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IMPACT OF GREEN SUPPLY CHAIN MANAGEMENT PRACTICES ON SUSTAINABILITY OF HEALTHCARE ORGANIZATIONS: MEDIATING ROLE OF ENVIRONMENTAL RESPONSIBILITY

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KEYWORDS

Green Supply Chain Management Practices, Environmental responsibility, Sustainable performance, PLS-SEM

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ABSTRACT

Sustainability is the main issues now days. Depletion of resources and harm to environment is the results of negligence of firms. After strict national and international environmental policies firms are interested to initiate and implement green objectives to attain sustainable performance. The aim of current study is to investigate mediating role of environmental responsibility between the green supply chain management practices and sustainable performance through lens of RBV and NRBV. Population of the study was health managers, and health related academicians. Non-probability snow ball sampling technique was used. The data was analyzed in PLS-SEM. The findings revealed that green manufacturing has insignificant influence on sustainability and environment responsibility and environment responsibility does not mediate amid green manufacturing and sustainable performance. It is concluded that environmental responsibility is essential factor to obtain sustainable performance. The current study has open doors for the future studies and future researchers can use more complex models by adding mediators and moderators in the model such as supply chain responsibility and can report more sophisticated findings.

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INTRODUCTION

The sustainable performance is the main problem for the firms. Organizations are opting and implementing green initiatives to solve environmental and ecological issues. The green supply chain management practices (GSCM) are very important to survive in this competitive world. Firms are paying focus to initiate green objectives so that the environmental damage could be reduced (Alhamali, 2019). Damage to environment and degradation of natural resources is due to human behavior and negligence of firms' management (Famiyeh, Adaku, Kwasi, Disraeli, & Charles, 2018). Previously, the firms were product and profit oriented now firms are consumer

oriented. Firms know that consumer is willing to pay more for eco-friendly products (Mughal, Jehangir, Khan & Saeed, 2020). Therefore, the firms want to add green objectives in their green shared vision and anxious for initiating the green activities so that they may get the competitive advantage and sustainable organizational performance (Çankaya & Sezen, 2019). In this regard, initiating green activities in supply chain is due to numerous reasons, likewise the pressure from society, pressure from stakeholders, consumers, and internal and external enviornemnt it has benefits for firms' i.e. increase reputation, image of firm, increase profits (Longoni & Cagliano, 2018).

The sustainability was first used in Brundtland (1987). It has three facets social, economic and environmental performance. Taking care of interest of community, society and stakeholders' is called social performance, well-being of employees. Financial affairs and taking care of natural resources fall under the economic and environmental performance. Sustainability is defined as "utilizing natural resources without compromising the interest of future generations" (Yusliza et al., 2020). Due to increasing change in climate, global warming, emission of carbon dioxide gas, waste of water, power and energy, fuel and degradation of natural resources i.e. waste of paper etc. has been constantly harming the natural environment (Longoni & Cagliano, 2018). In this connection. now consumers are aware about importance and significance of eco-friendly products and services. Therefore, they are concerned with those initiatives which could harm less to natural environment and can be recycled and reusable (Cankaya & Sezen, 2019). Thus the current study tried to answer those questions which are yet to be answered in the Saudi perspective. In this linking, there is a gap which prevails in the theory of natural resource based view (NRBV) given by Hart (1995) and stakeholder theory (Freeman, 1984). Thus, this study has filled the existing gap and offer new insights for the upcoming future researchers in Saudi perspective.

LITERATURE REVIEW

Green Supply Chain Management Practices (GSCM)

Numerous authors have defined GSCM in number of ways for example "process of recycling and reuse of goods and materials to save environment is called GSCM" (Alhamali, 2019). As per Cankaya and Sezen (2019) initiating issues related with ecology and environment into design of product, manufacturing, cooperating with customers, reverse logistic, marketing till end life of product is called green supply chain management practices. The concept of supply chain includes whole process from extracting raw materials to the end life cycle of the product (Walker et al., 2008). There are numerous GSCM practices and this area is so broad however their boundary depends on the goals and objectives of the authors and researchers (Srivastava, 2007; Drucker, 2020).

Green Purchasing (GP)

The very first step in supply chain process is purchasing. The success of all other components in green activities depends on the success of green purchasing. Environmental objectives of the firms are directly related with this first step, green purchasing (Carter et al., 2000). Integrating environmental issues and concern in the procurement process is called green purchasing (Rao & Halt, 2005). Firms have to select right supplier of raw material. It has significant influence on green objectives of the firms. In addition, appropriate supplier is not sufficient to achieve environmental goals but firms must establish an understanding and must have collaboration

with each other. Furthermore, Paulraj (2011) stated that firms have to analyze that whether the supplier they have selected meets the standards of the environmental goals of the firms. For purchasing, the firms have to investigate whether their supplier and client both have awareness and knowledge about importance of the environment and green activities or not. They have to choose the supplier which fulfills criteria of green objectives of organizations (Famiyeh et al., 2018).

Green Manufacturing (GM)

According to Gao et al., (2009) green manufacturing includes less consumption of resources and energy for production of products and less harm to environment. In this connection, this green manufacturing process help the firms to produce environmental friendly products and least possible air, water and soil pollution with minimum waste of natural resources (Routroy, 2009). Thus, it means that less depletion of the natural resources by firms to obtain sustainable performance so that, the natural environment and resources are not wasted and thus competitive advantage is achieved (Choi & Hawang, 2015). Thus, due to the human negligence lot of natural resources are wasted during manufacturing process therefore, due to this rising issue, the strict national and international policies were settled to handle this environmental issues (Malik et al., 2021).

Green Package & Distribution (GPD)

Green package has direct impact on environment. Firms should avoid excessive packaging. It includes simple packaging, biodegradability. Thus, least use of paper wrapping, minimum use of polystyrene, simplified material and easy disassembly (Kung et al., 2012; Cankaya & Sezen, 2019). Furthermore, green distribution includes activities during shipment of the products and firms must assure that least possible harm to environment during shipment. Frequency of the transport operations, fuel consumptions of the vehicles characteristics of the shipment such as shape, weight and material of packaging, distance from delivery spot to customers significantly affect supply chain process (Sarkis, 2003). Now, organizations use lot of packaging to safeguard products and customers want to have good packaging for products they purchased it is waste of natural resources, labour, time and cost so, it is suggested that essential packaging is required otherwise to make product attractive with help of packaging is not good practice (Kirchoff et al., 2016).

Green Marketing (GMR)

Sing and Pande (2012) argued that meeting human needs with the minimum affect to natural environment is called green marketing. Those activities which are intended for designing, promoting, pricing and distribution of goods without damaging environment is called green marketing. Now a days, organizations use different social media websites and different channels which are cost effective and reach the big audience in short time. In this connection, previously organizations spent the huge money from their annual budget for advertising and marketing of their services and products. In this linking, now they have their particular pages and groups to advertise their products. It is helpful to save the time, cost and human efforts (Fang & Zhang, 2018).

Environmental Responsibility (ER)

Achieving sustainability is not easy task of individual body but society, business, organizations, and government all together have put efforts. Environmental, economic and social responsibility

targets at macro level have been achieved but at micro level environmental responsibility is overlooked and yet need attention of industries (Herghiligiu et al., 2019). Still, organizations are trying their best to solve problems of society related with environment through use of the modern technology and green initiatives. For management of the organizations environmental responsibility is not easy task its complex and difficult task for them. Very first responsibility of the firms toward eco-system lies in the technologies and procedures used in the process of production of goods and services. The economic and financial issues are the hindrance in way of implementing environmental management system even for large firms. Environmental and eco-friendly technology is expensive even large firms may ignore/overlooked them under certain conditions. It is essential to study process of environmental responsibility. First responsibility, obligation and duty of firms is to pay taxes from legal point of view, because it is the duty of firms to pay for damages and harms cause to environment due to their negligence (Johstone, 2019).

On the other hand, firms have to pay some cost while fulfilling the environmental objectives. The firms have to ensure to use that equipment which consume less energy and fuel, must be environment friendly and there should be proper waste management system and firms must work on quality assurance and increase the productivity with minimum use of resources. There is direct effect of environmental responsibility on the socio-economic environment of the firms. There could be possibility that demand for products might be increased due to environmental responsible behavior, educating their employees to the practice environmentally responsible behavior in community. Environmental responsibility falls under domain of environmental management research system in which firms monitored continuously their activities and their impact on eco system, organizations can introduce eco-friendly products and can reduce the pollution cause to system. This could help organizations to increase their reputation and image in the society, corporate image, motivate employees and their loyalty, and achieve competitive advantage and obtain sustainable organizational performance. ISO 14001 has set standards for environmental management system. There are 5 key elements of EMS "environmental policy, planning, application and operations, corrective actions and review" (Kaysch, Suler & Rowland, 2020).

Sustainability

World commission on environment development was held in 1987 where Brundtland introduced idea of sustainability. It was defined as "without compromising resources of future generations, firms can use the current resources to fulfill their own needs". It has got so much attention by the firms, customers, consumers and all stakeholders. It includes three aspects first deals with monetary and financial aspects is called economic performance, 2nd deals with reducing emission of gases, carbon dioxide and efficiently handling waste, is called environmental performance and third is taking care of society, well-being of employees, and all stakeholder is called social performance (Schmidt et al., 2017). It is crucial for every organization to keep balance between these three dimensions but due to their complexity and difficulty it is not an easy task to keep balance among them. Green et al., (2012) stated that GSCM practices could be the good choice to maintain the balance among them; in addition, Hart (1995) claimed that NRBV sees green practices as a basis which could help enterprises to obtain substantial gains like reducing cost, reduce in consumption of energy, waste of natural resources, increase corporate image, profit, quality of goods, involve all stakeholders in environmental matters (Zhu et al., 2013; Malik et al., 2021).

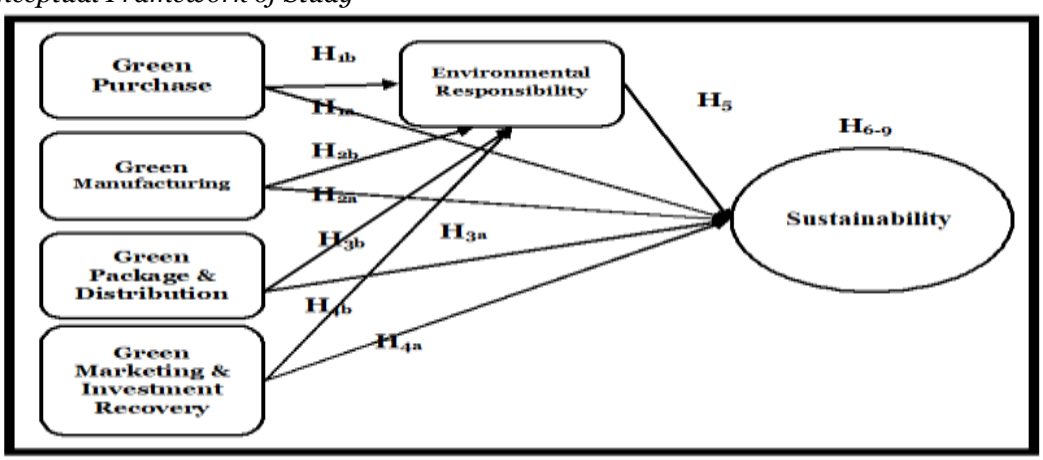
Theoretical Basis and Framework

Barney (1995) has introduced resource based view theory (RBV). He claimed that organizations has tangible and intangible resources like land, building are tangible resources while goodwill, image, reputation are intangible resources which cannot be seen or touched. Further he added that human resources are also resources for organizations which cannot imitate by competitors. These resources help the firms to obtain the competitive advantage. In this theory RBV Barney overlooked the natural environment and component of eco system. Later on, Hart (1995) has revised this theory and added natural environment in this theory has introduced natural resource based view theory. The environment is damaged due to negligence of human behavior. Organization were product and profit oriented before, they do not care about natural resources and their preservation. This theory focused on how we can save the natural resources, such as water, paper, energy, fuel, and how to reduce pollution such as emission of carbon dioxide gas, hazard material, hospital waste, etc. the questions is raised on manufacturing processes of the organizations.

What steps firm can take to save natural resources and reduce pollution? For above mentioned issues related with environment and natural resources green initiatives are introduced. Firms have to formulate the strict policies and add green objectives in their green shared vision and supply chain. Now firms have realized importance of green initiatives and those firms initiated and implemented green activities in their operations are more likely to obtain competitive advantage and sustainable performance (Cankaya & Sezen, 2019). In this linking, tustomers, are taking keen interest in those products which are co-friendly and less harmful for natural environment. Further the customers are also interested to know the process involved in the supply of material from suppliers as well as manufacturing process of the products (Cantele & Zardini, 2020). Consequently, customers and consumers are willing to pay high price for those products which are eco-friendly. In this connection, this study has investigated the impact of green supply chain management practices upon the sustainable performance through lens of the NRBV and stakeholder theory to answer the research questions given above in the previous section.

Figure 1

Conceptual Framework of Study



Hypotheses Development

Impact of green supply chain management practices (green purchase, manufacturing, package, distribution, marketing and investment recovery) on the sustainability is explained by RBV i.e. human resources help the organizations to achieve sustainable performance (Barney, 1995) but due to lack of environment aspect in RBV Hart (1995) has expanded the scope of RBV to a new typology i.e. NRBV. Hart claimed that the competitive advantage and sustainable performance could be achieved by reducing waste of natural resources, prevent emission of hazardous gases and reduce air and water pollution. NRBV also states that green SCM practices and environment responsibility are seen as strategic resources which help firms to enhance performance. Those organization that have initiated green objectives are able to differentiate them from competitors and able to survive in the market for long term that is called sustainability. As per Wijethilake, (2017) green SCM and environment responsibility has direct and positive impact on sustainable performance, efficient use of resources to get maximum output. Stakeholder theory also shed light on the importance of the green initiatives, environmental responsibility to achieve desired sustainability.

Due to increase in competition in market the organizations were product and profit oriented they neglect the importance and significance of natural resources and due to their negligence the environment was badly damaged. Now consumers are more concerned about environment and interested to know about the manufacturing process and eco-friendly products and for this consumers are ready to pay high prices for such goods and services. This concern makes the firms socially and environmentally responsible. There are two types of stakeholders internal and external, internal (managers, employees) while external (suppliers, creditors, societies and communities) if the both internal and external stakeholder have better relationships it could be easy for them to achieve sustainability goals (Endrikat et al., 2014). As per Eltayeb et al., (2011) GSCM practices has positive impact to reduce the negative impact of their products and their manufacturing process on the sustainability while they help to reduce damage to environment meanwhile on the other hand being responsible to efficiently handle the environmental issues and help society to reduce and overcome them also increase corporate image and reputation of organizations.

Researchers suggests that green initiatives have positive impacts on sustainability performance (Cankaya & Sezen, 2019) and effectively raising awareness among employees and educating them to overcome environmental issues also have indirect effects on sustainable performance (Kaysch et al., 2020). Mughal et al (2020) also reported the positive and significant impact of green initiatives on sustainable performance (economic, environmental and social). In addition (Malik et al., 2021) claimed that behavior of employees to reduce environmental issues help firms to achieve environmental objectives on time. Mughal, et al. (2020) reported the positive impact of corporate social responsibility on firm performance. Thus following hypotheses are developed:

H1a: Green purchase is directly related with Sustainability.
H1b: Green purchase is directly related with environmental responsibility.
H2a: Green manufacturing is directly related with sustainable performance.
H2b: Green manufacturing is directly related with environmental responsibility.
H3a: Green packing & distribution is directly related with Sustainability.
H3b: Green packing & distribution is directly related with environmental responsibility.

H4a: Green marketing & Investment recovery is directly related with Sustainability.
H4b: Green marketing & investment recovery is directly related with environmental responsibility.
H5: Environmental responsibility is directly related with Sustainability..
H6: Environmental responsibility is indirectly related with green purchase and sustainability.
H7: Environmental responsibility is indirectly related with green manufacturing & sustainability.
H8: Environmental responsibility is related with green package & distribution & Sustainability.
H9: Environmental responsibility is linked to green marketing & investment & sustainability.

RESEARCH METHODS

Population and Sampling

This study is based on research onion (Saunders et al., 2009) which helps the researchers to choose the best scientific methods for the study. positivism philosophy supported this study, in positivism researchers believe on the "social reality". The quantitative survey with the deductive approach was used. Cross-sectional primary data is collected from respondents. Unit of analysis was organizations. Those organizations which have implemented green objectives and initiated green activities were chosen. Population of the study was all those firms which are related with environmental issues were selected. Non probability snow ball sampling technique was used for selecting sample size. Total 200 firms were selected. Researcher has contacted directors of administration, managers human resource, general managers, pharmaceutical firms, hospitals, health organizations, medical laboratories primary healthcare centers etc through email and WhatsApp for online filling questionnaires for collecting data. The researcher has followed up by telephone in next week after sending the email to respondents. After two week an e-mail was sent again to respondents as a reminder. This process was repeated until the target sample size was achieved. In this connection, measurement model and structural models were developed. Thus, measurement model is developed to check convergent and discriminant validity about interna consistencies, the scales while structural model is developed to tests hypotheses of the study.

Measures and Instruments

All questionnaires were adopted form previous studies. Scale of green supply chain management was adopted from Cankaya and Sezen (2019) it has five items for green purchasing, 3 items for green manufacturing, 4 items for green packaging and distribution, 6 items for green marketing, two items for investment recovery. For sustainable performance scale was adopted from Malik et al. (2021), Zhu et al. (2008), Yusliza et al. (2020). Thus, it has three dimensions economic performance (4 items), the environmental performance (4 items) and social performance (4 items). The environmental responsibility scale is adopted form Kaysch et al. (2020) it has five items. All items were measured on 7 point scale ranging from 1 strongly disagree to 7 strongly agree.

Data Collection Procedure

Questionnaire was sent to 5 subject experts and 3 experts from industry to review questionnaire, for clarity, ambiguity and completeness. Questionnaire was translated in Arabic using parallel translation method initially six GSCM practices were selected by scholar. Experts have clarified few items during their review. Then questionnaire was again translated into English with help of translators.

Data Analysis

PLS-SEM is used for the data analysis. Structural equation modeling help researcher to develop measurement models for investigating convergent and discriminant validates of scales along with reliability. Convergent validity consist of factor loadings, average variance extracted and composite reliability (CR) while reliability is checked through Cronbach alpha. Hair et al. (2017) has given criteria for measurement model, it has suggested that factor loadings must be >0.50, AVE>0.5, CR>0.70 and α>0.70. while discriminant validity Henseler et al. (2015) criteria is HTMT ratio must be >0.85while Hair et al. (2017) <1. For structural model bootstrapping was run. The direct and indirect regression weights were analyzed. The upper and lower bounds are reported.

RESULTS OF STUDY

Majority of respondents were male 250 (67.2%) while 122 (32.79%) were female participants. Majority of respondents were general managers 201 (54.03%) followed by directors 98 (26.34%) remaining 73 belong to managerial positions i.e. 19.62%. further analysis of results revealed that majority of the age group belong to more than 45-50 years of age 278 74.73% followed by age group of 35-40 years who hold managerial positions 25.265 that were described through desctiptives.

Interpretation Measurement Model

Table 1 show measurement results model developed and validated in PLS-SEM. Measurement model includes factor loadings, average variance extracted and composite reliability (convergent validity) Cronbach alpha for reliability of scales and hetero trait mono trait ratios for discriminant validity in Table-2. Hair et al. (2017) criteria for loadings >0.70, AVE >0.50, CR>0.70, Cronbach alpha >0.70 and HTMT ratios must be <1 or as per Henseler et al. (2015) < 0.85. one item from green purchasing one from green manufacturing, one from green packaging and distribution, four from green marketing and one from investment recovery are deleted due to low factor loadings such as their respective loadings were less than 0.70 and was found as problematic items therefore these items were excluded from analysis. One item from economic and social performance while two items from environmental responsibility were excluded from analysis as these items is also found problematic. Remaining all items fulfill the criteria all loadings are higher than 0.70, AVEs >0.50 and CR>0.70 alpha values are >0.70 except the economic performance but it is closer to 0.70, also, HTMT ratios are also found in the range as specified by the Hair et al. (2017). So, the scales and measurement model are found reliable and valid. Figure 2.

Table 1

Measurement Model

Variables	Items	Loadings	AVE	CR	α
Green Purchasing	GP1	-			
	GP2	0.767			
	GP3	0.721			
	GP4	0.817	0.596	0.855	0.774
	GP5	0.780			
	GM1	0.870			
Green Manufacturing	GM2	0.901	0.784	0.879	0.726

	GM3	-			
	GPD1	-			
	GPD2	0.720			
Green Packaging & Distribution	GPD3	0.833	0.646	0.845	0.730
	GPD4	0.852			
	GR1	-			
Green Marketing	GR2	-			
	GR3	-			
	GR4	-			
	GR5	0.840			
	GR6	0.857	0.654	0.850	0.735
	IR1	0.757			
Investment recovery	IR2	-			
	EP1	0.843			
	EP2	0.756	0.619	0.829	0.692
Economic Performance	EP3	0.748			
	EP4	-			
	ENP1	0.712			
Environmental Performance	ENP2	0.733			
	ENP3	0.804	0.564	0.838	0.741
	ENP4	0.753			
	SP1	-			
Social Performance	SP2	0.826			
	SP3	0.868	0.717	0.884	0.803
	SP4	0.846			
	ER1	0.774			
	ER2	-	0.641	0.843	0.720
Environmental Responsibility	ER3	0.843			
	ER4	0.784			
	ER5	-			
R2		0.623=62.3% Variance			

Table 2
Hetero trait Mono trait Ratios (Discriminant validity)

Variables	1	2	3	4	5	6	7	8
Environmental responsibility								
Environmental performance	0.800							
Green Package & Distribution	0.674	0.662						
Green manufacturing	0.673	0.738	0.822					
Green marketing	0.878	0.769	0.602	0.684				
Green Purchasing	0.752	0.807	0.761	0.896	0.796			
economic performance	0.619	0.973	0.576	0.664	0.621	0.751		
Social performance	0.872	0.773	0.610	0.602	0.835	0.682	0.627	
Sustainability	0.838	1.138	0.673	0.729	0.812	0.813	1.078	0.964

Figure 2
Measurement Model in PLS-SEM

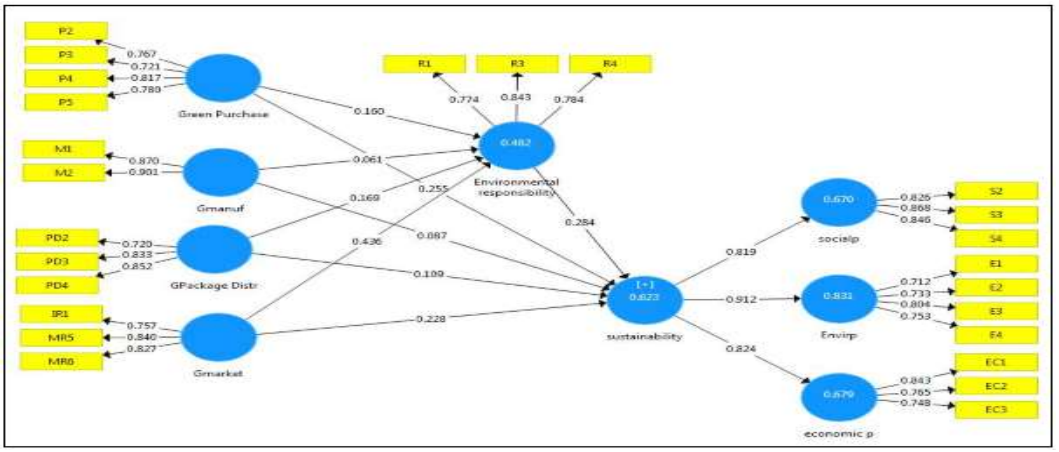


Table 3
Direct Effects

Hypotheses	β	S.E	T-stat	P	Support
Green Purchasing →sustainability (H1a)	0.255	0.053	4.811	0.000	Yes
Green manufacturing →sustainability (H2a)	0.084	0.055	1.527	0.114	No
GP&D →sustainability (H3a)	0.112	0.044	2.545	0.013	Yes
GMIR →sustainability (H4a)	0.230	0.052	4.423	0.000	Yes
Green Purchasing →ERESP (H1b)	0.160	0.062	2.580	0.010	Yes
Green manufacturing →ERESP (H2b)	0.062	0.063	0.984	0.334	No
GP&D → ERESP (H3b)	0.164	0.058	2.827	0.004	Yes
GMIR →ERESP (H4b)	0.435	0.055	7.909	0.000	Yes
ERESP → sustainability (H5)	0.282	0.051	5.529	0.000	Yes

ERESP> Environmental Responsibility

Structural model was developed in PLS-SEM and hypotheses were tested using bootstrapping. Table-3 presented the results of direct effects. Green purchasing has positive and significant influence on the sustainability β=0.255, t=4.811, p<0.05, one unit increase in green purchasing could be responsible to increase sustainability up to 25.5%. In addition, green manufacturing has insignificant impact on sustainability. Moreover, the green packaging and distribution has significant role on the sustainability β=0.112, t=2.545, p<0.05, 11.2% change is possible in the sustainability due to the green packaging and distribution, furthermore, green marketing and investment recovery also have the significant influence on the sustainability β=0.230, t=4.423, p<0.05, green marketing and investment recovery are 23% responsible for the change in the sustainability.

Furthermore, the green purchasing has significant impact on the environmental responsibility β=0.160, t=2.58, p<0.05, 16 change in the environmental responsibility is possible due to green purchasing, while there is insignificant change in environmental responsibility due to green

manufacturing, on the other hand, the green packaging and distribution are 16.4% responsible to bring change in the sustainable performance, β0.164, t=2.827, p<0.05, furthermore, green marketing and investment recovery also has significant role upon the sustainability β=0.435, t=7.909, p<0.05. The most dominant and highest change in the sustainable performance is the possible if organizations reduce the packaging and use the eco-friendly packaging which is less harmful to environment, and also less transportation cost is required to deliver eco-friendly products. Environmental responsibility is responsible 28.2% change in sustainability. On the basis of above discussion H1a, H3a, H4a, H1b, H3b, H4b, H5 are accepted while H2a and H2b are rejected.

Table 4
Indirect Effects (Mediation analysis)

Hypotheses	β	S.E	T-stat	P	Support
G Purchase→ERESP → sustainability H6	0.046	0.021	2.162	0.031	Yes
G manufacture →ERESP → sustainability H7	0.017	0.018	0.949	0.343	No
GP&D→ ERESP → sustainability H8	0.046	0.019	2.529	0.012	Yes
GMIR→ERESP → sustainability H9	0.122	0.027	4.672	0.000	Yes

ERESP> environmental Responsibility

Bootstrapping 2000 resample was run to test the indirect effects. Environmental responsibility mediates between green purchasing and sustainability β=0.046, t=2.162, p<0.01, it means that 4.6% change in relationship between green purchasing and sustainability is possible due to environmental responsibility. Furthermore, the green manufacturing β=0.017, t=0.949, p>0.05 indicates that the environmental responsibility does not act as the mediator between the green manufacturing and sustainability. Moreover, green packaging and distribution, sustainability are mediated by environmental responsibility β= 0.046, t=2.529, p<0.05. 4.6% change is responsible in sustainability due to environmental responsibility. Green marketing and investment recovery and sustainable performance are mediated by environmental responsibility β=0.122, t=4.672, p<0.05. Consequently, H6, H8 and H9 are substantiated and accepted while H7 is rejected.

DISCUSSION

Green supply chain management practices are considered as foundation for organizations to attain competitive advantage and sustainable performance. Sustainability is emerging issue for organizations. Stakeholders are aware about eco-friendly products and due to huge pressure from the customers, consumers and stakeholders organizations are initiating green initiatives, to obtain competitive advantage. For this purpose, the organizations are held responsible for damaging natural environment and degradation of natural resources due to their negligence. Organization must be responsible to save natural environment and natural resources. The aim of this study is to investigate the mediating role of environmental responsibility between green supply chain management practices and sustainable performance. Sample from diverse health related organizations including the health managers, health services managers, supply chain managers, experts, and academics were chosen and participated in this study. For this purpose 9 hypotheses were developed to test whether there is significant role played by the green supply chain management practices and environmental responsibility upon sustainable performance or not?

It is revealed from the results that green purchasing is significantly related with sustainable performance and environmental responsibility so H1a and H1b are accepted. The findings of current study are in line with study of Cankaya and Szen (2019) also reported the significant results on sustainable performance. Moreover green manufacturing is not significantly related and does not have significant effect on sustainable performance and environment responsibility so H2a and H2b are rejected and these results are in line with Famiyeh et al. (2018). Moreover, green packaging and design significantly predicted sustainable performance and environmental responsibility so H3a and H3b are accepted and in agreement with Fang and Zhang (2018). The findings revealed that the green manufacturing is not significantly related to obtain green marketing and investment recovery have significant impact on sustainable performance as well as environmental responsibility so H 4a and H4b are also accepted and related with Schmidt et al. (2017). In this connection, environmental responsibility also has the positive and significant impact on sustainable performance thus H5 is substantiated and accepted in light of previous studies of Alhamali (2019). Furthermore, the environmental responsibility mediated between green purchasing, green packaging and design, green marketing and investment recovery while does not mediate between green manufacturing and sustainable performance (Cankaya & Sezen, 2019).

CONCLUSIONS

It is concluded from above discussion that eco-friendly raw material can play important role in manufacturing environmentally friendly products and on other side it is vital that organizations must show responsibility to handle issues of environment. Organization uses massive packaging to make the look of product so attractive and in return there is huge cost of transportation and distribution of those massive packed products. That's why it increases the cost of products. It is concluded that organizations must reduce the packaging, and can save transportation as well as packaging cost and increase their profits. In next step green marketing and investment recovery also play their role. The organizations should use marketing strategies for pricing, designing; promotion and distribution of products which are less harmful are there must be no harm to natural environment. Also, investment recovery includes scrap, or used, old material is resold its purpose is to recover cost of obsolete products, surplus items and those products whose life is near to end (Alhamali, 2019). The green manufacturing does not have significant impact on sustainable performance and environmental obligation thus it is concluded that organizations should give proper attention to manufacturing processes. The current study has filled the gap by bridging two theories, RBV and NRBV by adding environmental responsibility as mediator between green supply chain management and sustainable performance. Study has extended the body of knowledge of green supply chain management practices, environmental responsibility and sustainable performance in Saudi perspective. Area of GSCM is so broad authors can use other dimensions of GSCM to investigate impact of other dimensions and extend the body of knowledge.

Recommendations

The current study has implications for policy makers, manufacturing organizations. The finding of the current study has extended the body of knowledge on green supply chain management practices, sustainable performance and environmental responsibility. It has added in theory of NRBV and stakeholder theory. Business managers, health managers must increase awareness of the environmental responsibility, green supply chain management practices in the seminars, conferences, workshops, benchmarks, lessons from local and international organizations, and

trainings and help the organizations how to achieve the competitive advantage and sustainable performance (Agyeman et al., 2018). Policy makers must pay attention to green manufacturing process, introduction of the eco-friendly products because there is a huge pressure form the stakeholder, such as governments, consumers, customers, suppliers, and creditors and they are willing to pay high prices for green products. Business managers must also focus on investment recovery for example, suppliers must be engaged in by-product and it's recycling and reduce the waste.

Green initiatives must be implemented in operations of organizations' especially total quality management. Managers are hereby play important role in recycling of products which is one of critical success factors of reducing waste, attaining competitive advantage and sustainability on the organizations. Yet this study is limited to health and educational related organizations but one should be careful while generalizing the findings of the study to other sectors. This study model could be applied and empirically tested in other sector such as food, beverages, dairy, sugar, cement, and construction sectors in future. In the current study cross-sectional data is collected and analyzed it is recommended that future study may use longitudinal data or mix methods to have better understanding the subject matter. Variables supply chain information integration and information leakage can be used as the moderator and mediators in the future studies.

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