azhar (2014) and Kamaruddin et al. (2013), which proved that the obstacles created by the organization and its workers directly impact the implementation of green supply chain management practices of the firm they can be positive as well as negative thus depends purely over the behaviour and obstacles of organization. The results also validated the study conducted by (Luthra et al., 2011). This revealed that when there is an absence of support in the administration, enthusiasm, and leadership in the new procedures and performance, the organization is a barrier. Thus, organizational barriers play a crucial role in green supply chain management.

#### *5.1.2. H2: The technological hurdles have a significant effect on implementing green supply chain management.*

Based on the findings of this research, it has been noted that the hypothesis concerning a significant influence of technological hurdles and sustainable supply chain management adoption results in negative thus, the hypothesis regarding this theory is rejected. This is by the theory and

research of Diabat and Govindan (2011), according to which when it comes to taking full advantage of today's technology, there are several roadblocks in the way; therefore, solely technology can not contribute to sustainable supply chain management adoption as it is expensive and challenging to implement. Therefore, this hypothesis is not validated and is thus rejected.

#### *5.1.3. H3: The work environment has a significant effect on implementing green supply chain management.*

The findings indicate a positive relationship between the company's environmental effects on implementing green supply chain management practices; therefore, the above hypothesis is accepted. The results validated the study and research conducted that concluded by highlighting the significance of the company's environmental effect on the implementation of the practices to incorporate green supply chain management practices. This concluded that the environment and practices followed by the company and its workers create a strong relation for green supply chain management practices.

#### *5.1.4. H4: The financial barriers have a significant effect on implementing green supply chain management.*

The above hypothesis concerning variables of regulatory and financial barriers is validated, thus proving that these variables do have a significant impact on the successful implementation of green supply chain management practices. They concluded in their study that variables such as a lack of funds, a lack of bank debt, the increased price of hazardous waste management, and costly expenditures in green practices will impede the adoption of GSCM. The results also verify the theory and study (Rajeev et al., 2017). According to him, the inability to get finances or financial assistance is considered a financial impediment. Therefore, it is proven that one of the significant impediments to green production implementation is a company's financial resources.

#### *5.1.5. H5: The informational barriers have a significant effect on implementing green supply chain management.*

The above hypothesis regarding the positive and important relationship between informational barriers over the adoption of green supply chain management practices is not accepted in our research and is thus rejected. A previous study stressed over the importance of various sources of information transmission means like training and education to implement GSCM procedures in any organization successfully. However, this requires more money and cost, which can lead to its rejection as it is not affordable for all the companies to meet such expenses. The results also reject the study of (Laosirihongthong et al., 2013); according to him, Decisions, consequences, and behaviour may all be influenced by sustained information.

### 5.2. Recommendations for the Industry

To the significant results of this study, the FMCGs should work hard to improve the company's environmental impact, organizational barriers, and financial barriers, as these are the key factors contributing to the successful implementation of GSCM. Apart from this, there is a need for top senior management's dedication, advice, assistance, and leadership to substantially impact the performance of the company's environmental management practices because upper executives impact a company's environmental proactivity. Apart from the top management, upper and middle management and every discrete organization must all work together to ensure GSCM's success. Also, there should be a strong comprehension among supply chain stakeholders. Lastly, the training and education for successfully implementing GSCM procedures in any organization should be intensely focused. By following the above implications and recommendations, the FMCGs can ensure the successful implementation of GSCM. Based on the limitation of this research, future researchers are recommended to focus on some of the aspects which would help them to identify the more relevant data for the SCM. Future researchers are recommended to use both qualitative and quantitative research designs, allowing them to incorporate the most compelling studies. As this research was based in Karachi, thus the future researcher is

recommended to explore the scope of the research and to focus on more countries like Lahore and Islamabad as a case study approach.

### 5.3. Limitations of Study

This research presented several functional theoretical as well as managerial information, but there are some limitations present in this research. This research is limited only to the working and environmental concerns of FMCGs. In contrast, no information was given regarding other industries of the country, so this study covers the FMCGs of the cosmopolitan city Karachi; only no data is drafted for the other cities. This study was conducted from different FMCGs in the city of Karachi. In addition to this, another limitation that has been identified in this research is based on the incorporation of the limited studies in the following research.

## Reference


Agha, A. A., Rashid, A., Rasheed, R., Khan, S., & Khan, U. (2021). Antecedents of Customer Loyalty at Telecomm Sector. *Turkish Online Journal of Qualitative Inquiry, 12*(9), 1352-1374.

Alam, M. (2022). Supply Chain Management Practices and Organizational Performance in Manufacturing Industry. *South Asian Journal of Social Review, 1*(1), 42-52. https://doi.org/10.57044/SAJSR.2022.1.1.2204

Ali, S. B. (2022). Industrial Revolution 4.0 and Supply Chain Digitization. *South Asian Journal of Social Review, 1*(1), 21-41. https://doi.org/10.57044/SAJSR.2022.1.1.2205

Alrazehi, H. A. A. W., Amirah, N. A., Emam, A. S., & Hashmi, A. R. (2021). Proposed model for entrepreneurship, organizational culture and job satisfaction towards organizational performance in International Bank of Yemen. *International Journal of Management and Human Science, 5*(1), 1-9.

Amjad, S. (2022). Role of Logistical Practices in Quality Service Delivery at Supermarkets: A Case Study from Pakistan. *South Asian Journal of Operations and Logistics, 1*(1), 39-56. https://doi.org/10.57044/SAJOL.2022.1.1.2204

Anwar, M. F. A. (2022). The Influence of Inter-Organizational System Use and Supply Chain Capabilities on Supply Chain Performance. *South Asian Journal of Operations and Logistics, 1*(1), 20-38. https://doi.org/10.57044/SAJOL.2022.1.1.2203

Ahmed, W., & Najmi, A. (2018). Developing and analyzing framework for understanding the effects of GSCM on green and economic performance: perspective of a developing country. *Management of Environmental Quality: An International Journal, 29*(4), 740-758. https://doi.org/10.1108/MEQ-11-2017-0140

Asif, K. (2022). The Impact of Procurement Strategies on Supply Chain Sustainability in the Pharmaceutical Industry. *South Asian Journal of Social Review, 1*(1), 53-64. https://doi.org/10.57044/SAJSR.2022.1.1.2203

Ayaz, J. (2022). Relationship between Green Supply Chain Management, Supply Chain Quality Integration, and Environmental Performance. *South Asian Management Review, 1*(1), 22-38. https://doi.org/10.57044/SAMR.2022.1.1.2203

Ayuso, S., Rodríguez, M. A., García-Castro, R., & Ariño, M. A. (2014). Maximizing stakeholders' interests: An empirical analysis of the stakeholder approach to corporate governance. *Business & Society, 53*(3), 414-439. https://doi.org/10.1177/0007650311433122

Baloch, N. & Rashid, A. (2022). Supply Chain Networks, Complexity, and Optimization in Developing Economies: A Systematic Literature Review and Meta-Analysis. *South Asian Journal of Operations and Logistics, 1*(1), 1-13. https://doi.org/10.57044/SAJOL.2022.1.1.2202

Basit, A. (2022). The Influence of Green Supply Chain Management on Sustainable Performance. *South Asian Management Review, 1*(1), 49-66. https://doi.org/10.57044/SAMR.2022.1.1.2206

Bhatia, M. S., & Gangwani, K. K. (2021). Green supply chain management: Scientometric review and analysis of empirical research. *Journal of Cleaner Production, 284*, 124722. https://doi.org/10.1016/j.jclepro.2020.124722

Bloomfield, J. & Fisher, M. J. (2019). Quantitative research design. *Journal of the Australasian Rehabilitation Nurses Association, 22*(2), 27-30. https://doi.org/10.33235/jarna.22.2.27-30

Das, S., Ghani, M., Rashid, A., Rasheed, R., Manthar, S., & Ahmed, S. (2021). How customer satisfaction and loyalty can be affected by employee's perceived emotional competence: The mediating role of rapport. *International Journal of Management, 12*(3), 1268-1277. DOI: 10.34218/IJM.12.3.2021.119.

Diabat, A., & Govindan, K. (2011). An analysis of the drivers affecting the implementation of green supply chain management. *Resources, Conservation, and Recycling*, *55*(6), 659-667. https://doi.org/10.1016/j.resconrec.2010.12.002

Haque, I., Rashid, A., & Ahmed, S. Z. (2021). The Role of Automobile Sector in Global Business: Case of Pakistan. *Pakistan Journal of International Affairs, 4*(2), 363-383. https://doi.org/10.52337/pjia.v4i2.195

Hashmi, A. R., & Mohd, A. T. (2020). The effect of disruptive factors on inventory control as a mediator and organizational performance in Health Department of Punjab, Pakistan. *International Journal of Sustainable Development & World Policy*, *9*(2), 122-134. https://doi.org/10.18488/journal.26.2020.92.122.134

Hashmi, A. R., Amirah, N. A., & Yusof, Y. (2020a). Mediating effect of integrated systems on the relationship between supply chain management practices and public healthcare performance: Structural Equation Modeling. *International Journal of Management and Sustainability*, *9*(3), 148-160. https://doi.org/10.18488/journal.11.2020.93.148.160

Hashmi, A. R., Amirah, N. A., & Yusof, Y. (2021a). Organizational performance with disruptive factors and inventory control as a mediator in public healthcare of Punjab, Pakistan. *Management Science Letters, 11*(1), 77-86. https://doi.org/10.5267/j.msl.2020.8.028

Hashmi, A. R., Amirah, N. A., Yusof, Y., & Zaliha, T. N. (2020b). Exploring the dimensions using exploratory factor analysis of disruptive factors and inventory control. *The Economics and Finance Letters*, *7*(2), 247-254. https://doi.org/10.18488/journal.29.2020.72.247.254

Hashmi, A. R., Amirah, N. A., Yusof, Y., & Zaliha, T. N. (2021b). Mediation of inventory control practices in proficiency and organizational performance: State-funded hospital perspective. *Uncertain Supply Chain Management. 9*(1), 89-98. https://doi.org/10.5267/j.uscm.2020.11.006

Hunaid, M., Bhurgri, A. A., & Shaikh, A. (2022). Supply Chain Visibility in Leading Organizations of the Shipping Industry. *South Asian Journal of Social Review*, *1*(1), 8-20. https://doi.org/10.57044/SAJSR.2022.1.1.2202

Jayant, A., & Azhar, M. (2014). Analysis of the barriers to implementing green supply chain management (GSCM) practices: interpretive structural modelling (ISM) approach. *Procedia Engineering*, *97*, 2157-2166. https://doi.org/10.1016/j.proeng.2014.12.459

Kamaruddin, N. K., Kovalan, V., Adi, M., Nazir, M., & Ahmad, A. R. (2013, March). Adoption of green supply chain initiatives among small and medium-sized suppliers. In *Proceedings of the 20th International Business Information Management Association Conference* (pp. 25-26).

Karimi, A., & Rahim, K. A. (2015). Classification of external stakeholders pressures in green supply chain management. *Procedia Environmental Sciences*, *30*, 27-32. https://doi.org/10.1016/j.proenv.2015.10.005

Khan, S. A. R. (2020). *Introduction to the Green Supply Chain Management. The Critical Success Factors of Green Supply Chain Management in Emerging Economies* (pp. 1-34). Springer, Cham. https://doi.org/10.1007/978-3-030-42742-9_1

Khan, S. A. R. (2020). *The Critical Success Factors of Green Supply Chain Management in Emerging Economies*. Springer Nature. https://doi.org/10.1007/978-3-030-42742-9

Khan, S. A. R., Zhang, Y., Golpîra, H., & Dong, Q. (2018). The impact of green supply chain practices in business performance: Evidence from Pakistani FMCG firms. *Journal of Advanced Manufacturing Systems, 17*(02), 267-275. https://doi.org/10.1142/S0219686718500166

Khan, S. K., Ahmed, S., & Rashid, A. (2021). Influence of social media on purchase intention and customer loyalty of generation Y with the mediating effect of conviction: a case of Pakistan. *Pakistan Journal of International Affairs. 4*(2), 526-548. https://doi.org/10.52337/pjia.v4i2.207

Khan, S., Benhamed, A., Rashid, A., Rasheed, R., & Huma, Z. (2022c). Effect of leadership styles on employees'

performance by considering psychological capital as mediator: evidence from airlines industry in emerging economy. *World Journal of Entrepreneurship, Management and Sustainable Development, 18*(8). https://wasdlibrary.org/publications/journals/wjemsd/

Khan, S., Rasheed., R., & Rashid, A., Abbas, Q., & Mahboob, F. (2022b). The Effect of Demographic Characteristics on Job Performance: An Empirical Study from Pakistan. *Journal of Asian Finance, Economics and Business, 9*(2), 283-294. https://doi.org/10.13106/jafeb.2022.vol9.no2.0283

Khan, S., Rashid, A., Rasheed, R., & Amirah, N. A. (2022a). Designing a knowledge-based system (KBS) to study consumer purchase intention: the impact of digital influencers in Pakistan. *Kybernetes, 51*(1). https://doi.org/10.1108/K-06-2021-0497

Laosirihongthong, T., Adebanjo, D., & Tan, K. C. (2013). Green supply chain management practices and performance. *Industrial Management & Data Systems, 113*(8), 1088-1109. https://doi.org/10.1108/IMDS-04-2013-0164

Lee, Sang M.; Tae Kim, Sung; Choi, Donghyun (2012). Green supply chain management and organizational performance. *Industrial Management & Data Systems, 112*(8), 1148-1180. https://doi.org/10.1108/02635571211264609

Luthra, S., Kumar, V., Kumar, S., & Haleem, A. (2011). Barriers to implementing green supply chain management in automobile industry using interpretive structural modelling technique: An Indian perspective. *Journal of Industrial Engineering and Management, 4*(2), 231-257. https://doi.org/10.3926/jiem.2011.v4n2.p231-257

Maaz, M. A. M., Ahmad, R., & Abad, A. (2022). Antecedents and consequences of green supply chain management practices: a study of Indian food processing industry. *Benchmarking: An International Journal, 29*(7), 2245-2273. https://doi.org/10.1108/BIJ-01-2021-0026

Mkansi, M., de Leeuw, S., & Amosun, O. (2019). Mobile application supported urban-township e-grocery distribution. *International Journal of Physical Distribution & Logistics Management, 50*(1), 26-53. https://doi.org/10.1108/IJPDLM-10-2018-0358

Muzammil, M. (2022). Evaluating the Factors to Improve the Organizational Performance. *South Asian Management Review, 1*(1), 39-48. https://doi.org/10.57044/SAMR.2022.1.1.2204

Rahmi, B. A. K. İ. (2018). Literature Review on Green Supply Chain Management Concept and Problems during Its Implementation. *The Journal of International Scientific Researches, 3*(2), 114-122.

Rajeev, A., Pati, R. K., Padhi, S. S., & Govindan, K. (2017). Evolution of sustainability in supply chain management: A literature review. *Journal of Cleaner Production, 162*, 299-314. https://doi.org/10.1016/j.jclepro.2017.05.026

Rasheed, T. (2022). Supply Chain Sustainability Through Green Practices in Manufacturing: A Case Study from Pakistan. *South Asian Journal of Operations and Logistics, 1*(1), 57-71. https://doi.org/10.57044/SAJOL.2022.1.1.2205

Rashid, A. & Rasheed, R. (2022). A Paradigm for Measuring Sustainable Performance Through Big Data Analytics-Artificial Intelligence in Manufacturing Firms. *SSRN 4087758*. https://doi.org/10.2139/ssrn.4087758

Rashid, A. (2016). Impact of inventory management in downstream chains on customer satisfaction at manufacturing firms. *International Journal of Management, IT and Engineering, 6*(6), 1-19.

Rashid, A., & Amirah, N. A. (2017). Relationship between poor documentation and efficient inventory control at Provincial Ministry of Health, Lahore. *American Journal of Innovative Research and Applied Sciences, 5*(6), 420-423.

Rashid, A., Ali, S. B., Rasheed, R., Amirah, N. A. & Ngah, A. H. (2022). A paradigm of blockchain and supply chain performance: a mediated model using structural equation modeling. *Kybernetes, Vol. ahead-of-print No. ahead-of-print.* https://doi.org/10.1108/K-04-2022-0543

Rashid, A., Amirah, N. A., & Yusof, Y. (2019). Statistical approach in exploring factors of documentation process and hospital performance: a preliminary study. *American Journal of Innovative Research and Applied Sciences, 9*(4), 306-310.

Rashid, A., Amirah, N. A., Yusof, Y., & Mohd, A. T. (2020). Analysis of demographic factors on perceptions of inventory managers towards healthcare performance. *The Economics and Finance Letters, 7*(2), 289-

294. https://doi.org/10.18488/journal.29.2020.72.289.294

Rashid, A., Rasheed, R., Amirah, N. A., Yusof, Y., Khan, S., & Agha, A., A. (2021). A Quantitative Perspective of Systematic Research: Easy and Step-by-Step Initial Guidelines. *Turkish Online Journal of Qualitative Inquiry, 12*(9), 2874-2883.

Saad, M., & Siddiqui, D. A. (2019). The impact of green supply chain management on firm performance: a case of manufacturing industry of Karachi. *Social Science and Humanities Journal, 3*(4), 993-105.

Sambrani, V. N., & Pol, N. (2016). Green Supply Chain Management: A Literature Review. *IUP Journal of Supply Chain Management, 13*(4), 7. https://doi.org/10.21863/jscms/2015.4.4.017

Shaheen, S. (2022). Quality management and operational performance: a case study from Pakistan. *South Asian Journal of Operations and Logistics, 1*(1), 14-19. https://doi.org/10.57044/SAJOL.2022.1.1.2201

Sibghatullah, A., Shamshir, M., Siddiqui, K., & Saeed, N. (2019). The Unification of Product and Industry Life-cycle: A Framework for Telecom Sector in Pakistan. *IBT Journal of Business Studies (JBS), 15*(1), 19-32. https://doi.org/10.46745/ilma.jbs.2019.15.01.02

Uddin, S. Q. (2022). Supply Chain Integration, Flexibility, and Operational Performance. South Asian Management Review, 1(1), 1-21. https://doi.org/10.57044/SAMR.2022.1.1.2202

Victory, G. O., Lizzie, O. A. & Olaitan, A. A. (2022). Climate-Smart Agricultural Practices at Oyo State-Nigeria. *South Asian Journal of Social Review, 1*(1), 1-7. https://doi.org/10.57044/SAJSR.2022.1.1.2201

Wong, C. Y., Wong, C. W., & Boon-Itt, S. (2015). Integrating environmental management into supply chains: a systematic literature review and theoretical framework. *International Journal of Physical Distribution & Logistics Management, 45*(1/2), 43-68. https://doi.org/10.1108/IJPDLM-05-2013-0110

Younis, H., Sundarakani, B., & Vel, P. (2016). The impact of implementing green supply chain management practices on corporate performance. *Competitiveness Review, 26*(3), 216-245. https://doi.org/10.1108/CR-04-2015-0024