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REVERSE LOGISTICS AND ORGANIZATIONAL PERFORMANCE IN THE PACKAGING INDUSTRY: THE MEDIATING ROLE OF CONSUMER COMMITMENT

BY

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DECLARATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma at Kwame Nkrumah University of Science and Technology, Kumasi or any other educational institution, except where due acknowledgment is made in the thesis.

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DEDICATION

This study is dedicated to God Almighty, my wife, Gloria Nkansah and two children Maame Abena Boahemaa Agyei and Nana Ama Serwaa Agyei and my dad for their immense support. I am very grateful to all friends and colleagues who in diverse ways helped me. God bless all of you.

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ABSTRACT

Reverse logistics is a crucial part of green supply chain management, which is seen by businesses worldwide as the answer to persistent environmental concerns. Its impact on business performance operations has received considerable attention in literature. It is on the strength of this background that this study aimed to assess the mediating role of consumer commitment in the relationship between reverse logistics and organizational performance. The study was conducted using the packaging industry of Ghana as a case. Primary data was utilized with questionnaires at the main data collection tool for the study. The data were analysed quantitatively with the help of SPSS and Smart PLS. Descriptive statistics, correlation and regression analysis were used to describe and analyze the data. The study utilized the Cronbach's alpha to assess the internal consistency of the measuring constructs for sound statistical analysis. Findings of the study revealed that there are practices to collect the packaging, practices of providing transportation to collect and dispose of products and packaging, the practices of outsourcing resources to return products at the end of the life cycle in the packaging industry. Findings also revealed a positive and significant relationship between reverse logistics and organizational performance. It was also revealed that consumer commitment failed to mediate the relationship between reverse logistics and organizational performance. This study therefore recommends to the management of the packaging industry to build strong relationship and commitment by improving their services with the consumers as it has the tendency to enhance their reverse logistics practices. Again, owing to the fact that reverse logistics enhance environmental sustainability, various policy makers must put in place measures that will prompt various firms to practice reverse logistics in Ghana.

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LIST OF ABBREVIATIONS

GDP – Gross Domestic Product

GSCM – Green Supply Chain Management

RL - Reverse Logistics

SEM – Structural Equation Model

SPSS – Statistical Package for Social Sciences

TOPSIS - Technique for Order of Preference by Similarity to Ideal Solution

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Reverse logistics (RL) has gained much attention as a result of rising environmental concerns, sustainable development, fierce global competition, among other. Reverse logistics is a crucial part of GSCM, which is seen by businesses worldwide as the answer to persistent environmental concerns (Ndung'u & Moronge, 2017). In line with this assertion, businesses are now spending time and money learning about reverse logistics so they may incorporate the related practices into their operations. Hitherto, most organizations were only practicing forward logistics. However, these firms are gradually incorporating reverse logistics strategies into their supply chain for reasons related to the environment, the economy, and the law (Yu et al., 2018; Ebenezer and Zhuo, 2019).

Reverse logistics have been recognized as essential to creating sustained competitive advantage as the supply chain environment becomes more unpredictable and globally competitive (Saruchera and Asante-Darko, 2021). The rising demand of packaging products across the globe has triggered the vat demand of plastic waste as well as issues pertaining to recycling which cause havoc to the environment (Ebenezer and Zhuo, 2019). In line with this ascertain, reverse logistics practices have been recognized by the packaging industry to enhance the utilization of materials and reduce cost (Chan et al., 2020).

Despite ongoing global attempts to protect the environment, logistics and supply chain industry continues to wreak havoc on the ecosystem (McKinnon et al., 2015; Grant et al., 2017). The remarkable advancements in industrialization over the past 200 years have

accelerated the transfer of people as well as goods around the world to the point where the natural environment is now under a great deal of stress that is beyond its capacity for self-recovery. It is seen as an efficient way to increase productivity, lessen the negative environmental impact and enhance productivity (Maheswari et al., 2020; Fernando et al., 2022).

Following Zhang et al. (2015), consumers through their commitments with organizations establish stable relationships with stakeholders by waiving their short-term goals in exchange of long-term relationship with the firm. Extant literature has revealed that consumer commitment is an essential factor in marketing management for the attainment of corporate objectives by utilizing consumer confidence through functional and emotional benefits (Curras-Perez and Sanchez-Garcia, 2016). Zhang et al. (2015) revealed that consumer commitment is a crucial factor in business operations because it enhances active participation and return of investments. In addition, firms stand the change to benefit from consumer commitment, as it is seen as an antecedent for gaining competitive advantage through causal relationships of profitability (Reichheld, 1996) and positive recommendations (Guo et al., 2016).

Due to the increased importance of environmental concern and sustainable development across several countries, reverse logistics and firm performance relationship have been studied to determine their connection (Bag and Gupta, 2019; Banihasheni et al., 2019; Maheswari et al., 2020). These studies have however yielded conflicting results as some scholars have recorded positive relationship (Ebenezer and Zhuo, 2019; Fernando et al., 2022). Other studies have also found no significant impact (Saruchera and Asante-Darko, 2021). In this study, the researcher argued that when consumers of packaging products remain committed, the

implementation and success of reverse logistics are achieved, which in turn enhance their performance.

Inconclusive outcomes have been discovered in studies relating to reverse logistics and firm performance (Huang and Yang, 2014; Ebenezer and Zhuo, 2019; Fernando et al., 2022). In this vein, a study of this nature aimed to resolve the following inconsistencies and gaps in knowledge: (i) most studies on reverse logistics and firm performance have concentrated in advance economies with dearth studies in developing countries (Abdulrahman et al., 2014; Fernando et al., 2022), (ii) most studies have considered only bivariate link with findings being inconclusive (Banihashemi et al., 2019; Maheswari et al., 2020), (iii) furthermore, most studies on reverse logistics focus on the waste management sector (; Maheswari et al., 2020) with paucity of studies focusing on packaging industry (Guarnieri et al., 2020). This study intends to fill these gaps by examining the mediating role of consumer commitment in reverse logistics-performance nexus.

1.2 Problem Statement

The concept of reverse logistics is on ascendancy due to its implication on businesses (Abdulrahman et al., 2014). Its impact on business operations has received considerable attention and has also piqued the interest of scholars and academicians with various studies linking it to the performance of firms (Daugherty et al., 2005; Fernando and Tew., 2022; Bag and Gupta, 2019; Banihasheni et al., 2019; Maheswari et al., 2020; Fernando et al., 2022). Some studies on reverse logistics have revealed a positive impact on firm performance (Huang and Yang, 2014; Ebenezer and Zhuo, 2019; Fernando et al., 2022). Other studies have revealed no significant impact on firm performance (Abdullah and Yaakub, 2014). In line with the findings from previous studies, there is a clear illustration that the relationship between reverse

logistics and firm performance is inconclusive and therefore calls for further studies to examine their relationships.

Studies on reverse logistics and organizational performance are abundant in literature. Some studies on reverse logistics have concentrated on resource commitment (Daugherty et al., 2001; Morgan et al., 2018; Fernando et al., 2022). Other studies have also concentrated on factors leading to its implementation in organizations (Panjehfouladgaran and Shirouyehzad, 2018), whilst other studies have also delved deeper on solid waste management (Mesjasz-Lech, 2019). Other studies have also analyzed its impact on sustainable supply chain (Kariuki et al., 2022). What this study does not entail is a comprehensive understanding of the role of consumer commitment in the link between reverse logistics and organizational performance.

Most studies on reverse logistics have concentrated on firms operating in advanced economies (Abdulrahman et al., 2014; Fernando et al., 2022) with dearth of studies in developing countries like Ghana (Ebenezer and Zhuo, 2019). Consequently, there is a challenge generalizing the findings from these studies to developing economies like Ghana. This is because in developed and developing countries, differences exist pertaining to how top management and consumers are committed to the implementation and success of reverse logistics to enhance efficient resource utilization and environmental protection (Gunasekaran and Spalanzaki, 2011). With this current business environment, managers of packaging industry in Ghana are under pressure to prioritize reverse logistics as a result of the consequence of resource depletion and environmental degradation.

In addition, previous studies conducted on reverse logistics and firm performance only considered the possibility of bivariate link (Banihashemi et al., 2019; Maheswari et al., 2020). That is, other essential variables have been overlooked in such studies. According to Huang

et al. (2014), the inconsistencies in findings from prior research may be as a result of the absence of several essential variables. In this study, the researcher argued that when consumers of packaging products remain committed, the implementation and success of reverse logistics are achieved, which in turn enhance the performance of the firm. In Ghana, studies on reverse logistics and organizational performance remains nascent (Saruchera and Asante-Darko, 2021). There is a lacuna of studies that have analyse the role of consumer commitment. To fill this gap and contribute to the body of knowledge, a study of this natures seeks to analyse the mediating role of consumer commitment in the link between reverse logistics and organizational performance.

To conclude with, many studies on reverse logistics can be pointed at the waste management sector (Fernando and Tew, 2016; Maheswari et al., 2020), bottled and sachet industry (Ebenezer and Zhuo, 2019), with dearth studies in packaging industry (Guarnieri et al., 2020). Looking at the importance of packaging industry to the economy of Ghana, a study of this nature would be of almost importance as a result of its significance. Examining the mediating role of consumer commitment in the relationship between reverse logistics and performance of packaging industry in Ghana is the aim of the study.

1.3 Objectives of the Study

The main objective of the study is to analyse the mediating role of consumer commitment in the relationship between reverse logistics and performance of packaging firms in Ghana. In achieving this, the following specific objectives have been outlined;

1. To identify the reverse logistics practices adopted by firms in the packaging industry.
2. To examine the effect of reverse logistics on firm performance in the packaging industry.

3. To examine the mediating role of consumer commitment on the relationship between reverse logistics and the performance of packaging firms.

1.4 Research Questions

The research questions include;

1. What are the reverse logistics practices adopted by firms in the packaging industry?
2. What is the effect of reverse logistics on firm performance in the packaging industry?
3. How does consumer commitment mediate the effect of reverse logistics on the performance of packaging firms?

1.5 Significance of the Study

Specifically, this study would be part of the paucity of studies conducted in emerging economies like Ghana to assess the mediating role of consumer commitment in reverse logistics and firm performance nexus. This study would provide insight to management of packaging firms in Ghana on how reverse logistics impact on their performance and help them to put in policies that could help improve the operations relating to their upstream movement of products and materials.

To the managers of packaging firms in Ghana, this study could provide insight to them on how to maintain an efficient flow of their products to improve their performance and lift their corporate image. To researchers in the field of logistics and SCM, this study could serve as a basis as well as a lead upon which future studies can also be conducted to assess the mediating role of consumer commitment in the relationship between reverse logistics and organizational performance of packaging firms. Finally, a study of this nature could add to the available literature on reverse logistics and firm performance nexus.

1.6 Methodology

This study adopts a quantitative research approach and explanatory study design. The population of this study revolves around packaging firms within the Greater Accra Region. The study however has a sample size of 163 packaging firms. The data source for this study is mainly of primary source as it made use of structured questionnaires to collect data. The data were analysed with the help of SPSS v 26 and Smart PLS. In addition to descriptive analysis, regression analysis, and correlation matrix, among others were utilized to analyse the data.

1.7 Scope of the Study

The study covers reverse logistics, consumer commitment and organizational performance of packaging firms in Ghana. Geographically, the scope of this study is limited to Ghana. It is limited to some selected packaging firms within the chosen region in Ghana. The said region was chosen because of the concentration of many packaging firms in that region.

1.8 Limitations of the Study

This study is limited by the inability of the researcher to cover all packaging firms in Ghana. The sample size, involving 163 respondents from selected packaging firms in Ghana is not ideal considering the total number of packaging firms in Ghana. It cannot be said with certainty that the sample size of this study is an exact representation of the study population. This could also bias the result of the findings and limit its generalizability.

1.9 Organization of the Study

Being organised int 5 chapters, the first chapter is the introductory chapter and presents the study's background, problem statement, methodology, and the essence of conducting this study, among others. Chapter two presents the review of literature and explores the concepts

under study as well as review literature on the theories guiding the study. It further presents the conceptual framework guiding the study. Chapter three presents the study's methodology. Chapter four presents the data, and analysis the results thereof. The final chapter presents the conclusion, summarizes the key findings, and makes recommendations to appropriate stakeholders.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, the researcher presents the literature review, detailing the concepts, theories as well as the arguments made by scholars with respect to the topic under study. The chapter also formulate hypotheses to be tested to support the findings of the study.

2.2 Conceptual Review

In this section of the study, the researcher reviews the concepts that covers the study. These concepts include reverse logistics, consumer commitment and organizational performance.

2.2.1 The Concept of Logistics

Since the concept of a logistics service is so wide, it is defined in a variety of ways in literature. Logistics can be defined as the systematic and structured management of people, products, and services in a complex movement or event that necessitates planning, coordinating processes, and managing people, among others. Due to industrialization, logistics and transportation activities have risen dramatically in recent years, affecting travel and living conditions in both urban and rural locations (Awasthi et al., 2011; Wang et al., 2015). A logistics service entails the service provider undertaking operations involving the execution of one or more logistics functions for the ordering party, based on contractual conditions. Transport, forwarding, and logistics, as well as other services, make up a logistics service (Rydzkowski, 2011).

Logistics is the process of strategically managing the procurement, movement and storage of materials, parts and finished inventory (and the related information flows) through the

organization and its marketing channels in such a way that current and future profitability are maximized through the cost-effective fulfilment of orders (Christopher, 2012). Logistics is essentially a planning orientation and framework that seeks to create a single plan for the flow of products and information through a business (Mangan and Lalwani, 2016). logistics is therefore essentially an integrative concept that seeks to develop a system-wide view of the firm. It is fundamentally a planning concept that seeks to create a framework through which the needs of the marketplace can be translated into a manufacturing strategy and plan, which in turn links into a strategy and plan for procurement (Tsolaki et al., 2022).

2.2.2 Reverse Logistics

Reverse logistics is a logistics function focusing on the backward flow of products from customers to suppliers (Hazen, 2011). Reverse logistics can be defined as a set of processes which aim to manage products and the flow of information about them in an opposite way to traditional logistics, thereby recovering value or correctly disposing of waste (Fleischmann et al., 2001). The reverse logistics process aims to mitigate the negative impacts of incorrect waste disposal on the environment, sharing the responsibility with the whole sectorial supply chain, from material extraction and manufacturing to the final consumer (Brasil, 2020; Campos et al., 2017). Reverse logistics, according to Stock (1992), includes all logistical operations that are connected to the management of hazardous waste. This description emphasizes the rationale for the label "environmentally sustainable practice" given to reverse logistics.

Reverse Logistics is defined as "the process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods, and related information from the point of consumption to the point of origin for the purpose of

recapturing value or appropriate disposal" (Rachih et al., 2019). As more businesses began implementing reverse logistics as a tactical tool for financial gains and the development of a positive corporate social image among stakeholders, research on reverse logistics is growing (Karaman et al., 2020). Many businesses have realized how important it might be for their success to properly comprehend and handle product returns (Lakhmi et al., 2019).

2.2.3 Consumer Commitment

Consumer commitment is defined as "the persistent desire to preserve a valued relationship" (Moorman et al. in 1992). The level of commitment of a consumer got to do with his persistent desire of a product or service. Additionally, it denotes a procedure for interacting between devoted consumers and members of the neighborhood. Such emotional dedication promotes co-creation and brand trust among consumers. Commitment is a key concept in marketing and logistics literature that defines the relationship between customers and businesses as well as the propensity of customers to sustain a relationship with a certain product (Keiningham et al., 2015; Minton et al., 2019). The commitment of a consumer in relation to a certain product or service defines it relationship with the firm. From an organizational standpoint, customer commitment upholds a valuable relationship and is crucial to the relationship-marketing paradigm. The commitment offers the consumer advantages, involvement, and participation in events.

2.2.4 Organizational Performance

Organizational performance means the effectiveness of an organization in the achievement of their desired goals (Henri, 2021). Meanwhile, organizational performance is a factor that measures how well an organization attains its desired goals (Hamon, 2004). Moreover, organizational performance playing a vital role in the existence of any kind of organizations

such as profit-making organizations and non-profit making organizations (Abu-Jarad et al., 2010). Performance is measured not only from a financial standpoint, but also from a non-financial standpoint, such as the customer's perspective, internal business procedures, learning, and growth (Kaplan & Norton, 2004). This study measured the performance of firms using proxies such as market share, ROA, ROE, and sales margin, among others. Organizational performance should be judged in terms of financial and operational efficiency (Venkatraman and Ramanujam, 2006). It is critical for a company to achieve goals, targets, and objectives that lead to improved business performance (Van Der Hoek et al., 2018).

2.3 Theoretical Review

Basically, this study is anchored on stakeholder theory and institutional theory. These theories and how relevant they are to the conduct of this study have been reviewed and presented in the next bulleting.

2.3.1 Stakeholder Theory

The stakeholder theory was coined by Edward Freeman (1984). In the study of reverse logistics and organizational performance, the stakeholder theory has received much attention and has piqued the interest of many scholars (Afum et al., 2019). Hence, the stakeholder theory is utilized to explain how various stakeholders including consumers influence many organizations to practice reverse logistics. A stakeholder is defined as a person or group that have keen interest in the affairs and running of a firm. These stakeholders include the government, community, customers, suppliers, employees, the media, and competitors, among others. These stakeholders are within or outside the operations of a firms and are said to influence the activities of the company. Organizations being an open system have a significant relationship with various groups, and the stakeholder theory behooves on the

organization to maintain such relationship by responding to the needs and pressures from such groups (Rebs et al., 2018). In line with this assertion, Alvarez-Gil et al. (2007) contends that the continuous existence of organizations depends on their network and relationships with key stakeholders such as consumers. The researcher also revealed that the enormous pressures from the community and consumers make firms like the packaging firms to adopt eco-friendly policies like the reverse logistics. Consumers as stakeholders are important in the logistics activities. Hence, they mostly exert pressure on businesses to their harmful outcome (Freeman 1984). This theory is imperative to the conduct of this study as it has been adopted by various researchers to explain how stakeholder influence prompts firms to implement reverse logistics in their operations. Under this current dispensation where much concerns have been raised on the protection of the environment, the practice of reverse logistics has been engaged by firms as a way of responding to the demands of consumers and other stakeholders who demand the products and services of an organization.

The stakeholder theory holds that firms have a significant relationship with various key interest groups, and it behoves on firms to maintain this relationship by responding to their interest (Clarkson, 1995). Thus, the continued existence of a firm hinge on how well it can sustain the network of relationship with its key stakeholders. The adoption of eco-friendly policies like RL emanates from the enormous pressures exerted by stakeholders (Álvarez-Gil et al., 2007; Rebs et al., 2018).

2.3.2 Institutional Theory

Institutional theory was introduced by Meyer and Rowan (1970). Institutional theory has broadly been used in many studies of reverse logistics (Ahmed and Irfan, 2022; Ye et al., 2013). Diverse studies employ the use of institutional theory from different perspective, i.e.,

implementation of reverse logistics (Ye et al., 2013), implementation of green supply chain management (Dubey et al., 2017), as well as the practice of environmental management (Tanveer et al., 2021), among others. Institutional theory is premised on the believe that organizational structures as well as behaviors are enhanced by expectations and regulations by firms (Ahmed and Irfan, 2022) comprising competitors, and other major stakeholders such as trade associations. Under institutional theory, firms will alter their behaviors since their capacity to obtain support from the society and also secure resources can be affected. Following Zhu and Sarkis (2007), organizational behavior is not only as a result of the outcome of economic decisions, but may be impacted by external values and norms. Following this theory, organizations are influenced by coercive (influenced by those in power), normative (factors that influence firms to be perceived more legitimacy) and mimetic pressures (when firms mimic the activities of their competitors). All these forms of pressures influence firms to practice reverse logistics. In as much as organizations are shaped by the society and the environment in which they operate, this theory attempts to align the practice of reverse logistics, which is acceptable by customers as a means of protecting the environment. When organizations practice reverse logistics, consumers will remain committed to them, which will in turn enhance their performance.

According to Suchman (1995), institutional theory suggests that firms not only seek profit but also recognize the importance of achieving social legitimacy. The institutional theory posits that external forces motivate firms to achieve similar strategic actions (Scott, 2008). DiMaggio and Powell (1983) argued that managerial decisions are strongly influenced by three institutional mechanisms – coercive, mimetic and normative isomorphism – that create and diffuse a common set of values, norms and rules to produce similar practices and structures

across organizations sharing an organizational field. Huang and Yuang (2013) revealed that the relationship between reverse logistics and performance may differ depending upon the institutional pressure on a firm's reverse logistics strategy.

2.4 Empirical Review

Studies on reverse logistics and firm performance have been conducted by different scholars from the context of both developed and developing countries. Among such studies, Skapa and Klapalova (2012) employed 102 companies in Czech Republic to study reverse logistics and firm performance. The study utilised the exploratory design and employed the basic statistical tests for the analysis. The findings of their study revealed that reverse logistics has a significant positive impact on the profitability of the surveyed companies. The study also found that the firms under study tend to focus much on efficiency but not the effectiveness of their reverse logistics activities. In addition, the study also revealed a positive significant relationship between reverse logistics and strategic focus of the organizations under study.

Ravi and Shankar (2015) utilised questionnaire-based survey to study reverse logistics practices among Indian manufacturing companies. These manufacturing companies under study include auto, paper, electronics as well as food and beverage companies. As a strategic-level decision, the study found that the firms under study implement reverse logistics activities in their respective organisations. The study also revealed that as a result of economic benefits, Indian manufacturing firms have adopted reverse logistics. In addition, their study unearthed that one key driver of reverse logistics practices in India is the volume of products entering the return stream.

Huang et al. (2015) utilised data from 284 companies in Taiwan to study reverse logistics, salient task environment and firm performance. The study tests the relationship between the variables using a hierarchical regression analysis. The study findings revealed that government agencies, suppliers and customers, which constitute the 3 constituents of task environment relate positively with reverse logistics. The study also revealed the mediating role of reverse logistics in task environment-performance nexus. In addition, it was found that when reverse logistics of a company matches with its salient task environment, it leads to superior firm performance.

Lau and Wang (2019) collected data from 4 consumer electronic manufacturing companies in China to study reverse logistics in Chinese electronic industry. This study findings were analysed and compared with all case studies. A comparison with literature was made as a way to identify gaps. The study found that while reverse logistics barriers are mainly external and common among companies in China, its drivers vary among organizations. The study revealed that lack of enforceable laws to enhance and regulate companies as the major barriers impeding the implementation of reverse logistics in China. The study also revealed a direct link existing among the various external forces driving reverse logistics activities in China.

Mbovu and Kiarie (2018) utilized questionnaire to collect data from 240 staff in the logistics and procurement department of East Africa Breweries Limited to study reverse logistics influencing competitiveness in manufacturing firms in Kenya. The study employed multiple regression analysis to establish the relationships among the variables. The study findings confirmed the influence of reverse logistics on manufacturing firms' competitiveness in Kenya. The study recommends to the management of manufacturing companies to create public awareness about recycling of their products. In addition, Bor (2020) sampled 187 food

processing firms in Kenya to study the impact of reverse logistics on performance of food industries. The study was quantitative and online questionnaire for the survey. The study was analyzed using descriptive and inferential statistical techniques. The findings of the study revealed a significant direct effect on reverse logistics-performance nexus.

Kariuki et al. (2022) utilized a simple random sampling to sample 289 horticultural firms in Kenya to study reverse logistics and performance. The study was mixed approach involving questionnaires and interviews as the main data collection tools. The study revealed a positive and significant relationship between reverse logistics-performance nexus. The study also revealed that value addition plays a moderating role on reverse logistics-performance nexus.

Sarunheta and Asante-Darko (2021) sampled 213 service and manufacturing firms in Ghana to study reverse logistics, organizational culture and business performance. The study employed questionnaire as the data collection tool. The analytical tools of the study include CFA, and other descriptive statistical techniques. The study in addition utilized the PLS-SEM to estimate the structural model. The results of the study revealed that the implementation of reverse logistics in service and manufacturing companies impact positively on their operational performance. The study also confirmed that the positive relationship between reverse logistics-performance nexus is been strengthened by organizational culture.

Jimenez et al. (2019) sampled 142 plastic product manufacturing firms in Turkey and utilized analytical hierarchical process to study good practices and trends in reverse logistics. The design of the survey was done by taken into consideration the AHP technique and applied to a sample of 35 plastic companies in Colombia. The study revealed that risk prioritization, the application of recycling, reuse and processing, the use of programming model by objectives as well as the development of alliances with group of common goal are among the drivers of

reverse logistics. The study also revealed that an environmental management system under the ISO 14001 standard is closely in line with the good practices in reverse logistics.

Sharma et al. (2021) sampled 121 retailed shops in India using purposive sampling technique to study reverse logistics and performance with fuzzy TOPSIS. The researchers defined TOPSIS as the multi-criteria decision analysis method. The study is qualitative, adopting the case study approach. The study revealed that as a result of environmental threats, firms have adopted several initiatives including reverse logistics practices. The study also revealed that the performance of some retailed stores in India is been hindered by inappropriate return policies, poor reverse logistics infrastructure as well as the lack of awareness at the store level.

Banihashemi et al. (2019) employed the qualitative research design and utilized the content analysis to analyze the nexus between reverse logistics and sustainability performance. Sustainability performance was measured using 3 dimensions which include social, economic and environmental. The results of the study confirmed the positive relationship between reverse logistics-performance nexus. The study revealed that most studies on reverse logistics have overlooked the social aspect of sustainability performance. The results of the study also revealed that paucity of studies that aimed to analyze the triple-bottom-line sustainability performance in a single study has been carried out.

Kaihan and Chin (2021) also utilize the triple bottom line to assess the nexus between reverse logistics practices and sustainability performance. In addition, the selected papers on reverse logistics were analyzed using a content analysis approach. The quantitative aspect of the study was analyzed using both descriptive and inferential statistical technique. The relationship of the variables under study was assessed using multiple regression model. the results of the study confirmed extant literature that revealed a positive impact of reverse logistics on

sustainability performance. The study results revealed that many studies have ignored the impact of reverse logistics on the social aspect of sustainability performance.

Afum et al. (2019) sampled 193 managers and owners of Ghanaian manufacturing firms via stratified sampling technique to study reverse logistics, stakeholder influence and business performance. The study utilized the PLS-SEM technique. The study results revealed that the adoption of reverse logistics practices among manufacturing companies in Ghana is been influence by pressure from customers and citizens as well as top management support. The study results also confirmed reverse logistics impact on performance of manufacturing firms in Ghana. the study therefore recommends to government and environmental agencies to come out with policies aimed to mount pressure on firms to adopt reverse logistics in their operations.

Huang et al. (2015) employed the hierarchical regression analysis to test the relationship among reverse logistics, salient task environment and business performance. The study made use of data collected from 284 retail firms in Taiwan. The study therefore tests the mediating role of reverse logistics on salient task environment-performance nexus. The study results revealed that reverse logistics practices in retail firms in Taiwan is been strengthened by government agencies, suppliers and customers. The study also confirmed the mediating role of reverse logistics on task environment-performance nexus. The study also revealed that some retail firms have outsource the reverse logistics component to professional recyclers at a fee.

Fernando et al. (2022) uptilted data from 113 vendors of automobile suppliers to study reverse logistics and firm performance. The study employed SEM approach to test for the hypotheses. The study further test for the role of reverse logistics on resource commitment-performance

nexus. The result of the study revealed that research and development by firms is essential opportunity for them to increase their revenue. A mediating role of reverse logistics on resource commitment-performance nexus was confirmed. The study also recommends to firms to uphold environmental standards through the practices of reverse logistics.

Ho et al. (2012) utilized questionnaires to collect data from 213 managers of logistics companies in Hong Kong to study factors enhancing the implementation of reverse logistics. The study employed various statistical models to carry out the analysis and test the data collected. The findings of the study revealed that the implementation of reverse logistics in firms are being influenced by both internal and external factors. These factors include both financial and human resource components. The study results also confirmed that the practice of reverse logistics in firms are being impacted less by tangible resources. The study also confirmed that firms that are able to implement reverse logistics are those with good cooperation and relationship with other business partners.

Ye et al. (2013) also utilized survey data from 209 manufacturers in China to study reverse logistics and performance of manufacturing firms. The results of the study were analyzed quantitatively using PLS-SEM technique. The study found a positive link between institutional pressure and top managers' posture towards the implementation of reverse logistics. The study also revealed that firm economic and environmental performance is been enhanced by product recovery. The study results also shown that product returns and economic performance has a negative relationship. The study however confirmed no significant link between product return and environmental performance of firms.

Mihi Ramirez and Morales (2014) utilized a survey approach involving 74 Spanish market and applied a structural model to study the improvement of firm performance through reverse

logistics. Basically, the study analyze how reverse logistics activities affect costs. The study utilized the PLS-SEM approach. The results of the study revealed that the activities of reverse logistics impact on the cost component of reverse logistics, which in turns impact on the performance of the organization. The study revealed to management to select the most appropriate combination of reverse logistics activities since it has different cost component.

Abdullah and Yaakub (2014) utilized purposive sampling technique to select 101 managers of manufacturing forms in the Northern state of Malaysia to study reverse logistics and its impact on organizational performance. The data of the study was collected using questionnaire and analyze quantitatively using the PLS regression model. The results of the study revealed the low adoption of reverse logistics activities among manufacturing firms in Malaysia. The study also revealed that reverse logistics is enhanced positively by regulatory pressure. The study results also revealed no significant impact on the adoption of reverse logistics on firm performance. The study results also confirmed the moderating role of stakeholder pressure.

Okumu and Juma (2019) utilized the descriptive and explanatory study design, with data collected via questionnaires from 57 employees of vehicle companies in Kenya to assess the influence of reverse logistics on customer perception of motor vehicle dealers. The study results revealed that customer perception among motor vehicle dealers is been enhanced by product return and product remanufacture. The study results also confirmed that product reuse on reverse logistics strengthens the perception of customers of motor vehicles in Kenya.

Huang et al. (2015) employed the hierarchical regression analysis to test the relationship among reverse logistics, salient task environment and business performance. The study made use of data collected from 284 retail firms in Taiwan. The study therefore tests the mediating role of reverse logistics on salient task environment-performance nexus. The study results

revealed that reverse logistics practices in retail firms in Taiwan is been strengthened by government agencies, suppliers and customers. The study also confirmed the mediating role of reverse logistics on task environment-performance nexus. The study also revealed that some retail firms have outsource the reverse logistics component to professional recyclers at a fee.

2.5. Conceptual Framework Model

The conceptual framework guiding the study is presented in Figure 2.1. From the model, a link between the 3 variables can be established. The framework also seeks to establish the direct relationship between reverse logistics and organizational performance, as well as the mediating role of consumer commitment on reverse logistics and organizational performance nexus. Four testable hypotheses emerged from the study based on the review of literature.

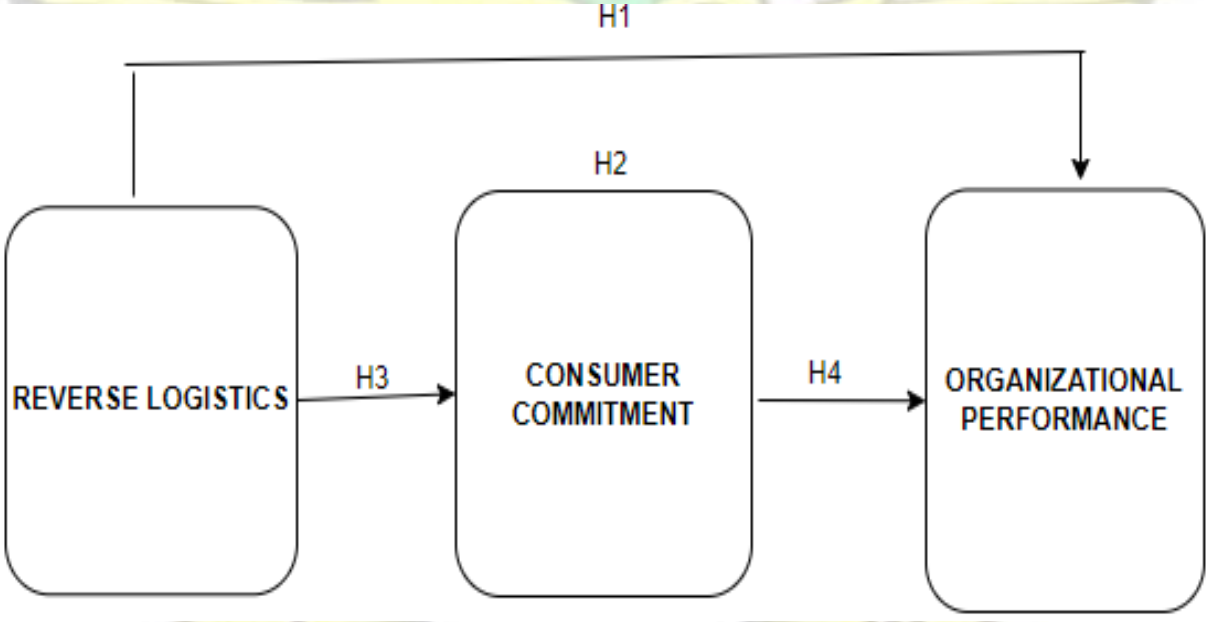

Figure 2.1: Conceptual Framework Model

Source: Researcher's Construct (2023)

2.6 Hypothesis Development

This section of the study presents the hypothesis development of the study based on the review of literature. In all, two testable hypotheses emerged for the study.

2.5.1.1 Reverse Logistics and Organizational Performance

Empirical studies on reverse logistics have revealed that a well-managed activities of reverse logistics reduce cost (Mihi Ramirez and Morales, 2014), enhance revenue (Abdullah and Yaakub, 2014) and as well increase the satisfaction level of customers (Huang et al., 2015). Organizations that practice reverse logistics in addition stand the chance to benefit from competitive advantage as well as enhanced corporate image (Ye et al., 2013). Organizations that implement reverse logistics are able to reduce their consumption of materials and energy resources as well as their operating costs. In addition, firms that practice reverse logistics are able to generate high revenue to recycled products as well as materials that had already been discarded (Stock et al., 2012). Literature has confirmed that firms that practice reverse logistics are able to improve their financial performance. Notable among such studies are Fernando et al. (2022); Mihi Ramirez and Morales, (2014), Abdullah and Yaakub (2014); and Huang et al. (2015). According to Narver and Slater (2019), companies that have implemented reverse logistics are able to attract customers and gain competitive advantage which in turns impact on their performance. Consequently, this study hypothesized that:

H1: Reverse logistics has a significant positive impact on organizational performance.

2.5.1.2 Mediating Role of Consumer Commitment

Following Baron and Kenny (1986), a mediating variable is a variable that account for the relationship existing between the predictor variable and the criterion. There is a need to introduce a mediating variable in this study because while some studies have reported a

positive impact of reverse logistics on organizational performance (Huang and Yang, 2014; Ebenezer and Zhuo, 2019; Fernando et al., 2022)., other studies also reported no significant relationship between the two variables (Abdullah and Yaakub, 2014). The main purpose of engaging in reverse logistics is to accommodate consumers wanting to return items (Smith, 2005). Following Abdullah and Yaakub (2014), reverse logistics practices promote the long-term relationship with consumers who are likely to seek repurchase from organizations that handles returns effectively and efficiently. According to Ye et al. (2013), many organizations implement reverse logistics through the pressure and commitments they receive from their consumers which in turn enhance their performance. Consequently, this study hypothesized that:

H2: Consumer commitment mediates reverse logistics-organizational performance nexus.

2.6.3 Reverse Logistics and Consumer Commitment

Consumer commitment has become an essential factor in the conduct of business. Many consumers face the challenge of returning products, hence the concept of reverse logistics play a vital role in consumer confidence and commitment (Jalil, 2019). Many organizations have obtained good reputation by fulfilling the current demands of their consumers through the practice of reverse logistics. The reverse logistics policies in the many packaging industries have the ability to assist in recovering and handling service failures to enhance customer satisfaction and commitment level (Massey, 2018). As consumers want the easiest way to return faulty items with lower cost, the practice of reverse logistics enhances consumer commitment and build a better brand image for the firm. Ezura (2019) revealed that reverse logistics has a significant impact on customer satisfaction and commitment. Consequently, the third hypothesis emerged for the study:

H3: Reverse logistics has a significant positive impact on organizational performance.

2.6.4 Consumer Commitment and Organizational Performance

The level of commitment of a consumer got to do with his persistent desire of a product or service. Many organizations implement reverse logistics through the pressure and commitments they receive from their consumers (Ye et al., 2013). A committed consumer can also call for many customers to purchase the product of a firm by words of referral or the testimony he will share on the product. Committed consumers are loyal to the products of the firms which has the tendency to enhance the profitability of the firm. Consumers who remain committed to the products and services of an organization are capable of investing and remaining loyal to the brand of the firm to enhance their performance (Weyland, 2011). Following Minton et al. (2019), when consumers remain committed to an organization, they definitely sustain their relationship and loyalty with such company, which in turn enhance the performance of the firm through the generation of high profit margin, Consequently, this study hypothesized that:

H4: Consumer commitment has a significant positive impact on organizational performance.

CHAPTER THREE

METHODOLOGY AND ORGANIZATIONAL PROFILE

3.1 Introduction

This chapter of the study presents the methodology followed by the researcher in analyzing the mediating role of consumer commitment in the relationship between reverse logistics and organizational performance in the packaging industry. The chapter basically presents the research design, population and sample size, data collection instrument, data analysis, as well as the validity and reliability of the data. The chapter also presents the ethical issues that pertains to the study.

3.2: Philosophical Assumptions

Research philosophy entails the idea of a mental picture, a set of belief, procedures and techniques that provides a framework of understanding. Saunders et al. (2007) view on research philosophy is concerned with questions on a specific view of the association between knowledge development and the nature of that knowledge. Three assumptions are known in social science studies. These assumptions are epistemology, ontology and axiology (Punch, 2014). Epistemology, according to Crotty (2003) is concerned with the way of expatiating and explaining how individuals know what we know, and thus, describes the process of uncovering reality. Social science researchers tend to argue from a number of perspectives such as positivism, interpretivism, realism and pragmatism in the process of uncovering reality.

The concept of research paradigms and designs is used to investigate research philosophy. These research philosophy that characterize and explain any given world view, according to Saunders et al. (2009), are integrated in opposition ontology, epistemology, axiology, and the methods used in the research process (methodology). Research philosophy is divided into three categories (Strange, 2014). These are axiology, ontology, and epistemology. There are three philosophical viewpoints within the epistemological view: positivism, critical realism, and interpretivism (Creswell, 2011). Ontology can be seen from both a subjectivist and an objectivist standpoint.

The belief of positivism is premised on the assumption that there is a single reality which can be measured and known, and thus more likely to adopt qualitative study approach (Johnson and Gill, 2010). On the other hand, realism relies on the idea of independence of reality from the minds of individuals. Its assumption is based on using scientific approach to formulate knowledge. Pragmatism is premised on the assumption that reality is constantly debated and interpreted, and as such, the best approach to adopt is the one that has remedy to the phenomenon under study. The argument put forward by the assumption of interpretivism is that it is crucial for a researcher to have a thorough understanding of individual differences. Naslund (2000) is of the view that the choice of research method should be founded on the research paradigm. This study being quantitative in nature employs positivism and interpretivism approach as this approach will help the researcher to gain insight into the phenomenon under investigation. Quantitative studies qualify for positivism research philosophy.

3.3 Research Approach

The research approach is critical to the success of any study. The objectives of the study guide the selection of a research approach. When a proper research approach is used, the researcher may deal with the study question quickly and effectively. Researchers can use study approach to create a thorough strategy for achieving their research objectives by ensuring that every data obtained is suitable for theoretical evaluations (Rindfleisch et al, 2008). Using an ineffective study approach can have a negative impact on the research findings' validity. As a result, in any study, efforts must be taken to determine the best method for reaching an acceptable conclusion. The research approach of a study can either be quantitative, qualitative or mixed research approach (Saunders at al., 2009). This study employs the quantitative research approach in order to achieve the study objectives. The quantitative approach would enable the researcher to employ systematic and organized numerical data that can be used to make statistical inference (Creswell and Creswell, 2017).

3.4 Research Design

The research design of a study can be classified into explanatory, exploratory and descriptive approach (Saunders et al., 2011). Exploratory studies attempt to find out what is happening and is adopted where not much studies have been conducted in the study area (Collins and Hussey, 2003). Descriptive study design describes a phenomenon by employing numeric data. Explanatory study design on the other hand intend to establish a causal relationship between the variables employed in a study (Saunders et al., 2017). The explanatory study approach employed for this study will enable the researcher to explain the relationship among reverse logistics, consumer commitment and organizational commitment.

3.4 Population of the Study

According to Blumberg et al. (2014), population refers to the entire group from which a sample can be drawn for a study. The population of this study consists of all packaging industries in Ghana. Currently, there are 276 packaging firms in Ghana (www.rentechdigital.com). Hence, the study has a total population of 276 packaging firms.

3.5 Sample Size and Sampling Technique

A sample needs to be drawn from the population of the study. In this study, the sample size chosen involves 163 packaging industries in Ghana. Sampling technique comes in two forms: probability and non-probability sampling technique. The latter include convenient, snowball, and purposive sampling. This study therefore utilized the purposive sampling technique to select the industries who are practicing reverse logistics. The researcher chose this technique because it helps the researcher focuses on respondent with in-depth knowledge in reverse logistics to arrive at valuable research outcome. The sample size of this study is determined using Yamane (1987) formula. That is;

$$n = \frac{N}{1+N(e)^2}$$

where n = sample size

N= population size

E= margin of error (0.05)

Mathematically, $n = \frac{276}{1+276(0.05)^2}$ =163.31

n =163

3.6 Data Collection Instrument

The measurement instrument of this study was developed after careful review of literature. Besides, pilot testing became useful in further refining all the items of the questionnaire. The questionnaire was developed in two sections. The first section sought to gather data on the demographic background of the respondents as well as the organizations under study. The second section of the questionnaire were sub-divided into three and seek to gather data on reverse logistics, organizational performance and consumer commitment. A 5-point Likert scale, developed in form of 1=strongly disagree to 5=strongly agree was used.

3.7 Data Analysis

The ability to break down the data for clarification purpose and to analyze the relationship between them is termed as the analysis of data (Saunders et al., 2009). The data were analyzed quantitatively. The data gathered were cross-checked, edited, and coded with the help of SPSS version 26. The researcher chose to analyze the data by employing both descriptive and inferential statistics. In finding the relationship among the study variables, the researcher employed regression analysis. Correlation analysis was utilized to test for the presence of multicollinearity amongst the predictive variables. Baron and Kenny's (1986) model were followed to test the mediating role of consumer commitment in reverse logistics-performance nexus.

3.8 Validity and Reliability

Data for a study needs to be valid and reliable. To generalize and validate the results of the study, the researcher run the required tests on reliability and validity. The questionnaire items were adopted and modified from top journal sources. The internal consistency of the research constructs was assessed using the Cronbach's alpha technique.

3.9 Ethical Issues

Any code of conduct that protects research from physical, metal and psychological harm are termed as ethics (Pring, 2004). For research to be deemed appropriate certain ethical issues should be taken into consideration by the researcher. In this study, priority was given to informed consent, anonymity as well as confidentiality of the data gathered. To ensure research anonymity and confidentiality of the study, the respondents were not allowed to provide their names and phone numbers on the research instrument. The data retrieved were guarded with confidentiality. The online data collected were encrypted and passworded to get out of reach to any third party without authorization. This study followed the graduate school of KNUST referencing style. The study was devoid of any form of plagiarism.

3.10 Overview of the Packaging Industry of Ghana

The demand for packing materials is driven by the growth of the Ghanaian population. Packing of goods had become essential from their inception through their processing, up to the end of their lifecycle (Nkube et al., 2021). In Ghana, there are many different packaging companies. Some of these companies have specialized in the making and selling of packaging materials. Other packaging companies in Ghana are mostly referred to as brokers, which include packaging distributors and packaging brokers, among others. Some of these packaging industries in Ghana include Greener Packs Limited, Crown Cans Ghana, Ausapp printing house, Pharmanova Limited, Royal Crown Packing Limited, Compact Movers Limited, Finepack industry Limited, Cassandy Home Movers, Dercolbags, Haizel's Atelier and Mohinani Group, just to mention a few of these companies. These companies located in Ghana have specialized purposely in packaging and manufacturing. Other have specialized in helping people to move from their residence to their desired locations. For the past decades, the

packaging industry of Ghana has witness major transformation and improvements. The dearth growth of the packing industry has been revised and revamped as many businesses under the sector are frequently opened nowadays. These packaging companies in Ghana aimed to satisfy every customer better and extends their services companies of any size. The packing industry of Ghana contributes to employment creation and the country's GDP growth. Nevertheless, the section is saddled with some peculiar challenges that derail their progress. Their main challenges include lack of credit, inadequate infrastructure, rising cost of production, as well as poor market research, among others. In other to keep the industry running, Essuman (1990) called for massive investment in the packaging industry of Ghana.

3.11 Summary of Methodology

Table 3.1 presents a summary of the methodology

Area	**Description**
Research philosophy	Positivism
Research Approach	Quantitative
Research Design	Explanatory
Study population	Packaging industry in Ghana
Data and data source	Primary, questionnaire
Data analysis	Descriptive statistics, regression, Hayes process
Validity and reliability	Cronbach's alpha, EFA

Source: Researcher's Construct (2023)

CHAPTER FOUR

PRESENTATION OF DATA AND ANALYSIS OF FINDINGS

4.1 Introduction

The researcher presents the data and analyses the findings of the study on the mediating role of consumer commitment in the relationship between reverse logistics and organizational performance in this chapter. In this chapter, the researcher presents the descriptive statistics of the constructs, correlation analysis and the multiple regression analysis, among others. The study employed firm age, number of employees as well as category of business as control variables. The discussion of findings was backed by literature.

4.2 Demographic Characteristics of Respondents

At this juncture, the researcher presents the profile of the respondents who partook in the study taking into consideration their age, gender, working experience and level of education. Table 4.1 presents the demographic information of the respondents engaged for the study. Respondent demography is salient under it study as references can be made and it also could impact on the study findings.

Table 4.1 Demographic Information of the Respondents Engaged for the Study

Factors	**Category**	**Frequency**	**Percentage**
Age limit	Up to 25 years	-	-
	26-30 years	10	12.7
	31-40 years	51	64.6
	41-50 years	13	16.5

	Above 50 years	6	6.3
Gender	Male	55	69.6
	Female	24	30.4
Educational level	HND	4	5.1
	1st Degree	28	35.4
	Masters	47	59.5
	Other qualification	-	-
Working Experience	Up to 2 years	5	6.3
	3-5 years	18	22.8
	6-10 years	27	34.2
	Above 10 years	29	36.7

Field Survey (2023)

4.2.1 Age Limit

The researcher presents the age category of the respondents who were engaged in this study under this section. From Table 4.1, it is indicated that 10 (12.7%) of the respondents were aged between 26-30 years. 51 (64.6%) were aged between 31-40, while 13 (16.5%) fall within the age category of 41-50 years. In addition, 6 (6.3%) of the respondents was above 50 years of age. As indicated from the table, majority of the respondents fall within the age category of 31-40 years. Below is figure 4.1 which represents the age limit of the respondents.

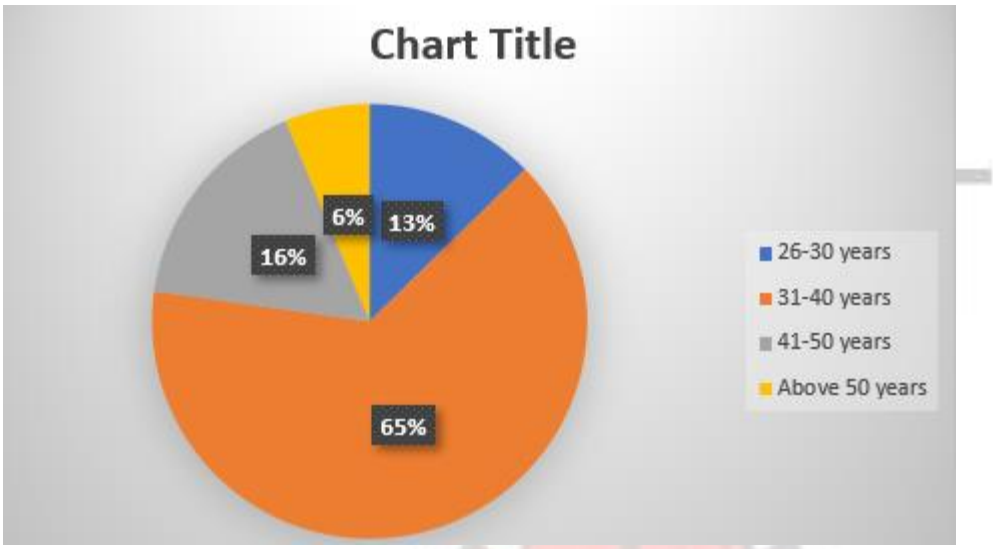

Figure 4.1 Age Limit of the Respondents

4.2.2 Gender

From Table 4.1, it can be indicated that 55 (69.6%) of the respondents were male, while 24 (30.4%) of the respondents who successfully partook in the study were female. This is an indication that majority of the respondents who partook in the study were female. Opinions from both male and female is essential as diverse information could be obtained for this study. Below is figure 4.2 which represents the gender of the respondents.

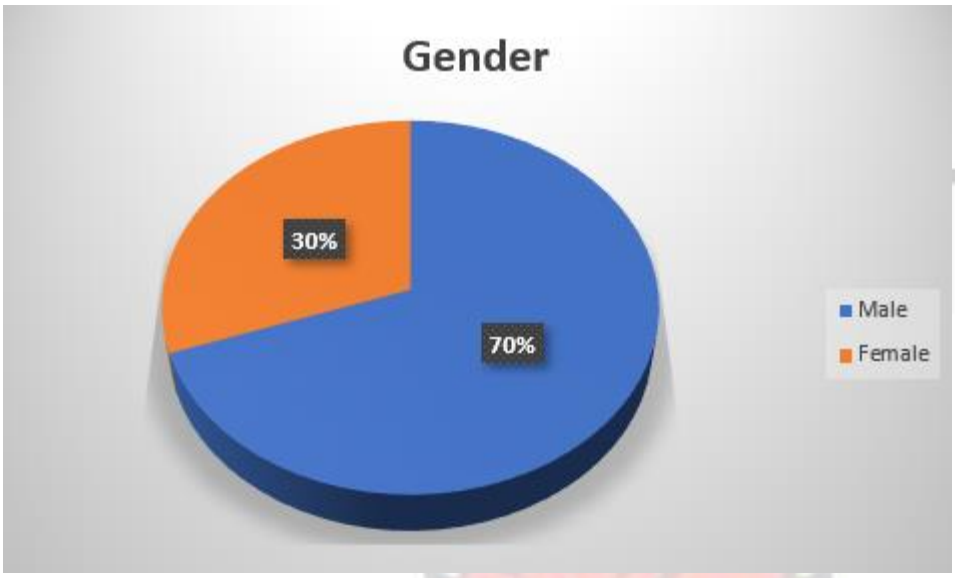

Figure 4.2: Gender of Respondents

4.2.3 Educational Level

Pertaining to the level of education of the respondents who were engaged in the study, 4 (5.1%) of them are HND holders, 28 (35.4%) are first degree holders, while 47 (59.5%) are master's degree holders. It can be said from the available data that majority of the respondents are master's degree holders. This is an indication that the organizations under study have quality human resource judging it from their human capital perspective. The level of education from the respondent is an indication that rich data for this study could be obtained. Below is figure 4.3 which represents respondents' level of education.

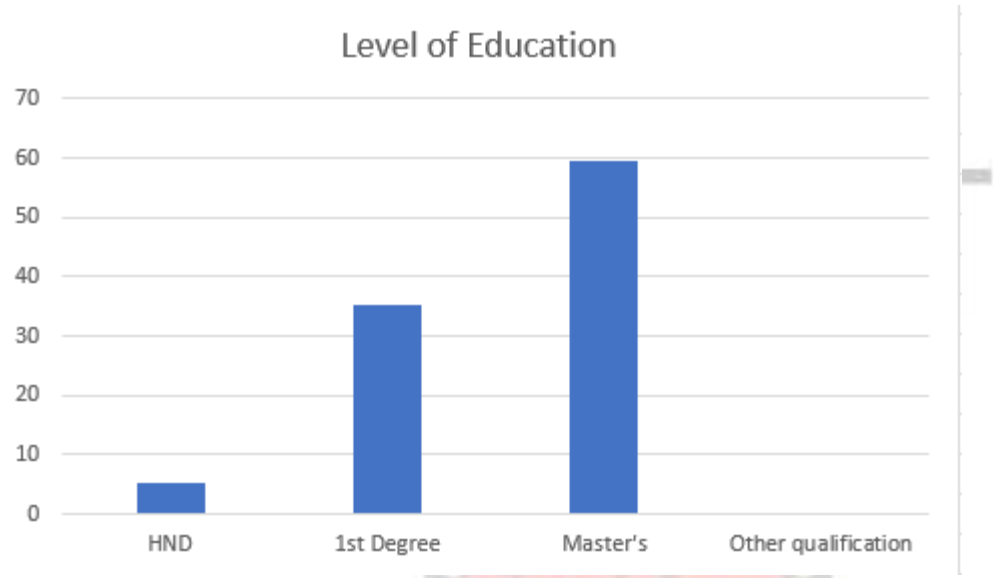

Figure 4.3: Level of Education

4.2.4 Working Experience

In line with their level of working experience, 5 (6.3%) have working experience of up to two years. 18 (22.8%) have experience in working from 3-5 years, while 27 (34.2%) and 29 (36.7%) of the respondents have working experience of 6-10 years and 11-20 years respectively. From the data, working experience of 6-10 years, as reported in the Figure below dominates the study and this will inure to the benefit of the organizations under study. Obtaining high working experience from the packing industry is imperative as quality data could be obtained for a robust analysis and interpretation. Below is figure 4.4 which represents the level of working experience of the respondents.

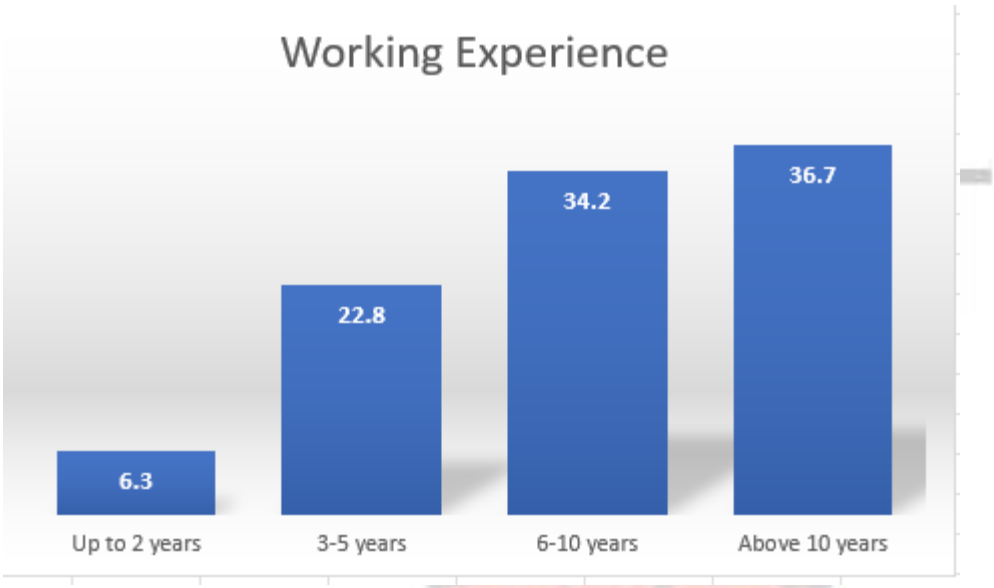

Figure 4.4: Working Experience

4.3 Background Information of the Responding Firms

Background factors of the responding firms, which include year of business operation, category of their business and number of employees were employed. The researcher deemed this section as important as it would provide useful information to augment the findings of the study. Table 4.2 present the background information of the responding firms.

Table 4.2 Demographic Information of the Responding Firms

Variables	**Factors**	**Frequency**	**%**
Years of operation	Up to 5 years	12	15.2
	6-10 years	20	25.3
	11-20 years	17	21.5
	Above 20 years	30	38.0
Category of business	Local	47	59.5

	International	12	15.2
	Multinational	11	13.9
	Others	9	11.4
Number of employees	1-20	45	57.0
	21-50	15	19.0
	51-100	19	24.1
	Above 100	-	-

Source: Field Survey (2023)

4.3.1 Years of Operations

This section of the study presents the number of years the firms have operated. From Table 4.2, it can be indicated that 12 (15.2%) of these firms have been in operation up to 5 years. 20 (25.3%) have operated from 6-10 years. In addition, 17 (21.5%) and 30 (38%) have been in operation from 11-20 years and above 20 years respectively.

4.3.2 Category of Business

The study further attempts to analyze the category of business of the firms under study. In this study, firms were categorized into local, international and multinational. From Table 4.1, it can be observed that 47 (59.5%) of the firms engaged in the study are local businesses. In addition, whilst 12 (15.2%) are international firms, 9 (11.4%) are multinational companies.

4.3.3 Number of Employees

In addition, the study assessed the number of workers employed by these firms under study. Per available data, it was revealed that 45 (57%) have employed workers between 1-20, while

15 (19%) have employees numbering between 21-50. In addition, 19 (24.1%) have employees between 51-100.

4.4 Reliability of Measurement Constructs

To measure the internal consistency of the constructs (reverse logistics, organizational performance and consumer commitment), the researcher employed the Cronbach's alpha tests. As noted by Palant (2005), the averages of these constructs were taking to run the test. An alpha value of 0.7 and able is deemed significant. After the averages were taken, all the constructs were subjected to Cronbach's alpha tests. From Table 4.2, it is indicated that the all the constructs have a strong internal consistency.

Table 4.3: Construct Reliability Results

Construct	**No. of items**	**Cronbach's alpha**
Reverse logistics	8	0.745
Consumer commitment	5	0.785
Organizational performance	8	0.811

Source: Field Survey (2023)

4.5 Validity Test

In order to check for validity, the exploratory factor analysis (EFA) was used. Exploratory Factor Analysis (EFA). Following Hair et al. (2010) to consider adequate and acceptable, the factor loading should be greater than 0.50. Therefore, factors loading below 0.50 were deleted. From the analysis in the table 4.4 below, it can be observed that the conditions were met for the variables in the study.

Table 4.4: Validity Test Results

		Component				
		1	2	3	4	Extraction
REVERSE1					0.842	0.417
REVERSE2					0.761	0.728
REVERSE3					0.58	0.772
REVERSE4				0.797		0.706
REVERSE5				0.756		0.666
REVERSE6				0.852		0.785
CC1			0.794			0.674
CC2			0.697			0.693
CC3			0.863			0.783
CC4			0.868			0.805
CC5			0.612			0.567
PNT3		0.706				0.665
PERF1		0.792				0.816
PERF2		0.847				0.773
PERF3		0.861				0.793
PERF4		0.669				0.614
PERF5		0.844				0.771
PERF6		0.799				0.648
Total		4.827	3.69	2.548	1.606	
% of Variance		26.819	20.499	14.154	8.921	
Cumulative %		26.819	47.318	61.472	70.393	
KMO and Bartlett's Test						
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			0.779			
Bartlett's Test of Sphericity	Approx. Chi-Sq		1416.471			
	Df		153			
	Sig.		0			

Source: Field Study (2023)

4.6 Descriptive Statistics

This section of the study employed the mean, standard deviation, minimum and maximum to presents the descriptive results of the study. The descriptive statistical model was presented on all the three constructs under study. These are presented in the next sub-sections.

4.6.1 Reverse Logistics

To provide a clear picture of the respondents' work-life balance, a descriptive statistical model was employed. Respondents gave their answers on a scale of 1 to 5. An overview of the descriptive statistics of this construct indicates the extent to which the firms under study practice reverse logistics. From Table 4.4, the highest and the lowest averages obtained was 4.14 and 3.96 Overall, the construct achieved an average of 4.02. This is an indication that the firms engaged for the study practice reverse logistics.

Table 4.4: Descriptive Statistics Results on Reverse Logistics

Construct	Mini	Maxi	Mean	Std.D
REVERSE LOGISTICS				
RL1	3.00	5.00	3.97	0.554
RL2	3.00	5.00	3.86	0.549
RL3	3.00	5.00	3.91	0.582
RL4	3.00	5.00	4.05	0.618
RL5	3.00	5.00	4.14	0.571
RL6	3.00	5.00	3.94	0.606
RL7	3.00	5.00	4.11	0.531
RL8	3.00	5.00	4.15	0.455

Source: Field Survey (2023)

4.6.2 Consumer Commitment

This section of the study provides the descriptive statistics on consumer commitment. Respondents gave their answers on a scale of 1 to 5. An overview of the descriptive statistics of this construct indicates the extent to which the consumers are committed to the organizations' products and services. From Table 4.5, the highest and the lowest averages obtained was 4.29 and 3.77. Overall, the construct achieved an average of 3.12. This is an

indication that the consumers of the firms under study are committed to their products and services.

Table 4.5: Descriptive Statistics Results of Consumer Commitment Constructs Employed in the Study

Construct	Mini	Maxi	Mean	Std. D
CONSUMER COMMITMENT				
CC1	4.00	5.00	4.27	0.445
CC2	3.00	5.00	3.77	0.767
CC3	3.00	5.00	4.03	0.640
CC4	3.00	5.00	3.84	0.724
CC5	3.00	5.00	4.29	0.701

Source: Field Survey (2023)

4.6.3 Organizational Performance

In this section of the study, the researcher employed the various descriptive statistical tools to describe employee performance as another construct of the study. The mean was used to determine their averages while the standard deviation was used to find out how disperse the dataset are from the mean. From Table 4.6, the highest and the lowest mean recorded was 4.25 and 3.96 respectively. The overall scale mean achieved was 4.02. This is an indication that the firms engaged in this study are performing better than their competitors.

Table 4.6: Descriptive Statistics Results of Employee Performance Employed in the Study

Construct	Mini	Maxi	Mean	Std. D
ORGANIZATIONAL PERFORMANCE				
PERF1	2.00	5.00	4.25	0.541
PERF2	3.00	5.00	3.97	0.568
PERF3	3.00	5.00	4.01	0.541
PERF4	3.00	5.00	3.96	0.586
PERF5	3.00	5.00	3.97	0.549
PERF6	3.00	5.00	4.23	0.532
PERF7	3.00	5.00	3.99	0.575
PERF8	3.00	5.00	4.13	0.540

Source: Field Survey (2023)

4.7 Correlation Analysis

In this study, when the variables employed to study the phenomenon are highly correlated, the model cannot be estimated correctly for the analysis. Table 4.7 indicated the existence of no perfect correlation. Correlation matrix of 0.456 relates to reverse logistics and consumer commitment. A correlation result of 0.091 also relates to reverse logistics and organizational performance, and is said to be the lowest correlation obtained for the model. Table 4.7 presents the results of the correlation matrix.

Table 4.7: Pearson Correlation Matrix

	1	2	3
1. Reverse logistics	1		
2. Consumer commitment	0.456**	1	
3. Organizational performance	0.091**	0.376**	1

Source: Field Study (2023)

4.8 Evaluation of the Outer Measurement Model

To ensure reliability as well as validity for the outer model, several statistical techniques as suggested by Hair et al. (2019) were utilized. Included in these statistical techniques are composite reliability (C.R.), Cronbach's alpha and average variance extracted (AVE), among others. From Table, the values pertaining to Cronbach alpha ranges from 0.712 to 0.755, while the C.R. also ranges from 0.721 to 761. As indicated by Sobaih and Elshaer (2022), these are good scale which indicates an acceptable internal reliability. In addition, the factor loadings of the model were greater than 0.70, depicting a good level of acceptability of reliability. To ensure convergent validity, the researcher utilised AVE to ensure whether the values are not more than 0.5 as revealed by Hair et al. (2021).

Table 4.8: Evaluation of the Measurement Model and VIF for multicollinearity

CONSTRUCT	Outer Loading	alpha (α)	C.R.	AVE	VIF
REVERSE LOGISTICS		0.712	0.721	0.702	
RL1	0.743				3.423
RL2	0.744				3.654
RL3	0.702				3.154
RL4	0.721				3.423
RL5	0.732				4.431
RL6	0.754				3.432
RL7	0.729				2.123
RL8	0.743				3.542
CONSUMER COMMITMENT		0.755	0.761	0.711	
CC1	0.732				2.543
CC2	0.721				3.212
CC3	0.717				2.432
CC4	0.765				2.993
CC5	0.784				3.654
ORGANIZATIONAL PERFORMANCE		0.743	0.752	0.724	
P1	0.774				4.112
P2	0.764				3.212
P3	0.733				2.225
P4	0.801				3.324
P5	0.755				3.554
P6	0.825				2.065
P7	0.799				4.512

Source: Field Study (2023)

4.8 Assessment of the Structural Inner Model

To assess the relationships among the variables and text for the study's hypotheses, a structural equation model (SEM) was utilized. Specifically, the main aim is to examine the mediating role of consumer commitment in reverse logistics-performance nexus. To ensure a satisfactory model fit, the R2 values of at least 0.10 as suggested by Chin (1998) were achieved.

4.9 Path Coefficient

To determine the path coefficient for both direct and mediation relationship, the researcher implemented a bootstrapping method in Smart PLS4. Using the structural equation model, the researcher demonstrated the relationships between the study variables by revealing their beta,

S.D., T-value and P-values. Table 4.9 presents the summary of the path coefficients. The result from the smart PLS revealed that all the direct impact of Reverse Logistics on consumer commitment and performance are positive.

Table 4.9: Summary of Path Coefficients

	Beta	S. D	T-value	P-value
RL → Consumer Commitment (CC)	0.433	0.625	0.693	0.252
Consumer commitment → Performance	0.489	0.172	2.843	0.034
RL → Performance	0.327	0.124	2.637	0.009
RL → CC → Performance	0.221	0.324	0.682	0.195

Source: Field Study (2023)

4.10 Hypothesis Tests

This section of the study presents the results of the hypotheses tested for the study. Table 4.10 presents the results of the hypotheses results.

Table 4.10: Summary of Hypotheses

Hypothesis	Beta	P-value	Results
RL ->Performance	0.327	0.009	Supported
RL → Consumer Commitment	0.433	0.252	Not supported
CC → Performance	0.489	0.034	Supported
RL ->Con Commitment ->Performance	0.221	0.195	Not Supported

Source: Field Study (2023)

4.9 Discussion of Findings

In this section of the chapter, the researcher discusses the findings of the study in line with exiting literature. The robust analysis of data is followed by a discussion of findings. The discussion of findings has been presented in accordance with the study objective.

4.9.1 Reverse Logistics Practices Adopted by Firms in the Packaging Industry

The assess and achieve the first objective which purport to assess reverse logistics practices in Ghana, this study utilized descriptive statistical tools to achieve this specific objective. Reverse logistics practices have been recognized by the packaging industry to enhance the utilization of materials and reduce cost (Chan et al., 2020), and also establish practices with lower-environmental impact (Fernando et al., 2022). Findings of the study revealed that there are practices to collect the packaging by the sector under study. The study also revealed that there are practices of providing transportation to collect and dispose of products and packaging. In addition, the study found that there are practices to inform employees about reverse logistics practices. In connection with the study, it was also discovered that there are practices to repair and provide services after sales within the packaging industry. Lastly, findings of the study revealed that within the packaging industry, there are practices to recycle returned and used products.

4.9.2 Effect of Reverse Logistics on Organizational Performance in the Packaging Industry

To achieve the second objective, the researcher run a multiple regression with reverse logistics and organizational structure as dependent and independent variables of the model respectively. From Table 4.9, the results of regression output revealed a positive and significant relationship between reverse logistics and organizational performance. The coefficient value of 0.327 recorded is an indication that a unit rise in reverse logistics practices by firms in the packaging industry would enhance organisational performance by 32.7%. The regression model also revealed a constant value of 3.421, which is explained by other essential variables that enhance organizational performance holding reverse logistics. The R-squared

of 0.453 obtained is indication that the model can explain up to 45.3% of the changes in reverse logistics at the workplace. Findings of this study back extant literature that have revealed a positive relationship between reverse logistics and organizational performance (Fernando et al., 2022; Mihi Ramirez and Morales, 2014; Abdullah and Yaakub, 2014; Huang et al., 2015). The results of the study findings confirmed the first hypothesis of the study.

4.9.3 Mediating role of Consumer Commitment in the Relationship Between Reverse Logistics and Organizational Performance

This study hypothesized that formal consumer commitment plays a mediating role in the relationship between reverse logistics and organizational performance. However, given that the models used in making these predictions were all statistically significant, there exist a chance for mediation. Following the steps carried out by Tryon (2018), the steps that must be met to conclude mediation involves the following. First, the independent variable should be linked to that of the dependent variable, seconds, the independent variable should be linked to the mediating variable, and lastly, the mediating variable should be linked to the dependent variable. Results of the data about the specific indirect effect to test the mediation effect of consumer commitment in the relationship between reverse logistics and organizational performance has been found to be positive but insignificant ($p>0.05$). This does not support the mediation effect of consumer commitment in reverse logistics-performance nexus. The result of the mode does not support the second hypothesis of the study.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

The researcher presents the summary of key findings, conclusion and make recommendations to stakeholders in this chapter. The chapter further presents the limitations of the study as well as areas to guide future studies.

5.1 Summary of Findings

This section of the study presents the summary of the findings that emerged in this research. The first objective of the study was to identify the reverse logistics practices adopted by firms in the packaging industry. It was revealed by the findings that there are practices to collect the packaging, practices of returning products at the end of the life cycle in the packaging industry, among others. In addition, the study found that there are practices to inform employees about reverse logistics practices, the practices to repair and provide services after sales within the packaging industry. Lastly, findings of the study revealed that within the packaging industry, there are practices to recycle returned and used products.

The second objective of the study was to assess the impact of reverse logistics on organizational performance. The results of regression output revealed a positive and significant relationship between reverse logistics and organizational performance. The coefficient value of 0.327 recorded is an indication that a unit rise in reverse logistics practices by firms in the packaging industry would enhance organizational performance by 32.7%. The results of the study findings confirmed the first hypothesis of the study.

The third objective of the study was to analyze the moderating role of consumer commitment in the relationship between reverse logistics and organizational performance. Findings of the study reveals consumer commitment failed to mediate the relationship between reverse logistics and organizational performance. The second hypothesis of the study is not supported.

5.3 Managerial Implications and Recommendations

As a result of the conclusions drawn above, the following implications and recommendations have been suggested. The study found that reverse logistics has a significant positive impact on organizational performance. Since reverse logistics entails the management process of receiving products (such as waste products) from the customer with the intention of capturing value or guaranteeing the proper disposal of the returned products, the implication is that various stakeholders need to play their roles to ensure reverse logistics enhance firm performance. Firms have a significant relationship with various key interest groups, and the study therefore recommends that firms maintain this relationship by responding to their interest. Satisfying the interest of the various stakeholders, especially the consumers, will influenced them to remain committed to the reverse logistics practices of the firm.

5.4 Conclusion

The main aim of the stud was to assess the mediating role of consumer commitment in reverse logistics-organizational performance nexus. Geographically, the study was conducted in Ghana. The study was conducted at a firm level using the packaging industry within the study settings. The study involves quantitative, explanatory and descriptive research design. These approaches aid the researcher to assess the relationships between the variables under study. The quantitative nature of the study made the researcher to utilized primary data (questionnaire) as the main data collection tool. The researcher distributed 163 questionnaires

to owners and managers of the selected packaging firms within the study settings. Both descriptive and inferential statistics were utilised to analyse the data. The analytical techniques include mean, standard deviation, percentages, correlation and regression model, among others. The study employed validity and reliability tests as a way of purifying the data for sound statistical analysis. The study found a positive and significant relationship between them. This concludes that consumer commitment does not mediate the relationship between reverse logistics and organizational performance.

5.5 Recommendations for Future Studies

This study has examined the mediating role of consumer commitment on reverse logistics-organizational performance nexus. First of all, the study was carried out using the packaging industry, the study recommends that future studies should be carried out in different sectors of the Ghanaian economy like the manufacturing sector for comparison purpose. The study was also carried in Ghana as emerging market economy. Future studies should be carried out in advance markets where reverse logistics and consumer commitment are crucial in their operations for comparison. In addition, further, studies should also test the moderating role of consumer commitment in the relationship between reverse logistics and organizational performance. It might be possible that consumer commitment will moderate such link.

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APPENDIX

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

KNUST SCHOOL OF BUSINESS

QUESTIONNAIRE

Dear respondent,

This research is an academic exercise and it intends to study "reverse logistics and organizational performance in the packaging industry: the mediating role of consumer commitment, in partial fulfillment of a Master Degree at the KNUST School of Business. Your responses and suggestions are very crucial to the success of the study. Please bear in mind that your suggestions will be guarded with outmost confidentiality and will be used for the intended purpose. Thank you.

DIRECTIONS: Please indicate your response to each question by selecting the most appropriate answer for each question.

SECTION A: DEMOGRAPHIC BACKGROUND OF RESPONDENTS

1. Educational level

A. HND [ ]
B. Ist Degree [ ]
C. Masters [ ]
D. Others, please specify……

2. Age limit (years)

A. up to 25 [ ]
B. 26-30 [ ]
C. 31-40 [ ]
D. 41-50 [ ]
E. above 50 [ ]

3. Gender A. Male [ ] B. Female [ ]

4. Working Experience

A.0- 2 years [ ]
B. 3-5 years [ ]

C. 6-10 years [ ]
D. Above 10 years [ ]

PROFILE OF ORGANIZATION

1. Years of been in operation

A. up to 5 years [ ]
B. 6-10 years [ ]
C. 11-20 years [ ]
D. Above 20 years [ ]

2. **Category of business**

A Local [ ]
B. International [ ]
C. Multinational [ ]
D. Others [ ]

3. Number of employees

A. 1-20 [ ]
B. 21-50 [ ]
C. 51-100 [ ]
D. 101-200 [ ]
E. Above 200

SECTION B: REVERSE LOGISTICS PRACTICES (Ebenezer and Zhuo, 2019)

Please indicate your response on the following reverse logistics practices engaged by your firm by ticking one of the options in the following 5-point likert scale.

1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

STATEMENTS		1	2	3	4	5
1	In my organization, there are practices of using reverse logistics system					
2	In my organization, there are practices to collect the packaging					

3	In my organization, there are practices of providing transportation to collect and dispose of products and/or packaging					
4	In my organization, there are practices of outsourcing resources to return products at the end of the life cycle					
5	In my organization, there are practices to inform employees about reverse logistics practices					
6	In my organization, there are practices to repair and provide maintenance services after sales					
7	In my organization, there are practices to recycle returned and used products and packaging					
8	In my organization, there are practices to recapture value through reconditioning, remanufacturing and proper disposal of returned products and packaging					

SECTION C: CONSUMER COMMITMENT (Curras-Perez and Sanchez-Garcia, 2016)

Please indicate your response on the following questions in relation to the commitment of consumers by ticking one of the options in the following 5-point likert scale.

1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

STATEMENTS		1	2	3	4	5
1	Our consumers remain highly committed to our products					
2	Our consumers always choose us since our products meet their expectations					
3	Our consumers continue to purchase our products for many years					
4	Our consumers are always delighted for choosing our products					
5	Our consumers are satisfied with the quality of the product provided by our company					

SECTION D: ORGANIZATIONAL PERFORMANCE (Mention et al., 2018)

Indicate the performance of your company relative to your major competitor for the past years ticking the one that best suits your response.

ORGANIZATIONAL PERFORMANCE

Much worse - 1
Worse - 2
At the same level - 3

Better - 4
Much better - 5

	PERFORMANCE MEASURES	1	2	3	4	5
1	Sales growth	1	2	3	4	5
2	Profitability growth	1	2	3	4	5
3	Market share growth	1	2	3	4	5
4	Return on Investments (ROI)	1	2	3	4	5
5	Return on equity (ROE)	1	2	3	4	5
6	Cost to income ratio	1	2	3	4	5
7	Industry leadership	1	2	3	4	5
8	Overall response to competition	1	2	3	4	5

THANK YOU FOR YOUR PARTICIPATION