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IMPACT OF GREEN SUPPLY CHAIN MANAGEMENT ON PERFORMANCES OF FAST-MOVING CONSUMER GOODS FIRMS IN PAKISTAN

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ABSTRACT

Pakistan is one of the emerging marketplaces for the FMCG sector. Globalisation and modern trade create a thrust for the consumers to purchase the products multiple times. Supply chain partners play a key role in making the products available in respective stores. In such a case, supply chain partners have an emit environment to offer customers service. So, an organization is taking steps to diminish the emission of supply chain activities. According to the Mckinsey report, 43% of respondents stated that they had included sustainability in their business goals. Such growing importance increases the thrust for measuring GSCM in the FMCG sector. Despite the large size of FMCG firms, implementation of GSCM improves performance. In this regard, there is an emergence of a need to measure the association between GSCM and the performance of FMCG firms in Pakistan. With the help of resource-based view theory, the study measures GSCM and performance through quantitative research methods. Samples are FMCG firms in Karachi, Pakistan. These samples are determined through the convenience sampling technique. Such opinions of samples gather through a self-structured questionnaire (online survey). Assessment of these opinions reveals that GSCM is positively associated with environmental, social and financial performance. In addition, GSCM has a moderate effect on environmental, social and financial performance. As a result, the study suggests that regulatory authorities should insist Pakistan FMCG firms adopt GSCM practices, ensuring the firm's performance. The practitioners of the leading firm should direct the other companies regarding the importance of GSCM practices and how to boost the performance of the respective organisations.

Keywords: GSCM, environment, social and financial performance.

INTRODUCTION

Industrialisation has adversely affected environmental issues like emitting chemical wastes, greenhouse gas emissions, climate change, and toxic pollutants (Wiguna *et al.* 2021; Irum *et al.* 2018). Traditionally, supply chain activities create pollutants, emission of toxic gases from production and transportation. It is affecting the sustainability of industries (Wiguna *et al.* 2021). As a result, industries' environmental issues are a major concern (Rusmawati, Soewarno 2021). The issues have created constraints for the organisation over the recent few years. To address the issues, 70% of leading companies give importance to their sustainability agenda (Herrmann *et al.* 2021). The main intention of the leading companies is to take the environmental issues, address the issues and gain competitiveness in the market (Famiyeh *et al.* 2018). GSCM is a solution to environmental concerns (Rusmawati, Soewarno 2021). Responding promptly to such concerns increases the more attention of researchers and academicians. The emergence of GSCM on FMCG firms is widely used in recent studies (Ogunlela 2018; Chen, Huatuco 2021; Mvubu 2015).

Topicality and novelty: FMCG is special because the consumers habit purchasing products in their regular life. Environment-friendly products can differentiate the respective companies from competitors (Niedermeier *et al.* 2021). Leading FMCG firms (Unilever, P&G, coco-cola) are working on the supply chain and logistics to create an eco-friendly and sustainable environment (Anistia 2014). As a result, importance of GSCM is widely used by FMCG firms. The literature in past studies indicates that GSCM is an important indicator for sustainable performance (De Sousa Jabbour *et al.* 2017; Omar *et al.* 2019). Studies pointed out that sustainable performances are economic, environmental and social performance (Zaid *et al.* 2018; Green *et al.* 2012; Çankaya, Sezen 2019). Also, a closer look at the review shows that GSCM positively associates and influence environmental, social and financial performance (Hashmi, Akram 2021; Darwish *et al.* 2021; Ye *et al.* 2021; Fianko *et al.* n.d.; Yu *et al.* 2019; Kalyar *et al.* 2019; Nguyen *et al.* 2020; Khan *et al.* 2021; Saad, Siddiqui 2019; Abdullah 2016; Younis *et al.* 2016; Irum *et al.* 2018). As per the earlier work, quantitative research methods offers better performance over qualitative research methods (*ibid*). Therefore, the present study empirically investigates how GSCM is associated with the performance of Fast-Moving Consumer Goods firms.

Research problem: Pakistan is one of the fastest-growing markets in South Asia (Fahad, Ali 2020). The country has considerable development in the Fast-Moving Consumer Goods segment (Fahad, Ali 2020). FMCG sector contains processed foods, beverages, prepared meals, fresh or frozen foods and more (Nozari *et al.* 2019). Pakistan is the fifteen largest FMCG manufacturers anticipate the revenue reaches 6 trillion USD by the end of 2022 (*ibid*). Consumers expect a new product based on changing trends and shifting quickly. Such trends emerge because globalisation and modern trade create a thrust for the consumers to purchase it multiple times (Choudhary n.d; Shaikh 2012; Khan *et al.* 2018) from the market. These trends of fast-moving consumer goods are met with the help of third party logistic service providers (Abbasi, Hassan 2013; Gilal *et al.* 2016). Such providers created the rise of environmental issues in Pakistan. So the government takes steps in reducing environmental issues by laying strict laws and regulations (Nadeem, Siddiqui 2017). Both national and Multinational companies have to oblige in following green practices in the respective organisation. Companies like P&G, Unilever, Engro invest a huge amount in green practices in their organisation (Khan, Qianli 2017). Even though fast-moving consumer goods companies have started giving importance to green practices, company contribution to environmental concerns is low in Pakistan (Abdullah *et al.* 2018). So, the study focuses on GSCM of fast-moving consumer goods companies in Pakistan.

GSCM of fast-moving consumer goods companies improves performance via throughput and reap competitive advantage (Nozari *et al.* 2019). Some past studies evaluated the relationship between GSCM and performance. (Uddin 2021; Fianko *et al.* n.d.; Hashmi, Akram 2021; Darwish *et al.* 2021; Ye *et al.* 2021; Rupa, Saif 2021; Seman *et al.* 2019; Yu *et al.* 2019; Laari *et al.* 2018; De Sousa Jabbour *et al.* 2017). With the help of previous studies, GSCM's effect on performances was addressed. So, this present study focuses on identifying the effect of GSCM on the performances of Fast-moving consumer goods companies in Pakistan.

The study aims are to examine the association between green supply chain management and the performances of Fast-Moving Consumer Goods firms in Pakistan.

The objective of the study is to examine the effect of Green Supply Chain Management on the environmental, financial, and social performance of Fast-moving consumer goods firms in Pakistan.

Hypothesis

1) Green Supply chain management associates and influences the environmental performance of Fast-Moving Consumer Goods firms in Pakistan
2) Green Supply chain management associates and influences the social performance of Fast-Moving Consumer Goods firms in Pakistan
3) Green Supply chain management associates and influences the financial performance of Fast-Moving Consumer Goods firms in Pakistan

Scope of the study: The importance of the study is to measure the green Supply Chain Management effect on performances (environment, social and financial) of Fast-moving consumer goods firms in Pakistan. The variables evaluate through a resource-based view because it predicts why FMCG companies can create and sustain competitive advantage. This study cannot apply a resource-based view of the firm because it is suited for organisations that exploit rare resources and capabilities that contribute to performance and competitive advantage (Newbert 2008). So, resource-based view theory supports this study in saying that GSCM is associated with performance (environment, social and financial).

Research methods: Green supply chain management and performances of Fast-moving consumer goods will be measured with the help of quantitative research methods. Samples are Fast-moving consumer goods firms in Karachi, Pakistan. The research instrument gathers the samples' opinions through the questionnaire. The web-based survey method uses in collecting the opinion from the respective samples.

Chapter scheme: Chapter-1 is the theoretical background of the study, indicating green Supply Chain Management, environment performance, financial performance, social performance, research gap and conceptual framework

Chapter-2 is a research methodology representing research strategy, population, sampling, sampling technique, sample size, data collection methods and ethics.

Chapter-3 Empirical analysis, representing the demographic profile of respondents, descriptive statistics for variables, the association between green Supply Chain Management and performance (environment, social and financial), effect of green Supply Chain Management on environment, economic and social performance

1. THEORETICAL BACKGROUND OF THE STUDY

1.1. Introduction

Green Supply Chain Management has been gaining attention in recent years. Companies have started recognising the importance of GSCM on performances. GSCM makes the companies gain benefits (sustainable competitiveness and performance) with the respective supply chain partners. Out of two benefits, the study gives more attention to sustainable performance. Sustainable performance indicators are environmental performance, social and financial performance. The literature of past studies indicates that GSCM associates and affect environmental, social and financial performance. As a result, the study describes variables (GSCM, environmental, financial and social performance) and their effect and association.

1.2. Green Supply chain management

The Green Supply chain management concept has emerged recently (Elzarka 2020). GSCM refers to the systematic coordination of the business process between an organization and its supply chains strategically to achieve the organization's social, environmental, and economic objectives and improve performance in the long term (Carter, Rogers 2008). A GSCM system integrates business processes and supply chain activities. The main intention of GSCM is to accomplish economic, social and environmental objectives. This GSCM improves the organization's long-term sustainability performance (Dong *et al.* 2021). The other author-defined Green Supply Chain Management as dealing with Supply Chain Management activities, effects and environmental context altogether (Khan *et al.* 2020). It integrates environment focused thinking and management of supply chain activities (Mumtaz *et al.* 2018). It incorporates environmental thinking into traditional supply chain management (Lau 2011). Integrating Supply Chain Management with the environment preceded diminishing pollution, increasing resource utilization efficiency (Dong *et al.* 2021). Many industries (manufacturing, electronics, agro and more) have started adopting GSCM to minimize the environmental effect on products or services (Zaid *et al.* 2018; Ninlawan *et al.* 2010; Sharma *et al.* 2017; Khan *et al.* 2018; Ogunlela 2018). Among the other industries,

Fast-moving consumer goods are one sector that considers GSCM important in global countries (Chen, Huatuco 2021; Joghee *et al.* 2021; Khan *et al.* 2018; Elzarka 2020). Despite small studies in Pakistan, GSCM is important (Gilal *et al.* 2016; Khan *et al.* 2018). The importance induces the study to measure the GSCM of Fast-moving consumer goods in Pakistan. Studies pointed out that sustainable performances are financial, environmental and social performance (Zaid *et al.* 2018; Green *et al.* 2012; Çankaya, Sezen 2019). A detailed description of individual sustainable performance presents below

1.3. Environmental performance

Environmental performance refers to the outcome indicating how the organization strategically manages activities in the natural environment (Walls *et al.* 2012).

The other definition refers to how reducing materials (toxic and hazardous) together reduced environmental accidents, emissions, and wastes in the external environment (Younis *et al.* 2016). To measure environmental performance, environmental performance indicators are pollution, energy consumption, compliances with environmental standards, and hazardous materials impact the quality of water and soil (Zhu *et al.* 2008; Paulraj 2011; Chen *et al.* 2010; Shi *et al.* 2013; Pallant *et al.* 2020). Studies have found that Supply Chain Management associate positively and influence environmental performance (Uddin 2021; Fianko *et al.* n.d.; Hashmi, Akram 2021; Darwish *et al.* 2021; Ye *et al.* 2021; Rupa, Saif 2021; Seman *et al.* 2019; Yu *et al.* 2019; Laari *et al.* 2018; de Sousa Jabbour *et al.* 2017). The detailed description of past studies is individually described below.

Uddin (2021) discusses how manufacturing companies of GSCM affect environmental performance and competitive advantage. Such profound effect was measured with the help of resource-based view theory. The theory supports the author to measure the variables using quantitative research methods. These methods helped identify the indirect effect between GSCM and competitive advantage but mediated through environmental performance.

Fianko *et al.* (n.d.) mention that industries were emitting 30% of carbon, 40% of global waste, 30%of global resources and 25% of water globally. In addition to the emission, gradual increment in urbanization increased the emission of carbon dioxide globally. As a result, measures are

essential to adopt sustainable GSCM in Ghana. Such widespread adoption induced the author in measuring how GSCM practices affected the environmental performance of Ghana. With the help of a quantitative survey research design, the study measured the green supply chain practices and environmental performance. The self-structured questionnaire used as a research instrument and the assessment revealed that the response rate was 92.7%. These assessments of researcher opinion in research instrument showed that green supply chain practices affected environmental performance.

Hashmi and Akram (2021) show that firms were using green supply chain practices as essential practices to tackle external environment issues. Such firm practices had induced the author to examine the association between green supply chain practices, environment and financial performance. These associations were measured using quantitative research methods. Such methods reveal that the partial relationship mediation existed between GSCM, environmental and financial performance. In addition to the outcome, external environment pressure enhanced the integration between GSCM and operational performance.

Darwish *et al.* (2021) discuss that Bahrain economy relied entirely on the hydrocarbon industry. These industries have a considerable effect on Bahrain's natural environment and health. Bahrain insisted that the industries follow and execute GSCM to overcome the effects. Despite the industries lacking its implementation, it badly affects society, people, and the environment. Often they lacked; the study had focused on measuring the effect of green supply chain practices on environmental performance. This study collected GSCM and environmental performance information through a self-structured questionnaire. Analyzing the opinion revealed that green purchase, procurement, customer environmental cooperation positively correlated with environmental performance. Along with the outcome, green innovation acted as a moderator connecting internal environment management and environmental performance. As a result, the implementation of green innovation created a considerable effect on environmental performance.

Ye *et al.* (2021) elaborated that green practices had a relationship with environmental performance in the study. The study measured the relationship through quantitative research methods. These methods assessed the data from industrialized & emerging western and Asian markets. The data assessment reveals that green supply chain practices are directly related to firm environmental performance. A higher quality of practices helped in achieving better performance.

Rupa and Saif (2021) point out in the study that the fourth industrial revolution has induced firms to focus on sustained performance and environmental sustainability. Due to the revolution, GSCM considers as an emerging concept. As a result, the study focused on examining the effect of GSCM on business performance (cost &profit) and environmental sustainability (disposal, greenhouse gas emission and resource consumption). Quantitative research methods were adopted; a self-structured questionnaire was utilized in gathering the information relating to the variables. These assessments of respondent information reveal that GSCM differs in business performance and environmental sustainability. As revealed, GSCM practices affected business performance and environmental sustainability. Environmental sustainability had a statistically significant effect, whereas cost was statistically high, but profit was insignificant with the GSCM.

Seman *et al.* (2019) claim that the Malaysian economy relied more on manufacturing. These manufacturing companies exploited the resources, gas emissions and created environmental risk for Malaysians. The public and stakeholder community started giving importance to implementing government regulations and green practices in their respective companies to safeguard the environment. These companies implemented the practices and gained improvement in environmental performance. Such implementation induced the author to measure the GSCM and environmental performance. These measurements were made through quantitative research methods; a structured questionnaire was utilized as a research instrument. Analyzing the questionnaire's opinions indicates that GSCM is positively associated with environmental performance.

Yu *et al.* (2019) discuss the model to analyze the supply chain quality integration, GSCM and environmental performance. These analyses were made through quantitative research methods; random sampling was used; an online survey was conducted among the manufacturing companies. Investigating the structured questionnaire revealed the response rate was 68.4%. Empirically testing the variables (supply chain quality integration, GSCM, environmental performance) indicate that Supply chain quality integration indirectly influenced GSCM. Still, GSCM positively influenced environmental performance.

Laari *et al.* (2018) argue that the service providers connect and interact with the other firms via a network. Such integration created constraints like the complexity of network-wide actions, low-profit margins and higher innovation costs. To diminish the constraints, there was a need to measure the GSCM, environment and financial performance. These measurements were made

through quantitative research methods; a self-rated questionnaire was utilized; an online survey was conducted among respondents. Analyzing the respondents' opinions reveals that GSCM is positively related to environmental performance. But there was no relation between GSCM and financial performance.

De Sousa Jabbour *et al.* (2017) points out that Brazil is one country that gives more importance to sustainability. The country had a regulation to safeguard the environment. These regulations are likely to encourage companies to follow more appropriate green practices. Following the green practices makes the Brazil companies improve both competitiveness and environmental performance. The present study measured the effect of GSCM practices on environmental performance. Quantitative measurement of variables (GSCM and environmental performance) reveals that GSCM is an important environmental performance indicator. Customers and suppliers are important in directing GSCM practices in improving the respective organizations' environmental performance.

The individual detailed description of studies provides an insight to the study that the studies present the GSCM relationship and its effect on environmental performance (Uddin 2021; Fianko *et al.* n.d.; Hashmi, Akram 2021; Darwish *et al.* 2021; Ye *et al.* 2021; Rupa, Saif 2021; Seman *et al.* 2019; Yu *et al.* 2019; Laari *et al.* 2018; De Sousa Jabbour *et al.* 2017). Studies have shown a relationship between GSCM and environmental performance (Hashmi, Akram 2021; Darwish *et al.* 2021). In their study, Ye et al. (2021) argued a direct relationship between GSCM and environmental performance. Despite the mediation relationship mentioned in the study (Uddin 2021). Fianko *et al.* (n.d.) and Yu *et al.* (2021) assessed the variables (GSCM and environmental performance) conceptually; the results indicate that there was no human bias in their variables. Uddin (2021) proposed the effect of GSCM and environmental performance through resource-based view theory. Despite GSCM and its effect on environmental performance measured with the help of theories (resource dependence theory and sustainable development theory) (Seman *et al.* 2019; De Sousa Jabbour *et al.* 2017). Analyzing the effects of variables indicate that the indirect effect was found between GSCM and environmental performance (Uddin 2021). The other studies mentioned that the effect was positive and statistically significant (De Sousa Jabbour *et al.* 2017; Darwish *et al.* 2021; Rupa, Saif 2021).

More recently, it has been demonstrated that quantitative research methods have been widely used in the literature Uddin 2021; Fianko *et al.* (n.d.); Hashmi and Akram (2021); Darwish *et al.* (2021);

Ye *et al.* (2021); Rupa and Saif (2021); Seman *et al.* (2019); Yu *et al.* (2019); Laari *et al.* (2018); De Sousa Jabbour *et al.* (2017). Moreover, resource-based view theory has been used previously by Uddin 2021. Several authors have used a self-structured questionnaire for a better outcome (Fianko *et al.* n.d; Darwish *et al.* 2021; De Sousa Jabbour *et al.* 2017). Samples of the respective studies are more than 200 (Fianko *et al.* n.d; Uddin 2021; Hashmi and Akram 2021; Ye *et al.* 2021; Yu *et al.* 2019), whereas one study pointed out that less than 100 is sufficient to measure GSCM and environmental performance (Seman *et al.* 2019). It is worth pointing out that some authors have mentioned that the response rate of the samples were more than 50% (Fianko *et al.* n.d; Hashmi, Akram 2021; Darwish *et al.* 2021). Despite above 50%, some studies have a response rate ranging from 5% to 29% (Laari *et al.* 2018; De Sousa Jabbour *et al.* 2017). Exploratory factor analysis is widely used in the literature to calculate common method bias (Uddin 2021; Darwish *et al.* 2021; De Sousa Jabbour *et al.* 2017). Cronbach alpha has been successfully utilised to know the internal consistency and has proven reliable (*ibid*). Next, key information of the previous studies is described in the subsequent section.

Table 1. Environmental performance

Author	objective	methods	results
Uddin 2021	To measure the effect of GSCM on environmental performance and competitive advantage	Quantitative research	GSCM had a mediation relationship with environmental performance
Fianko *et al.* (n.d.)	To measure the GSCM effect on environmental performance	Quantitative research	GSCM had a positive effect on environmental performance
Hashmi and Akram (2021)	To examine the association between GSCM, environmental and financial performance	Quantitative research	Partial mediation relation exists between GSCM, environmental performance and financial performance
Darwish *et al.* (2021)	To measure the effect of GSCM on environmental performance	Quantitative research	GSCM (green purchase and procurement) had a positive relationship with environmental performance
Ye *et al.* (2021)	To measure the relationship between GSCM and environmental performance	Quantitative research	GSCM had a direct relationship with environmental performance
Rupa and Saif (2021)	To find out the effect of GSCM on business performance and	Quantitative	GSCM affected business performance and environmental sustainability

	environmental sustainability	research	
Seman *et al.* (2019)	To measure GSCM and environmental performance	Quantitative research	GSCM had a positive association with environmental performance
Yu *et al.* (2019)	To analyze the supply chain quality integration, GSCM and environmental performance	Quantitative research	Supply chain quality integration indirectly influenced GSCM, but GSCM positively influence environmental performance
Laari *et al.* (2018)	To measure GSCM, environmental and financial performance	Quantitative research	GSCM is related to environmental performance positively, but no relationship exists between GSCM and financial performance
De Sousa Jabbour *et al.* (2017)	To measure the effect of GSCM on environmental performance	Quantitative research	GSCM affected environmental performance

Source: Own Illustration

1.4. Financial performance

Financial measures return on equity, assets, investment, and profitability (Jayarathna, Lasantha 2018; Hong, Najmi 2020; Sachin, Rajesh 2021; Allam *et al.* 2021). These are the indicators of financial performance, and they reflect the success of the organization (Yang *et al.* 2011; Hofer *et al.* 2012; Feng *et al.* 2018). Financial performance is described as "the degree to which the organization produces the profit-oriented objectives". Feng *et al.* (2018) argued that the indicators were growth in sales, return on sales, profit and growth in market share. Return on sales and return on investment were the important indicators of financial performance (Jum'a *et al.* 2021). The study takes the indicators from the studies: growth of sales, growth in market share, growth in return on investment, and the profit margin of sales. A clear description of the intake of variables is illustrated in the below figure.

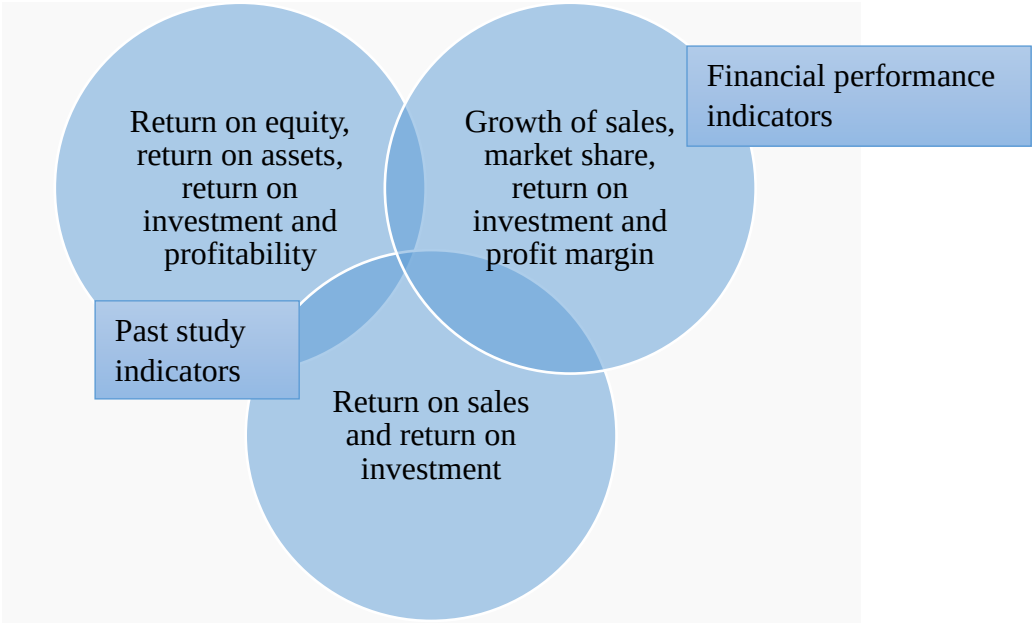

Figure 1. Financial performance
Source: Own Illustration

Later determining the financial performance indicators, ample evidence supporting GSCM had a positive association and statistically influenced financial performance (Kalyar *et al.* 2019; Nguyen *et al.* 2020; Khan *et al.* 2021; Saad, Siddiqui 2019). A detailed description of individual studies is presented below

Kalyar *et al.* (2019) discuss how GSCM practices directly affect financial performance through environmental performance. The objective focused on analyzing the institutional pressure on the direct association between GSCM and environmental performance. Such analyzed made through quantitative research methods. Samples were picked out based on the convenience sampling technique. Data collection was made through a questionnaire. Analyzing the collected data indicates that GSCM directly affected financial performance through environmental performance. In addition to the outcome, institutional pressure had a moderate relationship between GSCM and environmental performance.

Nguyen *et al.* (2020) argue that the management of the green supply chain is essential for Vietnam because the country faces environmental issues greatly. So, the government had taken steps to implement the policies, finding the solution for all issues right from product procurement to final product consumption. The present author found a few studies measuring GSCM in Vietnam. As a result, the study developed in measuring the effect of GSCM on financial and non-financial efficiency in Vietnam. These measurements were made with the help of quantitative research methods; a self-rated questionnaire was used to collect the opinion of respondents. The assessment of respondents' opinions indicates the relationship between GSCM and financial performance. But the relationship was not statistically significant. Despite a strong positive relationship, GSCM and environmental performance were statistically significant.

In the study, Khan et al. (2021) mention that GSCM practices started to show the best performance of the organization globally. The efficiency of GSCM increased because of green innovation activities. The author found that the few studies emphasised GSCM, financial and environmental performance. As a result, the study measured the association between the variables (GSCM, financial and environmental performance). Such measurements were made through quantitative research methods; a questionnaire survey was utilized in collecting the opinion. Analyzing the opinion reveal that GSCM affects performances (financial and environmental).

Saad and Siddiqui (2019) explored the relationship between GSCM, financial, environmental, and organizational performance. Quantitative research methods in which Likert scale questions develop. Analysis showed that GSCM had no statistical association with environmental and financial performance. However, GSCM had a positive and significant relationship with organization performance.

Agyabeng-Mensah *et al.* (2020) examine the direct effect of green logistics management practices on performance (environment, social, market, and financial aspects). Also, mediating effects are assessed with performance (environment, social, market, and financial) and green logistics management. Quantitative research methods in which five-point Likert scale questionnaire development. The analysis provided an outcome that green logistics positively affected environmental performance. Also, an insignificant effect was found on green logistics and social, market, and financial performance. Moreover, environmental performance mediates green logistics and financial, market, and social performance. Social performance fails to mediate the effect of green logistics and environment on financial performance.

Hashmi and Akram (2021) discuss the association between GSCM, environment, and financial performance of firms. Also, operational performance, external pressure were utilized to check the mediating role of the above variables. Quantitative research methods prove that partial mediation of operational performance exists among GSCM, environmental and financial performance. Moderated regression analysis highlighted that external pressure enhances the relationship between GSCM and operational performance.

Jum'a *et al.* (2021) mention that sustainable development created competitiveness among manufacturing companies in the market. These companies were under pressure to maintain sustainable environmental standards while performing manufacturing activities. Such companies faced concern due to financial pressure adopting sustainable development practices. As a result, the present study focused on how the manufacturing companies manage variables (GSCM on environmental sustainability and financial performance). These variables were measured using quantitative research methods; a well-designed questionnaire was utilized to collect opinions from the respective companies. These companies response rate was evaluated to be 83.5%. The companies' opinion assessment reveals that GSCM had a positive association with environmental sustainability. GSCM had a positive and moderate effect on financial performance. Demographic information indicates that the majority were male, with work experience of 5-10. The most number of respondents were possessed with bachelor's degree than rest qualification.

Table 2. Financial performance

Author	objective	methods	results

Kalyar *et al.* (2019)	To analyze how the GSCM affected financial performance	Quantitative research methods	GSCM had a direct effect on financial performance
Nguyen *et al.* (2020)	To investigate the effect of GSCM on financial and non-financial efficiency	Quantitative research methods	GSCM had a strong relationship with financial performance, but it did not statistically significant
Khan et al. (2021)	To analyze the relationship between GSCM, financial and environmental performance	Quantitative research methods	GSCM had a relationship with financial performance and environmental performance
Saad and Siddiqui (2019)	To find out the relationship between GSCM, financial, environmental and organizational performance	Quantitative research methods	GSCM had no relationship with environmental and financial performance. GSCM had a positive and statistical relationship with organization performance
Agyabeng-Mensah *et al.* (2020)	To analyze the effect of green logistics management practices on performance (environment, social, market, and financial aspects	Quantitative research methods	Green logistics had a positive effect on environmental performance. Also, an insignificant effect was found on green logistics and social, market, and financial performance.
Hashmi and Akram (2021)	To investigate the association between GSCM, environment, and financial performance of firms	Quantitative research methods	GSCM had a mediate relationship with environmental and financial performance
Jum'a *et al.* (2021)	To measure the effect of GSCM on financial performance	Quantitative research methods	GSCM had a moderate effect on financial performance

Source: Own Illustration

The researcher found that GSCM positively correlated with financial performance (Kalyar *et al.* 2019; Khan *et al.* 2021; Jum'a *et al.* 2021). Despite no relationship, GSCM and financial performance were not statistically significant (Nguyen *et al.* 2020; Saad, Siddiqui 2019; Agyabeng-Mensah *et al.* 2020). Hashmi and Akram (2021) argued a partial mediate relationship

between GSCM and financial performance. All the above-stated effects were identified with the help of regression analysis. The analysis indicates variables' exact effect (GSCM and financial performance (Kalyar *et al.* 2019; Khan *et al.* 2021; Nguyen *et al.* 2020; Jum'a *et al.* 2021). One of the studies mentioned that the instruments were reliable. The reliability of Cronbach's alpha and the value indicated higher internal consistency (Jum'a *et al.* 2021). The other studies did not assess their reliability in their respective studies. As a result, the study measures the reliability of financial performance indicators through Cronbach's alpha.

1.5. Social Performance

Social performance refers to measuring the social issues that increase the concerns in the respective society (Searcy 2012). Social issues in supply chain activities are related more to product and process aspects. It has influenced human safety, welfare and community development. Some social issues are health and safety incidents, practices, safety, economic welfare and growth (Beske-Janssen *et al.* 2015). Percent recycling, product green efficiency, and green image were social performance indicators (Mutingi *et al.* 2014). Some of the social performance indicators were employees' health & safety, incentives & engagement of local employment, economic activities, community health & safety improvement, and reduced the negative effect of products (Abdullah 2016). Employees, suppliers, health & safety, community and customers were the primary indicators of social performance (Zailani *et al.* 2012). The study considered the social performance metrics: employee health & safety, community health &safety, stakeholder value, and economic growth. The variables intake from the existing literature studies illustrates in the below figure

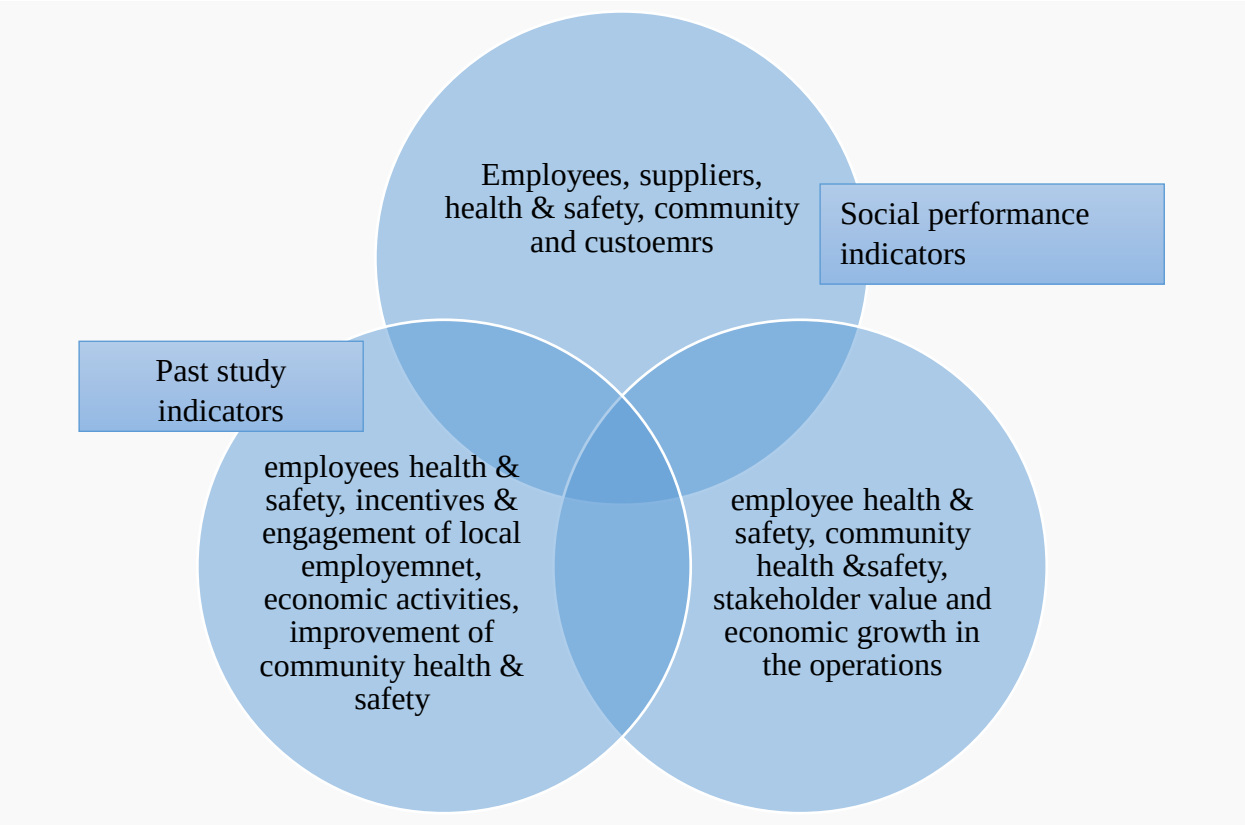

Figure 2. Social performance
Source: Own Illustration

Acquah *et al.* (2020) argue that the impact of green HRM, GSCM, on performance. The study considered performance from operational, market, financial, social, and environmental perspectives. Quantitative research methods were utilized in which survey technique was adopted. It provided an outcome that GSCM had played a mediating role between green HRM and performance (operational, market, social, and environmental performance). Moreover, green HRM and supply chain management created the highest value in all performance.

Abdullah (2016) discusses that Malaysian countries face environmental issues in the study. These issues have influenced the environment and the future of human society. To tackle the issues, the government had implemented the 10th Malaysian plan to create awareness among communities. The companies implemented practices in their respective companies. The author was keen on measuring the effect of GSCM on social performance. Such measurement was made through quantitative research methods; the research instrument for the study was a questionnaire; respondents' opinions were gathered through a mail survey. These survey opinions reveal that the

response rate of the mail survey was 24.68%. The present study found that GSCM had a positive and statistical effect on social performance.

Younis *et al.* (2016) discuss the implementation effect of GSCM on social performance. These effects were measured in the Middle East. The independent variable was GSCM; social performance was the dependent variable. Analyzing the variables through regression analysis reveals that GSCM positively affected social performance.

Irum *et al*. (2018) mention in the study that GSCM had gained attention in Asian countries. This attention induced the author to measure GSCM and its effect on performance through qualitative research methods. Data collection was made through Emerald, science direct, Taylor and Francis and springer. Systematic assessment of literature studies (2008-2017) reveals that GSCM affected economic, environmental, operational and social performance.

Table 3. Social performance

Author	objective	methods	results
Acquah *et al.* (2020)	To measure the impact of green HRM, GSCM on performance	Quantitative research methods	GSCM had played a mediating role between green HRM and performance (operational, market, social, and environmental performance)
Abdullah (2016)	To measure the effect of GSCM on social performance	Quantitative research methods	GSCM had a positive and statistical effect on social performance
Younis *et al.* (2016)	To discuss the implementation effect of GSCM on social performance	Quantitative research methods	GSCM had a positive effect on social performance
Irum *et al*. (2018)	To measure GSCM and its effect on performance	Quantitative research methods	GSCM affects economic, environmental, operational and social performance

Source: Own Illustration

From the limited number of studies, the study observes an effect of GSCM on social performance (Abdullah 2016; Younis *et al.* 2016; Irum *et al.* 2018). A similar quantitative research assessment of GSCM and social performance was made in the studies. GSCM considerably influenced social performance (Irum *et al.* 2018). These social performance metrics have a limited empirical test

found in the literature. As a result, the researcher measured the social performance metrics in the respective study.

1.6. Research gap

Financial performance indicators are measured quantitatively (Feng *et al.* 2018; Jum'a *et al.* 2021). These financial performance indicators evaluate the manufacturing industries. There is a lack of studies on GSCM on the financial performance of fast-moving consumer goods firms. Along with these, the absence of studies measuring the aspects in Pakistan. As a result, these studies are essential to empirically evaluate the exact effect of GSCM on financial performance.

Social performance is one of the indicators of sustainability performance. Abdullah (2016) and Younis *et al.* (2016) argued that social performance metrics could be measured quantitatively. It is imperative to note that the fewer studies made on direct assessment of GSCM with social performance. Most of the assessments are made in manufacturing industries. There is a lack of studies measuring GSCM and social performance in fast-moving consumer goods firms. As a result, the researcher aims to address GSCM and social performance metrics in their study

Most recent studies focus on measuring GSCM and environmental performance. Some of the past studies made on evaluating the relationship and impact of variables (Uddin 2021; Fianko *et al.* n.d.; Hashmi, Akram 2021; Darwish *et al.* 2021; Ye *et al.* 2021; Rupa, Saif 2021; Seman *et al.* 2019; Yu *et al.* 2019; Laari *et al.* 2018; De Sousa Jabbour *et al.* 2017). There are no recent studies on determining the effect of GSCM on fast-moving consumer goods firms (environmental, social and financial performance). In this regard, the study identifies the gap and direct the study greatly.

1.7. Conceptual framework

Resource-based view theory refers to identifying and holding internal resources. Internal resources are tangible, intangible assets, organization processes, knowledge and information (Barney 1991). These resources contribute to the firm ability to improve performance and gain a competitive advantage (Kirchoff 2011). Values align the resources with the external environment to exploit prospects and minimize threats. As per the theory, firms make an effort to identify the resources

that will make the firm competitive. Also, these resources are employed in such a way to exploit their value (Sirmon *et al.* 2007). Identification and holding are not sufficient to gain superior performance. Resources must be managed and exploited effectively and make the organization meet the changes of the external environment. It makes the organization meet competitive advantage. As a result, the main theory postulates the study is resource-based view theory because fast-moving consumer goods firms utilize their internal resources to prevent the emergence of external environment issues (wastages, emission and exploitation of resources) and to sustain for a longer period (Uddin 2021). A similar theory was carried out in past studies (Uddin 2021; Seman *et al.* 2019; De Sousa Jabbour *et al.* 2017). These studies precede the study to fix dependent and independent variables. The Independent variable is GSCM, whereas the dependent variables are social performance, environmental performance and environmental performance. A review of studies on resource-based views has shown that GSCM associates and affects social, environmental, and performance.

1.8. Summary

To sum up this section, it has been demonstrated that resource-based direct the researcher to measure the relationship between GSCM and performances (social, environmental and financial). From the previous studies, quantitative research methods are widely used in the literature to calculate the outcome mathematically. A self-structured questionnaire attempts to solve the problem effectively. So, similar tools were used in gathering the information through the survey method. For a fuller discussion of the methods, the methods have been described in detail under Chapter 2.

2. RESEARCH METHODOLOGY

The chapter describes how to carry the methodology to achieve the research objectives. The research objective of the study is to analyze the effect of GSCM on environmental, financial and social performance. These are analysing the effects of attempts to solve the objective through quantitative research methods. The easiest method to incorporate for GSCM and sustainable performance (environment, social and financial). These methods have been widely used in previous studies. Studies pinpointed that it is a convenient method to address the objective. (Hashmi, Akram 2021; Darwish *et al.* 2021; Ye *et al.* 2021; Fianko *et al.* n.d.; Yu *et al.* 2019; Kalyar *et al.* 2019; Nguyen *et al.* 2020; Khan *et al.* 2021; Saad, Siddiqui 2019; Abdullah 2016; Younis *et al.* 2016; Irum *et al.* 2018). In addition to the method, the section describes the population, sampling strategies, sample size, collection method and ethics in detail.

2.1. Research Methods

Research methods are of two types: Quantitative and qualitative. Merriam *et al.* (2009) point out that a qualitative study is a tool that includes many people with opinions who have different definitions depending on their individual experience and which cover non-numeric data (Saunders *et al.* 2009). For numerical data analysis, (Creswell 2011) shared quantitative analysis views regarding any data method or collection method.

Justification: As the current thesis focuses on the questionnaire with its deductive approach, a theoretical methodology based on the positivism theory is justified (Saunders, Lewis 2012). To explain the facts, the scientist holds a different and open-minded view (Duffy 1987). The study employed quantitative research methods in this work is described in detail in previous studies(Hashmi, Akram 2021; Darwish *et al.* 2021; Ye *et al.* 2021; Fianko *et al.* n.d.; Yu *et al.* 2019; Kalyar *et al.* 2019; Nguyen *et al.* 2020; Khan *et al.* 2021; Saad, Siddiqui 2019; Abdullah 2016; Younis *et al.* 2016; Irum *et al.* 2018). This approach involves analyzing or processing questionnaires, including graphs or statistics, to collect numerical data. Quantitative analysis uses

generalizable and straightforward methods to assess the massive sample of the phenomenon of interest. This study, therefore, adopts a quantitative approach to increase confidence in the results. The quantitative questionnaire that was used can be found in Appendix 1.

2.2. Population and sampling

The population represents the entire set of target populations (Majid 2018). The population of this research is FMCG firms in Karachi. Karachi is an economic hub of Pakistan. Some of the leading FMCG firms: Unilever, Egro, Nestle, P&G, PTC, EBM and more. Unilever, Engro and P&G employees take into account these companies.

2.3. Samples

It is a part of the population representing the entire population (Kabir 2016). The present study samples employees of FMCG firms in Karachi.

Justification: As the literature describes, samples are FMCG firms in Karachi. (Khan *et al.* 2021). These study represented the samples of 191 FMCG companies in Karachi.

2.4. Sampling technique

Sampling collects the information from a sample that indicates the whole population (*ibid*). There are two types of sampling techniques probability and non-probability sampling. Probability sampling has provided that every member has an equal part included in the sample, whereas non-probability sampling did not equal chance.

Justification: Out of two sampling techniques, the study considers non-probability sampling in which convenience sampling had been taken into account. The primary benefit of taking non-probability sampling is that it needs less time and effort, and at the same time, it is not costly. Similar sampling techniques have been used previously by Kalyar *et al.* (2019)

2.5. Sample size

As described in the literature, the population is 191 FMCG firms in Pakistan; the confidence level is 95%, the sample size is 135. The study conducts an online survey with 135 respondents, of which 128 responded adequately. As a result, the response rate of the study is 94%.

Justification: It is worth pointing out that the present response rate is higher than the previous studies (Fianko *et al.* n.d; Yu *et al.* 2019; Jum'a *et al.* 2021; Hashmi, Akram 2021; Darwish *et al.* 2021). The outcome is quite contradictory to one of the previous studies Abdullah (2016), Laari *et al.* (2018) and De Sousa Jabbour *et al.* (2017) because these studies recorded a very low response rate

2.6. Data collection method

Data collection: The process of collecting and measuring the study's respective variables established. These ways precede to find out the answer for the research questions through hypothesis and measures outcome statistically. Data collection are of two types: qualitative and quantitative methods. Quantitative methods represent the data in a numerical form, whereas qualitative methods show the data in a textual form. In this study, quantitative data methods were used to measure the association between GSCM and performances

Justification: The present study used quantitative data collection methods that has been previously used by (Hashmi, Akram 2021; Darwish *et al.* 2021; Ye *et al.* 2021; Fianko *et al.* n.d.; Yu *et al.* 2019; Kalyar *et al.* 2019; Nguyen *et al.* 2020; Khan *et al.* 2021; Saad, Siddiqui 2019; Abdullah 2016; Younis *et al.* 2016; Irum *et al.* 2018). Quantitative data measurements of the study adopt open-ended questions, close-ended questions and Likert scale type questions. Another author used similar questions in Agyabeng-Mensah *et al.* (2020).

Classification of data: There are two types of data: primary and secondary. Primary data was collected from first-hand experience. Secondary data was collected from the already published sources. Out of two data, primary data uses to get the more reliable and objective outcome. The questionnaire uses as a source to gather respondents' opinions. There are three sections in the questionnaire: Profile of respondents, GSCM and performance. Demographic profiles of

respondents have both open-ended and close-ended questions. GSCM and performance measurements were made through the Likert scale.

Web survey: All the questions are recorded in the Google form (**https://docs.google.com/forms/d/e/1FAIpQLSeIBiRnHyVGDwFvQegzhmjsE_HTsRem2S22uXLedbxzTPxMtA).** The link was sent to all the FMCG firms in Karachi, Pakistan. The collected data was gathered via Google forms and stored in Google Drive to be accessed later to draw an analysis.

Statistical analysis: Tools applied for the study are frequency distribution, descriptive statistics, correlation, regression and factor analysis. Frequency distribution exhibit the various categories and their observation and percentage in a tabular form. Profile of respondents is age, gender, education, work experience and firm size measures with the help of frequency distribution. Descriptive statistics measure the precision and accuracy of the respective variables. Correlation uses to determine the integration between GSCM and performance (environment, social and financial). Regression applies in determining the effect of GSCM on environment, social and financial performance.

2.7. Ethical considerations

Anonymity: The online survey considered understudy respondents' shopper conduct in brand acknowledgement and chocolate ice cream parlor inclination depended on classification and secrecy. Normal definition expresses that secrecy alludes to "guaranteeing that data is open just to those approved to approach." This definition is widened by including that secrecy comprises the procedure of approval, privilege, and consent (Hammer, 2007). Approval alludes to the probability of doing what is approved or the ability to approach a specific capacity allowed from a more significant position authority, such as a favored individual or an establishment. Entitled (availability) is comprehended under agreeing to specific arrangements, compulsory data stream, or access to detailed data. Authorization is the privilege of an individual (organization or a gathering of people) to play out specific assignments or utilize certain data. Accordingly, privacy might be characterized as guaranteeing that specific data is just open to the qualified person. It is just available to utilize the offered data to the degree allowed (Hammer, 2007).

As Whelan (2007) indicated, inquire about investigations frequently recognize the ideas of secrecy and privacy. The first is characterized as the absence of social assessment because of the nonattendance of recognizable proof required for an assessment. The subsequent idea is based on the distinguished information (of respondents) without revealing private data (Whelan, 2007). It is accepted that namelessness and secrecy assume a positive job in the readiness of the respondents to take a section in the review and decidedly impacts the unwavering quality of given data.

Confidentiality: In this study, the author doesn't approach understudies' very own data, including unique understudy codes, names, and other reasonable data. Other than constrained data on the example, which respondents were approached to give, for example, relative age gathering or gross pay, the creator has no entrance to extra data, making the overview seek after part of the respondent's secrecy. Simultaneously, the creator doesn't reveal various reposting (informal organization term for circulation and replicating the underlying message in their separate profiles to draw in more watchers) made in the part bunches nor initiators of reposting, which is a part of research classification.

3. DATA ANALYSIS

3.1. Demographic profile of respondents

The profile of respondents is age, gender, education, working experience and firm size. All the questions are raised in the form of open-ended and close-ended questions. Age and work experience are open-ended questions. Gender, education and firm size are close-ended questions. The respondents' age is classified into one of four categories: 25-30 years, 30-35 years, 35-50 years and above 40 years. The gender of employees is male and female. Education qualification is classified into four categories: Bachelors, Master, Professional degree holders and others. In this study, one of the categories of other education qualifications indicates diploma holders, ITI and secondary school education. The working experience of respondents is classified into one of four categories: Less than two years, 2-5 years, 5-8 years and above eight years. The firm size of the organization is big, small and moderate. All these profiles of respondents were measured with the help of frequency distribution. The outcome of frequency distribution is illustrated below.

Age: The age categories of respondents are classified into four categories: 25 to 30 years, 30 to 35 years, 35 to 40 years, and more than 40 years. It is observed that more than 50% of respondents are between 25-30 years, followed by 21.9% between 35-40 years, 19.5% between 30-35 years, and the remaining 7% of respondents are aged above 40 years. So, it is clear that most respondents are between the age category of 25-30 years.

Gender: Out of 128 respondents, 69 (53.9%) are male, whereas 59 (46.1%) are female. Therefore, the researcher found that the percentage of male respondents is more than female respondents and indicates that the male respondents dominate the study.

Education qualification: In the study, education qualifications are categorized into four groups like undergraduate, postgraduate, professional degree and other qualifications. Such other qualifications represent the qualifications of diploma, ITI and higher secondary education. The

highest percentage of respondents hold undergraduate degrees (67.2%), professional degree holders are 18%, and postgraduates are 12.5%. Lastly, a lower percentage of respondents (2.3%) hold other qualifications. It notes that the maximum number of respondents hold undergraduate degrees.

Working experience: Fast-moving consumer goods firms' working experience is classified into one of four categories: less than two years, 2-5 years, 5-8 years and above eight years. The maximum number of respondents have experience of less than two years in Fast-moving consumer goods firm (61.7%). Employees with experience of 2-5 years (20.3%), 9.4% between 5-8 years and 8.6% have more than eight years of work experience. So, it finds that the highest number of respondents have work experience of less than two years in Fast-moving consumer goods firms in Pakistan.

Firm size: It is observed from the above table that 48.4% of respondents are in big size firms, followed by 35.2% of respondents in moderate size firms and 16.4% of respondents in small size firms. Hence, most of the respondents who participated in the study are in big firms.

3.2. Mean and standard deviation

GSCM: The researcher measures GSCM with the help of the Likert scale. Constructs include cooperation with eco-design and green packaging, support from top-level employees for environmental practices, cooperation from FMCG firms for environmental improvements, ISO 14001 certification, using natural environmental arguments, periodic updating of the environmental issues, using ecological, recyclable or reusable material for packaging and establishing recycling for used and defective products, need of suppliers to use degradable and non-hazardous packaging, reduce the environmental impact of the activities and firms and customers making joint decisions to reduce the overall influence of products. However, the mean value of GSCM may vary from 2.60 to 3.75. Thus, the highest mean value indicates the statement of “Using ecological, recyclable or reusable material for packaging” with 3.75. Statement “Need of suppliers to use degradable and non-hazardous packaging” has the least mean value of 2.64. Hence, the study found that higher mean higher usage of ecological, recyclable or reusable materials for packaging.

Table 4. Green supply chain management

Particulars	Mean	SD
Cooperation with the community for eco-design and green packaging	3.6250	.92217
Firms aids support from top-level employees for environmental practices	3.3047	.79920
Cross-functional co-operation from FMCG firms for environmental improvements	3.2031	.65640
ISO 14001 certification	3.3359	.73471
Using natural environmental arguments in marketing the products	2.7031	1.15260
Periodic updating of the environmental issues on the websites/stores	3.1562	.68087
Using ecological, recyclable or reusable material for packaging	3.7500	.83241
Establishing recycling for used and defective products	3.1641	.97025
Need of suppliers to use degradable and non-hazardous packaging	2.6406	1.12757
FMCG firms work together with the customer to reduce the environmental impact of the activities	3.1094	1.05169
Firms and customers making joint decisions to reduce the overall influence of products	3.0703	1.05131

Source: Own calculation

Environmental performance: The study measures the environmental performance with the help of five Likert scales, which indicates statements like reducing air and water pollution, diminishes energy consumption, compliances with environmental standards and diminishing the usage of hazardous materials. However, the average value of environmental performance is in the range of 2.65 to 3.85. Thus, the highest average value indicates the statement of "FMCG firms following compliances with environmental standards" with 3.85 and the statement "It reduces air and water pollution" represent the least average value with 2.67. Therefore, it is found that most of the respondents are highly agreed that FMCG firms following compliances with environmental standards

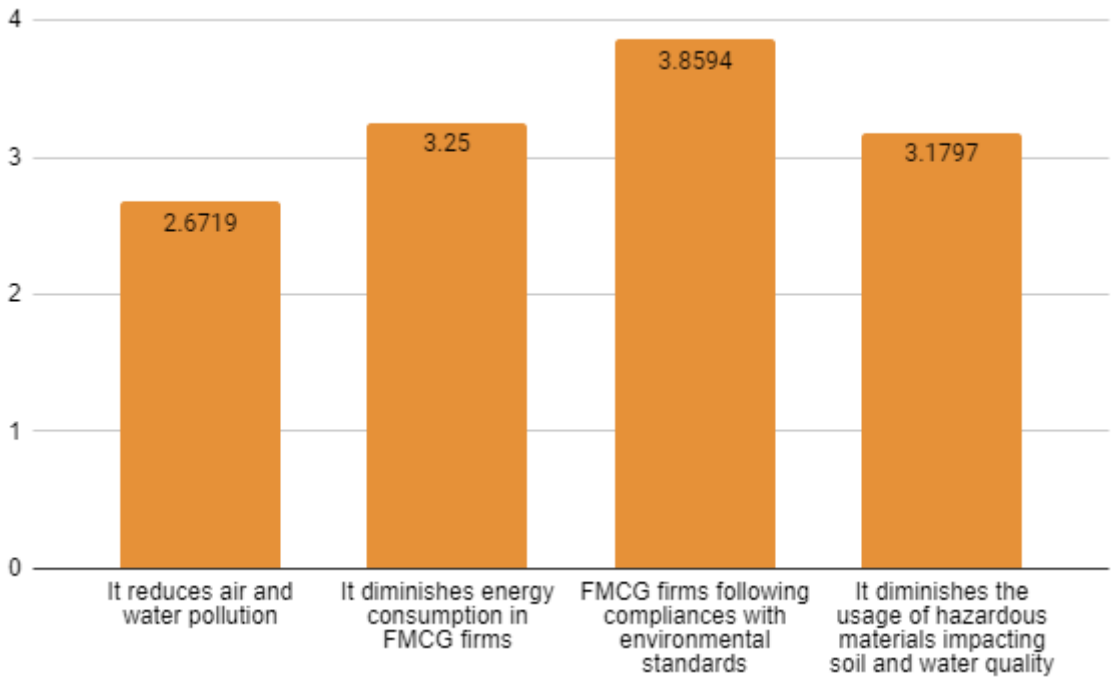

Figure 3: Environmental performance
Source: Own calculation

Social performance: The researcher measures social performance using the Likert scale. The items include improving employee health and safety, strictly prohibiting child labor, improving community health and safety, and improving overall stakeholder welfare. Social performance has a mean value in the range of 2.25 to 3.35. Hence, the highest mean value indicates “It improves community health and safety” with 3.32. The least mean value represents “It improves community health and safety” with 2.28. Therefore, it is concluded that most respondents agree that it improves community health and safety.

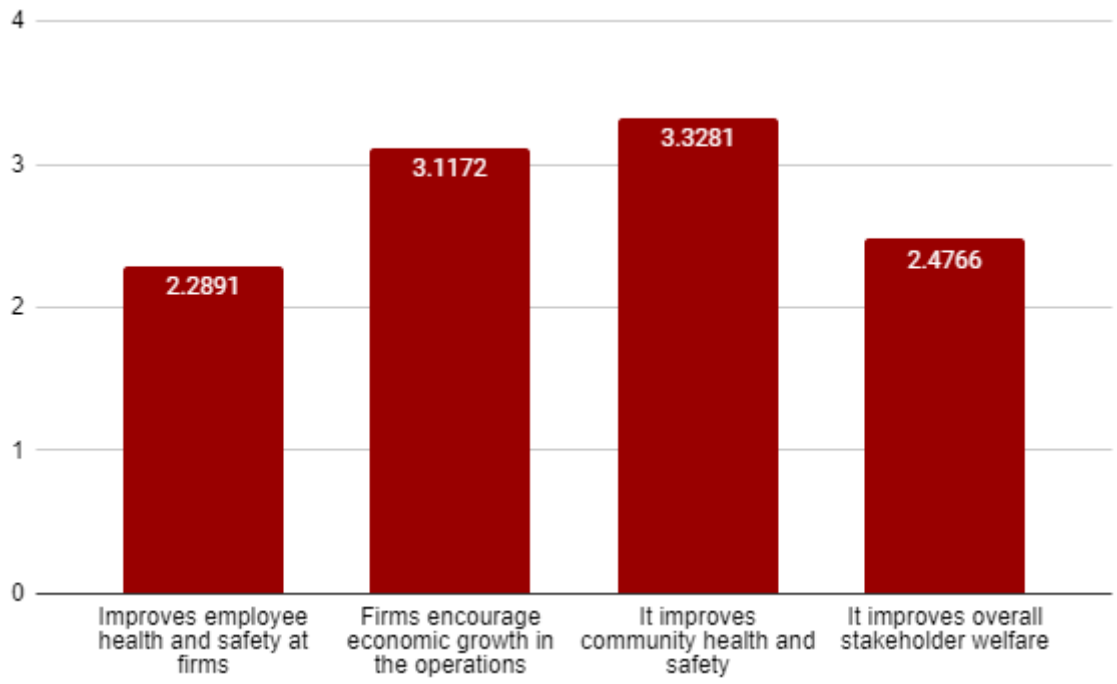

Figure 4: Social performance
Source: Own calculation

Financial performance: The five-point Likert scale measures in descriptive statistics. The main intention of using statistics is to know the precision of the performance. The constructs of financial performance include sales growth, market share growth, return on investment, and profit margin on sales. The average value of financial performance lies between 2.53 and 3.62, representing a slightly moderate financial performance level. The highest mean is 3.62 for-profit margin on sales whereas 2.53 for market share. So, the outcome reveals that the highest mean value indicates the highest profit margin on sales.

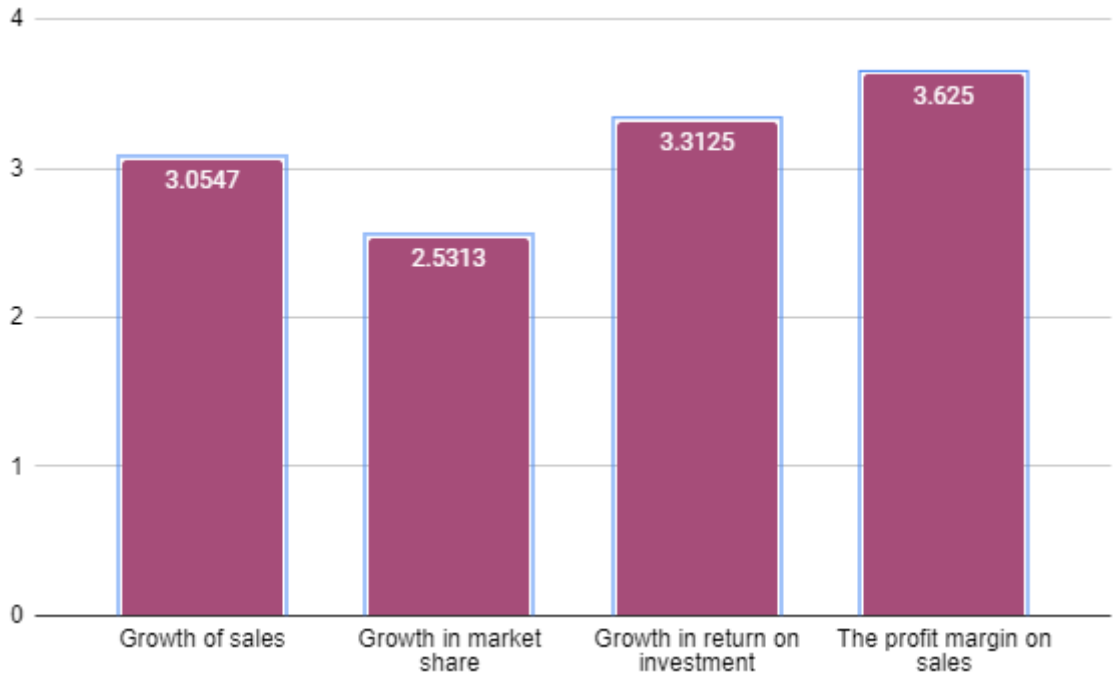

Figure 5: Financial performance
Source: Own calculation

3.3. Association between the green supply chain management and performance of Fast Moving Consumer Goods firms in Pakistan

Bivariate Correlation is used to identify the association between the respective variables. The study fixes GSCM as a dependent variable and independent variable as environmental, social and financial performance. The outcome of the analysis has been described in detail in the below table.

Table 5: Association between the green supply chain management and performance of Fast Moving Consumer Goods firms in Pakistan

Particulars		Value
GSCM and environmental performance	r	.700**
	sig	(.000)
GSCM and social performance	r	.774**
	sig	(.000)
GSCM and financial performance	r	.618**
	sig	(.000)

Source: Own calculation

The table above shows that the bivariate correlation determines the relationship between the variables. The researcher considers the environmental, social, and financial performance of Fast-Moving Consumer Goods firms in Pakistan as an independent variable and supply chain management as a dependent variable. A detailed analysis is listed below

GSCM and environmental performance: It is observed from the table that correlation between supply chain management and environmental performance. The correlation coefficient value of the variable is 0.700, which is statistically significant at a 5% significance level. So, GSCM is strong, positive and statistically significant with environmental performance.

GSCM and social performance: It is indicated from the table that the correlation coefficient value of social performance is 0.774, which means the statistically significant at a 5% significance level. So, GSCM is strong, positive and statistically significant with social performance.

GSCM and financial performance: As seen in the above table, the correlation coefficient value of the variables (GSCM and financial performance) is 0.618, which is statistically significant at a 5% significance level. At the same time, the p-value is less than 0.05. So, GSCM is strong, positive and statistically significant with financial performance.

Finally, the study finds that GSCM is positively associated with the performance (environment, social and finance) of FMCG firms in Pakistan.

3.4. Regression analysis

This section looks to improve the earlier correlation approach. Using simple linear regression analysis helps identify whether the variables have a linear relationship (Dependent and independent variable). A more detailed analysis has been presented in the subsequent subsection.

3.4.1. Impact of green supply chain management on environmental performance

Green supply chain management and its impact on environmental performance: To address the research questions outlined above, the researcher uses simple regression analysis to identify the statistical effect of how the environmental performance of FMCG firms affects GSCM. The study

considers environmental performance an independent variable and supply chain management a dependent variable. The outcome of regression presents below.

H_1: Green Supply chain management positively associates and influences the environmental performance of FMCG firms in Pakistan

Table 6: Impact of green supply chain management on environmental performance

Particulars	r	r^2	f	sig	B	t	sig
C	.700[a]	.491	121.356	.000[b]	1.176	6.326	.000
EP					.700	11.016	.000

Source: Own calculation

The table above shows the R-value of GSCM and environmental performance is 0.700, which indicates a strong relationship between the respective variables. Next, the R-square value is 0.491, representing GSCM explain 49.1% of the variation in the environmental performance. So, the model used to relate the variables' relationships is acceptable. The F-statistics is inferred to be 121.356, which is statistically significant at a 5% significance level. Thus, it shows that the present data of GSCM is sufficient to predict environmental performance.

Next, the coefficient value is 0.700, statistically significant at a 5% significance level. The sign of the coefficient is positive. The researcher finds a t-Statistic of 11.016 with a p-value of less than 0.05. As a result, it observes that one unit of GSCM changes increases environmental performance to 0.700 units. So, it concludes that GSCM positively associates and influences the environmental performance of FMCG firms in Pakistan.

The regression equation of the model is

Green supply chain management = 1.176 + 0.700 (Environment performance)

3.4.2. Impact of green supply chain management on social performance

Simple linear regression is used to identify the effect of the GSCM on the social performance of FMCG firms. The study's independent variable is social performance, whereas the dependent variable is GSCM. Later determining the variables, the hypothesis presents below.

H_2: Green Supply chain management is positively associated with and influences the social performance of FMCG firms in Pakistan

Table 7: Impact of green supply chain management on social performance

Particulars	r	r^2	f	sig	B	t	sig
C	.774[a]	.599	188.75	.000[b]	1.393	10.360	.000
SP					.774	13.725	.000

Source: Own calculation

It is observed from the above table that the R-value of social performance is 0.774, which means that GSCM has a strong relationship with social performance. In addition, the R-square value is 0.599, suggesting that GSCM explains 59.9% of the variation in social performance. So, the model used to relate the variables' relationships are acceptable. Next, the F-statistics is 188.75, which is statistically significant at a 5% significance level. The present GSCM data is sufficient to forecast social performance.

Additionally, the coefficient value is 0.774, which is statistically significant at a 5% significance level. The sign of the coefficient is positive. The researcher found a t-Statistic of 13.725 with a p-value is less than 0.05 to assess the importance of social performance in the model. One unit of increment in GSCM increase social performance to 0.774 units. So, it concludes that the hypothesis is accepted, stating GSCM is positively associated with and influences the social performance of FMCG firms in Pakistan.

The regression equation is
Green supply chain management = 1.393 + 0.774(social performance)

3.4.3. Impact of green supply chain management on financial performance

The section aims to measure how financial performance affects GSCM. The study observes that financial performance is considered independent, and the dependent variable is GSCM. The hypothesis of the variable presents below.

H_3: Green Supply chain management is positively associated with and influences the financial performance of FMCG firms in Pakistan

Table 8: Impact of green supply chain management on financial performance

Particulars	r	r^2	f	sig	B	t	sig
C	.618[a]	.382	77.885	.000[b]	1.631	9.027	.000
FP					.618	8.825	.000

Source: Own calculation

It is noted from the above table that the R-value of financial performance is 0.618, which means that GSCM has a moderate relationship with financial performance. Next, the R-square value is 0.382, indicating that GSCM explains 38.2% of the variation in financial performance. So, the model used to relate the variables' relationships are acceptable. Next, the F-statistics is 77.885, which is statistically significant at a 5% significance level. So, it indicates that the GSCM data is sufficient to predict financial performance.

Additionally, the coefficient value is 0.618, which is statistically significant at a 5% significance level. The sign of the coefficient is positive. The researcher found a t-Statistic of 8.825 with a p-value is less than 0.05. One unit increment in GSCM increases financial performance to 0.618. So, it concludes that GSCM is positively associated with and influences the financial performance of FMCG firms in Pakistan. The regression equation for the model is

Green supply chain management = 1.631+0.618(Financial performance)

3.5. Factor analysis

A factor analysis was performed to determine the eigenvalues of each factor in the data. The Kaiser-Meyer-Olkin Test is used to measure the sample adequacy, and the KMO value is 0.813, which is greater than Kaisen (1974) recommended threshold of 0.8. As a result, the value of KMO is acceptable. BTO has a significant value of 0.000, less than 5%, showing a correlation between sufficiently large items for EFA. On the other hand, the BTS has a chi-square value of 2334.476 and a significance level of less than 5%, indicating that correlations between items were sufficiently significant for EFA. The BTS and KMO results for all constructs Supply Chain Management and performance of FMCG firms in Pakistan indicated that they were highly significant, implying that these variables were acceptable for factor analysis

Table 9: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.813
Bartlett's Test of Sphericity	Approx. Chi-Square	2334.476
	df	253
	Sig.	.000

Source: Own calculation

The below table describes the communalities identified by Principal Components Analysis. PCA is based on the assumption that all variation is common; hence communalities are equal to one before extraction. The communalities in the extraction column show the data structure's inherent variability. It is found that nearly 91.5 percent of the variance in "Market share growth" is explained, whereas 55.3 percent of the variance in "Establishing recycling for used and defective items" is explained.

Table 10: Communalities

Particulars	Extraction
EP1	.726
EP2	.807
EP3	.774
EP4	.603
SP1	.792
SP2	.842
SP3	.695
SP4	.799
FP1	.816
FP2	.915
FP3	.599
FP4	.573
GSCMP1	.781
GSCMP2	.864
GSCMP3	.609
GSCMP4	.664
GSCMP5	.681
GSCMP6	.675
GSCMP7	.696
GSCMP8	.553
GSCMP9	.625
GSCMP10	.600
GSCMP11	.710

Source: Own calculation

The number of components to be calculated is determined by the size of the eigenvalues and the percentage of specified variance. Only factors equal to or greater than one are considered significant in this study, and variance of at least 70% is considered acceptable. According to the table results, one factor had greater eigenvalues than that, accounting for 71.297 percent of the total variance. The component, which had an eigenvalue of roughly 1.858, explained 71.297 percent of the variation.

Table 11: Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.232	40.139	40.139	5.081	22.090	22.090
2	2.880	12.522	52.661	4.432	19.269	41.359
3	1.999	8.689	61.350	2.619	11.388	52.746
4	1.183	5.141	66.492	2.408	10.472	63.218
5	1.105	4.805	71.297	1.858	8.079	71.297
6	.857	3.726	75.022			
7	.827	3.595	78.617			
8	.790	3.433	82.050			
9	.579	2.519	84.569			
10	.547	2.378	86.947			
11	.513	2.229	89.176			
12	.412	1.789	90.965			
13	.368	1.599	92.564			
14	.333	1.449	94.013			
15	.282	1.225	95.238			
16	.244	1.059	96.297			
17	.216	.941	97.238			
18	.197	.857	98.095			
19	.150	.653	98.749			
20	.108	.468	99.217			
21	.074	.324	99.540			
22	.071	.307	99.847			
23	.035	.153	100.000			

Source: Own calculation

The scree plot presents the eigenvalues as a function of all the components. The graph is used to figure out how many factors to maintain. The main point is where the curve starts to flatten. The figure describes how the curve flattens between components 5 and 6. Furthermore, only the first five factors were kept because factor 6 has an eigenvalue less than one.

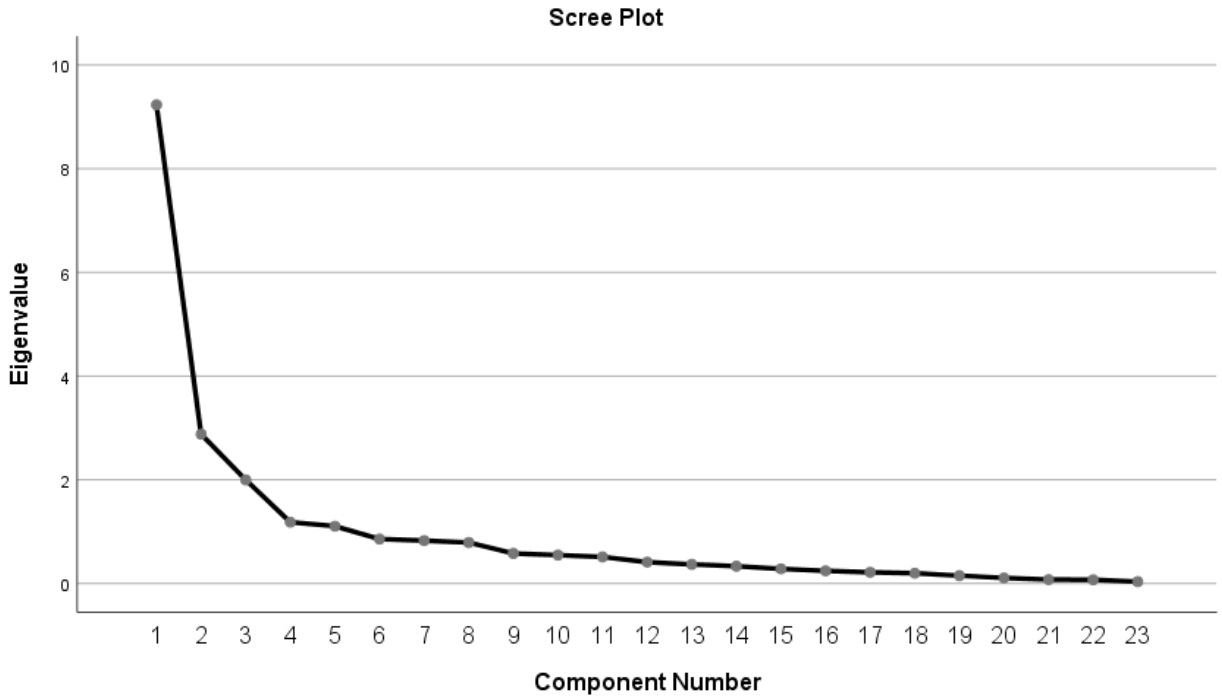

Figure 6: Screen plot
Source: Own calculation

The rotated Component Matrix indicates that factors were classified into five categories. Each of the five variables is labelled with the highest-scoring score for that performance. It is worth explicitly stating that factor loadings greater than 0.50 are significant. 0.60 is considered more significant, whereas 0.70 or above is considered extremely significant. The gap in the table indicates loadings smaller than 0.5; this simplifies reading the table. The researcher suppressed all loadings less than 0.5.

Table 12: Rotated Component Matrix

Particulars	Component				
	1	2	3	4	5
EP3	.832				
EP2	.628				
EP4	.627				
EP1	.579				
SP2		.852			
SP1		.759			
SP3		.655			
SP4		.652			

FP1					.788
FP4					.725
FP2					.716
FP3					.622
GSCMP1			.779		
GSCMP2			.764		
GSCMP3			.751		
GSCMP4			.730		
GSCMP5			.668		
GSCMP6			.662		
GSCMP7			.550		
GSCMP8			.522		
GSCMP9				.738	
GSCMP10				.632	
GSCMP11				.603	

Source: Own calculation

The first factor indicates the environmental performance comprises the items such as reducing air and water pollution, diminishing energy consumption, complying with environmental standards, and diminishing the usage of hazardous materials with loading ranging from 0.832 to 0.579. Thus, the factor load is higher than 0.5 and concluded that the environmental performance variables are significant.

The second factor is named a social performance that comprises statements like improving employee health and safety, strictly prohibited child labour, community health and safety, and overall stakeholder welfare with loading differing from 0.852 to 0.652. Hence, the factor load of social performance is higher than 0.6 and found that social performance is considered more significant.

The third factor is assigned as supply chain management which comprises the statement like cooperation with eco-design and green packaging, support from top-level employees for environmental practices, cooperation from FMCG firms for environmental improvements, ISO 14001 certification, using natural environmental arguments, periodic updating of the environmental issues, using ecological, recyclable or reusable material for packaging and establishing recycling for used and defective products with loading ranging from 0.779 to 0.552. Hence, the factor load of supply chain management is higher than 0.5 and found that supply chain management is considered significant.

The fourth factor is named as supply chain management practices which indicates the variable such as the need of suppliers to use degradable and non-hazardous packaging, reduce the environmental impact of the activities and firms and customers making joint decisions to reduce the overall influence of products with loading ranging from 0.738 to 0.603. Thus, the factor load of supply chain management practices is higher than 0.6 and found that supply chain management practices are considered as significant.

The last factor is financial performance, which constructs the variables such as sales growth, growth in market share, growth in return on investment and profit margin on sales with loading range from 0.788 to 0.622. Therefore, the factor load of financial performance is higher than 0.6 and found that financial performance is considered more significant.

3.6. Result

FMCG is emerging as one of the fifteen largest sectors that reaps revenue to the manufacturers. Globalization and modern trade create a thrust for the customers to have the products to meet their daily activities. FMCG companies supply the products through third party logistic service providers. These providers emit the environment because they supply the products to the available stores multiple times. So, the government of Pakistan is formulating strict laws and regulations to practice GSCM in the respective Fast-moving consumer goods organization. Despite Fast-moving consumer goods contribution to green practice, Pakistan organization contributes less importance to environmental concerns. So, the study focuses on examining the GSCM of Fast-moving consumer goods in Pakistan. GSCM of the companies was measured using various statements. Statements indicating GSCM were cooperation with eco-design and green packaging, support from top-level employees for environmental practices, cooperation from FMCG firms for environmental improvements, ISO 14001 certification, using natural environmental arguments, periodic updating of the environmental issues, using ecological, recyclable or reusable material for packaging and establishing recycling for used and defective products, need of suppliers to use degradable and non-hazardous packaging, reduce the environmental impact of the activities and firms and customers making joint decisions to reduce the overall influence of products. The GSCM assessment varies between 2.60 and 3.75, indicating a moderate level mean score of GSCM.

Descriptive statistics reveal that Fast-moving consumer goods firms increased the usage of ecological, recyclable or reusable materials for packaging in their organization.

Next, the performances of Fast-moving consumer goods are measured in descriptive statistics. Performances of environmental, social and financial aspects considered.

Environment performance considered the statements to reduce air and water pollution, diminish energy consumption, comply with environmental standards, and diminish the usage of hazardous materials. Out of the four statements, Fast-moving consumer goods gave higher importance to follow complaisance as per environmental standards.

Social performance includes statements improvement in employee health and safety, strictly prohibiting child labour, improvement in community health and safety, and overall stakeholder welfare. Among the four statements, the highest mean value indicates that Fast-moving consumer goods improved community health and safety.

Financial performance includes sales growth, market share growth, return on investment, and profit margin on sales. The outcome of descriptive statistics indicates that Fast-moving consumer goods gave higher importance to profit margin on sales.

Bivariate correlation showed that GSCM had a strong, positive and statistically significant association with environmental, social and financial performance

Simple regression analysis reveals that GSCM had an effect of 49.1% on environmental performance. Next, GSCM had an effect of 59.9% on social performance. Finally, GSCM had an effect of 38.2% on financial performance

The overall profile of Fast-moving consumer goods employees is 25-30 years. Most of the employees were male and held UG degrees, and had an experience of fewer than two years. Most of the employees were from big firms, whereas fewer employees were from other firms.

3.7. Discussion

This study measured GSCM and performances (Environment, social and financial performance) in quantitative research methods. This method is a powerful method for determining the outcome in a quantitative form. Acquah *et al.* (2020); Abdullah (2016); Younis *et al.* (2016); Irum *et al.* (2018); Uddin 2021; Fianko *et al.* (n.d.); Hashmi and Akram (2021); Darwish *et al.* (2021); Ye *et al.* (2021); Rupa and Saif (2021); Seman *et al.* (2019); Yu *et al.* (2019); Laari *et al.* (2018); De Sousa Jabbour *et al.* (2017); Kalyar *et al.* (2019); Nguyen *et al.* (2020); Khan et al. (2021); Saad and Siddiqui (2019); Agyabeng-Mensah *et al.* (2020); Hashmi and Akram (2021); Jum'a *et al.* (2021).

Later determining the methods, samples were gathered in the convenience sampling method. Similar sampling techniques have been used previously by Kalyar *et al.* (2019). The sample size for the study was 128, which is quite higher than one of the previous studies (Seman *et al.* 2019). Next, quantitative data methods were used to measure the association between GSCM and performances (Hashmi, Akram 2021; Darwish *et al.* 2021; Ye *et al.* 2021; Fianko *et al.* n.d.; Yu *et al.* 2019; Kalyar *et al.* 2019; Nguyen *et al.* 2020; Khan *et al.* 2021; Saad, Siddiqui 2019; Abdullah 2016; Younis *et al.* 2016; Irum *et al.* 2018).

GSCM indicators were cooperation with eco-design and green packaging, support from top-level employees for environmental practices, cooperation from FMCG firms for environmental improvements, ISO 14001 certification, using natural environmental arguments, periodic updating of the environmental issues, using ecological, recyclable or reusable material for packaging and establishing recycling for used and defective products, need of suppliers to use degradable and non-hazardous packaging, reduce the environmental impact of the activities and firms and customers making joint decisions to reduce the overall influence of products. Such constructs are consistent with the previous studies Carter, Rogers 2008; Dong *et al.* 2021; Khan *et al.* 2020; Mumtaz *et al.* 2018; Dong *et al.* 2021.

In this study, the performances were environment, social and financial performance. Authors have found that these performances contribute most to measuring the sustainable performance of Fast-moving consumer goods (Zaid *et al.* 2018; Green *et al.* 2012; Çankaya, Sezen 2019). Financial indicators were sales growth, market share growth, return on investment, and profit margin of sales. Such indicators agree well with existing studies on Jum'a *et al.* 2021; Yang *et al.* 2011;

Hofer *et al.* 2012; Feng *et al.* 2018; Jayarathna, Lasantha 2018; Hong, Najmi 2020; Sachin, Rajesh 2021; Allam *et al.* 2021). Social performance indicators were employee health & safety, community health &safety, stakeholder value, and economic growth. Such indicators were observed in the previous studies Zailani *et al.* 2012; Abdullah 2016; Mutingi *et al.* 2014 and Beske-Janssen *et al.* 2015

The correlation method has been widely used to measure the association between GSCM and performance. Similar performances were used in the studies Uddin 2021; Fianko *et al.* (n.d.); Hashmi and Akram (2021); Darwish *et al.* (2021); Ye *et al.* (2021); Rupa and Saif (2021); Seman *et al.* (2019); Yu *et al.* (2019); Laari *et al.* (2018); De Sousa Jabbour *et al.* (2017); Kalyar *et al.* (2019); Nguyen *et al.* (2020); Khan et al. (2021); Saad and Siddiqui (2019); Agyabeng-Mensah *et al.* (2020); Hashmi and Akram (2021); Jum'a *et al.* (2021); Acquah *et al.* (2020); Abdullah (2016); Younis *et al.* (2016); Irum *et al*. (2018)

First, GSCM is associated with environmental performance in correlation method Uddin 2021; Darwish *et al.* (2021); Ye *et al.* (2021); Seman *et al.* (2019); Laari *et al.* (2018). A similar method has been used in this study, and the outcome indicates that GSCM was strong, positive and statistically significant. Darwish *et al.* (2021), Seman *et al.* (2019), Laari *et al.* (2018) reported that a positive and significant relationship existed between GSCM and environmental performance.

Second, GSCM is associated with financial performance. Similar results were reported in the previous studies Nguyen *et al.* (2020); Khan et al. (2021). In contrast to the above findings, no statistical relationship was found between GSCM and financial performance (Saad, Siddiqui 2019; Agyabeng-Mensah *et al.* 2020)

Third, GSCM is associated with social performance. (Abdullah 2016; Younis *et al.* 2016; Irum *et al.* 2018).

Later, regression analysis was shown to be a powerful method for determining the effect of GSCM on performances

First, GSCM affects environmental performance. Fianko *et al.* (n.d.); Rupa and Saif (2021); De Sousa Jabbour *et al.* (2017). The outcome of regression analysis reveals that GSCM is associated with and influenced environmental performance. The present results were essentially confirmed

in (Uddin 2021; Fianko *et al.* n.d.; Hashmi, Akram 2021; Darwish *et al.* 2021; Ye *et al.* 2021; Rupa, Saif 2021; Seman *et al.* 2019; Yu *et al.* 2019; Laari *et al.* 2018; de Sousa Jabbour *et al.* 2017).

Second, GSCM affects the financial performance Kalyar *et al.* (2019); Hashmi and Akram (2021); Jum'a *et al.* (2021). In this study, the positive and significant outcome between GSCM and financial performance. These results were compared with the previous findings indicating the effect was significant (Kalyar *et al.* 2019; Nguyen *et al.* 2020; Khan *et al.* 2021; Saad, Siddiqui 2019). Despite similar findings, some contradictory findings were also observed. GSCM had no statistical effect on financial performance Agyabeng-Mensah *et al.* (2020); Saad and Siddiqui (2019).

Third, GSCM affects social performance Abdullah (2016); Younis *et al.* (2016) and Irum *et al.* (2018). This study state that GSCM positively affected social performance. The present outcome agrees with Abdullah (2016), Younis *et al.* (2016), and Irum *et al.* (2018), which was similar to that investigated in this study.

Finally, the respondents' demographic profile indicates the results in quantitative form. Jum'a *et al.* (2021) and Abdullah (2016) reported similar forms in previous studies. FMCG firm employees were between 25-30 years. Male respondents completely dominate GSCM. The maximum number of employees were highly educated in GSCM. These findings also agree with the results reported by Jum'a *et al.* (2021). Most of the respondents willing to participate in the study have less than two years of working experience in FMCG firms in Pakistan. These work experiences are in contrast with the previous studies. These findings also agree with the results reported by Jum'a *et al.* (2021).

Finally, the respondents' demographic profile indicates the results in quantitative form. FMCG firm employees were between 25-30 years. Male respondents completely dominate GSCM. The maximum number of employees were highly educated in GSCM. These findings also agree with the results reported by Jum'a *et al.* (2021). Most of the respondents willing to participate in the study have less than two years of working experience in FMCG firms in Pakistan. These work experiences are in contrast with the previous studies. These findings also agree with the results reported by Jum'a *et al.* (2021).

Main outcome: The key outcome of the study was GSCM positively associated and affected environment, social and financial performances. Effect of environment performance was 49.1%, social performance was 59.9%, and financial performance was 38.2%. These outcomes indicate that the highest effect of GSCM was recorded at social performance whereas moderate at environment performance and least at financial performance.

CONCLUSION

FMCG is emerging as one of the fifteen largest sectors that reaps revenue to the manufacturers. Globalization and modern trade create a thrust for the customers to have the products to meet their daily activities. Fast-moving consumer goods companies make the product available in the market with the consistent help from third-party logistic service providers. They created so many environmental issues, and hence the Pakistan government had laid down laws and regulations to oblige to follow green practices in the organization. Companies like P&G, Unilever, Ergo invest a huge amount in green practices in their organisation. But the practices of the Fast-moving consumer good organisation was low in Pakistan. So, the study focuses on GSCM of FMCG companies in Pakistan. Later, the studies demonstrated that GSCM improves individual performances in a separate study. There is a lack of studies on addressing the effect of GSCM on environment, social and financial performance. So, the study identifies the gap and direct the study greatly. After determining the gap, the study tried to measure the variables (GSCM and firm performance) quantitative research methods. Samples were Fast-moving consumer goods in Karachi. Such samples were determined based on the convenience sampling method. In this study, the respective sample size was 128, and their opinion was gathered through a questionnaire. This study fixes the dependent variable as GSCM, and independent variables are performances (environment, social and financial aspects). These variables postulate the resource-based view theory. Assessment of sample opinion reveals that Fast-moving consumer goods are using ecological, recyclable or reusable materials for packaging higher in their respective organization. Most of the companies are following compliances with environmental standards. So, it improves community health and safety and increases the profit margin on sales of the companies. Correlation results reveal that GSCM positively influences economic, social and financial performance. Regression analysis indicates that GSCM affected the performances, and the outcome is more like the resource-based view theory.

In addition, GSCM had a strong effect on social performance, moderate effect on the environment and low effect on financial performance. So, the study indicates no improvement in financial and environmental performance. GSCM lowers the financial performance and moderates the

environmental performance of the fast-moving consumer goods organization. Finally, the study concludes that FMCG firms are diminishing societal issues through the GSCM in their respective organization.

Implications: Fast-moving consumer goods have to improve environmental performance through integrating internal practice (Green design) with external practice (Green purchase). This study finds that GSCM lowers financial performance. It is primarily due to not recognizing the characteristics of practices imposed by the government for the respective organization. Managers must prioritise GSCM and follow the regulations as per the government. If it is not followed properly, the fast-moving consumer goods firms can face penalties from the government. Getting penalties from the government may affect the company image. To win a competitive edge and enhance company image, it should be essential to invest in GSCM. It may bring financial returns in terms of tangible and intangible aspects to the organization. It is responsible for the manager to recognize the external environment and follow the practices to promote the organisation's financial performance.

Limitations: In this study, the sample size is small, which fails to represent the entire study population. This study picks out the samples using the convenience sampling method, and hence there is a lack of clear generalizability. Most of the sample participation is from big companies whereas small and local companies' participation is lower. Including such samples may change the generalizability of the outcome.

Scope for further research: The present results of respondents are limited, and it is not the case for all small and medium-size Fast moving consumer good organisations. So, further improvements are expected to result in an improved understanding of GSCM on various performances. In this study, quantitative research methods have been proven statistically, but the full potential of the samples has not been proven. So, it is important and interesting to modify the quantitative methodology to qualitative methodology to improve the efficiency of the results in a proper form. In this study, environmental, social and financial performances were measured. Further directions are related to the improvement of performances in a detailed way. Some of the aspects of performances (operational, organisation and economic) are not considered here and is left as an area for further work.

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APPENDICES

Appendix 1. Questionnaire

Dear respondents,

I invite you to participate in this research by filling in the following questionnaire. The study aims to investigate the effect of green supply chain management on the performance of fast-moving consumer goods firms in Pakistan. As per the survey questionnaires, there is a need about five minutes to fill them. I assure you that the opinion is confidential and is used for academic purposes.

Thank you

Profile of respondents

1. Age

2. Gender

3. Education qualification

4. Work experience

5. Firm size

6. Indicate your level of agreement of green supply chain management practices in FMCG firms (5-Full implementation to 1-No plan to consider)

Particulars	**5**	**4**	**3**	**2**	**1**
Co-operation with the community for eco-design and green packaging					
Firms aids support from top-level employees for environmental practices					
Cross-functional co-operation from FMCG firms for environmental improvements					
ISO 14001 certification					

Using natural environmental arguments in marketing the products					
Periodic updating of the environmental issues on the websites/stores					
Using ecological, recyclable or reusable material for packaging					
Establishing recycling for used and defective products					
Need of suppliers to use degradable and non-hazardous packaging					
FMCG firms work together with the customer to reduce the environmental impact of the activities					
Firms and customers making joint decisions to reduce the overall influence of products					

Performance

7. Indicate your level of agreement of environmental performance of FMCG firms (5-Highly significant to 1-Highly insignificant)

Particulars	**5**	**4**	**3**	**2**	**1**
It reduces air and water pollution					
It diminishes energy consumption in fast-moving consumer goods firms					
FMCG firms following compliances with environmental standards					
It diminishes the usage of hazardous materials impacting soil and water quality					

8. Indicate your level of agreement of social performance of FMCG firms (5-Highly significant to 1-Highly insignificant)

Particulars	**5**	**4**	**3**	**2**	**1**
Improves employee health and safety at firms					
Firms encourage economic growth in the operations					
It improves community health and safety					
It improves overall stakeholder welfare					

9. Indicate your level of agreement of financial performance of FMCG firms (5-Increased significantly to 1-Decreased)

Particulars	**5**	**4**	**3**	**2**	**1**
Growth of sales					
Growth in market share					
Growth in return on investment					
The profit margin on sales					

Appendix 2. Results

Table 13: Demographic profile of respondents

Particulars		Frequency	Percent
Age	25 to 30 years	66	51.6
	30 to 35 years	25	19.5
	35 to 40 years	28	21.9
	Above 40 years	9	7.0
Gender	Male	69	53.9
	Female	59	46.1
Education qualification	Bachelors	86	67.2
	Masters	16	12.5
	Professional degree	23	18.0
	Others	3	2.3
Working experience	Below two years	79	61.7
	2 to 5 years	26	20.3
	5 to 8 years	12	9.4
	Above eight years	11	8.6
Firm size	Big	62	48.4
	Moderate	45	35.2
	Small	21	16.4
Total		128	100.0

Source: Own calculation

Table 14: Environmental performance

Particulars	Mean	SD
It reduces air and water pollution	2.6719	1.13018
It diminishes energy consumption in FMCG firms	3.2500	.78369
FMCG firms following compliances with environmental standards	3.8594	.67269
It diminishes the usage of hazardous materials impacting soil and water quality	3.1797	.68082

Source: Own calculation

Table 15: Social performance

Particulars	Mean	SD
Improves employee health and safety at firms	2.2891	.77513
Firms encourage economic growth in the operations	3.1172	.67136
It improves community health and safety	3.3281	.82395
It improves overall stakeholder welfare	2.4766	.92187

Source: Own calculation

Table 16: Financial performance

Particulars	Mean	SD
Growth of sales	3.0547	.66769
Growth in market share	2.5313	1.01126
Growth in return on investment	3.3125	1.24704
The profit margin on sales	3.6250	1.12243

Source: Own calculation

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