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"THE IMPACT OF GREEN LOGISTIC ACTIVITIES ON GREEN LOGISTIC PERFORMANCE WITH THE MODERATING EFFECT OF GREEN INNOVATION"

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ABSTRACT

This paper investigates the impact of green logistic activities on green logistic performance with the moderating effects of green innovation in the manufacturing and logistics industry of Pakistan. This research proposes a model that shows the impact of Green product designing, green distribution, green warehousing, green packaging on Green logistic performance and have a significant influence by the help of Green innovation as a moderator. The approach used in this research is quantitative and used to support the theoretical model with the help of online survey. The results of all the items used in the questionnaire are analyzed using SPSS statistical software. The results drawn from 300 respondents presents that Green logistic performance, green packaging, green warehousing and green product designing influences the green innovation as a moderator.

Furthermore, the research imply that the manufacturing and logistics industry of Pakistan can make use of management by the employees and HR analysts by considering the green logistics activities to obtain the affective outputs. This study also has some limitations of time constraint, limited sample and targeted variables, but it enables further researchers a platform for future studies.

Keywords: Green Product Designing, Green Distribution, Green Warehousing, Green Packaging, Green Innovation, supply chain management, Green Logistics Performance.

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Chapter 1: Introduction

1.1 Introduction:

Protection of environment should be the first priority of every customer and management of an organization. Moreover, there is an increasing pressure from the regulatory authorities for the reduction of wastes. Thus, organization under this increasing pressure and fulfilling their own priorities try to devise such strategies that lead to reducing wastes and favorable environmental impact. The only concern while delivering products from buyers to customers is Traditional Supply chain management. It neither focuses on the society nor it has any concerns with the environment. Many of the times, outdated equipment and vehicles are used that are also damaged and not maintained. Therefore, these equipment and vehicles release carbon emissions that cause air pollution. Air pollution is becoming a serious concern in many countries. And is caused by outdated equipment, vehicles, and factories. This air pollution will lead towards damaging the society as well as causing many diseases, which would ultimately lead towards the death of the humans and animals. (Lee, Min 2015).

Secondly, traditional supply chains incur more cost and damaged materials and vehicles require additional maintenance cost. Without updated technology and fuel saving techniques, vehicles consume more fuel. These additional costs lift the overall expenses of the organizations, will increases the product cost ultimately. In this modern era, organizations are competing hard with their competitors with respect to cost. Therefore, if organization face high cost, it would not be possible for them to compete on this basis. (Chiou et al. 2011)

Organizations are now changing their traditional processes into new environmental or green activities (Shafique et al., 2017). Thus, to overcome the regulatory pressure, to enhance the business performance and minimize the negative impact on environment, organizations implement green supply chain practices.

Many countries are facing continuous destruction of the environment, change in environment, issues related to environmental sustainability and global warming have developed as basic territories in the administration of organizations internationally. Expanding client interest for environmentally sustainable products and services, fixing environmental rules and regulations and

developing interest for more prominent corporate social obligation have become the key drivers for organizations to embrace green strategies (Gotschol et al., 2014; R.-J. Lin, 2013).

Due to globalization, the ultimate customers and organizations are aware of the critical importance of protecting environment. At the international level, organizations have already started implementing green supply chain management practices to protect environment. Moreover, organizations are competing with each other based on corporate social responsibility activities. And through fewer wastage and implementation of green supply chain management activities, they can achieve their CSR goals.

The logistics industry is a significant segment of exchange and a key supporter of financial development in numerous nations. However, logistics exercises join extreme negative ecological effects, especially brought about by cargo transport. In the EU, ozone-depleting substances (GHG) discharges of the vehicle segment expanded at a higher rate in correlation with different ventures in the course of the most recent decades (Baran & K Górecka, 2019). The logistics industry and transport are a key part of the exchange and a significant supporter of financial development in numerous nations. However, logistics activities join extreme negative ecological effects, especially brought about by cargo transport. In the EU, ozone-depleting substances i-e greenhouse gases (GHG) outflows of the transportation sector expanded at a higher rate in correlation with different enterprises in the course of the most recent decades (Prinsen et al., 2018).

The environmental policy of Pakistan depends on a participatory way to deal with accomplishing targets of maintaining environmental sustainability lawfully, officially, and sound establishments. For this purpose, in Pakistan, the Federal Environment Ministry was established in 1975 as follows up on a Stockholm disclosure of 1972. The Ministry was responsible for the decree of the characteristic Protection Ordinance of Pakistan in 1983. It was the main comprehensive institution masterminded in the country. The guideline focus of Ordinance 1983 was to set up association i.e to develop Federal and Provincial Environmental Assurance Agencies and Pakistan Environmental Protection Council (PEPC), (Pakistan Environmental Protection Act, 1997.

1.2 Research Gap

In their study, Jia et al., (2019) only consider the effect of customer pressure on green innovations. In this paper, we take green innovation as a moderator to examine the impact on logistics

performance. Products move from one side of the world to another side that travel days and months to cater to the rapidly responsive demand of customers in the current competitive business environment and that business activity has an environmental impact globally. Increasing awareness of environmental concerns and considering long term business sustainability, companies are redefining and redesigning their logistics strategy to move the products in most efficient and effective ways buy saving maximum energy and environmentally friendly method resulting fully customer satisfaction through reducing the overall logistics cost. (Persdotter Isaksson et al., 2019).

The logistic performance or Green logistic performance (GLP) comes as a competitive advantage once companies use the Green logistics practice as a core strategy (Mangla et al., 2019). In simple words, Green Logistics consists of Green Product design, Green Distribution, Green Warehousing and Green packaging that impact on Green logistic performance resulting in a reduction in cost and maximum customer satisfaction. Moreover, this study suggested to conduct this study in other countries to examine the impact of green logistics activities on logistics performance on broad spectrum.

The green innovation provides a common platform for the manufacturing organizations and their suppliers to cooperate, which doubtlessly increases green innovation to enhance the green product (Imran et al., 2019). Also, this study suggested examining both the direct and indirect effects of green innovation on green logistics performance. Previous studies focused on the concept of environmental management. Subsequently, it was challenging to gauge impartially the logistics performance. As the environmental issue of the building nations gets distinctive, the ecological angle has become a point of convergence everywhere throughout the world. In this way, it is important to complete an explicit examination of green logistics action.

El-Kassar & Singh, (2019), mentioned in their study that there may be various impacts of organizational factors on green innovation usage for diverse logistics performances. It would be beneficial to make a further study on the moderating impact of innovation on logistics industries. Besides, other conceivable compelling elements on the usage of green innovation will likewise be taken into contemplations in a further study. As ecological issue of the creating nations gets unmistakable, the natural viewpoint has become a point of convergence everywhere throughout the world. Thus, it is important to do explicit investigation on green logistics drive. In addition, all

endeavors in Pakistan are occupied with logistics exercises in all connections from acquisition logistics and production logistics to definite distribution logistics. Be that as it may, all ebb and flow household and remote examinations lay weight on explore of fundamental hypotheses, there is no uniform reference standard for green logistics at home and abroad, and the green logistics study has not come down with the impact of green logistics movement of Pakistani endeavors on their logistics execution. In this way, it is basic to consider the connection between green logistics action and last logistics execution of the undertaking.

According to Hidayat et al., (2022), much reasons has been done on the effect of green supply chain management activities on company performance but not much in the Asian region. In this study, the influence of green supply chain management activities is studied specifically in Pakistan. The manufacturing and logistics industry of Pakistan is one of the best in Asian region. Organizations that have taken up the environmental position go beyond. The basics of cutting waste and operating efficiency to adopt the strategy of lean and clean to be really green (Hidayat et al., 2022).

RAHAL & ZENNIR, n.d. (2021), concludes in their study that implementing green supply chain management related practices reduce the negative environmental impact and improves the economic performance while also giving a competitive advantage to the firm. In today's economy, most of the companies are now moving towards more greener solutions and more sustainable development in the supply chain but it is not necessary that the advantages obtained within a company are same within another one or the whole industry.

1.3 Problem Statement

Sustainability of this world is in danger because of the expansion of natural debasement. It's ordinarily contended that spontaneous industrial endeavor and along these lines the cheerful activities of corporations' cause contamination of water, air, and soil that will be that the essential explanation behind global warming and an ever-changing assortment (Shafique et al., 2017). Moreover, the main focus of this study is to conduct an in-depth analysis of the effect of the green logistics activities and green logistics performance and moderating impact of green innovation for logistics and manufacturing industry and advancing mindfulness and self-actualization in a quick developing state. The consumer is a boss of each industry who controls the market diversity and competency related to green logistics activities which include green warehousing, green

packaging, green distribution and green designing for logistics industry. Back to few years, a very rare texting companies have endeavored to attract their employees by using these activities and collect the huge amount of expectations related to green logistics activities (Aslam et al., 2018). It has been seen that green warehousing, green packaging, green distribution and green designing that come under green logistics activities are used to enhance their products or services in logistics industry and only few modern approaches have implemented to cope up the challenges for attaining the competitive edge for organizations

Moreover, the aim is to identify the knowledge, importance and gap of green warehousing, green packaging, green distribution and green designing and its implementation on green logistics performance and moderating impact of green innovation and how they effect in manufacturing and logistics industry by using different contracts. The manufacturing and logistics industry in relation to green logistics activities including green packaging, green distribution, green warehousing and green designing have not been touched in depth. The paper also addresses the gap of green logistics activities green logistics performance and what actually the Pakistan's logistics industry intends to show. The main focus of this research is to give recommendations and contemporary strategies that how logistics and manufacturing industry should use green packaging, green distribution, green warehousing and green designing to gain performance by green innovation as a moderator.

1.4 Research Objectives

According to the problem statement of this literature, this study seeks to predict the appropriate understanding of relevant scopes of researchers and how green logistics activities such as green packaging, green distribution, green warehousing and green designing on such as green logistics performance with moderating role of green innovation for logistics and manufacturing industry of Pakistan.

Research Objective 1: To analyze the influence of green logistics activities on green logistics performance for logistics industry of Pakistan.

Research Objective 2: To analyze the impact of green logistics activities on green logistics performance having a moderator of green innovation for logistics industry of Pakistan.

1.5 Research Questions

Given the problem statement, this paper intends to assess the effect of green logistics activities, green logistics performance and green innovation in the logistics and manufacturing industry.

Research Question 1: What is the influence of green logistics activities on green logistics performance for logistics industry of Pakistan?

Research Question 2: What is the impact of green logistics activities on green logistics performance having a moderator of green innovation for logistics industry of Pakistan?

1.6 Significance of the study

Data produced from this study will help the future researchers to show the impact of green logistics activities which include green warehousing, green packaging, green designing and green distribution on green logistics performance with having a moderator as green innovation for logistics and manufacturing industry of Pakistan. This will further highlight the researchers to take measures at the right time. Moreover, it is hoped that this research will be the beginning of ongoing body of projects into the field of supply chain management. It is seen that green logistics activities on green logistics performance especially when having a moderator of green innovation are contemplated as the most hit factor that has been studies by the scholars have encouraged others to conduct the study. From the great scholars' perspectives, this overall concept can be contemplated as precautionary measure tool which plays an essential role in the profitability of the firms. In this research, there are going to be the discussion of some conceptual and theoretical contribution of some areas of research for the future researchers who want to observe the impact of green logistics activities on of green logistics activities with a moderating role of green innovation for logistics sector of Pakistan.

1.7 Scheme of the Study

This study is based on five chapters namely Introduction, Literature Review, Methodology, Analysis of Data (results that will be drawn from SPSS software) and Conclusions in the last. The questionnaire will be attached at the end of this report along with the plagiarism report. Below are the details about every chapter that is going to be written in here.

Chapter 1:

This chapter includes the introductory part of this study. It includes the introduction of each variable along with some citations. Moreover, the significance of the study, purpose and problem statement, research objectives and research questions are the main discussions in this chapter.

Chapter 2:

It wholly includes the literature review of each variable such as green logistics activities including green warehousing, green packaging, green designing and green distribution, green logistics performance and green innovation with respect to manufacturing and logistics sector. Then the relationship amongst the independent and dependent variables will be explained. Later on, the hypothesis and conceptual framework will be drawn.

Chapter 3:

Discussing about this chapter, this will involve the methods and approaches of how data will be collected. Moreover, the sampling technique, population and sample size, method of estimation and unit of analysis will be discussed in details.

Chapter 4:

This chapter will be best telling about the analysis of the data that this study has collected. This analysis will be run in statistical tool namely SPSS v 23.0. Followings are the tests which will be run in this study; frequency table, Descriptive Test, Reliability Test (Cronbach's Alpha), Correlation Test and at last, the Linear Regression Model. The justification of each test will be written in the chapter.

Chapter 5:

This chapter will provide the summary of this study. Along with this, conclusions, suggestions & recommendations, limitations and findings will be discussed.

Chapter Two: Literature Review

2.1 Introduction

In this part of study, author has focused on the detail discussion of every variable. Along with that, the relationship amongst the variables will also be briefed. At the end, hypothesis development and theoretical framework will be made. Moreover, the influence of green logistics activities which include green warehousing, green packaging, green designing and green distribution on green logistics performance will be analyzed with a moderating role of green innovation specifically in logistics and manufacturing industry of Pakistan.

Sustainability is considered as the main theme in supply chain management since the late Nineties (Rajeev et al., 2017). Sustainability of this world is in danger because of the expansion of natural debasement. It's ordinarily contended that spontaneous industrial endeavor and along these lines the cheerful activities of corporations cause contamination of water, air, and soil that will be that the essential explanation behind global warming and an ever-changing assortment (Alam et al., 2017; Bansal, 2002). It is interesting to pinpoint the particular time once specialists began looking at ecological issues related with logistics, anyway the conversation got pervasive from 1990 (Burns & Bush, 2000), when the natural emergencies became universal issues due to globalization (Gills, 2010). Environmental concerns spread a far-reaching range (to give a few models, biodiversity, air pollution, regular resource lack, and waste evacuation) and the methodologies to deal with them are not limited to alter logistics or close loop logistics. There is an absence of literature review focusing on natural worries in the logistics of both the administration and the partner (Islam et al., 2021).

Sureeyatanapas et al., (2018), presents the idea that 'green logistics includes all the endeavors to downsize the environmental effect of people groups' development, traffic frameworks and of transport in local and efficient supply chains utilized all around just as the converse progression of product and materials. Green logistics is fundamentally engaged with environmental supportability (Zarbakhshnia et al., 2019). The number of publications grew as a result of the misrepresented studies of ecological contamination. This suggests specialists endeavor to examine natural contemplations whereby considering logistics. In this way, this examination presents an

indistinguishable expanding pattern of studies on green supply chain the management (de Oliveira et al., 2018; Tseng et al., 2019).

2.2 Green Logistics Activities

Green logistic activities or the GSCM practices have a common advantage of achieving efficiency as they are all based on the 4R's approach (Reduce, Reuse, Recycle and Recover), that will allow the companies to achieve more value and reduce the consumption of resources (RAHAL & ZENNIR, n.d. 2021).

Wang & Wang, (2019), brought up that the present improvement of green logistics experienced some new blockages, city logistics circulation framework should be updated all together to diminish working expenses, decrease ecological harm, mirroring the affectability of condition on logistics appropriation way streamlining, the green logistics transport way is one of the significant issues to be unraveled desperately. Green logistics should be from varying backgrounds together to create sustainable development.

2.2.3 Green Products Designing and Green Logistic Performance.

Green product configuration includes the joining of both environmental and financial points of view in growing new and utilitarian items. Different terms that portray products that satisfy the enthusiasm of the earth are the green structure, design for environment, eco-design, ecologically cognizant products or sustainable items (Yin et al., 2017). Eco-design incorporates ecological aspects into items to limit dangers of outflows spread during production, utilization and removal periods of items' lifecycle (Baumann et al., 2002; Dangelico & Pontrandolfo, 2010). For this examination, green product configuration is characterized as "corporate proactive methodology for coordinating product design and ecological contemplations without trading off item's capacity and quality, including developments for recouping item an incentive for an incredible duration cycle before removal." This definition incorporates all components featured by past researchers and stresses on the need to receive ecologically proactive methodology (Jia et al., 2019). Both eco-design and reverse logistics are cost decrease activities yet the previous activity is all the more encouraging as this eco-feasible practice add to both financial and ecological result (ElTayeb et al., 2010).

Khor & Udin, (2013), The clients of customary items may concentrate on the quality, cost, and individual interest, yet its originators now not just attempt to satisfy the essential needs of these clients yet also improve the natural friendliness of the item. Such natural friendliness is encapsulated in the entire structure, what's more, assembling of the item. From an assembling venture, a decent structure of green items can adequately use present assets, for example, utilizing practical and ecologically benevolent crude materials, sensibly using creation hardware, considering the utilization of bundling materials and coursing advancement, what's more, reusing of items, etc. To figure it out business objectives and undertakings, an organization needs to react to expanding utilization interest for "green" items and an incredible enterprise ought to follow environmental laws and guidelines and execute the plan for environmental sustainability (Geng et al., 2017).

H1-a: Green product design has a positive impact on minimizing logistics expenses.

H2-a: Green Product designing has a positive impact on the customer's satisfaction level.

2.2.2 Green Warehousing and Green Logistic Performance.

Warehousing of items likewise includes ecological effect. Though such an effect isn't so evident for designing transport, the carrying cost of inventory assumes an extraordinary job in structure of logistics chain, and most concentrative capacity will leads to less capacity cost (Bartolini et al., 2019). Warehousing and transport are two essential and significant drivers of logistics, and sensibly arranging warehousing the executives, diminishing warehousing time of products and improving turnover pace of freight are the successful methods for an undertaking to improve its calculated efficiency and customer support level. Likewise, from the point of view of decreasing squanders in the distribution center, green warehousing additionally cyclic usage of compartments and plate, selection of most recent stacking procedures and security stock alongside holders and other gear, actuated treatment of long haul dead stock, and different substance (Pedro et al., 2014).

Warehouses are significant hubs in each supply chain and pretty much every industry. The extending e-commerce segment and the developing interest for mass customization have prompted an expanding requirement for distribution center space and structures especially for serving the continuous customer's request in the business-to-customer market (Boysen et al., 2019). It is reported as other logistic activities, warehouses emit the greenhouse gasses in the environment and their impact on global warming cannot be disputed anymore. Warehousing exercises contribute

generally 11% of the total GHG discharges created by the logistics division over the Online business retailers progressively center on improving last mile conveyance by restructuring their warehousing system to be nearer at their clients, who increasingly more interest for a quick delivery (Roumboutsos et al., 2014).

H1-b: Green warehousing activity has a positive impact on minimizing logistics expenses.

H2-b: Green warehousing has a positive impact on the customer's satisfaction level.

2.2.3 Green Distribution and Green Logistic Performance.

In logistics, the key link has continually been ended distribution, which might be a good measure to examine both green and smart logistics. The explanation for this can be (1) end distribution consists of both the real costs and the green costs. 2) The objective of developing green and smart logistics is to manage the distribution cost. End distribution could be a route set up that is based on the location of the distribution center and the customer rationalized. Logistics industry success is based on whether or not it wills an inexpensive and effective vehicle delivery route. The method during which to cut back logistics costs and improvement in terminal satisfaction depends on the choices created by the logistics system (Mangla et al., 2019). During the time spent dissemination, most of the day endeavors are additionally stood up to with so much issues as irrational appropriation plan, high void pace of conveyance vehicle, low assistance level, etc. The green logistics arrangement should control contamination during calculated circulation, to be specific; the plan with less ecological contamination ought to be embraced as conceivable in the arranging and choice of calculated circulation framework and action. For instance, the freight vehicles with little release limit ought to be utilized and short proximity distribution and night conveyance ought to be embraced to decrease car influx, monitor powers and diminish release (Rodrigue et al., 2017). Logistics industry success is based on whether or not it wills an inexpensive and effective vehicle delivery route. The method during which to cut back logistics costs and improvement in terminal satisfaction depends on the choices created by the logistics system (Mangla et al., 2019).

H1-c: Distribution of green logistics activity has a positive impact on minimizing logistics expenses

H2-c: Green distribution has a positive impact on the customer's satisfaction level.

2.2.4 Green Packaging and Green Logistic Performance.

Green packaging improvement might be prevented by profession trade-offs between natural contemplations and other concerns (Molina-Besch & Pålsson, 2016). According to Azzi et al., (2012), ecological upgrades of packaging will at the same time bring about progress or decline of logistics, promoting as well as security. The absence of full incorporation of ecological prerequisites on packaging from the supply chain could in this manner be thwarted by obstructions made from necessities in these different zones. Packaging influences each logistics action (M. H.-C. Lin et al., 2019) and in this way affects the natural effect of the strategic procedures in the supply chain. From an environmental viewpoint, the impact of packaging on calculated productivity is predominantly identified with the vitality utilization of strategic procedures. Taking a look at carbon outflows, cargo transport ordinarily represents 80–90% of the carbon emissions related to the logistics and that's why has greater influence environmental impact of the logistical processes in the supply chain (Piecyk & McKinnon, 2010). The packaging is a significant activity of logistics as it adds to a reduction in transportation cost along with the supply because natural effect from transportation is similarly higher for some items than the direct ecological effect from packaging.

M. H.-C. Lin et al., (2019), stated that ground-breaking advertisers look for more noteworthy interest in packaging so as to fulfill customers' needs. So as to raise organizations' notoriety and customers' purchase aims towards organization items, moral advertising rehearses and corporate duty programs both are critical for better promoting purposes. The packaging is by all accounts one of the most essential factors in impacting buyers purchasing choices at the retail location.

H1-d: the activity of green logistics packaging has a positive impact on reducing the expense of logistics

H2-d: Green packaging has a positive impact on the level of customer satisfaction.

2.3 Green Innovation as a Moderator

The green advancements for the logistics business recommended by Murphy & Poist, (2003), are taken as the green practices in this examination. Innovation is the utilization of new specialized and regulatory information to offer another item or administration to customers. it comprises of any practices that are new to associations, including equipment's, services, products, procedure,

strategies, and undertakings (C.-Y. Lin & Ho, 2011). The green innovation eludes to the appropriation of the development, for example, data and discussion innovation, natural innovation, observing innovation, and scope of remarkable advances in the strategy for logistics the board. Green advancement is another corporate ecological management idea advanced among assembling organizations. Green development lessens the creation costs, however, furthermore improves the consistency and gauges of the item just as the asset productiveness (Chen et al., 2006). Green program are embraced just when organizations concur with that such practices would prompt monetary increase, operational improvement, and improvement of their serious addition (Chiou et al., 2011). the execution of green projects would perhaps improve the general ecological by and large execution of the companies (Liao et al., 2019).

H3: Green innovation moderates the relationship between green logistics activity and logistics performance as an increase in green innovation will strengthen the relation between green logistic activity and logistic performance and vice versa.

2.3.1 Green Innovation and Product Designing

Decent product innovation by and large execution can assist corporate with improving business sector position, creating the brand name, jump competition makes a stage forward and claims to new customer (R.-J. Lin et al., 2013). Moreover, the outcomes additionally demonstrate that green item advancement execution has a positive connection with firm execution. For chiefs, this investigation underscores the key significance of green item development decisions and exhibits that green item advancement and affiliation execution must join contemplations related to the entrance of data about market request attributes.

Ar, (2012), studies examination guaranteed that green product innovation has a more profitable impact on serious capacity than firm execution. The advancement of green item structure and opposite logistics capacities are green supply chain rehearses that are corresponding with the objectives of economic improvement by methods for delayed maker duty (Khor & Udin, 2013). The outcomes of Xie et al., (2019), uncover that an organization's green picture can reinforce the great impact of green product innovation on its monetary presentation, which light on the unexpected instrument that green item development improves money related execution.

H3-a: Green innovation acts as a moderator between green product design and logistics performance.

2.3.2 Green innovation and Green Warehouses

Distribution centers are occupied spots, products are continually moving; inbound and outbound conveyances must be managed as pleasantly as the moves of contraptions from area to area. Numerous organizations are hoping to distribution center activities are a zone where they can settle on naturally cool-headed choices. Organizations are focusing on three zones to help them in this undertaking, diminish, reuse, and reuse. Warehousing includes all distribution center administration from item gathering and deciding to compartment stacking (Garcia et al., 2012). Garcia et al., (2012) shows numerous variables affecting green warehousing rehearses. Development innovation is one of the components is an effect on green stockrooms. There is a relationship between technology innovations and green warehousing practice formulate hypothesis by Xin et al., (2019). What's more founded on the consequence of this examination, mechanical developments influence essentially the green warehousing rehearses. As far as generally speaking execution is worried, there is a need to secure the impact of the green logistics movement. An audit of the writing shows a critical connection between green logistics action and green logistics execution. As a general outcome, the impact of the innovation being used is by all accounts restricted.

H3-b: Green innovation acts as a moderator between green product design and logistics performance

2.3.3 Green Innovation and Green Distribution

Distribution networks assume a significant job between the showcasing and outfit chain interface. This is the transcendent worries of flexibly chain the executives from charge and float of materials viewpoint. Moreover, this is furthermore where a company can meet the clients, for the most part for the mechanical business. Like life-cycle evaluation, referenced carbon impression is some other parameter to portray the "greenness" of an item or strategy (Chan et al., 2012). Green development impacts lessening the ecological weight of the transportation business, explicitly in term of contamination and ozone harming substance outflows, subsequently growing a requirement for incorporating green advancement in logistics (Lee, 2008). With the development of green advancements, the logistics endeavor has gone past the standard strategic objectives for proficient, successful, fast taking care of, and development of merchandise. According to C.-Y. Lin & Ho, (2011), most green practices require coordinated effort and synchronization from unique office at some phase in the selection phase.in request to ensure effective usage, green activities are

normally reassuring and enlivened from the top administration. Thus, green mechanical skill development in the transportation endeavor flexibly fast advancement, just as the improvement of new frameworks or gear to save the regular habitat and assets (Zailani et al., 2014).

H3-c: Green innovation acts as a moderator between green distribution and logistics performance.

2.4 Logistics Performance

According to the world bank‘s Economics Policy report on the evaluation of logistics performance in global trade containing the logistic evaluation of 160 countries, logistic is key in today global perspective consists of movement of goods across the borders in different modes with the flow of information and cash in different stages including storages, international freight, border crossing mechanism and payments methods to reach the end customer. This complex inter-chain of activities is required to measure the performance in a systematic way that can give a clear picture of the complete logistics process to get the sustainable Supply Chain Management. Moons et al., (2019) Presented five performance indicators to measure logistics performance considering time, cost, inventory, service level, and criticality to measure the efficient and effective logistics.

Evaluation of reverse logistics performance for companies is important to get a clear picture of their complete logistics performance. By evaluating reverse logistics economic benefits will also be significant for companies with environmental sustainability and allow management to have a clear understanding of complete logistics activities and allow to invest further to improve the efficiency and effectiveness (Hammes et al., 2020). Irfani et al., (2019) presented seven indicators to measure the logistics performance, that indicators include reliability, responsiveness, flexibility, assets management, transportation cost, and safety. Wang & Wang, (2019) define logistics performance as two broader types of logistics performance measures, soft measure and hard measure in their research work, hard measures are defined to profitability and soft measure are defined to customer satisfaction and long-term customer relationship, their research work on systematic literature review define that some research focuses on soft logistics measure and some on hard but no research work measures both measures together. Chan et al., (2012) proposed the logistics performance indicator by considering the low carbon logistics performance; they proposed the logistics performance measurement indicators for economic, environmental, and social aspect.

2.5 Theory

We used Institutional theory to support the theoretical framework of the study. Institutional theory provides a perspective for researchers to study the influence of factors that affect and promote organizational practices or greener practices. It also explains the influence of social, political and economic factors in the organizational environment on its strategies, decision-making and adaption of greener practices. Organizations which operate in well-developed countries or institutional environments do not become successful without greener practices in logistics activities and by merely executing their operations in an efficient manner to enhance logistics performance (Aslam et al., 2018).

2.6 Hypothesis Development

This study examines the factors involved in logistics activities that have an impact on logistics performance with the moderation effect of green innovation, the hypothesis for this study is developed based on the results of the literature review.

H1: Green innovation acts as a moderator between green product design and logistics performance.

H2: Green innovation acts as a moderator between green warehousing and logistics performance.

H3: Green innovation acts as a moderator between green distribution and logistics performance.

H4: Green innovation acts as a moderator between green packaging and logistics performance.

2.7 Theoretical Framework

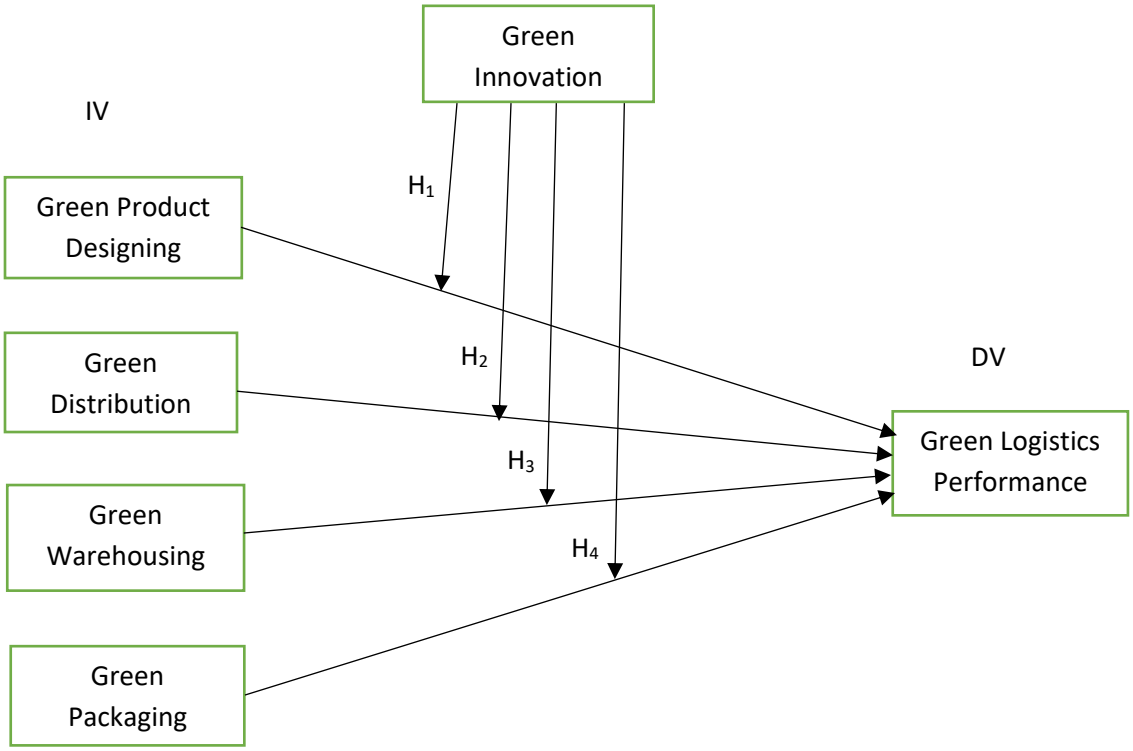

Figure 1: Theoretical Framework for Research

Chapter Three: Methodology

3.1 Introduction

This area of study explains the method and design that is adopted for the study along with the tools and approaches used to collect and analyze the data. Furthermore, data collection techniques, method of sampling and theoretical framework are used for the study. In the end, the statistical methods have been applied to find the relationship between variables and testing of proposed hypothesis.

3.2 Research Design

This study places focus on the concept and perspectives of respondents related to the influence of green logistics activities such as green warehousing, green distribution, green design and green packaging on green logistics performance having green innovation as a moderator for logistics and manufacturing sector of Pakistan. Moreover, it has been observed that this study has been applied with quantitative approach which shows the inspections to check the impact of green logistics activities on green logistics performance with moderating effect of green innovation. The relationship between green logistics activities and green logistics activities along with green innovation are attested in the context of Pakistan.

3.2.1 Research Philosophy

This study has opted for Positivism approach in order to interrogate the association amongst green logistics activities including green warehousing, green distribution, green design and green packaging and green logistics performance and having environmental green innovation as moderator for manufacturing & logistics sector of Pakistan. The positivism research paradigm is used in the research. The data is collected in quantitative way that is measurable and previously well-known theories are tested in different type of backgrounds.

3.2.2 Research Method

These are taken as the strategies and techniques which are utilized for the collection of data and analysis evidence in order to explore the new information and data to better understand the topic.

3.2.3 Research Strategy

The research strategy used for this study is questionnaire based. Questionnaires are used to test the hypothesis developed.

3.2.4 Time Horizon

The collection of data in cross-sectional study is done only once in a timeline. Since, due to quantitative approach, cross-sectional time horizon has been used in this study.

3.3 Unit of Analysis

In managerial sciences research, there are three types of analysis i.e., individual, group and organization. The unit of analysis that we have used for this study are organizations who took part in this research & belonging to logistics sector, having understanding of green logistics activities such as green design, green distribution, green packaging, green warehousing, green logistics performance and green innovation such as TPL (Transport and Project Logistics), Coca Cola. Daraz and TCS etc.

3.4 Population

Organizations that are operating in the manufacturing and logistics sector of Pakistan is considered as the main population for conducting this study. The actual cause behind opting for this population is that the sector which the study has been produced and developed is related to the institutions providing manufacturing and logistics services in Pakistan. The respondents are supposed to respond in the form of questionnaires in both soft as well as hard form.

3.5 Sampling and Data Collection:

Sample is defined as the group of people that is selected for a large population. There are two techniques that are widely used in research. Since, the resources that are available are limited so this study has opted for non-probability convenient sampling technique which shows zero chances of selection of every respondent in the population size. In sample size of this study, the methodology that have been used is primary data that in return support the theory to develop. Moreover, sample size is completely based on the number of responses per scaling item. For this research, total 300 questionnaires were received (Aslam et al., 2018; Tu & Wu, 2021)**.** This sample size is acceptable for a model with 34 indicators (Ar, 2012; Ma et al., 2018).

In order to empirically test the model, this study adopts a 34-item questionnaire which consists of green product designing (6 items), green distribution (5 items), green warehousing (5 items), green packaging (5 items), green innovation (8 items) and green logistics performance (5 items). These items of the questionnaire were adopted from Küçük et al., (2021), Xie et al., (2019), Tu & Wu, (2021) and Ninlawan et al., (2010). A 5-point Likert scale is used to measure the items.

Chapter Four: Analysis and Results

4.0 Data Analysis

In this paper, different tests have been performed to observe the hypotheses which have been discussed initially in this study. Demographics related questions will be considered for the descriptive analysis, while the covariance between the selected variables as well as their regression weights, reliability test, correlation test, and Process Hayes method will be used in order to check for the reliability and the validity of the data.

4.1 Frequency Table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	175	58.3	58.3	58.
	female	125	41.7	41.7	100.0
	Total	300	100.0	100.0	

Table 1: Gender

In this test, the stress has been laid on the demographic questions of age and gender. It will show the number of minimum and maximum groups who responded to the questionnaire. Table 1 of gender, shows the division of gender part into two groups i.e., Males and Females. The total number of respondents were 300. Out of 300, 175 belonged to male group whereas, 125 respondents belonged to female group showing the percentage of male group as 58.3% which means that this group has contributed more efforts as compared to female group (whose contribution is 41.7% of the total) in the whole questionnaire.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21-25years	162	54.0	54.0	54.0
	26-30years	100	33.3	33.3	87.3
	31-35years	37	12.3	12.3	99.7
	36-40years	1	.3	.3	100.0
	Total	300	100.0	100.0	

Table 2: Age

Above table 2 of age, clearly shows that four age groups have actually responded to the questionnaire. Amongst them, the group ranging from 21 to 25 has given their maximum output in the survey that ultimately adds up to 54.0% showing the figure of 162. On the contrary, 36-40 years age group is the group who have responded the least by giving a number of 1.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Graduation	165	55.0	55.0	55.0
	Masters	78	26.0	26.0	81.0
	M.Phil.	23	7.7	7.7	88.7
	Others	34	11.3	11.3	100.0
	Total	300	100.0	100.0	

Table 3: Qualification

It has been drawn in table 3, most of the people who answered to questionnaire were 300, out of which 165 were from graduation category who shared the responses about the study and have a major impact on the analysis of the study. By this analysis, we can come to conclusion that graduation employees are more indulge in getting the responses. Due to this group, the results of this study have shown to be significant.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	below 5 years	200	66.7	66.7	66.7
	5-10 years	75	25.0	25.0	91.7
	10-15 years	20	6.7	6.7	98.3
	above 15 years	5	1.7	1.7	100.0
	Total	300	100.0	100.0	

Table 4: Experience

The above table 4 of experience shows that group having experience less than 5 years have contributed more to this questionnaire i.e., 200 people having percentage of 66.7% whereas, on the other side group of experience more than 15 years have contributed minimal.

	N	Minimum	Maximum	Mean	Standard Deviation
Gender	300	1.00	2.00	1.4167	.49383
Age	300	1.00	4.00	1.5900	.71433
Qualification	300	1.00	4.00	1.7533	1.01122
Experience	300	1.00	4.00	1.4333	.69317
GDP	300	1.83	5.00	3.8794	.55788
GD	300	1.20	5.00	3.5960	.75331
GW	300	1.60	5.00	3.7860	.60406
GP	300	1.20	5.00	3.7720	.74098
GI	300	1.63	5.00	3.6804	.60239
GLP	300	1.60	5.00	3.8727	.55775
Valid N (listwise)	300				

Table 5: Descriptive Statistics

The above table 5 shows the one next to the other clear insights for four numeric factors displayed previously. This test is hurried to reinforce the responses. The above given table 5 portrays the distinct examination of this review. The consequences of enlightening examination showed that all factors were tracked down critical in space of study. In this measurement, gender have least and most extreme mean upsides of 1.00 and 2.00 separately. There are given the base and most extreme worth of any remaining factors also. While, this table shows that the amount it has

deviation with mean. The standard deviation of each gathering is positive which shows that outcomes are exceptionally huge.

4.2 Reliability Test

No. of items	Cronbach's Alpha
Green Product Design = 6	.725
Green design = 5	.749
Green warehousing = 5	.875
Green packaging = 5	.834
Green Innovation = 8	.759
Green Logistics Performance = 5	.830

Table 6: Reliability

Reliability test is used in order to check, analyze and observe the validity and reliability of the scaling items. The tests are shown in the form of Cronbach alpha. If the value is closer to 0.9, then it means that the items are significantly acceptable. In this paper, the Cronbach alpha of green product design is 0.725 which is closer to 0.9 and considered as acceptable. The Cronbach alpha for green distribution is 0.749, green warehousing is 0.875, green packaging 0.834, green innovation is 0.759 and green logistics performance is 0.830 respectively. Cronbach alpha of all variables is 0.941 which is excellent. In both cases above, the Cronbach alpha is closer to 0.9 which means that they are acceptable and also depict that the data is valid.

Testing the reliability and validity of the proven results of the questionnaire is reliable and valid performance. Thus, the Cronbach's alpha is different in every variable and is important and acceptable that depicts the relation and conceptual framework amongst the antecedents that are reliable and positive.

4.3 Correlation

		GPD	GD	GW	GP	GI	GLP
GPD	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	300					
GD	Pearson Correlation	.609**	1	.			
	Sig. (2-tailed)	.000					
	N	300	300				
GW	Pearson Correlation	.852**	.506**	1			
	Sig. (2-tailed)	.000	.000				
	N	300	300	300			
GP	Pearson Correlation	.659**	.843**	.372**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	300	300	300	300		
GI	Pearson Correlation	.842**	.784**	.884**	.573**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	300	300	300	300	300	
GLP	Pearson Correlation	.407**	.667**	.763**	.733**	.753**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	300	300	300	300	300	300

**. Correlation is significant at the 0.01 level (2-tailed).

Table 7: Correlation

It has been seen that this test is used to measure and calculate the power and to reinforce the association between all the three variables that are independent, dependent, and moderating variables. The value between -1 to +1 is said to be significant when we measure the values of correlation between the two variables. In the above given table, it should be considered that the GPD (green product designing) and GD (green distribution) is .609 and the correlation for GW (green warehousing) and GI (green innovation) .884 and the correlation for GLP (green logistics performance) and GP (green packaging) is .407 add all other values of correlation are between -1 to +1. Therefore, all the values are significant and acceptable. P-value for all the values is found

to be 0. As $p < 0.05$, so accepting the developed hypothesis of having the real based relationship and conclude that the relationships are statistically significant.

4.4 Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.288	.087		3.320	.001
	GPD	.924	.022	.924	41.810	.000

Table 8(a): Regression 1

The above Table shows the effect of green product designing (GPD) on green logistics performance (GLP) through the regression test. The value of B shows the effect of independent variable on dependent variable. In the above table, value of B is .924. It means that the change in green Product designing will bring the 92% change in green logistics performance. Moreover, the value of β shows the standardized coefficient. It means the effect on dependent variable is only due to the independent variable. The value of β is .924. It means that 92.4% change in performance is only due to green product design. The value of t shows the difference. In the table, value of t is 41.810. The significant or p value is .000. All the values are in the acceptable range at the significant level.

Model Summary						
R	**R Sq**	**MSE**	**F**	**df1**	**df2**	**p**
0.9255	0.8566	0.0451	589.4604	3.0000	296.0000	0.0000
Model						
	Coeff	**se**	**T**	**P**	**LLCI**	**ULCI**
Constant	0.1275	0.3022	1.4219	0.0323	0.4672	0.7221
GPD	0.0442	0.0917	11.3895	0.0000	0.8637	1.2246
GI	0.0258	0.0961	2.2681	0.0438	0.2149	0.1634
Int_1	0.0145	0.0243	1.5948	0.0024	0.0624	0.0334

Table 8(b)

The table 8(b) describe the effect of independent variable of green product designing (GPD) on dependent variable green logistics performance (GLP) while in the second model the interaction effect has been analyzed. From the regression 1 table 8, the coefficient on the path from green product designing (GPD) to green innovation (GI) is positive and significant (Coeff =.0442, S. E=.0917, P=.0000) indicating that this moderating relationship of green innovation (GI) between independent variable GPD and dependent variable GLP (green logistics performance) is significant as $P<0.05$. This positive significant coefficient suggests that hypothesis 1 is supported.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	2.097	.117		17.860	.000
	GD	.494	.032	.667	15.445	.000

Table 9(a): Regression 2

The above table shows the effect of green distribution (GD) on green logistics performance (GLP) through the regression test. The value of B shows the effect of independent variable on dependent variable. In the above table, value of B is .494. It means that the change in green distribution will bring the 49.4% change in green logistics performance. Moreover, the value of β shows the standardized coefficient. It means the effect on dependent variable is only due to the independent variable. The value of β is .667. It means that 66.7%% change in performance is only due to green distribution. The value of t shows the difference. In the table, value of t is 15.445. The significant or p value is .000. All the values are in the acceptable range at the significant level.

Model Summary						
R	**R Sq**	**MSE**	**F**	**df1**	**df2**	**p**
0.7633	0.5826	0.1312	137.7436	3.0000	296.0000	0.0000
Model						
	Coeff	**se**	**t**	**P**	**LLCI**	**ULCI**
Constant	1.3369	0.3986	3.3538	0.0009	0.5524	2.1215
GD	0.1364	0.1289	1.0584	0.0207	0.1172	0.3900
GI	0.5454	0.1274	4.2687	0.0000	0.2940	0.7969
Int_2	0.0028	0.0353	0.0790	0.0370	0.0667	0.0723

Table 9(b)

The above table describe the effect of independent variable of green distribution (GD) on dependent variable green logistics performance (GLP) while in the second model the interaction effect has been analyzed. From the regression 2 table 9, the coefficient on the path from green distribution (GD) to green innovation (GI) is positive and significant (Coeff=.1364, S.E=.1289, P=.0207) indicating that this moderating relationship of green innovation(GI) between independent variable GD and dependent variable GLP(green logistics performance) is significant as $P<0.05$. This positive significant coefficient suggests that hypothesis 2 is supported.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	1.205	.133		9.094	.000
	GW	.705	.035	.763	20.378	.000

Table 10(a): Regression 3

The above Table shows the effect of green warehousing (GW) on green logistics performance (GLP) through the regression test. The value of B shows the effect of independent variable on dependent variable. In the above table, value of B is .705. It means that the change in green warehousing will bring the 70.5% change in green logistics performance. Moreover, the value of β shows the standardized coefficient. It means the effect on dependent variable is only due to the independent variable. The value of β is .763. It means that 76.3% change in performance is only due to green warehousing. The value of t shows the difference. In the table, value of t is 20.378. The significant or p value is .000. All the values are in the acceptable range at the significant level.

Model Summary						
R	**R Sq**	**MSE**	**F**	**df1**	**df2**	**p**
0.7823	0.6120	0.1219	155.6358	3.0000	296.0000	0.0000
Model						
	Coeff	**se**	**t**	**P**	**LLCI**	**ULCI**
Constant	0.6762	0.4469	1.5131	0.1313	0.2033	1.5556
GW	0.5327	0.1457	3.6570	0.0003	0.2460	0.8193
GI	0.4600	0.1479	3.1092	0.0021	0.1688	0.1634
Int_3	0.0360	0.0371	0.9691	0.0333	0.1091	0.0334

Table 10(b)

The table 10(b) describe the effect of independent variable of green warehousing (GW) on

dependent variable green logistics performance (GLP) while in the second model the interaction effect has been analyzed. From the regression 3 table 10, the coefficient on the path the green warehousing (GW) to green innovation (GI) is positive and significant (Coeff=.5327, S.E =.1457, P=.0003) indicating that this moderating relationship of green innovation(GI) between independent variable GW and dependent variable GLP(green logistics performance) is significant as P<0.05. This positive significant coefficient suggests that hypothesis 3 is supported.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
4	(Constant)	1.793	.114		15.713	.000
	GP	.551	.030	.733	18.581	.000

Table 11(a): Regression 4

The above Table shows the effect of green packaging (GP) on green logistics performance (GLP) through the regression test. The value of B shows the effect of independent variable on dependent variable. In the above table, value of B is .551. It means that the change in green packaging will bring the 55.1% change in green logistics performance. Moreover, the value of β shows the standardized coefficient. It means the effect on dependent variable is only due to the independent variable. The value of β is .733. It means that 73.3% change in performance is only due to green warehousing. The value of t shows the difference. In the table, value of t is 18.581. The significant or p value is .000. All the values are in the acceptable range at the significant level.

Model Summary						
R	**R Sq**	**MSE**	**F**	**df1**	**df2**	**p**
0.8389	0.7038	0.0931	234.4755	3.0000	296.0000	0.0000
Model						
	Coeff	**Se**	**t**	**P**	**LLCI**	**ULCI**
Constant	1.3460	0.3759	3.5806	0.0004	0.6062	2.0859
GP	0.2107	0.1075	1.9595	0.0410	0.0009	0.4222
GI	0.3245	0.1164	2.7868	0.0057	0.0953	0.5536
Int_4	0.0380	0.0311	1.2218	0.0227	0.0232	0.0993

Table 11(b)

The table () describe the effect of independent variable of green packaging (GD) on dependent variable green logistics performance (GLP) while in the second model the interaction effect has been analyzed. From the regression 11 table 4, the coefficient on the path the green packaging (GP) to green innovation (GI) is positive and significant (Coeff=.2107, S.E=.1075, P=.0410) indicating that this moderating relationship of green innovation(GI) between independent variable GP and dependent variable GLP(green logistics performance) is significant as $P<0.05$. This positive significant coefficient suggests that hypothesis 4 is supported.

Chapter Five: Conclusion

5.0 Conclusion

The purpose of the study to investigate the relationship of green logistics activities including green warehousing, green design, green distribution and green packaging with green logistics performance and also the access the impact of “green innovation” as a moderator on this relationship. The questionnaire was adopted as a data collection tool. The population for the study is the employees working in manufacturing and logistics industry of Pakistan. The sampling technique used is convenient sampling.

The analysis of the study indicates that there is positive association of green logistics activities including green warehousing, green design, green distribution and green packaging and green logistics performance. The moderating variable “green innovation” also moderates their association. The results of the study are in accordance with existing literature. Future research can be conducted by taking different dimensions of the existing variables. Also, it can be conducted by taking “warehousing operations” or any other internal/external factor as a moderating variable. Sample size can be increase for more generalize results. Moreover, future research can make comparison of private and government sectors.

5.2 Findings of the study.

The core objective of this study is to analyze the effect of signs that connects from green logistics activities including green warehousing, green design, green distribution and green packaging with green logistics performance. It also focused to describe that under what circumstances and situations, green logistics activities including green warehousing, green design, green distribution collaborated within the working organizations. This literature also found the support of moderating role. The findings give highlights on the role of green logistics activities of other firms working in an organization in effecting the green logistics performance considering the green innovation factor in the employees as the moderating variable that how this variable is affecting the entire system.

First of all, in this research it has been found out the information regarding one of the green logistics activities including green warehousing, green design, green distribution and green packaging and its impact on green logistics performance. The finding point of win-lose situation is that green logistics activities as a proof as positive connection view of gaining the greener

innovation of the products. Another finding is that the perception of the green logistics activities including green warehousing, green design, green distribution and green packaging which might have direct relationship with the actual results. It is actually believed that these factors are hard to control because they are automatic in nature. Therefore, it is very essential to reach the efforts of the literature at finding different tools and techniques which might make the firms more enthusiastic to their workplace. The study says that all the hypotheses are accepted whereas, after running the tests, the hypotheses seem to be accepted because the values that are drawn, are reliable and significant.

5.3 Limitations of Research

There are always some limitations while conducting the research which can highlight meaningful directions for future research. This study shows the best understanding and testing of dynamics of the connection between the logistics system of the employees. So, considering this study as quantitative research, it has few implications as well as limitations. First of all, the time is the most important factor while conducting research. It is considered as a direct tool of research and fulfilling its basic requirements. The budget constraint and the funding are another factor which can make the research more reliable. It puts the limitations to the one's study.

The questionnaire items were taken from the previous studies but different in research background, region and other contextual factors that requires the analysis of detailed issues. Future research can develop more careful measures related to the research questions and this led to improvement in the validity and reliability of the questionnaire. Another limitation of this study is based upon geographical location, this study focused only on Pakistan while further study can be done on different geographical regions. Third limitation is industry based. This study focused only on manufacturing and logistics industry of Pakistan while further study can be done on different sector. Last but not the least, the sample size of the study that this literature has (n=300) which represents a limitation as a small and minimum sample size which can make bias connections amongst the variables and this is also because of time constraint.

5.4 Future Implications and Recommendation

This study can be implemented at academician and managerial level both. From managerial point of view, this study can be implanted in the organizational structure to strengthen their supply chain management channels through new concepts which will not only enhance their logistics performance and but innovation as well. From the academic point of view, this study can open

new doors in the field of green supply chain management, green innovation, and logistics performance for the new researchers to perform further study on it. Therefore, this study has practical implications on both sides.

Implementing GSCM practices not only reduces the negative environmental impacts but it also improves the economic performance. Therefore, the aim of the companies should be more concerned about moving towards greener solutions for the problems within a company. Moreover, the companies should also avoid unnecessary resource consumption and waste generation.

In future approach, it is suggested that further variables could be added to this literature such as warehousing operations, supply chain practices and many others. Also, the addition of some other mediating and more moderating variables can be made, interpreted and observed in the insights. Moreover, in this study the quantitative approach is used. The qualitative as well as the quantitative approach can better help in such type of study by taking the large sample size to get the highly significant and authentic results. It has been recommended by the scholars and researchers that green innovation along with the green logistics performance should be taken into consideration with respect to areas of marketing and other major niches and domain.

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