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Strategic Supply Chain Drivers for Achieving Sustainability and Environmental Greenness in Developing Economies

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Abstract

The integration of environmental and social responsibility considerations into supply chain management is becoming increasingly critical to the overall success of organizations and their supply chains. Organizations are now held accountable not only for their own environmental, social, and economic impacts but also for those of their supply chain partners. For sustainability strategies to be effectively implemented, it is essential to consider environmental factors, government regulations, and social norms across all stages of the supply chain—from suppliers to end customers.This study aimed to: examine the external supply chain drivers that promote greenness and sustainability; investigate the internal supply chain drivers that support greenness and sustainability; and assess the sustainability practices of MOVIS Ghana Limited and BAJ Freight and Logistics Limited.

To achieve these objectives, the study adopted a descriptive single cross-sectional survey design and employed a stratified sampling technique, resulting in a sample size of 105 respondents. The constructs used in the study demonstrated reliability and validity, with a Kaiser-Meyer-Olkin (KMO) measure of 0.8 and a Cronbach's Alpha of 0.71. Regression analysis revealed a positive and significant relationship between external and internal supply chain drivers. Furthermore, the study found that both external and internal supply chain drivers positively and significantly influence the adoption of green and sustainable practices.

Based on these findings, the study recommends that organizational managers broaden their procurement objectives beyond recycling and reuse. Supply chain evaluations and audits should incorporate life cycle costing, design for reuse, and informed decisions on supplier and production choices. Organizations should also invest in modern technologies and equipment, as these are critical for process innovation and the effective implementation of sustainability initiatives throughout the supply chain. Additionally, cross-functional training and continuous education should be prioritized to enhance sustainability performance, support skill development, improve job efficiency, and reduce errors and waste.

Keywords: *Supply Chain Management, Sustainability, Greenness, Environmental Responsibility, Social Responsibility, External Drivers, Internal Drivers, MOVIS Ghana Limited, BAJ Freight and Logistics Limited, Sustainable Practices, Supply Chain Performance, Process Innovation, Cross-Functional Training, Life Cycle Costing.*

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1.0 INTRODUCTION

The 21st-century global business environment is characterized by growing concerns over environmental degradation, climate change, and social inequality—issues that have compelled organizations to rethink their operations, particularly within their supply chains. As sustainability gains prominence as a strategic business imperative, companies are increasingly expected to incorporate environmental and social considerations into their supply chain management practices (Sarkis, 2021). The shift towards sustainable supply chain management (SSCM) is especially critical in developing economies, where economic growth often comes at the cost of environmental deterioration and resource depletion (Agyabeng-Mensah et al., 2020).

Supply chains, which traditionally focused on cost efficiency and responsiveness, are now being redesigned to integrate environmental greenness and long-term sustainability goals. Strategic supply chain drivers—such as supplier relationship management, technological innovation, regulatory compliance, organizational culture, and market pressure—play a pivotal role in achieving this transformation (Seuring & Müller, 2008). These drivers, when effectively leveraged, can foster the adoption of green practices such as waste minimization, energy efficiency, eco-design, and reverse logistics, contributing to improved environmental and operational performance (Dubey et al., 2017).

In developing economies, the implementation of sustainable and green supply chain practices presents both opportunities and challenges. On one hand, these economies are uniquely positioned to leapfrog unsustainable industrial practices by embracing cleaner and more efficient technologies. On the other hand, limited infrastructure, weak institutional frameworks, and a lack of awareness often hinder the adoption of sustainable supply chain strategies (Acheampong & Boateng, 2021). Moreover, supply chain actors in these regions frequently encounter constraints related to high investment costs, inadequate policy enforcement, and low stakeholder commitment (Govindan et al., 2015).

Despite these barriers, several firms in developing countries have begun to adopt strategic approaches aimed at integrating sustainability and greenness into their operations. These include proactive environmental management, stakeholder engagement, green procurement, and compliance with international environmental standards. The success of such initiatives largely depends on the ability of firms to identify and activate key internal and external supply chain drivers (Walker et al., 2008). While internal drivers may include leadership commitment, employee training, and corporate values, external drivers encompass factors such as government regulations, customer expectations, and global market trends (Zhu & Geng, 2013).

In Ghana and other Sub-Saharan African economies, logistics and manufacturing companies are increasingly confronted with the need to balance profitability with sustainable development objectives. However, there is limited empirical research exploring the strategic supply chain drivers that influence the adoption of sustainability and greenness in these contexts. This research seeks to fill that gap by examining the internal and external drivers that promote green and sustainable supply chain practices among logistics companies in Ghana, with specific reference to MOVIS Ghana Limited and BAJ Freight and Logistics Limited.

This study is therefore timely and significant, as it contributes to the growing body of knowledge on sustainable supply chain management in developing economies. By identifying the key strategic drivers and their influence on environmental greenness, the research aims to provide practical insights for policymakers, business leaders, and supply chain practitioners seeking to foster sustainable development through effective supply chain strategies.

2.0 MATERIALS AND METHODS

2.1. Concept of Sustainable and Green Supply Chain Management

Sustainable Supply Chain Management (SSCM) refers to the integration of environmental, social, and economic goals across a firm's supply chain activities to improve the long-term performance of the organization and its partners (Carter & Rogers, 2008). Green Supply Chain Management (GSCM), a subset of SSCM, focuses specifically on environmental aspects such as waste reduction, pollution control, eco-friendly sourcing, and sustainable product design (Srivastava, 2007). Both SSCM and GSCM have evolved as strategic responses to increased environmental regulations, stakeholder pressures, and growing societal concerns about ecological sustainability (Zhu & Sarkis, 2004).

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In developing economies, SSCM practices are gaining momentum as businesses face mounting pressure from international trade partners and environmental advocacy groups to align with global sustainability standards. However, the application of these practices remains uneven due to economic constraints, limited institutional support, and technological deficiencies (Agyabeng-Mensah et al., 2020).

2.2. Strategic Supply Chain Drivers

Strategic supply chain drivers are organizational and environmental factors that facilitate the adoption and implementation of sustainability and greenness within supply chain systems. These drivers are generally categorized into **internal** and **external**.

a) Internal Drivers

Internal drivers are factors within the organization's control that influence its sustainability performance. These include top management commitment, employee competence, organizational culture, process innovation, and internal communication systems (Dubey et al., 2017). Leadership support, in particular, is recognized as a key enabler of green initiatives, as it sets the tone for the adoption of sustainable values and allocates the necessary resources (Sarkis, 2021). Additionally, firms that invest in employee training and development tend to improve their environmental practices and reduce operational waste (Zhu & Geng, 2013). Process innovation, driven by technological advancement, also contributes significantly to sustainable outcomes by enabling energy-efficient production, green product design, and waste minimization. However, in developing countries, internal drivers are often hindered by a lack of financial resources, inadequate infrastructure, and insufficient expertise (Acheampong & Boateng, 2021).

b) External Drivers

External drivers are influences from outside the organization that push firms toward adopting green and sustainable practices. These include government regulations, customer expectations, competitive pressure, stakeholder influence, and global supply chain requirements (Walker et al., 2008). Regulatory frameworks, when effectively enforced, play a pivotal role in steering organizations towards environmental compliance and sustainability (Govindan et al., 2015). Customer and market pressure, especially from environmentally conscious consumers in developed countries, has become a powerful external force shaping SSCM strategies in developing regions. Moreover, non-governmental organizations (NGOs), investors, and certification bodies increasingly demand transparency and accountability in supply chain operations (Seuring & Müller, 2008). In the African context, the role of governments and regional organizations is particularly critical, given the challenges posed by weak enforcement mechanisms and the informal nature of many supply chains. Studies by Agyabeng-Mensah et al. (2020) and Acheampong and Boateng (2021) suggest that increased public-private partnerships and international cooperation can strengthen external drivers and promote sustainable supply chain transitions in developing economies.

2.3. Barriers to Sustainable and Green Supply Chain Practices

Despite growing awareness, the implementation of SSCM in developing economies faces several obstacles. These include high initial investment costs, lack of technological infrastructure, resistance to change, limited knowledge and skills, and weak institutional frameworks (Testa & Iraldo, 2010). Financial constraints remain a significant barrier, especially for small and medium enterprises (SMEs), which often lack the capacity to invest in advanced green technologies.

Moreover, cultural and behavioral factors such as short-term profit orientation, low stakeholder awareness, and absence of performance incentives hinder the progress of green initiatives (Eltayeb, Zailani, & Ramayah, 2011). Without a supportive policy environment and access to sustainability-oriented supply chain networks, many firms in developing regions struggle to implement effective SSCM strategies.

2.4. Empirical Studies on SSCM in Developing Economies

Empirical research on SSCM in developing economies remains limited compared to developed countries. However, a few notable studies have highlighted the emerging trends and

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practices in this area. For instance, Agyabeng-Mensah et al. (2020) found that supply chain traceability, supplier collaboration, and reverse logistics were significant predictors of firm performance in Ghanaian manufacturing firms. Similarly, Dubey et al. (2017) reported that institutional pressure and leadership engagement were key to driving sustainability performance in Indian supply chains.

In Sub-Saharan Africa, research by Acheampong and Boateng (2021) emphasized the role of capacity building, regulatory incentives, and stakeholder involvement in enabling sustainable logistics practices. Yet, the contextual challenges facing the region—such as corruption, weak infrastructure, and informal economic structures—necessitate a more nuanced and strategic approach to SSCM.

2.5. Research Gaps and Justification for the Study

While the existing literature provides valuable insights into the strategic drivers of sustainability, most studies have focused on developed economies, with limited exploration of the unique dynamics in developing regions. There is a pressing need to examine how internal and external drivers interact to influence sustainable supply chain practices within the specific socio-economic and institutional context of developing countries, particularly in Africa. This study seeks to fill this gap by investigating the strategic supply chain drivers that promote environmental greenness and sustainability in Ghana's logistics sector. By focusing on firms such as MOVIS Ghana Limited and BAJ Freight and Logistics Limited, the research aims to provide contextualized knowledge that can guide policy formulation and managerial decision-making in the region.

3.0 METHODOLOGY

Research methodology is the detailed procedure used to answer the research questions; it includes a description of research design, sampling techniques, instrumentation and data analysis techniques (Oso & Onen, 2009). This chapter presents the methodology that employed for the conduct of the study. It provides an in-depth description of the research approach adopted for this study, the research design and strategy, study population, sample size and sampling techniques. It also discusses the mode of data collection, operationalization of the construct, method of data analysis, type and sources of data, ethical considerations and profile of the study area.

3.2 Research Design

The study used a descriptive single cross-sectional survey approach in collecting data from the respondents. According to Saunders et al. (2009), the research philosophy adopted by a researcher embodies vital assumptions about his view point of the world. It is more related with the development and understanding of knowledge and the nature of that knowledge; a way of looking at the world and making sense of it. The three major ways of thinking about research philosophies are; Ontology, Epistemology and Axiology (Saunders et al., 2009). Ontology identifies the state of being and refers to a researcher's philosophical assumptions about the nature of reality. Epistemology is the researcher's view regarding what constitute acceptable knowledge (Saunders et al., 2009). Positivism adopts the philosophies of the natural scientists. It underscores the point that facts are facts. Axiology according to Saunders et al. (2009) is the "researcher's view of the role of values in research".

3.3 Population

Newing (2011) describes a population as the set of sampling units or cases that the researcher is interested in. According to Kothari (2014), a population refers to all items in any field of inquiry and is also known as the universe of the researcher. In general, the study focuses on the staff of MOVIS Ghana Limited and BAJ Freight and Logistics Limited in the Western Region of Ghana. MOVIS Ghana Limited and BAJ Freight and Logistics Limited being the selected company of the study is made up of a total workforce of about 2,508. To add to this, the nature of concepts being investigated into required narrowing down to a group that could provide all relevant data needed to address the objectives of the study. For instance, the staff of MOVIS Ghana Limited and BAJ Freight and Logistics Limited taken into consideration should at least have fair knowledge in the external supply chain drivers of fostering greenness and

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sustainability, the internal supply chain drivers of fostering greenness and sustainability and the greenness sustainability practices of MOVIS Ghana Limited and BAJ Freight and Logistics Limited.

3.4 Sampling Technique and Sample Size

Kothari (2014) describes a sample as a collection of units chosen from the universe to represent it. Black (2011) defines sampling as the selection of individuals from within a population to yield some knowledge about the whole population, especially for the purpose of making predictions based on statistical inference. The researcher used stratified sampling technique. According to Cohen et al. (2017), a stratified sampling technique is used for dividing the "population into homogenous groups, with each containing subjects with similar characteristics". Therefore, the staff of procurement and supply departments as well materials departments constitutes the respondents of the study. In finding an appropriate sample size for a study, Singh (2016), says there is no one given rule in arriving at an appropriate sample size for any study. In all one hundred and five (105) sample size was drawn from 2,508 staff of MOVIS Ghana Limited and BAJ Freight and Logistics Limited in which the departments with fair knowledge were contacted due to nature of the study. Therefore, the total sample size for the study is one hundred and five (105).

The summary of the sample and data collected is shown in Table 3.1.

Table 3.1 Summary of Sample and Data Collected

Location	**Sample (quota)**
Movis Ghana limited	79
BAJ Freight	26

Source: Field Data, 2020

3.5 Data Collection Method

Creswell (2012) defines data collection as a means by which information is obtained from the selected subjects of an investigation. The study relied solely on primary source of data due to the large scale nature of the study though there are two main sources of data (i.e. primary and secondary data sources). This study makes use of only primary data source. The primary data were gathered through a self-administered questionnaire. This instrument was designed with reference to measures adopted by some authors in measuring similar constructs in their studies. The questionnaire mostly constituted closed ended questions. In order to ensure that respondent clearly provide answers and enable researcher code responses with ease, items on the questionnaire were grouped under various themes: inventory management practices, competitive advantage and organizational performance.

The study adopted only one approach in collecting responses in the actual field study. Questionnaires were self-administered to the respondents that fall within the study population and hold the required positions were contacted and given questionnaires to be answered. In all one hundred and twenty (120) questionnaires were self-administered to one hundred and twenty (120) staff of MOVIS Ghana Limited and BAJ Freight and Logistics Limited and 105 responses were made within the stipulated time frame for the study.

3.6 Data Collection Instruments

Constructs	**Number of Items**	**Source**
External supply chain drivers of fostering greenness and sustainability	26	(Saeed and Kersten, 2019)
Internal supply chain drivers of fostering greenness and sustainability	17	(Saeed and Kersten, 2019)
Greenness sustainability practices	19	Source: (Maina, 2015)

3.7 Types and Sources of Data

For every research work, there are two basic types of data that is applied; primary and secondary data. Primary data are collected originally from the field for the particular research problem at hand, via means that best suit the study and collected under the control and

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supervision of the researcher (Hox and Boeije, 2015). In using the primary data, the researcher is able to gain a greater control and the data can be interpreted much better (Kadam et al., 2013). On the other hand, a secondary data refers to data that are collected and recorded by someone else earlier and for a reason other than the present study. It is less time consuming, saves cost, and uses little effort. It is less time consuming, saves cost, and uses little effort. For the purpose of this study, primary data was used to test the relationships.

3.8 Data Analysis Techniques

Data analysis refers to the application of reasoning to understand the data that has been gathered with the aim of determining consistent patterns and summarizing the relevant details revealed in the investigation (Carr & Griffin, 2010). To determine the patterns revealed in the data collected regarding the selected variables, data analysis was guided by the aims and objectives of the research and the measurement of the data collected. The data collected is input into the statistical package for social sciences (SPSS) for production of graphs, tables, descriptive statistics and inferential statistics. A pre testing of data is performed to test for multicolinearity and autocorrelation. A variance inflation factor is used for multicollinearity testing while Durbin-Watson statistic is used to measure autocorrelation. Both descriptive and inferential statistics were employed. Descriptive statistics was used to present the characteristics of the data. Regression techniques were used to test for the effects of the variables. Regression analysis is used to test the significance of the independent variables on the dependent variable.

3.9 Validity and Reliability Test

Validity in research refers to the degree to which the data gathering instrument measure what it is intended to and reliability addresses the extent of consistency and truthful representation of the total population under study (Joppe, 2000 as cited in Golafshani, 2003). Reliability is very important because it is a requirement for the validity of test. The data gathered should be reliable and valid and so must be the assessment techniques. In ensuring that data gathered was suitable and reliable for this study, the Cronbach's Alpha is used to measure the overall internal consistency.

3.10 Ethical Consideration

In conducting research, researchers must follow rules that guide their research. In complying with ethical standards, this research was conducted in an honest fashion devoid of deception. Informed consent was sort from respondents who were willing to take part in this study and they were not coerced in any way to provide answers to the questionnaires. The actual purpose for this research was communicated to the respondents.

4.0 RESULTS AND DISCUSSIONS

This chapter presents the data analysis, discussions and discussions of the results. The chapter covered the demographics of the respondents followed by the validity and reliability tests, descriptive statistics, testing of the hypothesis, summary of findings and discussions of the results. The table 4.1 presents the results.

Table 4.1 Demographics of the respondents

Profile	**Characteristics**	**Frequency**	**Percentage**
Gender	Male	73	70
	Female	32	30
	Total	**105**	**100**
Age	20-30 years	26	25
	31-40 years	38	36
	41-50 years	19	18
	51 and above	22	21
	Total	**105**	**100**
Education	JHS/SHS	11	10
	HND/Equivalents	43	40
	1st Degree	33	31

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	Master's degree	18	17
	Total	**105**	**100**
Working experience	Less than 1 year	6	6
	1-5 years	23	21
	5-10 years	32	30
	11-15 years	22	21
	16-20 years	13	12
	above 20 years	9	9
	Total	**105**	**100**

Source: Field Data, 2022

The gender issue of the respondents, 73 of the respondents was male representing 70% whilst 32 of the respondents were female representing 30%. Concerning the age of the respondents, 26 of the respondents were between the ages of 20-30 years, representing 25%, 38 of the respondents were between the ages of31-40 years representing 36%, 19 of the respondents were between the ages of41-50 years representing 18% and 22 of the respondents were 51 and above representing 21%.

The Educational background, 11 of the respondents was junior high secondary certificate graduate representing 10%, 43 of the respondents were Higher national Diploma graduate representing 40%, 33 of the respondents were first degree graduate representing 31% and 18 of the respondents were second degree graduate representing 17%.

Working experience, 6 of the respondents have worked in their organizations for less than 1 year representing 6%, 23 of the respondents have worked in their organizations for about 1-5 years representing 21%, 32 of the respondents have worked in their organizations for about 5-10 years representing 30%, 22 of the respondents have worked in their organizations for about 11-15 years representing 21%, 13 of the respondents have worked in their organizations for about 16-20 of the respondents years representing 12% and 9 have worked in their organizations for above 20 years representing 9%.

4.2 Validity and Reliability Tests

Generally, validity refers to the degree to which the data gathering instruments measures what it intended to while reliability seeks to assess the extent of consistency in the data gathered (Saunders et al., 2014; Pallant, 2017). The types of tests conducted to ensure that the data gathered were suitable for the study were (1) internal consistency (using Cronbach alpha in SPSS), composite reliability and discriminant validity. To validate the results, appropriate reliability and validity tests of the measurement were taken. The Cornbrash's Alpha coefficient was used as a measure of internal consistency-reliability of the scale used in this study. Cronbach's Alpha is a measure of internal reliability for multi-item summated rating scales. Its values range 0 and 1, where the higher the score, the more reliable the scale. A coefficient reliability of 0.70 or higher indicated that the instrument used is reliable (Cronbach, 2004).

Table 4.2 Cronbach's Alpha Results

Variables	Number of items	Cronbach's Alpha
External supply chain drivers	26	0.771
Internal supply chain drivers	17	0.822
Greenness sustainability practices	19	0.713

Source: Field Data, 2022

Also, in order to analyze the data in relation to ascertain the validity threshold, the measurement of the response using Kaiser Mayer Olkin test to be certain that the data is acceptable to proceed to the inferential statistics to make fair and valid conclusions. Kaiser (1974) proposes that values above 0.5 are acceptable and appropriate. In a situation that the value is less than 0.5, then there is a need to collect additional data or reconsider which variable is to take into consideration. The table 4.3 presents the results.

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Table 4.3 Kaiser Mayer Olkin test

Variables	**Variance (%)**	KMO	Approx. Chi Square
External supply chain drivers	50.332	.812	4532.416
Internal supply chain drivers	42.122	.722	4241.305
Greenness sustainability practices	62.531	.844	4122.617

Source: Field Data, 2022

The variable external supply chain drivers Cronbach's Alpha of 0.771, Internal supply chain drivers Cronbach's Alpha of 0.822 and Greenness sustainability practices Cronbach's Alpha of 0.713 were all within the acceptable recommended threshold. The variable external supply chain drivers' variance of 50.332%, Kaiser Mayer Olkin.812 and Approx. Chi Square of 4532.416 are all within the acceptable threshold. The variable internal supply chain drivers variance of 42.122% , Kaiser Mayer Olkin .722 and Approx. Chi Square of 4241.305 are all within the acceptable threshold. The variable greenness sustainability practices variance of 62.531%, Kaiser Mayer Olkin .844 and Approx. Chi Square of 4122.617 are all within the acceptable threshold. The factor loadings of the items measuring the constructs were also considered and the items with a factor loading of 0.5 were considered for the inferential statistics. The table 4.4 presents the results.

Table 4.4 Factor loadings of the items

External supply chain drivers	**Internal supply chain drivers**	**Greenness sustainability practices**
.821	.946	.844
.734	.937	.796
.692	.773	.891
.801	.833	.842
.579	.811	.814
.918	.903	.903
.732	.847	.817
.770	.813	.862
.860	.844	.774
.770	.729	.916
.776	.712	.763
.724	.799	.818
.869	.821	.795
.751	.627	.865
.783	.882	.816
.685	.811	.763
.823	.835	.882
.819		.927
.775		.831
.822		
.890		
.783		
.589		
.931		
.955		
.847		
.942		
.938		
.736		

Source: Field Data, 2022

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4.3 External supply chain drivers

In determining the external supply chain drivers of fostering greenness and sustainability, a literature was consulted and after a pre-test was done, twenty-six (26) items were selected to measure the construct external supply chain drivers of fostering greenness and sustainability and the table 4.5 presents the results.

Table 4.5 Descriptive statistics for external supply chain drivers

Items	Min	Max	Mean	S.D
Organizations operating in more than one country are influenced by national as well as supranational (regional and international) regulations to adopt sustainability-related practices as proposed by legislators.	1	5	4.23	.561
Organizations experience pressure from various sets of requirements proposed by trade/professional associations.	1	5	4.31	.586
Non-compliance can lead to penalties and exclusion of the organization from the members' list.	1	5	4.25	.528
Compliance can lead to benefits such as access to international markets.	1	5	4.29	.533
Government agencies are responsible for developing regulations related to labor relations, employment conditions, and environmental management.	1	5	4.27	.595
Noncompliance to these regulations results in fines, penalties, or legal costs for organizations.	2	5	4.20	.566
Various incentives are introduced by national and international institutions to stimulate organizations' proactive behavior in adopting sustainability practices.	1	5	4.25	.572
Certifications such as ISO certificates are international voluntary standards designed to help organizations in achieving product- or service-related ecological and social requirements derived from the needs of customers and other stakeholders.	1	5	4.28	.567
NGOs raise awareness of bad environmental and social performance by organizations, and constantly exert pressure on them to adopt sustainability initiatives.	1	5	4.26	.532
NGOs have the ability to unite a group of people or stakeholders on sustainability issues.	1	5	4.27	.580
Media reporting of sustainability issues can draw both public and government attention, resulting in a bad reputation as well as actions from government agencies against poorly performing organizations.	1	5	4.21	.571
Value-based networks, such as scientific communities and research centers, can also influence organizations to develop innovative approaches to consider sustainability in their products & operations.	1	5	4.30	.583
The public, in general, put pressure on organizations to adopt sustainability practices.	1	5	4.26	.521
In turn, consumers' purchasing behavior is affected by organizations' sustainability performance.	1	5	4.31	.586
Issues like 'global warming' have increased public awareness	1	5	4.27	.597
Due to the new forms of media and communication, consumers are more organized than before, and several consumer organizations exert pressure on organizations to adopt sustainability behavior.	1	5	4.30	.583
Organizations face pressure to implement sustainability initiatives that help to fulfill local communities' expectations	1	5	4.24	.557

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(e.g., parks, schools, charities, etc.) and the welfare of people who work for them.				
Organizations improve their social and environmental performance or develop environmentally friendly technologies to gain a competitive advantage over their competitors.	1	5	4.23	.525
Similarly, organizations are under strict scrutiny from their competitors.	1	5	4.20	.608
Competitors leading in adopting sustainability practices are able to set industry norms, which may result in extra pressure on other organizations to follow.	1	5	4.22	.559
Organizations face pressure from shareholders and investors in the implementation of sustainability initiatives.	1	5	4.25	.506
Investors can withdraw investments due to bad sustainability performance.	1	5	4.27	.595
Organizations face institutional pressures from banks, financial institutes, and other stakeholders to adopt sustainability practices.	1	5	4.36	.556
Supplier participation is critical in achieving sustainability goals across the supply chain.	1	5	4.20	.564
Consumer demand for sustainable products has increased the pressure on organizations to adopt sustainability practices within their upstream and downstream supply chains.	2	5	4.21	.560
Organizations implement sustainability initiatives to fulfill stakeholders' expectations so that the organization's sustainability image improves.	1	5	4.20	.555
Globalization has pressured organizations to implement sustainability practices across their entire supply chain.	1	5	4.29	.533

Source: Field Data, 2022

The item "organizations operating in more than one country are influenced by national as well as supranational (regional and international) regulations to adopt sustainability-related practices as proposed by legislators" (mean= 4.23 and SD= .561) to affirm that the organizations for the study believe that organizations operating in more than one country are influenced by national as well as supranational (regional and international) regulations to adopt sustainability-related practices as proposed by legislators. The item "organizations experience pressure from various sets of requirements proposed by trade/professional associations" (Mean= 4.31 and SD= .586) affirm that the organizations for the study experience pressure from various sets of requirements proposed by trade/professional associations.

The item Non-compliance can lead to penalties and exclusion of the organization from the members' list (mean= 4.25 SD=.528) affirm that the organizations for the study can lead to penalties and exclusion of the organization from the members' list. The item "compliance can lead to benefits such as access to international markets" (mean= 4.29 and SD= .533) affirm that the organizations for the study benefits such as access to international markets. The item "government agencies are responsible for developing regulations related to labor relations, employment conditions, and environmental management (mean=4.27 and SD= .595) affirm that the organizations for the study are responsible for developing regulations related to labor relations, employment conditions, and environmental management.

The item "Noncompliance to these regulations results in fines, penalties, or legal costs for organizations" (mean= 4.20 and SD= .566) affirm that the organizations for the study regulations results in fines, penalties, or legal costs for organizations. The item "various incentives are introduced by national and international institutions to stimulate organizations' proactive behavior in adopting sustainability practices" (mean= 4.25 and SD= .572) affirm that the organizations for the study are introduced by national and international institutions to stimulate organizations' proactive behavior in adopting sustainability practices. The item certifications such as ISO certificates are international voluntary standards designed to help organizations in achieving product- or service-related ecological and social requirements derived

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from the needs of customers and other stakeholders (mean= 4.28 and SD= .567) affirm that the organizations for the study are international voluntary standards designed to help organizations in achieving product- or service-related ecological and social requirements derived from the needs of customers and other stakeholders. The item "NGOs raise awareness of bad environmental and social performance by organizations, and constantly exert pressure on them to adopt sustainability initiatives" (mean= 4.26 SD= .532) affirm that the organizations for the study raise awareness of bad environmental and social performance by organizations, and constantly exert pressure on them to adopt sustainability initiatives. The item NGOs have the ability to unite a group of people or stakeholders on sustainability issues (mean= 4.27 and SD= .580) affirm that the organizations for the study have the ability to unite a group of people or stakeholders on sustainability issues.

The item "media reporting of sustainability issues can draw both public and government attention, resulting in a bad reputation as well as actions from government agencies against poorly performing organizations" (mean= 4.21 and SD= .571) affirm that the organizations for the study draw both public and government attention, resulting in a bad reputation as well as actions from government agencies against poorly performing organizations. The item "value-based networks, such as scientific communities and research centers, can also influence organizations to develop innovative approaches to consider sustainability in their products & operations" (mean= 4.30 and SD= .583) affirm that the organizations for the study value-based networks, such as scientific communities and research centers, can also influence organizations to develop innovative approaches to consider sustainability in their products & operations.

The item "the public, in general, put pressure on organizations to adopt sustainability practices" (mean= 4.26 and SD=.521) affirm that the organizations for the study put pressure on organizations to adopt sustainability practices. The item "in turn, consumers' purchasing behavior is affected by organizations' sustainability performance (mean= 4.31 and SD= .586) affirm that the organizations for the study is affected by organizations' sustainability performance. The item "issues like 'global warming' have increased public awareness" (mean= 4.27 and SD= .597) affirm that the organizations for the study have increased public awareness. The item "due to the new forms of media and communication, consumers are more organized than before, and several consumer organizations exert pressure on organizations to adopt sustainability behavior" (mean= 4.30 and SD= .583) affirm that the organizations for the study use new forms of media and communication, consumers are more organized than before, and several consumer organizations exert pressure on organizations to adopt sustainability behavior.

The item "organizations face pressure to implement sustainability initiatives that help to fulfill local communities' expectations (e.g., parks, schools, charities, etc.) and the welfare of people who work for them" (mean= 4.24 and SD= .557) affirm that the organizations for the study face pressure to implement sustainability initiatives that help to fulfill local communities' expectations (e.g., parks, schools, charities, etc.) and the welfare of people who work for them. The item "organizations improve their social and environmental performance or develop environmentally friendly technologies to gain a competitive advantage over their competitors" (mean= 4.23 and SD= .525) affirm that the organizations for the study have improved their social and environmental performance or develop environmentally friendly technologies to gain a competitive advantage over their competitors.

The item "similarly, organizations are under strict scrutiny from their competitors" (mean= 4.20 and SD= .608) affirm that the organizations for the study are under strict scrutiny from their competitors. The item "competitors leading in adopting sustainability practices are able to set industry norms, which may result in extra pressure on other organizations to follow" (mean= 4.22 and SD= .559) affirm that the organizations for the study are able to set industry norms, which may result in extra pressure on other organizations to follow. The item "organizations face pressure from shareholders and investors in the implementation of sustainability initiatives" (mean= 4.25 and SD= .506) affirm that the organizations for the study face pressure from shareholders and investors in the implementation of sustainability initiatives. The item "investors can withdraw investments due to bad sustainability performance" (mean= 4.27 and SD= .595) affirm that the organizations for the study can withdraw investments due to bad sustainability performance. The item "organizations face institutional pressures from banks, financial institutes, and other stakeholders to adopt sustainability practices" (mean= 4.36 and SD= .556) affirm that the organizations for the study

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face institutional pressures from banks, financial institutes, and other stakeholders to adopt sustainability practices. The item "supplier participation is critical in achieving sustainability goals across the supply chain" (mean= 4.20 and SD= .564) affirm that the organizations for the study supplier participation is critical in achieving sustainability goals across the supply chain.

The item "consumer demand for sustainable products has increased the pressure on organizations to adopt sustainability practices within their upstream and downstream supply chains" mean= 4.21 and SD= .560) affirm that the organizations for the study products has increased the pressure on organizations to adopt sustainability practices within their upstream and downstream supply chains. The item "organizations implement sustainability initiatives to fulfill stakeholders' expectations so that the organization's sustainability image improves" (mean= 4.20 and SD= .555) affirm that the organizations for the study implement sustainability initiatives to fulfill stakeholders' expectations so that the organization's sustainability image improves. The item "globalization has pressured organizations to implement sustainability practices across their entire supply chain" (mean= 4.29 and SD= .533) affirm that the organizations for the study globalization has pressured organizations to implement sustainability practices across their entire supply chain. The descriptive statistics fully establish that the organizations for the study are highly driven by external supply chain drivers.

4.4 Internal Supply Chain Drivers

In determining the internal supply chain drivers of fostering greenness and sustainability, a literature was consulted and after a pre-test was done, seventeen (17) items were selected to measure the construct internal supply chain drivers of fostering greenness and sustainability and the table 4.6 presents the results.

Table 4.6 Descriptive statistics for Internal Supply Chain Drivers

Items	Min	Max	Mean	S.D
The top management's commitment is the internal political force that supports proactive sustainability behaviors as well as successful implementation of sustainability initiatives.	1	5	4.22	.538
Sustainability-related issues must be incorporated in the organization's strategy and the mission statement. The organization's strategy acts as a driver for the implementation of sustainability initiatives within the organization.	1	5	4.21	.554
One of the most desirable drivers for implementing sustainability initiatives is cost reduction in the form of energy savings, reduction in material consumption, and increased efficiency, as well as profit.	1	5	4.21	.551
To achieve the goals of better economic and operational performance, organizations are pressured to implement sustainable strategies that provide long-term monetary benefits.	1	5	4.22	.538
The moral obligation of an organization in the society where it operates, represented by voluntary efforts to achieve harmony with social expectations and norms.	1	5	4.23	.543
An organization's willingness to change and improve the existing sustainability practices, involving the generation of new ideas to reach sustainability goals that also drive the organization toward adopting sustainability practices.	2	5	4.21	.551
Provides common and standardized decisions, procedures, and systems that meet the expectations of its stakeholders.	1	5	4.22	.541
The sharing of sustainability related information internally and externally is a prerequisite for implementing sustainability practices.	1	5	4.23	.534
Organizations face pressure from different stakeholders (such as NGOs and media) to report and reduce work-related health and safety incidents.	1	5	4.23	.509

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The provision of adequate resources drives an organization's sustainability initiative and encourages the adoption of sustainability practices.	1	5	4.25	.544
One of the main drivers for adopting sustainability practices, and organizations face pressure to undertake the most efficient use of natural resources.	1	5	4.31	.532
Organizations that have already adopted sustainability practices gain better professional expertise and capabilities in sustainability management, which encourage them to further implement sustainability-related actions.	1	5	4.25	.546
Employees of an organization either act alone or through their unions to pressure organizations internally to adopt sustainability practices.	1	5	4.28	.548
New technology and equipment are important factors in process innovation, helping organizations to successfully implement sustainability practices across the supply chain to enhance their sustainability and operational performance.	1	5	4.25	.579
Cross-functional training and education helps organizations to increase their sustainability-related performance, as well as support employees to update their skills, improve job performance, and decrease errors and waste.	1	5	4.29	.533
Organizations with a higher level of sustainability performance experience relatively less stakeholder pressure compared to organizations with low sustainability performance scores.	1	5	4.23	.561
Multinational organizations receive more pressure to adopt sustainability practices.	1	5	4.25	.561

Source: Field Data, 2022

The item "the top management's commitment is the internal political force that supports proactive sustainability behaviors as well as successful implementation of sustainability initiatives" (Mean= 4.22 and SD=.538) indicate that the organizations for the study the top management's commitment is the internal political force that supports proactive sustainability behaviors as well as successful implementation of sustainability initiatives. The item "the organization's strategy acts as a driver for the implementation of sustainability initiatives within the organization" (Mean= 4.21 and SD=.554) indicate that the organizations for the study acts as a driver for the implementation of sustainability initiatives within the organization.

The item "one of the most desirable drivers for implementing sustainability initiatives is cost reduction in the form of energy savings, reduction in material consumption, and increased efficiency, as well as profit" (Mean= 4.21 and SD=.551) indicate that the organizations for the study desirable drivers for implementing sustainability initiatives is cost reduction in the form of energy savings, reduction in material consumption, and increased efficiency, as well as profit. The item "to achieve the goals of better economic and operational performance, organizations are pressured to implement sustainable strategies that provide long-term monetary benefits" (Mean= 4.22 and SD=.538) indicate that the organizations for the study achieve the goals of better economic and operational performance; organizations are pressured to implement sustainable strategies that provide long-term monetary benefits.

The item "the moral obligation of an organization in the society where it operates, represented by voluntary efforts to achieve harmony with social expectations and norms (Mean= 4.23 and SD=.543) indicate that the organizations for the study achieve harmony with social expectations and norms. The item "an organization's willingness to change and improve the existing sustainability practices, involving the generation of new ideas to reach sustainability goals that also drive the organization toward adopting sustainability practices" (Mean= 4.21 and SD=.551) indicate that the organizations for the study are willing to change and improve the existing sustainability practices, involving the generation of new ideas to reach sustainability goals that also drive the organization toward adopting sustainability practices. The item "provides common and standardized decisions, procedures, and systems that meet the expectations of its

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stakeholders" (Mean= 4.22 and SD= .541) indicate that the organizations for the study provides common and standardized decisions, procedures, and systems that meet the expectations of its stakeholders. The item "the sharing of sustainability related information internally and externally is a prerequisite for implementing sustainability practices" (Mean= 4.23 and SD=.534) indicate that the organizations for the study share of sustainability related information internally and externally is a prerequisite for implementing sustainability practices.

The item "organizations face pressure from different stakeholders (such as NGOs and media) to report and reduce work-related health and safety incidents" (Mean= 4.23 and SD= .509) indicate that the organizations for the study face pressure from different stakeholders. The item "the provision of adequate resources drives an organization's sustainability initiative and encourages the adoption of sustainability practices" (Mean= 4.25 and SD= .544) indicate that the organizations for the study provide adequate resources drives an organization's sustainability initiative and encourages the adoption of sustainability practices.

The item "one of the main drivers for adopting sustainability practices, and organizations face pressure to undertake the most efficient use of natural resources" (Mean= 4.31 and SD=.532) indicate that the organizations for the study drives for adopting sustainability practices, and organizations face pressure to undertake the most efficient use of natural resources. The item "organizations that have already adopted sustainability practices gain better professional expertise and capabilities in sustainability management, which encourage them to further implement sustainability-related actions" (Mean= 4.25 and SD=.546) indicate that the organizations for the study have already adopted sustainability practices gain better professional expertise and capabilities in sustainability management, which encourage them to further implement sustainability-related actions.

The item "employees of an organization either act alone or through their unions to pressure organizations internally to adopt sustainability practices" (Mean= 4.28 and SD=.548) indicate that the organizations for the study either act alone or through their unions to pressure organizations internally to adopt sustainability practices. The item "new technology and equipment are important factors in process innovation, helping organizations to successfully implement sustainability practices across the supply chain to enhance their sustainability and operational performance" (Mean= 4.25 and SD=.579) indicate that the organizations for the study have been helping organizations to successfully implement sustainability practices across the supply chain to enhance their sustainability and operational performance.

The item "cross-functional training and education helps organizations to increase their sustainability-related performance, as well as support employees to update their skills, improve job performance, and decrease errors and waste" (Mean= 4.29 and SD=.533) indicate that the organizations for the study are engaging cross-functional training and education helps organizations to increase their sustainability-related performance, as well as support employees to update their skills, improve job performance, and decrease errors and waste.

The item "organizations with a higher level of sustainability performance experience relatively less stakeholder pressure compared to organizations with low sustainability performance scores" (Mean= 4.23 and SD=.561) indicate that the organizations for the study organizations with a higher level of sustainability performance experience relatively less stakeholder pressure compared to organizations with low sustainability performance scores. The item "multinational organizations receive more pressure to adopt sustainability practices" (Mean= 4.25 and SD=.561) indicate that the organizations for the study receive more pressure to adopt sustainability practices. The descriptive statistics results indicate that the organizations for the study are highly guided by internal supply chain drivers.

4.5 Greenness sustainability practices

In determining the greenness sustainability practices, a literature was consulted and after a pre-test was done, nineteen (19) items were selected to measure the construct greenness sustainability practices and the table 4.7 presents the results.

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Table 4.7 Descriptive statistics for Internal Supply Chain Drivers

Items	Min	Max	Mean	S.D
The firm's purchasing practices seek to ensure sustainability by reducing sources of waste and promote recycling, reuse, substitution of materials and proper sourcing	1	5	4.25	.509
The firm acquires raw materials, select suppliers and choose products with an emphasis on environmentally friendly packaging, recycling, reuse, resource reduction and disposal	1	5	4.25	.572
The firm's approach to minimize environmental impact in inbound supply chain includes eco-labeled product purchase, adoption of environmental criteria into the supplier assessment systems	1	5	4.30	.583
The firm centers to set purchasing policies or guidelines that integrates and reflect concerns for natural environment in its purchasing process	1	5	4.31	.586
The firm's purchasing enables better compliance with existing norms, improvement of brand image for consumers and better ranking by nonfinancial notation organizations.	1	5	4.24	.557
The firm chooses suppliers whose processes are ISO 14001 certified and encourages those who have low raw material consumption, controlled emissions, pollution levels and raw material tracking.	2	5	4.25	.506
The firm has adopted green purchasing as a way to reduce the human health, environmental and social impacts of routine purchasing decisions.	1	5	4.20	.564
The firm's green purchasing performance metrics include quality, delivery time, capacity of production systems, price, financial status, capability of R&D and packaging cost.	1	5	4.21	.554
The firm has chosen an optimal appropriate green purchasing strategy and can obtain competitive advantages of the sustainable supply chain when faced with a competitive market.	1	5	4.23	.543
The firm's green purchase helps to promote clean production technology in the sustainable supply chain.	1	5	4.22	.541
The firm adoption of green purchasing directly affect their suppliers practice and thus causing ripple effect through which local firms considers environment practices to gain legitimacy.	1	5	4.23	.509
The firm's employees are aware of the firm's green purchasing policy and actually implement it.	1	5	4.25	.544
The firm practices green purchasing by incorporating environmental sustainability issues into their choices of materials, parts and equipment moving beyond traditional purchasing criteria such as cost, quality, flexibility or payment terms.	1	5	4.28	.548
The firms consumers are recognizing the enormous impact their buying behaviours have on the environment which reinforces the position of the environment as a top world concern and thus increase their green purchasing behavior.	1	5	4.25	.579
The firm's shift from non-green or traditional purchasing to green purchasing practices is as a result of consumers' awareness and experience of environmental problems.	1	5	4.25	.509
The firm's purchasing is an important agent for change concerning environmental initiatives and compliance in the supply chain.	1	5	4.25	.546

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The firm has developed a scorecard based on specific metrics and manages as well as evaluates their suppliers" environmental performance and provides advice to them on improving their performance.	1	5	4.25	.528
The firm integrates their environmental goals with their purchasing activities in order to become green or initiate green initiatives in their supply chain.	1	5	4.26	.532
The firm's purchasing objective extends beyond recycling and reuse such that evaluations and audits of supply chains investigates life cycle costs, product designs for reuse and supplier or production choices.	1	5	4.22	.625

Source: Field Data, 2022

The item "the firm's purchasing practices seek to ensure sustainability by reducing sources of waste and promote recycling, reuse, substitution of materials and proper sourcing" (Mean=4.25 and SD=.509) establish that the organizations for the study seek to ensure sustainability by reducing sources of waste and promote recycling, reuse, substitution of materials and proper sourcing. The item "the firm acquires raw materials, select suppliers and choose products with an emphasis on environmentally friendly packaging, recycling, reuse, resource reduction and disposal" (Mean=4.25 and SD=.572) establish that the organizations for the study select suppliers and choose products with an emphasis on environmentally friendly packaging, recycling, reuse, resource reduction and disposal.

The item "the firm's approach to minimize environmental impact in inbound supply chain includes eco-labeled product purchase, adoption of environmental criteria into the supplier assessment systems" (Mean= 4.30and SD=.583) establish that the organizations for the study minimize environmental impact in inbound supply chain includes eco-labeled product purchase, adoption of environmental criteria into the supplier assessment systems. The item "the firm centers to set purchasing policies or guidelines that integrates and reflect concerns for natural environment in its purchasing process" (Mean= 4.31 and SD=.586) establish that the organizations for the study set purchasing policies or guidelines that integrates and reflect concerns for natural environment in its purchasing process. The item "the firm's purchasing enables better compliance with existing norms, improvement of brand image for consumers and better ranking by nonfinancial notation organizations"(Mean= 4.24 and SD=.557) establish that the organizations for the study ensure compliance with existing norms, improvement of brand image for consumers and better ranking by nonfinancial notation organizations.

The item "the firm chooses suppliers whose processes are ISO 14001 certified and encourages those who have low raw material consumption, controlled emissions, pollution levels and raw material tracking" (Mean= 4.25 and SD= .506) establish that the organizations for the study choose suppliers whose processes are ISO 14001 certified and encourages those who have low raw material consumption, controlled emissions, pollution levels and raw material tracking. The item "the firm has adopted green purchasing as a way to reduce the human health, environmental and social impacts of routine purchasing decisions" (Mean= 4.20 and SD=.564) establish that the organizations for the study have adopted green purchasing as a way to reduce the human health, environmental and social impacts of routine purchasing decisions.

The item "the firm's green purchasing performance metrics include quality, delivery time, capacity of production systems, price, financial status, capability of R&D and packaging cost" (Mean= 4.21 and SD=.554) establish that the organizations for the study purchasing performance metrics include quality, delivery time, capacity of production systems, price, financial status, capability of R&D and packaging cost. The item "the firm has chosen an optimal appropriate green purchasing strategy and can obtain competitive advantages of the sustainable supply chain when faced with a competitive market" (Mean=4.23 and SD=.543) establish that the organizations for the study have chosen an optimal appropriate green purchasing strategy and can obtain competitive advantages of the sustainable supply chain when faced with a competitive market.

The item "the firm's green purchase helps to promote clean production technology in the sustainable supply chain" (Mean= 4.22and SD=.541) establish that the organizations for the study promote clean production technology in the sustainable supply chain. The item "the firm

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adoption of green purchasing directly affect their suppliers practice and thus causing ripple effect through which local firms considers environment practices to gain legitimacy" (Mean= 4.23 and SD=.509) establish that the organizations for the study adoption of green purchasing directly affect their suppliers practice and thus causing ripple effect through which local firms considers environment practices to gain legitimacy.

The item "the firm's employees are aware of the firm's green purchasing policy and actually implement it" (Mean= 4.25 and SD= .544) establish that the organizations for the study have green purchasing policy and actually implement it. The item "the firm practices green purchasing by incorporating environmental sustainability issues into their choices of materials, parts and equipment moving beyond traditional purchasing criteria such as cost, quality, flexibility or payment terms" (Mean= 4.28 and SD=.548) establish that the organizations for the study practices green purchasing by incorporating environmental sustainability issues into their choices of materials, parts and equipment moving beyond traditional purchasing criteria such as cost, quality, flexibility or payment terms.

The item "the firms consumers are recognizing the enormous impact their buying behaviors have on the environment which reinforces the position of the environment as a top world concern and thus increase their green purchasing behavior" (Mean= 4.25 and SD=.579) establish that the organizations for the study the firms consumers are recognizing the enormous impact their buying behaviors have on the environment which reinforces the position of the environment as a top world concern and thus increase their green purchasing behavior. The item "the firm's shift from non-green or traditional purchasing to green purchasing practices is as a result of consumers' awareness and experience of environmental problems" (Mean= 4.25 and SD=.509) establish that the organizations for the firm's shift from non-green or traditional purchasing to green purchasing practices is as a result of consumers' awareness and experience of environmental problems.

The item "the firm's purchasing is an important agent for change concerning environmental initiatives and compliance in the supply chain" (Mean= 4.25and SD= .546) establish that the organizations for firm's purchasing is an important agent for change concerning environmental initiatives and compliance in the supply chain. The item "the firm has developed a scorecard based on specific metrics and manages as well as evaluates their suppliers‟ environmental performance and provides advice to them on improving their performance" (Mean=4.25 and SD=.528) establish that the firm has developed a scorecard based on specific metrics and manages as well as evaluates their suppliers‟ environmental performance and provides advice to them on improving their performance.

The item "the firm integrates their environmental goals with their purchasing activities in order to become green or initiate green initiatives in their supply chain" (Mean= 4.26 and SD=.532) establish that the firm integrates their environmental goals with their purchasing activities in order to become green or initiate green initiatives in their supply chain. The item "the firm's purchasing objective extends beyond recycling and reuse such that evaluations and audits of supply chains investigates life cycle costs, product designs for reuse and supplier or production choices" (Mean= 4.22and SD=.625) establish that the firm's purchasing objective extends beyond recycling and reuse such that evaluations and audits of supply chains investigates life cycle costs, product designs for reuse and supplier or production choices.

4.6 Correlations among the constructs

The correlation among the construct was performed to determine how the variables are correlated and the table 4.8 presents the results.

Table 4.8 Correlations among the constructs

Constructs		ESCD	ISCD	GSP
ESCD	Pearson Correlation	1	.730**	.709**
	Sig. (2-tailed)		.000	.000
ISCD	Pearson Correlation	.730**	1	.807**
	Sig. (2-tailed)	.000		.000
GSP	Pearson Correlation	.709**	.807**	1
	Sig. (2-tailed)	.000	.000	

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

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ESCD= External Supply Chain Drivers; ISCD= Internal Supply Chain Drivers; GSP= Greenness Sustainability Practices.

The relationship between external supply chain drivers and internal supply chain drivers, the coefficient of (.730**) and P< of .000 clearly establish that external supply chain drivers have a positive and significant relationship with internal supply chain drivers. External drivers are dependent on the surrounding conditions so that they force members of the supply chain (suppliers, distributors, and consumers) to have tendency towards sustainability. In this study, these drivers are divided into normative, mimetic, and coercive drivers (Melnyk, & Ragatz, 2015). Coercive drivers stem from political issues and regulations and laws of the environment which are set by governmental agencies and international issues.

These pressures are the major factors affecting a company's decision to initiate measures of sustainability. Examples of coercive drivers in sustainability include: requirements, policies and legal guidelines set by the government concerning social issues and the environment. In this case, organizations must adhere to the regulations and laws of sustainable development in order to avoid the increased costs due to illegal actions caused by illegal activities and paying possible fines. In addition, organizations often encounter costly lawsuits in providing reports to shareholders and supervisors and this issue will seriously hurt their public image and their ties even with customers will be flawed (Wei, & Benbasat, 2013).

The relationship between external supply chain drivers and greenness sustainability practices, the coefficient of (.709**) and P< of .000 clearly establish that external supply chain drivers have a positive and significant relationship with greenness sustainability practices. sustainable approach, organizations are motivated to move towards sustainable thinking. This is an imitative behavior which models the competing companies. This imitative behavior is caused when the goals of the organization are vague.

Therefore, organizations have no choice but to imitate competitors, and it also has the lowest cost for them (Liu et al., 2010). Drivers and inter-organizational factors of the supply chain can also be one of the aspects affecting the company moving towards sustainability. This issue has been considered in previous studies. The core focus of the previous studies have been on the thinking of managers and employees (Defee, Esper, & Mollenkopf, 2009; McFadden, Henagan, & Gowen, 2009; Reed, 2002).

The relationship between internal supply chain drivers and greenness sustainability practices, the coefficient of (.807**) and P< of .000 clearly establish that internal supply chain drivers have a positive and significant relationship with greenness sustainability practices. Companies with positive attitude towards sustainability will have a precise orientation towards it and this will lead to proper implementation of sustainable development practices which are based on the attitude of top management. After an active and committed approach towards sustainability is formed in the company, top managers should strongly support sustainable thinking. This support plays an important role in the follow-up actions in line with organizational changes (Mentzer, Min, & Zacharia, 2016).

Top management support of sustainability refers to the involvement of top managers in sustainability initiatives and funding, and their providing of other resources needed by operational departments (Chen & Paulraj, 2014). It is important to note that the growth in adoption of green practices is, in part, due to the effect of institutional pressures driven by market and regulatory demands (Curkovic et al, 2010). According to Zhu and Sarkis (2017), economic performance remains the top priority for manufacturers and, in particular, those in developing economies. Not surprisingly, there are several studies that have attempted to link GSCM practices with organizational performance. While some studies such as Zhu and Sarkis (2004), Rao and Holt (2005) and Green et al. (2012) found positive relationships between environmental practices and organizational performance, other studies such as Giovanni and Vinzi (2012) and Huang et al. (2012) showed that there is no significant relationship between such practices and organizational performance.

5.0 CONCLUSIONS

This chapter presents the summary of findings, conclusions, recommendations and suggestions for future studies.

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5.1 Summary of Findings

The external supply chain drivers of fostering greenness and sustainability the findings of the study indicate that the organizations for the study are influenced by national as well as supranational (regional and international) regulations to adopt sustainability-related practices as proposed by legislators, experience pressure from various sets of requirements proposed by trade/professional associations, can lead to penalties and exclusion of the organization from the members' list, are responsible for developing regulations related to labor relations, employment conditions, and environmental management, are moved by international voluntary standards designed to help organizations in achieving product- or service-related ecological and social requirements derived from the needs of customers and other stakeholders, raise awareness of bad environmental and social performance by organizations, and constantly exert pressure on them to adopt sustainability initiatives, have the ability to unite a group of people or stakeholders on sustainability issues, draw both public and government attention, resulting in a bad reputation as well as actions from government agencies against poorly performing organizations, value-based networks, such as scientific communities and research centers, can also influence organizations to develop innovative approaches to consider sustainability in their products & operations, put pressure on organizations to adopt sustainability practices, is affected by organizations' sustainability performance, have increased public awareness, use new forms of media and communication, consumers are more organized than before, and several consumer organizations exert pressure on organizations to adopt sustainability behavior, face pressure to implement sustainability initiatives that help to fulfill local communities' expectations (e.g., parks, schools, charities, etc.) and the welfare of people who work for them, have improved their social and environmental performance or develop environmentally friendly technologies to gain a competitive advantage over their competitors, are under strict scrutiny from their competitors.

The internal supply chain drivers of fostering greenness and sustainability, the descriptive statistics indicate that the organizations for the study top management's commitment is the internal political force that supports proactive sustainability behaviors as well as successful implementation of sustainability initiatives, most desirable drivers for implementing sustainability initiatives is cost reduction in the form of energy savings, reduction in material consumption, and increased efficiency, as well as profit, achieve the goals of better economic and operational performance; organizations are pressured to implement sustainable strategies that provide long-term monetary benefits and the organizations are willing to change and improve the existing sustainability practices, involving the generation of new ideas to reach sustainability goals that also drive the organization toward adopting sustainability practices.

In the greenness sustainability practices, the descriptive statistics results indicate that seek to ensure sustainability by reducing sources of waste and promote recycling, reuse, substitution of materials and proper sourcing, select suppliers and choose products with an emphasis on environmentally friendly packaging, recycling, reuse, resource reduction and disposal, minimize environmental impact in inbound supply chain includes eco-labeled product purchase, adoption of environmental criteria into the supplier assessment systems and the organizations for the study set purchasing policies or guidelines that integrates and reflect concerns for natural environment in its purchasing process.

The correlation among the constructs, the results indicates that external supply chain drivers have a positive and significant relationship with internal supply chain drivers. The relationship between external supply chain drivers and greenness sustainability practices, the results establish that external supply chain drivers have a positive and significant relationship with greenness sustainability practices. The relationship between internal supply chain drivers and greenness sustainability practices, the results establish that internal supply chain drivers have a positive and significant relationship with greenness sustainability practices.

5.3 Conclusions

The study assessed external supply chain drivers of fostering greenness and sustainability and the descriptive statistics of study fully concluded that the organizations for the study are highly driven by external supply chain drivers. The study assessed internal supply chain drivers of fostering greenness and sustainability and the descriptive statistics results concluded that the organizations for the study are highly guided by internal supply chain drivers. The study assessed greenness sustainability practices in the organizations for the study and the

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descriptive statistics results concluded that the organizations for the study are implementing good greenness sustainability practices. The study assessed the relationship between external supply chain drivers and internal supply chain drivers and the findings of the study concluded that chain external supply chain drivers have a positive and significant relationship with internal supply chain drivers. The relationship between external supply chain drivers and greenness sustainability practices, findings of the study concluded that external supply chain drivers have a positive and significant relationship with greenness sustainability practices. The relationship between internal supply chain drivers and greenness sustainability practices, the findings of the study concluded that internal supply chain drivers have a positive and significant relationship with greenness sustainability practices.

5.4 Recommendations

Managers in organizations should integrate their environmental goals with their purchasing activities in order to become green or initiate green initiatives in their supply chain. Managers in organizations should have purchasing objective that extends beyond recycling and reuse such that evaluations and audits of supply chains investigate life cycle costs, product designs for reuse and supplier or production choices. Management of organizations should have new technology and equipment that are important factors in process innovation, helping organizations to successfully implement sustainability practices across the supply chain to enhance their sustainability and operational performance. Managers should have a cross-functional training and education helps organizations to increase their sustainability-related performance, as well as support employees to update their skills, improve job performance, and decrease errors and waste.

5.5 Suggestions for future study

The current study considered the supply chain performance drivers for fostering greenness and sustainability in developing economies therefore a future study can consider the moderating effect of organizational culture on the relationship between external and internal drivers and firms' financial performance.

REFERENCES

Abel, M.-H. (2020): "Competencies management and learning organizational memory," Journal of Knowledge Management, 12(6), pp. 15–30.

Abrahamsson, P., Conboy, K., and Wang, X. (2019): "Lots done, more to do': the current state of agile systems development research," European Journal of Information Systems, 18, pp. 281–284.

Accenture (2020), "Technology Vision 2017 – Technology for People," Accenture Research.

Ofori, I., Bluwey, E., Ackah, D., (2024), "Total Quality Management Practices, Organisational Culture and Firm Performance; Service or Product Innovation", African Journal of Procurement, Logistics & Supply Chain Management Society 2024, 7(9): pp.165-205. DOI: https://dx.doi.org/10.4314/ajplscm.v7i9.5

Ackah, D., (2014). "The Impact of Motivation on Employee Performance in the Manufacturing Industry", Global Journal of Management Studies and Researches (GJMSR), Volume 1, Number 5, pp. 291- 310, 2014,

Ofori, I., Ackah, D., (2024), "The Role Organizational Culture as a Moderating Factor in the Relationship Between E-Procurement Adoption, Procurement", African Journal of Procurement, Logistics & Supply Chain Management Society 2024, 7(9): pp.01-32. DOI: https://dx.doi.org/10.4314/ajplscm.v7i9.1

Attafuah, E. D. & Ackah, D., (2022) "The Impact of Financial Engineering on Building Project Finance Among Commercial Banks in Ghana" Finance & Management Engineering Journal of Africa, Volume 4, Issue 10, pp. 01-44

IJMS 2025, Volume 5, Issue 1, Page 56-84

ISSN: 2676-2749
Journal Impact Factor (JIF): 7.807

Ackah, D., Dadzie. B., E., Yornu, K. I., (2025), "The Role of Corporate Governance in Strengthening Competitive Advantage through Strategic Project Procurement", Dama Academic Scholarly & Scientific Research Society 2025, 10(01): pp.58-81, DOI: https://dx.doi.org/10.4314/dasjr.v10i1.3

Ackah, D., Ofori., I., (2025), "The Influence of Green Logistics and Food Distribution Strategy on Post-Harvest Loss Reduction", African Journal of Procurement, Logistics & Supply Chain Management Society 2025, 7(9): pp.01-17, DOI: https://dx.doi.org/10.4314/ajplscm.v8i1.1

Ackah, D., Addo, K. S., K., Yornu, K. I., (2025), "Analysing the Connection Between Motivation, Compensation, and Employee Job Satisfaction", Dama Academic Scholarly & Scientific Research Society 2025, 10(01): pp.01-31, DOI: https://dx.doi.org/10.4314/dasjr.v10i1.1

Ackah, D., Addo, K. S., K., Yornu, K. I., (2025), "Analyzing the Impact of Green Procurement on Inexpensive Advantage and Business Performance", Dama Academic Scholarly & Scientific Research Society 2025, 10(01): pp.32-57, DOI: https://dx.doi.org/10.4314/dasjr.v10i1.2

Ackah, D., Ofori, I., Amponsah., R., (2025), "Resource Capabilities as a Moderator: Impact of Procurement Practices on Project Performance and Competitive Advantage", Project Management Scientific Journal, 2024, 8(9): pp.158-188. DOI: https://dx.doi.org/10.4314/pmsj.v8i1.6

Ackah, D., (2020). "The Impact of the World COVID-19 Pandemic on Project Financing" Project Management Scientific Journal, Volume 4, Issue 4, pp.01-13

Ofori., I., Ackah., D., Owusu-Asantewaah., P., (2025), "Supply Chain Collaboration, Organizational Resources and Firms' Performance", African Journal of Procurement, Logistics & Supply Chain Management Society 2025, 8(01): pp.41-58, DOI: https://dx.doi.org/10.4314/ajplscm.v8i1.3

Ackah, D., & Boadu, O. K. (2025). Entrepreneurship as a Catalyst for Innovation and Economic Growth in Ghana", Dama Academic Scholarly & Scientific Research Society 2024, 10(04): pp.28 - 47, DOI: https://dx.doi.org/10.4314/dasjr.v10i4.2

Mensah-Amewuda., B., Mensah., O., Agyemang., I., Ackah., D., (2025), "Disposal of Unused Medicines in a Rural Ghanaian Household and its Effect on the Environment", Dama Academic Scholarly & Scientific Research Society 2024, 10(02): pp.40-51, DOI: https://dx.doi.org/10.4314/dasjr.v10i2.5

Attafuah, E. D. & Ackah, D., (2020) "The repercussions facing the Ghana Stock Exchange (GSE)" Finance & Management Engineering Journal of Africa, Volume 2, Issue 11, pp.11-14

Ackah, D., Addo, K. S., K., Yornu, K. I., (2024), "Effect of Green Procurement Practices on Financial Performance", African Journal of Procurement, Logistics & Supply Chain Management, 2024, 7(8): pp.13-40. DOI: https://dx.doi.org/10.4314/ajplscm.v7i8.2

Owusu K., Issah Ofori., I., Ackah., D., (2025), "Behavioral Competencies, Supply Chain Resilience and Firm Performance: The Moderating Effect of Internal Integration", African Journal of Procurement, Logistics & Supply Chain Management Society 2025, 8(01): pp.18-40, DOI: https://dx.doi.org/10.4314/ajplscm.v8i1.2

Ackah, D., Agboyi, M., R., & Adu-Gyamfi, L., (2014). "Competitive tendering, an effective tool in ensuring value for money in the public sector," Global Journal of Management Studies and Researches (GJMSR), Volume1, Number 4, pp. 108 – 185

IJMS 2025, Volume 5, Issue 1, Page 56-84

ISSN: 2676-2749
Journal Impact Factor (JIF): 7.807

Ackah, D., Dadzie, B., E., (2025), "The Influence of Procurement Practices on Project Outcomes and Competitive Edge", Dama Academic Scholarly & Scientific Research Society 2024, 10(01): pp.82-111, DOI: https://dx.doi.org/10.4314/dasjr.v10i1.4

Ackah, D., Kondegri-Pangka, M., & Agboyi, A., R., (2015). "The Role and Impact of Rural Banking on SME's (Small Medium Enterprise)", Global Journal of Management Studies and Researches (GJMSR), Volume 1, Number 5, pp. 311 – 323

Ackah, D., Amponsah, R., (2024), "Evaluating the Project Management Maturity in the Construction Industry of Developing Countries, Ghana in Perspective", Project Management Scientific Journal, 2024, 7(9): pp.01-15. DOI: https://dx.doi.org/10.4314/pmsj.v7i9.1

Ackah, D., Adu-Gyamfi, L., & Agboyi, M., R., (2015). "The Impact of Trade Liberalisation on Import Composition," Global Journal of Management Studies and Researches (GJMSR), Volume 1, Number 5, pp. 273 – 290

Ackah, D., Addo, K. S., K., Yornu, K. I., (2024), "Enforcing Ethical Codes of Conduct in Procurement and Its Impact on Public Procurement Performance in Ghana", African Journal of Procurement, Logistics & Supply Chain Management 2024, 7(8): pp.72-92. DOI: https://dx.doi.org/10.4314/ajplscm.v7i8.5

Acquah, P., Ofori, I., & Ackah, D., (2022) "Analyzing Stakeholder Challenges in Public Sector Project Implementation" Project Management Scientific Journal, Volume 6, Issue 1, pp. 01-15

Ackah, D., Addo, K. S., K., Yornu, K. I., (2024), "Information Sharing's Impact on Supply Chain Management, Logistics, and Organizational Performance", Project Management Scientific Journal, 2024, 7(9): pp.16-33. DOI: https://dx.doi.org/10.4314/pmsj.v7i9.2

Ackah, D., Addo, K. S., K., Yornu, K. I., (2024), "Senior Management's Influence on Supplier Selection and Procurement Performance", African Journal of Procurement, Logistics & Supply Chain Management, 2024, 7(8): pp. 93-113. DOI: https://dx.doi.org/10.4314/ajplscm.v7i8.6

Ofori, I., & Ackah, D., (2021) "The Influence of Green Logistics and Food Distribution Strategy on Post-Harvest Loss Reduction" African Journal of Procurement, Logistics & Supply Chain Management, Volume 4, Issue 12, pp.33-48

Ofori, I., Ackah, D., Dadzie. B., E., (2024), "Digitalization and Operational Performance of the Audit Service of Ghana", Project Management Scientific Journal, 2024, 7(9): pp.93-116. DOI: https://dx.doi.org/10.4314/pmsj.v7i9.6

Ackah, D., Agboyi, M., R., & Adu-Gyamfi, L., (2014). "An Investigation of Yam Ingestion Customs in Ghanaian Urban Communities," International Journal of Sciences: Basic and Applied Research (IJSBAR), Volume 17, Number 2, pp. 374 – 411

Ackah, D., Dadzie. B., E., Yornu, K. I., (2024), "The Influence of Corporate Governance on Strategic Procurement and Competitive Advantage", African Journal of Procurement, Logistics & Supply Chain Management, 2024, 7(8): pp.13-40. DOI: https://dx.doi.org/10.4314/ajplscm.v7i8.7

Ackah, D., Ofori, I., Dadzie. B., E., (2025), "Examining the Role of Technological Innovation, and the Impact of Green Procurement on Competitive Advantage and Company Performance",

IJMS 2025, Volume 5, Issue 1, Page 56-84

ISSN: 2676-2749
Journal Impact Factor (JIF): 7.807

Project Management Scientific Journal, 2024, 8(9): pp.107-134. DOI: https://dx.doi.org/10.4314/pmsj.v8i1.4

Aiken, P., Gillenson, M., Zhang, X., and Rafner, D. (2021): "Data Management and Data Administration: Assessing 25 Years of Practice," Journal of Database Management, 22(3), pp. 24–44, July–September.

van Aken, J. E. and Romme, G. (2019): "Reinventing the future: Adding design science to the repertoire of organization and management studies," Organization Management Journal, 6(1), pp. 2–12.

Alavi, M. and Leidner, D. E. (2021): "Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues," MIS Quarterly, (25: 1), pp. 107–136.

Allal-Chérif, O., Bidan, M., and Makhlouf, M. (2021): "Using serious games to manage knowledge and competencies: The seven-step development process," Information Systems Frontiers, 18(6), pp. 1153–1163.

Alsleben, M. (2022): "Creating Dynamic Capabilities: R&D Network Management for Globally Distributed Research and Development in the Software Industry," CreateSpace Independent Publishing Platform.

Alvesson, M. (2019): "Knowledge Work and Knowledge-intensive Firms," OUP, Oxford.

Alvesson, M. (2021): "Management of knowledge-intensive companies," (Vol. 61), Walter de Gruyter.

Appelo, J. (2021): "Management 3.0: leading Agile developers, developing Agile leaders," Pearson Education.

Baert, P. (2020): "Philosophy of the social sciences: Towards pragmatism," Cambridge, UK; Malden, MA: SAGE.

Baladi, P. (2019): "Knowledge and Competence Management: Ericsson Business Consulting," Business Strategy Review (10:4), pp. 20–28.

Benbasat and Zmud (2019): "Empirical research in information systems: The practice of relevance," MIS Quarterly, 23(1), pp. 3–16.

Benbasat, I., Goldstein, D. K. and Mead, M. (2021): "The Case Research Strategy in Studies of Information Systems," *MIS Quarterly,* 11(3), pp. 369–386.

Berlin, I. (2029): "The Hedgehog and the Fox," Orion Books, London.

Blank, S. (2013): "Why the lean start-up changes everything," Harvard Business Review, 91(5), pp. 63–72.

Borek, A., Parlikad, A., Webb, J., and Woodall, P. (2019): "Total Information Risk Management: Maximizing the Value of Data and Information Assets," 1st edition, Morgan Kaufmann.

Bououd, I., Skandrani, S. R., Boughzala, I., and Makhlouf, M. (2016): "Impact of object manipulation, customization and social loafing on competencies management in 3D Virtual Worlds," Information Systems Frontiers, 18(6), pp. 1191–1203.

Bresnen, M., Goussevskaia, A., and Swan, J. (2021): "Embedding new management knowledge in project-based organizations," Organization Studies, 25(9), pp. 1535– 1555.

Brown, C. and Vessey, I. (2020): "Managing the next wave of enterprise systems: Leveraging lessons from ERP," MIS Quarterly Executive, 2 (1), pp. 65–77.

Brynjolfsson, E. and McAfee, A. (2019): "The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies," W. W. Norton & Company.

Brynjolfsson, E. and McAfee, A. (2019): "Race Against the Machine," Digital Frontier, Lexington, MA.

Brynjolfsson, E. (2021): "Strength in Numbers: How does data-driven decision-making affect firm performance?" Completed Research Paper in the Thirty Second International Conference on Information Systems, Shanghai, 2011.

Carr, N., G. (2023): "IT doesn't matter," Harvard Business Review, (81:5), pp. 41–49.

Castells, M. (2020): "The Rise of the Network Society," 2nd ed., Wiley-Blackwell.

CEN European Committee for Standardization. (2020): "European e-Competence Framework 2.0 – A common European framework for ICT Professionals in all industry sectors," European Commission, Brussels, Belgium.

IJMS 2025, Volume 5, Issue 1, Page 56-84

ISSN: 2676-2749
Journal Impact Factor (JIF): 7.807

Chae, B. K., Bruce Prince, J., Katz, J., and Kabst, R. (2021): "An exploratory cross-national study of information sharing and human resource information systems," Journal of Global Information Management, 19(4), pp. 18–44.

Chang, H. H., Tsai, Y. C., Fu, C. S., Chen, S. H., and De Peng, Y. (2019): "Exploring the antecedents and consequences of technology and knowledge integration mechanisms in the context of NPD," Information Systems Frontiers, 18(6), pp. 11651189.

Charan, R. (2019): "It's time to split HR," Harvard Business Review, 92(7), pp. 33–34.

Charband, Y., and Navimipour, N. J. (2016): "Online knowledge sharing mechanisms: a systematic review of the state of the art literature and recommendations for future research," Information Systems Frontiers, 18(6), pp. 1131–1151.

Collins, C. (2021): "Level 5 Leadership: The triumph of humility and fierce resolve," Harvard Business Review, (January), pp. 65–76.

Conboy, K. (2019): "Agility from first principles: Reconstructing the concept of agility in information systems development," Information Systems Research, 20(3), pp. 329–354.

Corallo, A., Lazoi, M., and Margherita, A. (2020): "Optimizing competence management processes: A case study in the aerospace industry," Business Process Management Journal, 16(2), pp. 297–314.

Creswell, J. W. (2019): "Qualitative Inquiry & Research Design: Choosing Among Five Approaches," 2nd ed., SAGE, Thousand Oaks, CA.

Davenport, T. H. (2020): "Putting the enterprise into the enterprise system," Harvard Business Review, (July/August), pp. 121–31.

Davenport and Markus (2019): "Rigor vs. Relevance revisited: Response to Benbasat and Zmud," MIS Quarterly, 23(1), pp. 19–23.

Davenport, T. (2017): "Competing on Analytics: The New Science of Winning," Harvard Business School Press, Boston, MA.

Davies, A. and Hobday, M. (2020): "The Business Projects, Managing Innovation in Complex Products and Systems," Cambridge University Press, New York, NY, U.S.A.

Davenport, T. H., Jarvenpaa, S. L., and Beers, M. C. (2020): "Improving knowledge work processes," Sloan Management Review, 37(4), p. 53.

Deloitte (2017): "Global Human Capital Trends 2017: Rewriting the Rules for the Digital Age," Deloitte Consulting LLP, Deloitte University Press.

Deloitte (2019): "Global Human Capital Trends 2016: The New Organization: Different by Design," Deloitte Consulting LLP, Deloitte University Press.

Dingsøyr, T., Nerur, S., Balijepally, V., and Moe, N. B. (2019): "A decade of agile methodologies: Towards explaining agile software development," Journal of Systems and Software, 85(6).

Drucker, P. (2019): "Knowledge-worker productivity: The biggest challenge," California Management Review, 41(2), pp. 79–94.

Drucker, P. (2023): "Post-Capitalist Society", Harper Collins, New York, NY.

Drucker, P. (1969): "The Age of Discontinuity: Guidelines to Our Changing Society", Harper & Row, New York, NY.

Durkheim (2011): "Pragmatism and the question of truth," Philosophy Archive, accessed October 7, 2011, marxists.org. Original work published in 1914.

Dzbor, M, Paralic, J. and Paralic, M. (2000): "Knowledge Management in a distributed organization," Kmi-TR-94 technical report, Knowledge Media Institute, Open University.

EIU (2011): "Big Data: Harnessing a Game-changing Asset," The Economist Intelligence Unit Limited, London (UK).

EIU (2008): "The Future of Enterprise Information Governance," The EconomistIntelligence Unit Limited, London (UK).

EU GDPR (2016): "Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)," accessed on April 28th, 2017, http://data.europa.eu/eli/reg/2016/679/oj

Eurofound (2017): "Knowledge-intensive business services: Trends and scenarios," European Monitoring Centre for Change, The European Foundation for the Improvement of Living and Working Conditions (Eurofound), accessed on April 28th, 2017,

IJMS 2025, Volume 5, Issue 1, Page 56-84

ISSN: 2676-2749
Journal Impact Factor (JIF): 7.807

https://www.eurofound.europa.eu/observatories/emcc/articles/ working-conditions/knowledge-intensive-business-services-trends-andscenarios

Eurostat (2017): "Glossary: Knowledge-intensive services (KIS)," the statistical office of the European Union, accessed on April 28th, 2017, http://ec.europa.eu/eurostat/ statistics-explained/index.php/ Glossary:Knowledge-intensive_services_(KIS)

Fisher, A. G. B. (1939): "Production, primary, secondary and tertiary," Economic Record, 15(1), pp. 24–38.

Fowler, M. and Highsmith, J. (2001): "The Agile Manifesto," Software Development, 9(8), pp. 28–35.

Ford, M. (2015): "The Rise of the Robots: Technology and the Threat of Mass Unemployment," Oneworld Publications.

Galbraith, J. R. (1973): "Designing complex organizations," Addison-Wesley Pub. Co., Reading, MA.

Galbraith, J. R. (1971): "Matrix organization designs: How to combine functional and project forms," Business Horizons, 14(1), pp. 29–40.

Galliers, R. (1991): "Choosing Appropriate Information Systems Research Approaches: A Revised Taxonomy," In "Information Systems Research: Contemporary Approaches and Emergent Traditions," Nissen, H., Klein, H. and Hirschheim, R. (Eds.), Elsevier Science Publishers, Holland, pp. 327–345.

Gallupe, R. B. (2007): "The tyranny of methodologies in information systems research," SIGMIS Database, 38(3), pp. 20–28.

Gash, D. C. and Orlikowski, W. J. (1991): "Changing frames: Towards an understanding of information technology and organizational change," MIT Sloan School Working Paper No. 3320-91, (January), MSA.

Goldkuhl, G. (2004): "Meanings of pragmatism: Ways to conduct information systems research," In "Proceedings of the 2nd international conference on action in language, organisations and information systems (ALOIS 2004)," Linköping, Sweden.

Goles, T. and Hirschheim, R. (2000): "The paradigm is dead, the paradigm is dead ... Long live the paradigm: The legacy of Burrell and Morgan," Omega, 28(3), pp. 249–268.

Gonçalves, M. J. A., Rocha, Á., and Cota, M. P. (2016): "Information management model for competencies and learning outcomes in an educational context," Information Systems Frontiers, 18(6), pp. 1051–1061.

Goodhue, D. L., Kirsch, L. J., Quillard, J. A., and Wybo, M. D. (1992): "Strategic data planning: lessons from the field," MIS Quarterly, pp. 11–34.

Goodhue, D., Quillard, J., and Rockart, J. (1988): "Managing the Data Resources: A Contingency Perspective," MIS Quarterly, 16(1), pp. 267–274.

Grabski, S. V., Leech S. A., and Schmidt, P. J. (2011): "A review of ERP research: A future agenda for accounting information systems," Journal of Information Systems, 25(1), pp. 37–78.

Greenwood, R., Suddaby, R., and McDougald, M. (2009): "Introduction," in "Professional Service Firms," Suddaby, R., McDougard, M. and Greenwood, R. (eds.), Emerald Group Publishing Limited.

Greenwood, R., Hinings, C. R., and Brown, J. (1990): "'P2-form' strategic management: Corporate practices in professional partnerships," Academy of Management Journal, 33(4), pp. 725–755.

Gregor, S. (2006): "The Nature of Theory in Information Systems," MIS Quarterly, 30(3), pp. 611–642.

Groß, C., and Kieser, A. (2006): "Are consultants moving towards professionalization?" In "Professional Service Firms," pp. 69–100, Emerald Group Publishing Limited.

Guba, E. G. L. Y. S. (1999): "Fourth Generation Evaluation," SAGE.

Haeckel, S. (1992): "From 'make and sell' to 'sense and respond,'" Sloan Management Review.

Hamel, G. and Breen, B. (2007): "The Future of Management," Harvard Business School Press.

Hankin, S., Michaels, E., Handfield-Jones, H., and Axelrod, B. (1997): "War for Talent," Mckinsey Quarterly.

Hansen, M., Nohria, N., and Tierney, T. 1999: "What's your strategy for managing knowledge?" Harvard Business Review, 77(2): pp. 106–118.

IJMS 2025, Volume 5, Issue 1, Page 56-84

ISSN: 2676-2749
Journal Impact Factor (JIF): 7.807

Hellström, T., Kemlin, P., and Malmquist, U. (2000): "Knowledge and competence management at Ericsson: Decentralization and organizational fit," Journal of Knowledge Management, 4(2), pp. 99–110.

den Hertog, P. (2000): "Knowledge-intensive business services as co-producers of innovation," International Journal of Innovation Management, 4(4), pp. 491-528.

Hevner, A. R. (2007): "A three cycle view of design science research," Scandinavian Journal of Information Systems, 19(2), p. 4.

Hevner, A. R., March, S. T., and Park, J. (2004): "Design research in information systems research," MIS Quarterly, 28(1), pp. 75–105.

Highsmith, J. and Cockburn, A. (2001): "Agile software development: The business of innovation," Computer, 34(9), pp. 120–127.

Hinings, C. R. and Leblebici, H. (2003): "Editorial introduction to the special issue: Knowledge and professional organizations," Organization Studies, 24(6), pp. 827– 830.

Hobday, M. (2000): "The project-based organisation: An ideal form for managing complex products and systems?" Research Policy, 29(7), pp. 871–893.

Hoshmand, L. T. and Polkinghorne, D. E. (1992): "Redefining the science-practice relationship and professional training," American Psychologist, 47(1), pp. 55–66.

Huemann, M., Keegan, A. and Turner, J. R. (2007): "Human resource management in the project-oriented company: A review," International Journal of Project Management, (25), pp. 315–323.

Huselid, M. A. (2011): "Celebrating 50 Years: Looking back and looking forward: 50 years of *Human Resource Management*," Human Resource Management, 50(3), pp. 309–312.

Hustad, E. and Munkvold, B. E. (2005): "IT-supported competence management: A case study at Ericsson," Information Systems Management, pp. 165–184.

ILO (2016): "World Employment Social Outlook: Trends 2016," Research Department, International Labour Organization, Geneva.

ILO (2015): "World Employment Social Outlook: The changing nature of jobs," Research Department, International Labour Organization, Geneva.

ISO/IEC (2008): "ISO/IEC 38500: Corporate governance of information technology," the ISO and IEC.

Johnson, R. D., Lukaszewski, K. M., and Stone, D. L. (2016): "The Evolution of the Field of Human Resource Information Systems: Co-Evolution of Technology and HR Processes," Communications of the Association for Information Systems: Vol. 38, Article 28.

Johnson, R. B. and Onwuegbuzie, A. J. (2004): "Mixed methods research: A re- search paradigm whose time has come," Educational Researcher, 33(7), pp. 14–26.

Johns, T. and Gratton, L. (2013): "The third wave of virtual work," Harvard Business Review, 91(1), pp. 66–73.

Kasanen, E., Lukka, K., and Siitonen, A. (1993): "The constructive approach in management accounting research," Journal of Management Accounting Research.

Khatri, V., and Brown, C. V. (2010): "Designing data governance," Communications of the ACM, 53(1), pp. 148–152.

Kimble, C., de Vasconcelos, J. B., and Rocha, Á. (2016): "Competence management in knowledge intensive organizations using consensual knowledge and ontologies," Information Systems Frontiers, 18(6), pp. 1119–1130.

Krafcik, J. F. (1988): "Triumph of the lean production system," MIT Sloan Management Review, 30(1), pp. 41–52.

Kähkönen, T., Alanne, A., Pekkola, S., and Smolander, K. (2017): "Explaining the challenges in ERP development networks with triggers, root causes, and consequences," Communications of the Association for Information Systems, 40(1), 11.

Lacheheub, M. N. and Maamri, R. (2016): "Towards a construction of an intelligent business process based on cloud services and driven by degree of similarity and QoS," Information Systems Frontiers, 18(6), pp. 1085–1102.

Lee, Y., Madnick, S., Wang, R., Wang, F., and Zhang, H. (2014): "A cubic framework for the chief data officer: Succeeding in a world of big data," MIS Quarterly Executive, 13(1).

Lee, Z. and Lee, J. (2000): "An ERP implementation case study from a knowledge transfer perspective," Journal of Information Technology, (15), pp. 281–288.

IJMS 2025, Volume 5, Issue 1, Page 56-84

ISSN: 2676-2749
Journal Impact Factor (JIF): 7.807

Leffingwell, D. (2011): "Agile Software Requirements: Lean Requirements Practices for Teams, Programs, and the Enterprise," Addison-Wesley.
Lempinen, H. (2013): "Design Framework for Performance Management Systems: An Ensemble Approach," doctoral dissertation, Aalto University.
Lester, S. (2014): "Professional standards, competence and capability," Higher Education, Skills and Work-based Learning, 4(1), pp. 31–43.
Levitin, A. and Redman, T. C. (1998): "Data as a resource: Properties, implications, and prescriptions," Sloan Management Review, 40(1), pp. 89–101.
Lindgren, R., Henfridsson, O., and Schultze, U. (2004): "Design principles for competence management systems: A synthesis of an action research study," MIS Quarterly, 28(3).
Lindkvist, L. (2004): "Governing project-based firms: Promoting market-like processes within hierarchies," Journal of Management and Governance, 8(1), pp. 3–25.
Lincoln, Y. S. and Guba, E. G. (1985): "Naturalistic Inquiry," SAGE, Beverly Hills, CA.
Logan, D., King, J. P., and Fischer-Wright, H. (2008): "Tribal Leadership: Leveraging Natural Groups to Build a Thriving Organization," Collins.
Mahnken, T. G. and Maiolo, J. A. (2014): "Strategic Studies: A Reader," Routledge.
Maister, D. H. (2012): "Managing the Professional Service Firm," Simon and Schuster.
Maister, D. H. (1985): "The one-firm firm: What makes it successful," Sloan Management Review, 27(1).
Maister, D. H. (1982): "Managing the professional services firm," Sloan Management Review, 24, pp. 15–29.
Malhotra, N, Morris, T., and Hinings, C. R. (2015): "Variation in Organizational Form among Professional Service Organizations," In "Professional Service Firms," Emerald Group Publishing Limited, pp. 171–202
March, S. T. and Smith, G. F. (1995): "Design and natural science research on information technology," Decision Support Systems, 15, pp. 251–266.
Mattila, M. (2012): "The Interaction Between an Enterprise System and a KnowledgeIntensive Project Organization: A Case Study of Project Staffing," doctoral dissertation, Aalto University.
McAfee, A. & Brynjolfsson, E. (2017): "Machine, Platform, Crowds: Harnessing Our Digital Future," W. W. Norton & Company.
Michaels, E., Handfield-Jones, H., and Axelrod, B. (2001): "The War for Talent," Harvard Business Press.
Miles, R. E., Snow, C. S., Mathews, J. A., Miles, G., and Coleman, H. J. (1997): "Organizing in the knowledge age: Anticipating the cellular form," Academy of Management Executive, 11(4), pp. 7–20.
Mintzberg, H., Ahlstrand, B. W., and Lampel, J. (1998): "Strategy Safari: A Guided Tour Through the Wilds of Strategic Management," Free Press, New York, NY.
Momoh, A., Roy, R., and Shehab, E. (2010): "Challenges in enterprise resource planning implementation: State-of-the-art," Business Process Management Journal, 16(4).
Morgan, G. (1998): "Images or organization," executive edition, Berrett Koehler, San Francisco, CA.
Myers, M. D. (1997): "Qualitative research in information systems," MIS Quarterly, 21(2), pp. 241–242.
Myers, M. D. (2009): "Qualitative Research in Business & Management," SAGE, London.
Nag, R., Hambrick, D. C., and Chen, M. J. (2007): "What is strategic management, really? Inductive derivation of a consensus definition of the field," Strategic Management Journal, 28(9), pp. 935–955.
Niederman, F. (1999): "Global information systems and human resource management: A research agenda," Journal of Global Information Management, 7(2), pp. 33–39. von Nordenflycht, A. (2010): "What is a professional service firm? Toward a theory and taxonomy of knowledge-intensive firms," Academy of Management Review, 35(1), pp. 155–174.
O'Dell, C., and Grayson, C. J. (1998): "If only we knew what we know: Identification and transfer of internal best practices," California Management Review, 40(3), pp. 154–174.
OECD (2017): "Statistics," Organisation for Economic Co-operation and Development (OECD), accessed on April 28th, 2017, http://stats.oecd.org/
OECD (2015): "G20/OECD Principles of Corporate Governance," OECD Publishing, Paris.

IJMS 2025, Volume 5, Issue 1, Page 56-84

ISSN: 2676-2749
Journal Impact Factor (JIF): 7.807

Ohno, T. (1988): "Toyota production system: Beyond large-scale production", CRC Press.
Orlikowski and Baroudi (1991): "Studying information technology in organizations: Research approaches and assumptions," Information Systems Research, 2(1), March 1991, pp. 1–28.
Otto, B. (2011): "A morphology of the organisation of data governance," ECIS Proceedings.
Patton, M. Q. (2003): "Utilization-Focused Evaluation", International Handbook of Educational Evaluation, Volume 9, pp. 223–242
Pekkola, S., Niemi, E., Rossi, M., Ruskamo, M., and Salmimaa, T. (2013): "ERP research at ECIS and ICIS: A fashion wave calming down?" ECIS Proceedings.
Penrose, E. T. (1959): "The Theory of the Growth of the Firm," Oxford University Press, USA.
Pierce, E., Dismute, W. S., and Yonke, C. L. (2008): "The State of Information and Data Governance: Understanding How Organizations Govern Their Information and Data Assets," International Association for Information and Data Quality and the University of Arkansas at Little Rock.
Porter, M. (1979): "How competitive forces shape strategy," Harvard Business Review, March–April, p. 137.
Prahalad, C. K. and Hamel, G. (1990): "The core competence of the corporation," Harvard Business Review, 68(3), pp. 79–91.
Redman, T. C. (1998): "The impact of poor data quality on the typical enterprise," Communications of ACM, 41(2).
Robertson, B. J. (2007): "Organization at the leading edge: Introducing HolacracyTM," Integral Leadership Review, 7(3).
Robertson, B. J. (2006): "Holacracy: A Complete System for Agile Organizational Governance and Steering," Agile Project Management Executive Report. 7(7), Cutter Consortium.
Rorty, R. (1991): "Consequences of pragmatism: Essays, 1972–1980," Harvester Wheatsheaf, New York, NY.
Rylander, A., and Peppard, J. (2005): "What Really is a Knowledge-Intensive Firm?" Royal Institute of Technology, pp. 1–28.
Sánchez-Segura, M. I., Ruiz-Robles, A., and Medina-Dominguez, F. (2016): "Uncovering hidden process assets: A case study," Information Systems Frontiers, 18(6), pp. 1041–1049.
Sarker, S., Xiao, X., and Beaulieu, T. (2013): "Qualitative studies in information systems: A critical review and some guiding principles," MIS Quarterly, 37(4).
Shang, S. and Seddon, P. B. (2002): "Assessing and managing the benefits of enterprise systems: The business manager's perspective," Information Systems Journal (12), pp. 271–299.
Sheng, Y. and Mykytyn, P. (2002): "Information technology investment and firm performance: A perspective of data quality," Proceedings the 7th ICIQ, pp. 132–141.
Schultze (2000): "A confessional account of an ethnography about knowledge work". MIS Quarterly, 24(1), pp. 3-41.
Schricke, E., Zenker, A., and Stahlecker, T. (2012): "Knowledge-intensive (business) services in Europe," Directorate-General for Research and Innovation, European Commission, Brussels.
Schwab, K. (2017): "The Fourth Industrial Revolution," Penguin, UK.
Sein, M., Henfridsson, O., Purao, S., Rossi, M. and Lindgren, R. (2011): "Action Design Research". MIS Quarterly, 35(2).
Seiner, R. S. (2014): "Non-invasive Data Governance: The Path of Least Resistance and Greatest Success," Technics Publications.
Sieber, J. E. (2009): "Planning ethically responsible research," In L. Bickman and D. J. Rog (Eds.), "The SAGE Handbook of Applied Social Research Methods," (pp. 106–141), SAGE, Los Angeles, CA.
Sierra-Cedar (2016): "2016–2017 HR Systems Survey White Paper," (19th Annual Edition), CedarCrestone, Alpharetta, GA.
Silver, M. S., Markus, M. L., and Beath, C. M. (1995): "The information technology interaction model: A foundation for the MBA core course," MIS Quarterly, 19(3), pp. 361–390.
Simon, B. 2010: "A discussion on competency management systems from a design theory perspective," Business & Information Systems Engineering, 6.
Simon, H. A. (1996): "The Sciences of the Artificial," MIT Press.

IJMS 2025, Volume 5, Issue 1, Page 56-84

ISSN: 2676-2749
Journal Impact Factor (JIF): 7.807

Slone, J. P. (2006): "Information quality strategy: An empirical investigation of the relationship between information quality improvements and organizational outcomes," Ph.D. dissertation, Capella University.

Sousa, M. J., and González-Loureiro, M. (2016): "Employee knowledge profiles—a mixedresearch methods approach," Information Systems Frontiers, 18(6), pp. 1103–1117.

Starbuck, W. H. (1992): "Learning by knowledge-intensive firms", Journal of Management Studies, 29(6), pp. 713–740.

Straub, D. and Boudreau, C. (2004): "Quantitative, positivist research methods in information systems," AIS http://dstraub. cis. gsu. edu, 88.

Sutton, B. (2007): "The War for Talent is back," HBR Blog Network, Harvard Business Review.

Swanson, R. A. and Holton, E.F. (2009): "Foundations of Human Resource Development," (2nd Edition), Berrett-Koehler Publishers.

Sydow, J., Lindkvist, L., and DeFillippi, R. (2004): "Project-based organizations, embeddedness and repositories of knowledge," editorial.

Tallon, P., Ramirez, R., and Short, J. (2013): "The information artifact in IT governance: Toward a theory of information governance," Journal of Management Information Systems, 30(3), pp. 141–178.

Tashakkori, A. and Teddlie, C. (1998): "Mixed Methodology: Combining Qualitative and Quantitative Approaches," SAGE, Thousand Oaks, CA.

Teddlie, C. and Tashakkori, A. (2009). "Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences," SAGE, Los Angeles, CA.

Teece, D. J. (2009): "Dynamic Capabilities and Strategic Management," Oxford University Press.

Teece, D. J., Pisano, G., and Shuen, A. (1997): "Dynamic capabilities and strategic management," Strategic Management Journal, 18(7), pp. 509–533.

Thomas, G. (2006): "The DGI Data Governance Framework," The Data Governance Institute.

Turner, J. R., and Keegan, A. (2001): "Mechanisms of governance in the project-based organization: Roles of the broker and steward," European Management Journal, 19(3), pp. 254–267.

Vasconcelos, J. B., Kimble, C., and Rocha, Á. (2016): "A special issue on knowledge and competence management: Developing enterprise solutions," Information Systems Frontiers, 18(6), pp. 1035–1039.

Vasconcelos, J. B., Gouveia, F. R., Kimble, C., and Kudenko, D. (2007): "Reasoning in Corporate Memory Systems: A Case Study of Group Competencies," In J. F. Schreinemakers and T. M. V. Engers (Eds.) "15 Years of Knowledge Management," Vol. 3, Advances in Knowledge Management. Ergon, Würzburg.

Vasconcelos, J. B., Kimble, C., and Rocha, Á. (2003): "Organisational memory information systems an example of a group memory system for the management of group competencies," Journal of Universal Computer Science, 9(12), pp. 1410–1427.

Wade, M. and Hulland, J. (2004): "Review: The resource-based view and information systems research: Review, extension, and suggestions for future research," MIS Quarterly, 28(1), pp. 107–142.

Walsham, G. (2006): "Doing interpretive research," European Journal of Information Systems, 15, pp. 320–330.

Walsham, G. (1995): "Interpretive case studies in IS research: Nature and method," European Journal of Information Systems, 4, pp. 74–81.

Wang, R. Y., Lee, Y., Pipino, L., and Strong, D. (1998): "Manage your information as a product," Sloan Management Review, Summer, pp. 95–106.

Wang, Z. and Wang, N. (2012): "Knowledge sharing, innovation and firm performance," Expert Systems with Applications, 39(10), pp. 8899–8908.