SUPPLY CHAIN ORIENTATION AND PERFORMANCE OF CLASSIFIED TOURISM ENTERPRISES IN KENYA

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ABSTRACT

Supply chain diversification is major practice of expanding and diversifying a company's sources of supply, distribution channels, and market reach to reduce risks and enhance performance. This approach involves incorporating various suppliers, markets, products, and digital technologies into the supply chain to improve flexibility, reduce dependency on single sources, and create opportunities for innovation and business growth. Supply chain diversification as way of improving flexibility by minimizing risks by increasing supplier agility. Supply chain diversification is a strategic approach that involves spreading risks across various suppliers, regions, and transportation methods to enhance resilience and mitigate disruption. The study sought to examine the influence of Supply chain diversification strategies on electronic industry performance, case study of Kisii County, Kenya. The specific objectives will be to examine the influence of supplier diversification on performance of electronic industry, to determine the influence of market diversification on performance of electronic industry. The study adopted descriptive research design. Target population for this study was 380 respondents. The sample size of 195 was drawn. Research instruments was the questionnaires. Validity was done in Kisii using content and construct validity index which was tested using supervisors opinion. Reliability was achieved through Cronbach alpha. Data collected was analyzed using descriptive statistics methods. Inferential statistics was used to determine the effect on variables. Simple regression was used to test the direct effect while hierarchical linear regression was used to test the moderating role. The results were presented inform of tables, figures, percentage, frequencies, means and standard deviation. The study concludes that supply chain diversification, encompassing supplier, market, product, and Digital Procurement policies practices, plays a vital role in enhancing the performance of the electronic industry in Kisii County. Supplier diversification fosters flexibility and innovation by reducing risks and enabling access to new technologies and competitive pricing. Market diversification drives growth by expanding customer bases, opening new revenue streams, and strengthening reputations, especially when supported by employee training initiatives. The study recommends that firms prioritize market diversification, accelerate digital adoption, and optimize product accessibility and customer service to improve business performance. Additionally, while supplier diversification is beneficial, it must be carefully managed to avoid risks related to inconsistent product quality. These strategies are essential for securing long-term growth and maintaining a competitive edge in a rapidly evolving market.

INTRODUCTION

Supply chain diversification practices have improved firms in the current years. Eventually, the goal of supply chain diversification is to strike a balance between sourcing options, risk mitigation, and operational agility. This approach enables businesses to navigate challenges while optimizing procurement strategies for enhanced performance in a dynamic marketplace. Wang (2024) defines Supply chain diversification as way of improving flexibility by minimizing risks by increasing supplier agility. Working with multiple suppliers is one way to achieve it. Another way is to expand and reimagine manufacturing and distribution networks. And yet another is using redundant and multimodal logistics solutions. In traditional portfolio theory, there are three levels or steps to diversifying, capital allocation, security selection and asset allocation. Market diversification is done diversifying capital between risky and riskless investments in supply chains (Wang, 2024).

Ivanoy (2020) describes supply chain diversification is a strategic approach that involves spreading risks across various suppliers, regions, and transportation methods to enhance resilience and mitigate disruptions. Dependence on a single supplier can leave your business vulnerable to disruptions in their operations or potential price gouging. Utilizing multiple suppliers mitigates this risk by providing alternative sources in the event of disruptions. This strategy ensures you are not overly dependent on a single source, reducing the risk of disruptions due to unexpected events that might affect a particular supplier. Thus, if one supplier faces issues, such as production delays, quality problems, or even a complete shutdown, you can quickly shift to alternate suppliers and maintain the flow of essential goods. Thus, cultivating relationships with multiple suppliers for the same critical components or materials significantly enhances supply chain resilience

Diversifying the supply chain has been proposed as an important means to build this capability. However, there is insufficient empirical evidence demonstrating the merits of supply chain diversification during a crisis. Chinese manufacturing firms amidst the crisis of firms with a diversified supply base are associated with a larger supply stream (increased abnormal inventory) and increased profitability during the crisis, including both the disruption and recovery periods. In addition, firms with a diversified customer base are associated with a larger demand stream (reduced abnormal inventory) during the crisis (both disruption and recovery periods) but show increased profitability only during the recovery period. The study contributes to the literature on supply chain risk, disruption, diversification, and inventory management (Yongjia 2021).

Responding to supply chain disruption crises caused by uncertain events is now an urgent priority for firms, and therefore, they need to be able to withstand and recover from supply chain disruptions, which can severely damage a firm’s performance and are detrimental to long-term survival and growth. Therefore, to improve the ability of supply chains to withstand and recover from disruptions, increasing numbers of scholars and practitioners are addressing the risk of supply chain disruptions by building supply chain.

Supply chain diversification can improve the ability of firms to cope with supply chain disruptions and risks that can also help firms to avoid production shutdowns due to supply interruptions. A diversified supply chain base can improve the operational flexibility of firms and help firms promptly meet the needs of the market and customers. Similarly, a diverse customer base can help firms achieve higher financial performance, even if some customer needs are affected by supply chain disruptions, and can help firms sell products more effectively, thereby improving the capability to withstand supply chain disruption. On the one hand, a diversified customer base can help firms better cope with the risk of supply chain disruptions, while, on the other hand, the supply chain structure brought about by supply chain diversification is more complex, which may require firms to spend more time and energy coordinating the relationship between supply chain partners. The benefits of supplier diversification are well established for price-taking firms (Luo, X., & Ren, J. 2020.

When a disruption caused by human or environmental accident occurs in production systems, it may cause a shortage of the supply, and thus the buyers' procurement behaviors will be influenced. Supply chain comprises of a buyer and two types of suppliers: one is cheap but unreliable and the other is reliable but expensive. If there is a major disruption, the unreliable supplier may not be able to fully satisfy the buyer's order, despite the fact that it exerts additional effort to rebuild capacity; at the same time, the reliable supplier cannot fulfill extra orders from the buyer due to capacity constraints. In this way, the buyer should strategically allocate its order between the two types of suppliers by offering different contracts at the very beginning, and then the unreliable supplier chooses its optimal restoration effort according to the contract if a disruption occurs. The optimal contracts provided by the buyer under different circumstances, which aims to help managers design their contracts under disruption risks to maximize the company's profit (Luo, X., & Ren, J. 2020).

Statement of the problem

Supplier chain diversification using sourcing options, risk mitigation, and operational agility can enhance performance of electronic industry in Kenya. However, performance of electronic industry is decreasing over the years. This is due to ineffective supply chain diversification employed by firms. Yongjia (2021) finds that an increase in supplier correlation leads to more correlated buyers' outputs and a decrease in their profits. In the presence of end-market competition, dual sourcing still brings value by reducing the inefficiency caused by random yield: Namely, when the suppliers' yield processes are strongly negatively correlated, dual sourcing increases the expected market output and improves the firms' profits over sole sourcing. However, unlike a monopolist firm, a duopolist does not necessarily allocate its supplier orders to minimize output variability.

Polyviou, M., Wiedmer, R., Chae, S., Rogers, Z. S., & Mena, C. (2023) results show that higher pre-disruption supplier concentration and supplier country concentration helped buyers to mitigate the risks. Conversely, higher pre-disruption carrier diversification helped buyers mitigate the impact of supply disruptions.

Objectives of the study

The study examined the influence of Supply chain diversification practices on electronic industry performance, case study of Kisii County, Kenya

Specific objectives

i. To examine the influence of supplier diversification on performance of electronic industry
ii. To determine the influence of market diversification on performance of electronic industry

Research Questions

The following research questions guided the objectives

i. What is the influence of supplier diversification on performance of electronic industry
ii. What is the influence of market diversification on performance of electronic industry

LITERATURE REVIEW

Conceptual review

A supply chain is a system of information and resources that involves manufacturers/ producers, distributors/ middlemen, and the end customers collaborating to convert raw materials to work in progress and then to finished goods. Despite a lot of focus on forward logistics by supply chain management, the importance of reverse logistics cannot be ignored. The study focuses on investigating how supply chain management influences the performance. In the today global market, lean supply chain management (LSCM) has gain increasing attention within both academic and industrial research. However, its potential has remained largely underdeveloped in the SCM arena. Concerning the gap in the literature regarding to theory development in SCM, the possibilities of adapting some SCM theories to LSCM practices are investigated through extensive reviewing the related literature in this paper. Given a background on the definition of SCM theories, a review on LSCM definition and practices is provided. Based on the recent lean manufacturing literature, five important lean principles have been categorized to investigate the possibility of adoption with some SCM theories. As a result, SCM theories was matched with these lean principles (Polyviou, M., Wiedmer, R., Chae, S., Rogers, Z. S., & Mena, C. 2023).

Theoretical Literature

Resource-Based View (RBV) theory

Resource-Based View (RBV) theory stipulates that the designing of the supply management process should be based on the resources available to the company, transaction Cost Analysis (TCA) theory. The theory is based on the transaction costs incurred during the supplies and knowledge-Based View (KBV) theory. This theory is formulated going by the information knowledge that is available. Strategic Choice Theory (SCT) is based and dependent on various strategic theories taken by the management to ensure that they make rightful decisions on the supply chain (Luo, 2020).

The Resource-Based View (RBV) theory was initially developed by two prominent management scholars: Jay Barney and Birger Wernerfelt. Jay Barney, a professor at Ohio State University, and Birger Wernerfelt, a professor at the Massachusetts Institute of Technology (MIT), independently contributed to the development of RBV in the early 1980s. Emphasized the importance of a firm's internal resources and capabilities in achieving sustained competitive advantage

It is used to offers a valuable lens through which firms can analyze and pursue supply chain diversification strategies by focusing on internal resources, core competencies, competitive advantage, strategic decision-making, resource mobility, and sustainable competitive advantage.

Supply chain diversification strategies informed by RBV principles aim to create enduring competitive advantages that are difficult for competitors to replicate. By diversifying strategically based on internal resource strengths, firms can build resilience and adaptability in their supply chain networks over the long term.

Transaction Cost Analysis (TCA) theory

Transaction Cost Analysis (TCA) theory was primarily developed by economist Oliver E. Williamson in 1985. He argued that firms exist to minimize transaction costs, which include the costs of searching for trading partners, negotiating contracts, and enforcing agreements, among others. He further developed these ideas and formalized transaction cost analysis as a framework for understanding economic behavior and organizational design.

It is used here to offer valuable insights into the design, management, and evaluation of supply chain diversity strategies by focusing on the transaction costs associated with different governance structures, contractual arrangements, information sharing, coordination mechanisms, risk management approaches, and long-term relationships within the supply chains. Supply chain diversity strategies may involve cultivating relationships with a variety of suppliers over time. This helps firms evaluate the costs and benefits of investing in such relationships, considering factors like trust-building, adaptation to changing market conditions, and joint problem-solving.

Empirical Literature review

Supplier diversification

Yongjia Lin a , Di Fan b,* , Xuanyi Shi c , Maggie Fu (2021) studied the effects of supply chain diversification during the COVID-19 crisis. Currently, supply chain have made firms vulnerable to turbulent business environments. Diversification present tremendous difficulties for firms in managing their supply chain, difficulties are reflected by the ever-fluctuating supply and demand caused by supply chain disruptions. The emergence of the supplier diversification has been a most critical disruptor of the industry which has attracted attention to the diversifying supply chain disruption not only in the business world but also in academia. Consequently, resilience, defined in the literature as a firm’s ability to withstand a disruption

and recover its performance after a disruption, has become a vital operational priority in addition to traditional cost, quality, flexibility, and delivery considerations. Therefore, resilience actually reflects a firm's risk management capability.
LeMay, S., Helms, M. M., Kimball, B., & McMahon, D. (2017) examines supply chain management: the elusive concept and definition. The study has suggested the merits of diversification in coping with supply chain disruption risks. The suggestion follows the conventional wisdom of "don't put all your eggs in one basket". Diversification strategies have prevailed in the industry to hedge against uncertainty. Diversification increases a firm's operational flexibility, which stabilizes supply and demand by having alternative suppliers and customers when disruptive events occur. However, the literature has also emphasized the hidden costs of having a diversified supply chain. That is, supply chain complexity makes it difficult for firms to coordinate with supply chain partners in response. Therefore, it is inconclusive whether supply chain diversification can help firms build when combating a global crisis.

Le, A. N. H., Nguyen, T. T., & Cheng, J. M. S. (2021) noted that the management of supply chain risks through coordination or collaboration among the supply chain partners so as to ensure profitability and continuity. China, as the world's factory, offers a valuable platform for us to explore this critical issue. As reported by the study, the recent global economic downturn brought about by the outbreak. Thus, drawing on both supply- and customer-based diversification perspectives, this study investigates whether and how a diversifying supply chain influence firms during global pandemic crisis. This has made supply chain disrupted causing demand of goods and supply mismatch among firms.

Wang, Q., Zhou, H., & Zhao, X. (2024) examined the role of supply chain diversification in mitigating the negative effects of supply chain disruptions in COVID-19. This study examines the firm-level financial consequences caused by supply chain disruptions during COVID-19 and explores how firms' supply chain diversification strategies, including diversified suppliers, customers and products, moderate the negative effect on firm performance. Design/methodology/approach is based on data drawn from 222 publicly traded firms in China, the authors use event study methodology to estimate the effects of supply chain disruptions on the financial performance of affected firms. Regression analyses are conducted to examine the moderating effects of supply chain diversification. Firms affected by supply chain disruptions during COVID-19 experienced a significant decline in shareholder value in two weeks and a subsequent decrease in operating performance in one year. Diversified suppliers, customers and products act as shock absorbers to alleviate the negative effects. Further regression shows a substitution effect between customer and product diversification. Cross-industry comparisons reveal that service firms experienced more loss than manufacturing firms. Customer diversification mitigates the adverse effects of supply chain disruptions for both manufacturing and service firms. Supplier diversification exerts a noteworthy role in manufacturing firms, while product diversification is beneficial for service firms.

Chod, J., Trichakis, N., & Tsoukalas, G. (2019) found that supplier diversification under buyer risk is when should a firm diversify its supply base. Most extant theories attribute supplier

diversification to supplier risk. Herein, they develop a new theory that attributes supplier diversification to buyer risk. When suppliers are subject to the risk of buyer default, buyers may take costly action to signal creditworthiness so as to obtain more favorable terms. But once signaling costs are sunk, buyers sourcing from a single supplier become vulnerable to future holdup. Although ex ante supply base diversification can be effective at alleviating the holdup problem, they show that it comes at the expense of higher up-front signaling costs. They resolve the ensuing trade-off and show that diversification emerges as the preferred strategy in equilibrium. Their theory can help explain sourcing strategies when risk in a trade relationship originates from the sourcing firm, for example, a small-to-medium enterprise or a start-up; a setting that has eluded existing theories so far.

Chelimo and Ndeto (2023) examined influence of supplier diversity on organizational performance of state corporations in Kenya. This study sought to establish the influence of supplier diversity on organizational performance of state corporations in Kenya. The specific objectives of the study included; to assess the influence of adoption of information technology on organizational performance of State Corporations in Kenya, and to determine the influence of strategic supplier partnership on organizational performance of State Corporations in Kenya. This study used a descriptive research design. The unit of analysis in this study was 187 state corporations in Kenya. On the other hand, the unit of observation of this study was 935 managerial employees working in the state corporations in Nairobi County. The study used stratified random sampling to select a sample of 272 respondents from the target population. Primary data was used in this study. Questionnaire was used to collect primary data. Quantitative and qualitative data was generated from the closed-ended and open-ended questions, respectively. Descriptive statistics such as frequency distribution, mean (measure of dispersion), standard deviation, and percentages were used. Inferential data analysis was conducted by use of Pearson correlation coefficient, and multiple regression analysis. The study results were presented through use of tables and figures. The study found that adoption of information technology positively and significantly influences organizational performance of State Corporations in Kenya. Also, strategic supplier partnership positively and significantly influences organizational performance of State Corporations in Kenya. The study recommended state corporations to improve its technology adoption in all supply related areas in the organization. They also need to ensure that the adopted technology is well implemented and sustainable. The state corporations should also increase their financial allocation towards IT investments. There is also need for effective supplier relationship management solution which contains essential components such as ranking, rating and optimization that allow a firm to reduce its supply base and overall costs.

Market diversification

Chen, C. M. (2017) explored supply chain strategies and carbon intensity: The roles of process leanness, diversification strategy, and outsourcing. Using firm-level data from the U.S. manufacturing industry, this paper examines the relationship among inventory leanness, structural strategies for supply chains, and the carbon intensities of a firm and its suppliers. They formulate hypotheses on and empirically test whether this internal characteristic (inventory leanness) and these two structural strategies can influence the intensities of firm-

level and supply chain environmental impacts. It examined inventory leanness because it not only reflects a manufacturer's operational efficiency, but also markedly influences manufacturers' financial performance. It also focus on two closely related structural strategies (outsourcing and product diversification) that can influence the scope and ownership of the supply chain process, resulting in changes in emission allocation and, more importantly, how resources are utilized and shared in a firm. Based on multi-year carbon inventory data from U.S. manufacturing firms, they find that manufacturers with greater inventory leanness and a parsimonious process structure (i.e., a high level of outsourcing but low product diversification) tend to attain lower firm-level and supply chain carbon intensities.

Narasimhan, R., & Kim, S. W. (2002) examined the effect of supply chain integration on the relationship between diversification and performance: evidence from Japanese and Korean firms. The study showed that Supply chain strategies and practices depend on not only the nature of the business, the competitive environment, and technological intensity of the product, but also on product and market characteristics. Consequently, supply chain integration (SCI) strategies should be evaluated in the light of a company's market and product strategies. This paper examines the effect of SCI on the relationship between diversification and a firm's competitive performance. The results of the study can be useful in integrating supply chain strategy into market and product diversification (PD) strategy. By comparing the main and interaction effects of SCI and diversification on performance, the paper shows that SCI strategy modifies the relationship between diversification and performance. Additionally, it is argued that coordinated use of SCI and diversification strategies has a significant effect on firm performance

Product diversification

Syokau, M. F. (2021). Effects of product diversification strategy on supply chain performance of Delmonte Kenya. The purpose of the study was to establish the effects of product diversification on supply chain performance of Delmonte Kenya. The research design employed in this study was descriptive research design. The target population for this study was 44 management employees of Delmonte. The study adopted census approach since the population of the study was small. Therefore, the total number of respondents to be selected was 44. Primary data was collected using semi structured questionnaires. The findings revealed that there was a significant association between product diversification and supply chain performance of Delmonte Kenya. The findings were also supported by the statements in the questionnaire which majority of the respondents agreed. This was also supported by the regression results which revealed that product diversification and supply chain performance were positively and significantly related. Based on the research findings, the study recommends that managerial departments of the company, particularly the IT department should consider the adoption of new technology and employment of skillful and competent personnel who will ensure constant and updated market information flow in to the company for market decision making. The study also recommended that the management should consider the aspect of job satisfaction of the staff.

Tsang, Su, W., &, E. W. (2015) examined the product diversification and financial performance: The moderating role of secondary stakeholders. The challenges firms face increase with their product diversification levels because different product markets possess different sociopolitical issues. It argue that secondary stakeholders, as represented by various nonprofit or non-governmental organizations, serve as agents mitigating the external constraints embedded within sociopolitical environments. Firms should therefore maintain relationships with different secondary-stakeholder scopes commensurate with their product diversification levels in order to enhance financial performance. Analyzing a sample of U.S. Fortune 500 firms during the period from 1996 to 2003, it found that secondary stakeholders play a positive moderating role in the relationship between product diversification and financial performance. Furthermore, this moderating effect was stronger in the case of unrelated diversification than in related diversification.

Delios, A., & Beamish, P. W. (1999) studied Geographic scope, product diversification, and the corporate performance of Japanese firms. The study extends research on the geographic scope, product diversification, and performance relationship by exploring both the antecedents and consequences of geographic scope. In so doing, it addresses a fundamental criticism of the geographic scope–performance relationship; namely, that the observed positive relationship between geographic scope and performance is spurious because it is the possession of proprietary assets that is the foundation of superior performance, not expansion into international markets per se. We tested the research model with data on the corporate performance of 399 Japanese manufacturing firms. In the partial least squares analyses used to examine the study's six main hypotheses, we demonstrate that geographic scope was positively associated with firm profitability, even when the competing effect of proprietary assets on firm performance was considered. Further, we find that performance was not related to the extent of product diversification, although investment levels in rent-generating, proprietary assets were related to the extent of product diversification. Co

Mayer, M. C., Stadler, C., & Hautz, J. (2015). The relationship between product and international diversification: The role of experience. The study establishes prior diversification experience as a key determinant of the relationship between growth of product and international diversification. Prior diversification experience allows firms to overcome short-run constraints on simultaneous diversification growth imposed by the difficulty to transfer tacit knowledge, ambiguous competencies, and limited absorptive capacity. Studying U.S. and European firms, we find a positive relationship between growth in product and international scope for firms with high and a negative one for those with little prior diversification experience. Further, we find that product diversification experience has greater impact than international diversification experience

Oh, C. H., Sohl, T., & Rugman, A. M. (2015) explored regional and product diversification and the performance of retail multinationals. The study focuses on experiential learning benefits and managerial complexity to investigate whether and how firms in the retail sector may benefit by expanding their activities within and across regional boundaries. Using panel data of 65 large European retailers from 19 countries for the period between 1997 and 2010,

we find that intra-regional diversification has an inverted S-curve relationship and inter-regional diversification has an S-curve relationship with firm performance. Moreover, the results show that product diversification has a negative moderating effect on the relationship between inter-regional diversification and firm performance. Overall, these results add support in the services sector for the three-stage paradigm of international expansion and firm performance. Despite the importance of geographic expansion in the services sector, few studies have analyzed the relationships between regional diversification, product diversification and performance for services firms.

Conceptual Framework

These conceptual frameworks provide a structured approach for organizations to implement and manage supplier diversification, market diversification, product diversification, and Digital Procurement policies effectively, thereby enhancing resilience, and competitiveness.

Supplier diversification

Conway, D. M. (2012) defines supplier diversification involves reducing dependency on a single supplier by sourcing goods or services from multiple suppliers. The conceptual framework for supplier diversification typically includes: By diversifying suppliers, organizations can mitigate the risk of supply chain disruptions caused by factors such as supplier bankruptcy, natural disasters, geopolitical issues, or quality problems. Working with multiple suppliers can lead to increased competition, which may result in better pricing, quality, and innovation. It also gives organizations leverage during negotiations. Diversifying suppliers allows organizations to tap into a broader range of expertise, technologies, and ideas, fostering innovation and adaptability. Effective supplier diversification requires building strong relationships with multiple suppliers, based on trust, communication, and mutual benefit. While diversification can incur additional administrative costs, it can also help manage overall costs by avoiding over-reliance on a single source, reducing price volatility, and enhancing negotiation power. Supplier diversification is known by Risk Mitigation, Competitive Advantage, Flexibility and Innovation, Relationship Management: and Cost Management

Market diversification

Market diversification involves expanding into new markets, either geographically or demographically, to reduce reliance on a single market segment. The conceptual framework for market diversification typically includes: market analysis such as Organizations analyze potential new markets based on factors such as market size, growth potential, competition, regulatory environment, and cultural considerations. Risk management in diversifying into multiple markets reduces the vulnerability to economic downturns, political instability, or other market-specific risks. Growth of business; Market diversification offers opportunities for revenue growth and market expansion, tapping into new customer segments, demographics, or geographical regions. Brand Building and Reputation; successfully entering new markets enhances brand visibility and reputation, providing a platform for long-term growth and sustainability. Adaptability and Innovation in diversifying into different markets requires adaptability and innovation to cater to diverse customer needs, preferences, and cultural nuances.

A schematic presentation of ideas which a researcher puts into operation to realize predetermined goals and also explains the interconnections between the independent, extraneous and dependent variables is known as a conceptual framework (Oso and Onen, 2008). It helps one to examine the meaning of concepts, how they are interrelated, and where there is ambiguity (Mugenda and Mugenda, 2003).

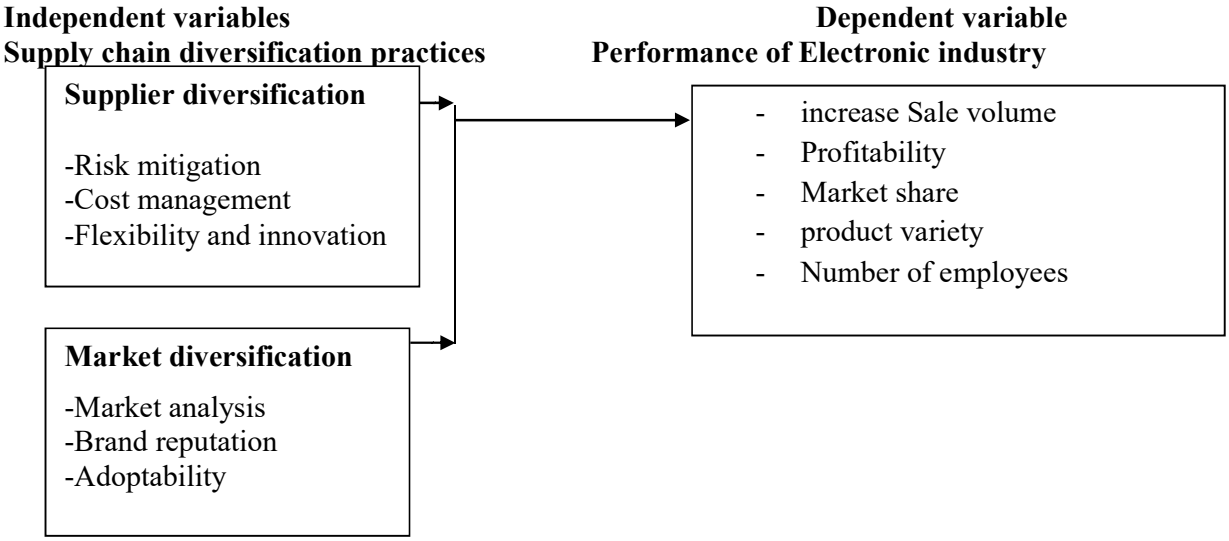

Figure 2.1 Conceptual Framework
Source: (Researcher 2025)

The conceptual framework in this study consists of three independent variables.

RESEARCH METHODOLOGY

Research design is acknowledged concept in conducting a research project and aids researchers in laying out research related questions, research procedures, implementation techniques, gathering and scrutinizing data (Kothari, 2004).

The target population comprised of 380 respondents who are working in electronic enterprises in Kisii County. According to the data accessed from the Kisii County there are 380 respondents. The unit of analysis includes all employees working in the electronic industries. According to Israel (2013), sample size is a calculation depends on the size of the population a researcher is interested in, use of sample sizes related to a researchers study, use of sample size available tables and mathematical formulas. In this study, Yamane's 1967 formula was used because of the standards it has for choice of sample size which include levels of precision and risk levels a researcher is prepared to take given by the formula. According to Yamane (1967) a 95% confidence level, error of precision (e)at 0.05 and N as the population was able to give a desired sample size of n depicts by the following formula$n = \frac{N}{1+N(e^2)}$, hence giving a sample calculation as follows: $n = \frac{N}{1+N(e^2)}$, $n = \frac{380}{1+380(0.05^2)}$

$n = \frac{380}{1+380(0.0025)}, n = \frac{380}{1.95} n = 195$ respondents,

The sample size of 195 respondents comprises of employees according to the formula. Questionnaires used to collect primary data. The questionnaires was given directly to the sample respondents. Kothari (2004) prefers the use of questionnaires in a study because they cover a large area and use little time.

RESULTS AND DISCUSIONS

This presents the data analysis, interpretation, and discussion of the findings based on the objectives of the study. The study sought to examine the influence of supply chain diversification practices on the performance of the electronic industry in Kisii County, Kenya. The specific objectives were: to examine the influence of supplier diversification on the performance of the electronic industry; to determine the influence of market diversification on the performance of the electronic industry. Data was collected, analyzed using descriptive and inferential statistics, and presented in tables.

Response rate

The study issued 195 questions and only returned 131 questionnaires. The study targeted a total of 195 respondents from the electronic industry sector in Kisii County. Out of the 195 questionnaires distributed, 131 were duly completed and returned, representing a response rate of **67.18%.** According to Mugenda and Mugenda (2003), a response rate of 50% is adequate, 60% is good, and 70% and above is considered very good for analysis and reporting. Therefore, the achieved response rate of 67.18% was considered sufficient and reliable for the purposes of data analysis and making generalizations about the target population.

Biographic characteristics

This section presents the demographic information of the respondents, which included gender, among other factors. Understanding the biographic characteristics of respondents helps provide context for interpreting the study findings.

Gender for respondents

The study sought to determine the gender distribution of the respondents to assess the level of gender representation in the electronic industry within Kisii County. The findings are presented in Table 4.1.

Table 4.1 Gender of respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	54	41.2	41.2	41.2
	Female	77	58.8	58.8	100.0
	Total	131	100.0	100.0	

As shown in Table 4.1, the majority of respondents were female, accounting for 58.8% of the total sample, while male respondents constituted 41.2%. This indicates that female employees were more represented in the electronic industry within Kisii County at the time of the study. The relatively balanced distribution between genders ensures that the study's findings reflect perspectives from both male and female participants.

Academic qualifications of the respondents

The study sought to determine the academic qualifications of the respondents to assess their educational background, which is essential in understanding their contribution to supply chain diversification practices. The findings are summarized in Table 4.2.

Table 4.2 Academic qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Certificate	12	9.2	9.2	9.2
	Diploma	95	72.5	72.5	81.7
	Undergraduate degree	18	13.7	13.7	95.4
	Postgraduat	6	4.6	4.6	100.0
	Total	131	100.0	100.0	

The results presented in Table 4.2 show that the majority of the respondents (72.5%) held diploma qualifications. Respondents with undergraduate degrees accounted for 13.7%, while 9.2% had certificate qualifications. Only 4.6% of the respondents possessed postgraduate qualifications. This distribution suggests that the electronic industry workforce in Kisii County is largely comprised of diploma holders, indicating a moderate to high level of technical education among employees, which is important for implementing supply chain diversification practices.

Descriptive statistics

This section presents the descriptive analysis of the study variables based on the responses collected. The analysis focuses on measures such as minimum, maximum, mean, and standard deviation to provide insights into the participants' views.

Supplier diversification

The first objective of the study was to examine the influence of supplier diversification on the performance of the electronic industry in Kisii County. The respondents were asked to indicate their level of agreement with various statements related to supplier diversification. The results are presented in Table 4.3.

Table 4.3 Supplier diversification

	N	Minimum	Maximum	Mean	Std. Deviation
Risk mitigation for an enterprise enable to start a business	131	1.00	5.00	4.4046	1.51799
Applying new process improves cost management.	131	1.00	5.00	3.7863	1.30683
New pricing improve customer survey	131	1.00	5.00	2.6031	1.29899

Flexibility and innovation will be relevant about electronic supply chain.	131	1.00	5.00	4.4656	1.47438
Valid N (listwise)	131				

The findings in Table 4.3 show that respondents strongly agreed that flexibility and innovation are relevant in the electronic supply chain (mean = 4.4656) and that risk mitigation through supplier diversification enables business startups (mean = 4.4046). Respondents also agreed, though to a slightly lesser extent, that applying new processes improves cost management (mean = 3.7863). However, the lowest mean score was observed in the statement that new pricing improves customer survey outcomes (mean = 2.6031), suggesting that pricing strategies may have a less direct impact on perceived customer satisfaction. Overall, the high mean scores imply that supplier diversification practices play a critical role in enhancing the performance of the electronic industry in Kisii County.

Market diversification on performance of electronic industry

The second objective of the study was to determine the influence of market diversification on the performance of the electronic industry in Kisii County. Respondents were asked to indicate their level of agreement with various statements related to market diversification practices. The findings are presented in Table 4.4.

Table 4.4 market diversification

	N	Minimum	Maximum	Mean	Std. Deviation
Market analysis training improves business	131	1.00	5.00	3.8855	1.29876
Brand reputation enhances my experience in the enterprise	131	1.00	5.00	3.6641	1.24413
Continuous development provides effective supply.	131	1.00	5.00	3.3359	1.29265
Enterprises owners participate in seminars to get skills	131	1.00	5.00	3.5191	1.46419
Business training is reliable	131	1.00	5.00	3.7176	1.16536
Enterprise intends to participate in a business seminar soon for supply chain innovation	131	1.00	5.00	4.3817	1.11257
Valid N (listwise)	131				

The results from Table 4.4 show that the statement “Enterprise intends to participate in a business seminar soon for supply chain innovation” recorded the highest mean score (mean =

4.3817), indicating strong agreement among respondents on the importance of continuous skill development through seminars. Similarly, respondents agreed that market analysis training improves business (mean = 3.8855) and that business training is reliable (mean = 3.7176). Other aspects like brand reputation (mean = 3.6641) and participation in skill development seminars (mean = 3.5191) were also positively rated. Continuous development for effective supply scored moderately (mean = 3.3359). Overall, the results suggest that market diversification initiatives, such as training, reputation building, and continuous development, positively influence the performance of the electronic industry in Kisii County.

The study also sought to assess the overall performance of the electronic industry as influenced by supply chain diversification practices. Respondents were asked to evaluate various aspects related to performance. The findings are presented in Table 4.5.

Table 4.5 Performance of electronic industry

	N	Minimum	Maximum	Mean	Std. Deviation
The enterprise sale volume has grown steadily	131	1.00	5.00	4	1.15081
The enterprise acquires additional assets within a year forsmooth operations.	131	1.00	5.00	4.1756	1.16011
Industries have employed additional workers to help run my business and its subsidiary outlets in the last one year.	131	1.00	5.00	3.2672	1.22049
Number of products procured enhances performance	131	1.00	5.00	2.3130	1.15081
Quality of products has contributed to performance	131	1.00	5.00	4.1756	1.16011
Services deliveries have improved performance.	131	1.00	5.00	3.2672	1.22049
Valid N (listwise)	131				

The results in Table 4.5 indicate that the highest mean scores were recorded for "The enterprise acquires additional assets within a year for smooth operations" and "Quality of products has contributed to performance," both at a mean of 4.1756. This suggests that asset acquisition and product quality are viewed as major contributors to enhanced performance. "The enterprise sale volume has grown steadily" also scored highly (mean = 4.0000), indicating positive business growth. However, "Number of products procured enhances performance" had the lowest mean (mean = 2.3130), implying that simply increasing the quantity of products does not necessarily lead to better performance. Overall, the findings reveal that operational growth, asset acquisition, product quality, and improved service delivery are key indicators of performance improvement in the electronic industry in Kisii County.

Inferential Statistics

The study sought to examine the influence of supply chain diversification practices on the performance of the electronic industry in Kisii County. Pearson correlation analysis was

conducted to determine the strength and direction of the relationship between supply diversification practices, market diversification, product diversification, Digital Procurement policies, and the performance of the electronic industry. The results are presented in Table 4.6.

Table 4.6 Correlation matrix

		Supply diversification practice	Market diversification practice	Performance
Supply diversification practice	Pearson Correlation	1	.936**	.892**
	Sig. (2-tailed)		.000	.000
	N	131	131	131
Market diversification	Pearson Correlation	.936**	1	.953**
	Sig. (2-tailed)	.000		.000
	N	131	131	131
Performance	Pearson Correlation	.892**	.953**	1
	Sig. (2-tailed)	.000	.000	
	N	131	131	131

The findings revealed that supply diversification practice had a strong positive correlation with performance ($r = 0.892$, $p < 0.01$), suggesting that diversifying supply sources significantly enhances the performance of electronic enterprises. Similarly, market diversification was found to have a very strong positive correlation with performance ($r = 0.953$, $p < 0.01$), implying that entering new markets and expanding customer bases contributes greatly to business success.
The model summary results indicated that the four independent variables; supply diversification practice, market diversification had a very strong relationship with the performance of the electronic industry, as shown by a correlation coefficient (R) of 0.973.

The R Square value was 0.946, implying that 94.6% of the variation in the performance of electronic industries in Kisii County could be explained by the combined effect of supply diversification practice, market diversification. The adjusted R Square was slightly lower at 0.945, confirming that the model was robust and provided a reliable fit even after adjusting for the number of predictors. The standard error of the estimate was 0.24073, indicating a relatively low deviation of observed values from the predicted values. These results suggest that supply chain diversification practices are critical predictors of the performance of electronic industries in Kisii.

Table 4.7 model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.973[a]	.946	.945	.24073

a. Predictors: (Constant), Market Diversification, Supply diversification Practice

To determine whether the independent variables; supply diversification practice, market diversification significantly predicted the performance of the electronic industry in Kisii

County, an Analysis of Variance (ANOVA) was conducted. The ANOVA test evaluates the overall significance of the regression model by examining whether the model explains a substantial portion of the variance in the dependent variable (performance). The results of the ANOVA are presented in Table 4.8.

Table 4.8 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	128.882	4	32.220	556.013	.000[b]
	Residual	7.302	126	.058		
	Total	136.183	130			

a. Dependent Variable: PERFORMANCE

b. Predictors: (Constant), Digital Procurement policies, market diversification, product diversification, supply diversification Practice

The ANOVA results indicated that the regression model was statistically significant in explaining the relationship between supply chain diversification practices and the performance of the electronic industry in Kisii County. The regression sum of squares was 128.882 with 4 degrees of freedom, while the residual sum of squares was 7.302 with 126 degrees of freedom, making the total sum of squares 136.183. The F-statistic value was 556.013 with a significance level (p-value) of 0.000, which is less than 0.05. This implies that the model was a good fit for the data and that supply diversification practice, market diversification collectively had a statistically significant influence on the performance of electronic industries in Kisii County.

Table 4. 9 Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.162	.090		1.803	.074
	Supply diversification practice	-.753	.188	-.810	-4.005	.000
	Market diversification	.967	.063	1.007	15.431	.000

a. Dependent Variable: PERFORMANCE

Simple regression

$Y = .162 - .753\ X_1$…… …. Supplier diversification

$Y = .162 + .967X_2$ …… …. Market diversification

Multiple regression established as shown showing z-Moderator

$Y = .162 - .753\ X_1 + + .967X2$ ……

The regression analysis in Table 4.15 reveals insightful relationships between various supply chain diversification practices and the performance of the electronic industry in Kisii County. The constant term, though positive (B = 0.162), is not statistically significant (p = 0.074), suggesting that when all independent variables are zero, the performance score does not differ significantly from zero. Among the independent variables, supply diversification practice (B = -0.753, p = 0.000) has a negative and statistically significant impact on performance. This suggests that increasing supply diversification, in this case, leads to a decrease in performance,

which contradicts the general expectation that supply diversification reduces risks and enhances operational flexibility. Previous studies, such as Yang et al. (2020), have highlighted the positive effects of supply diversification in terms of risk mitigation and increased flexibility. However, in Kisii County, the complexity and challenges of managing a diverse supplier base might have led to inefficiencies, which could explain the negative result.

In contrast, market diversification (B = 0.967, p = 0.000) shows a strong positive and statistically significant effect on performance. This result aligns with studies like Kim et al. (2022), which argue that market diversification helps businesses grow by accessing new customer segments and reducing dependency on any single market. By expanding into new markets, firms in Kisii County seem to enhance their revenue streams, which translates to better performance.

CONCLUSIONS AND RECOMMENDATION

The study concludes that supply chain diversification, through practices like supplier, market on performance. The study concludes that supply chain diversification, encompassing practices such as supplier diversification, market diversification, plays an essential role in enhancing the performance of the electronic industry in Kisii County. Each of these practices contributes uniquely to improving efficiency, fostering innovation, and promoting business growth, with varying degrees of impact across different areas.

Supplier diversification, for example, was found to be a key driver of flexibility and innovation within the industry. By engaging with multiple suppliers, electronic industry players can reduce the risk of supply chain disruptions, improve access to a wider range of materials and products, and foster greater competition among suppliers, which can lead to more favorable pricing and terms. Moreover, the variety of suppliers encourages innovation, as firms gain access to new technologies, ideas, and approaches to problem-solving. This diversification practice ensures that businesses are not overly dependent on a single supplier, allowing them to adapt more quickly to market changes and technological advancements.

Market diversification emerged as a critical factor in driving business growth. Firms in Kisii County that diversified into new markets whether geographically or demographically saw substantial benefits in terms of expanding their customer base and enhancing their reputation. Market diversification not only opens new revenue streams but also enables businesses to tap into underserved or niche segments. The study found that this process was particularly beneficial when coupled with efforts to enhance the skills and knowledge of the workforce through training programs. Business training initiatives equip employees with the expertise to identify and pursue new market opportunities effectively, thereby boosting organizational competitiveness. Additionally, the development of a strong market reputation through positive customer experiences and brand recognition contributed significantly to business success. This reputation becomes a valuable asset in a competitive industry, reinforcing customer loyalty and encouraging repeat business.

Based on the findings, the study strongly recommends that electronic industry players in Kisii County not only continue but also strategically expand their supply chain diversification

efforts. As the study revealed, diversification in supply chain practices is directly linked to improved business performance, so it is crucial for firms to adopt a proactive approach toward enhancing these practices.

Firstly, market diversification stands out as a vital avenue for growth. Firms in Kisii County should prioritize market diversification initiatives by investing significantly in business training and encouraging active participation in skill development seminars and industry conferences. The study highlighted that training and education in areas such as market analysis, strategic marketing, and customer relationship management are key factors that lead to greater business success. These initiatives will provide the workforce with valuable skills that directly contribute to improved decision-making and better market adaptability. Moreover, by increasing their knowledge base, firms can foster innovative solutions to tap into new markets, thus boosting their competitiveness and overall performance.

Market diversification allows companies to better understand consumer needs and preferences, develop tailored products, and effectively penetrate new geographical or demographic markets, ensuring sustained growth and risk reduction.

Future studies could explore the long-term effects of supply chain diversification on performance, considering how changes in the external business environment, such as economic downturns or technological disruptions, may influence the effectiveness of these strategies. Additionally, more research could be conducted to examine the role of external factors, such as government policies and industry regulations, in shaping the success of supply chain diversification practices.

A deeper dive into specific sectors within the electronic industry, such as manufacturing or retail, could also provide more granular insights into how diversification impacts different business models. Finally, qualitative studies could complement the findings by exploring the personal experiences and perspectives of industry players regarding the challenges and opportunities associated with implementing supply chain diversification practices.

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