

## STRATEGIC INTELLIGENCE CAPABILITIES AND FIRM PERFORMANCE IN LOGISTICS COMPANIES IN KENYA

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### ABSTRACT

*The purpose of this research was to examine the effect of strategic intelligence capability on firm performance with organizational culture as moderator variable in logistics companies in Kenya. Specifically, the research sought to examine the effect of strategic intelligence capability on firm performance in logistics companies in Kenya. Additionally, the research examined the moderating effect of organizational culture on the relationship between strategic intelligence capability and firm performance in logistics companies in Kenya. Drawing on the resource-based theory, dynamic capability theory and knowledge-based view theory, the research utilized a positivist research philosophy and a non-experimental research methodology. The research utilized a correlational cross-sectional survey design for testing noncausal relationships among variables. Simple random sampling technique was used to select a sample size of 272 logistics companies from a target population of 849 logistics companies in Kenya. A cross-sectional survey-based approach was used to collect primary data utilizing a self-administered structured questionnaire. With the help of 3 research assistants, the researcher utilized the drop and pick method to hand deliver the survey questionnaire to the chief executive officers of the logistics companies in Kenya. The collected data was processed and entered into the statistical package for social sciences (SPSS) version 26 to create a data sheet to be used for analysis. The descriptive statistics and inferential statistics were used for data analysis. The Pearson's correlation results showed that strategic intelligence capability had a positive and significant relationship with firm performance. The simple linear regression results showed that strategic intelligence capability had a positive and significant effect on firm performance. The hierarchical multiple regression results indicated that organizational culture had significant moderating effect on the relationship between strategic intelligence capability and firm performance in logistics companies in Kenya. Managers and policy makers should to focus on strengthening strategic intelligence capability to foster the performance of logistics companies. Future research could examine the effect of strategic intelligence capability on firm performance in other sectors or in other regions.*

**Key words:** Firm Performance, Organizational Culture, Strategic Intelligence Capability, Kenya

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## INTRODUCTION

The logistics industry is developing rapidly at the global level. The growing demand for express delivery services is a key trend in the logistics delivery market (Martin, Hemmelmayr & Wakolbinger, 2021). The global logistics delivery market is expected to grow at a compound annual growth rate of 8.5% from 2022 to 2027 (Melton, 2022). It is expected to reach \$622.69 billion in revenue by 2029 (Research, 2023; Yaiprasert & Hidayanto, 2024). Profit maximization is crucial for long-term success in the competitive logistics business industry (Yaiprasert & Hidayanto, 2024). However, the logistics delivery market is highly competitive, and the key players are constantly innovating to stay ahead of the competition (Kulkarni, Dahan, & Montreuil, 2022). The logistics business is a data-intensive industry with vast information, including route details, customer demand patterns, and fuel consumption metrics (Hasib *et al.*, 2023).

In the dynamic and cost-sensitive logistics industry, efficient cost management is essential for maintaining profitability and competitive advantage (Yaiprasert & Hidayanto, 2024). The growing global awareness of sustainability and the recognition of interconnectedness across the world have elevated the significance of factors such as the logistics performance index, eco strategy, and sustainable performance within the logistics sector (Gunduz, Naji, & Maki, 2024). However, African countries experience lowest average logistics performance index score relative to its trading partner regions, particularly in terms of quality of trade- and transport-related infrastructures, customs, and border clearance, and competency and quality of logistics services (Ulkhag, 2024).

An efficient logistics service is vital to world trade. The growth of consumer demand for logistics services and their high quality provokes an increase in freight turnover around the world, allowing logistics processes to improve (Binda & Bolibruckh, 2022). The development of logistics plays a serious integrating role in the modern economy, expanding

the transport capabilities of regions, reducing costs, increasing the speed, safety, quality and efficiency of transport and logistics services and creating conditions for increasing the added value of produced and transported goods and services, which, ultimately, contributes to the growth of global economic efficiency (Barykin *et al.*, 2021). The developments of the countries in the logistics sector make them indispensable in world trade (Gürler, Özçalıcı, & Pamucar, 2024). However, the logistics delivery business is a complex and challenging industry (Ouyang, Leung, & Huang, 2022).

The logistics firms are among the companies that have embraced supply chain performance and have made a lot of progress in terms of service delivery (Chao, 2023). However, the customers increasingly demand faster delivery times, which drives the demand for express delivery services (Nogueira, de Assis Rangel, Croce, & Peixoto, 2022). As more and more people shop online, the demand for intelligent logistics delivery services is increasing (Yaiprasert & Hidayanto, 2024). Nevertheless, firms in the logistics industry face several issues and problems, including lost or damaged logistics, late deliveries, high costs, competition, regulations, and technology (Zhang, Zhou, Li, & Gong, 2023). The challenges can make it difficult for businesses to operate and stay competitive. However, by understanding the challenges, companies can make informed decisions about managing their businesses and succeeding (Tavakoli *et al.*, 2022).

The highly evolving economic environment requires from logistics companies' fast response and agile solutions (Kitzmann, Strimovskaya, & Serova, 2023). With regard to management, strategic intelligence performs the function of detecting, identifying, and solving problems that go beyond the past experience, and which the organization is going to face in the future (Gitelman, Kozhevnikov, & Chebotareva, 2021). Strategic intelligence is a decision-making tool for the management of companies and organizations (Hamour *et al.*, 2023).

The strategic intelligence is one of the most important and latest systems that guarantee institutions' ability to maintain their position in a market characterized by change and intense competition (Kaddour, 2021).

Strategic intelligence provides an accurate estimate of the business's value and help distinguish it from competitors that use comparable systems (Zarafili & Zarafili, 2023). Existent literature posits that strategic intelligence helps the organization to keep abreast with stiff competition in the market (Blandina, Stephine, & Samuel, 2021). Subsequently, strategic intelligence is a fundamentally new management mechanism in organizations that provides information and analytical support for making anticipatory decisions and the company's preparedness for unpredictable challenges of the future (Kitagawa & Vidmar, 2023). However, while the concept of strategic intelligence has attracted immense interest from researchers in the field of strategic management, the findings regarding the effect of strategic intelligence on firm performance have been inconsistent (Agha *et al.*, 2021).

### **Statement of the Problem**

The government of Kenya views logistics industry as the promoters of economic growth and development toward the middle-level economy, as envisioned in the development blueprint of Vision 2030 (Kamau, 2022). However, the logistics service industry has in the recent past faced numerous challenges (Nombi, 2022). The effectiveness and efficiency of the logistics services in Kenya has been an issue that all sub-sectors of the economy continue to grapple with (Kunambi & Zheng, 2024). The performance of the logistics industry has been unstable with many logistics firms shutting down their operations, which threatens the sector's contribution to the country's gross domestic product and employment rate (Ngesa & Eric, 2021). The performance in logistics firms is critical if the logistics sector has to make meaningful contribution to the gross domestic product and to the realization of the country Vision 2030. Nevertheless, only 35%

of logistics firms cut above-average performance, while 65% of the logistics firms in Kenya portray abysmal performance (Mugambi & Machoka, 2023).

The logistics firms are among the companies that have embraced supply chain performance and have made a lot of progress in terms of service delivery (Chao, 2023). However, firms in the logistics industry face several issues and problems, including lost or damaged logistics, late deliveries, high costs, competition, regulations, and technology (Zhang, Zhou, Li, & Gong, 2023). The challenges can make it difficult for businesses to operate and stay competitive. Nevertheless, by understanding the challenges, companies can make informed decisions about managing their businesses and succeeding (Tavakoli *et al.*, 2022). The highly evolving economic environment requires from logistics companies' fast response and agile solutions (Kitzmann *et al.*, 2023). With regard to management, strategic intelligence performs the function of detecting, identifying, and solving problems that go beyond the past experience, and which the organization is going to face in the future (Gitelman *et al.*, 2021). However, while the concept of strategic intelligence has attracted immense interest from researchers in the field of strategic management, the findings regarding the effect of strategic intelligence on firm performance have been inconsistent (Agha *et al.*, 2021). The general business problem is that without strategies for developing plans based on strategic intelligence, logistics leaders may fail to implement organizational roadmaps, resulting in deteriorated firm performance. The specific business problem is that some logistics leaders lack strategies to develop plans based on strategic intelligence for improving firm performance.

### **Research Objectives**

The general objective of this study was to examine the effect of strategic intelligence capability on firm performance with organizational culture as a moderator in logistics companies in Kenya. The specific objectives;

- To determine the effect of strategic intelligence capability on firm performance in logistics companies in Kenya.
- To establish the moderating effect of organizational culture on the relationship between strategic intelligence capability and firm performance in logistics companies in Kenya.

### Research Hypotheses

This study tested the following null hypotheses:

- H<sub>0</sub>1: Strategic intelligence capability has no significant effect on firm performance in logistics companies in Kenya.
- H<sub>0</sub>2: Organizational culture has no significant moderating effect on the relationship between strategic intelligence capability and firm performance in logistics companies in Kenya.

## LITERATURE REVIEW

### Theoretical Framework

Theoretical framework is the lens through which the researcher uses to connect the literature with the study results and methodology (Bingham, Mitchell, & Carter, 2024). The theoretical framework is anchored on the resource-based view theory, dynamic capabilities theory and dynamic managerial capabilities theory.

### Resource-Based View Theory

The resource-based view (RBV) theory (Barney, 1991; Penrose, 1959; Peteraf, 1993; Wernerfelt, 1984) posits that firms' competitiveness even in the same industry varies based on a firm's resources and capabilities (Zulkiffli *et al.*, 2022). The RBV theory provides an explanation as to why some organizations are performing better and how an organization can perform better (Ali *et al.*, 2020; Wu, Yan, & Umair, 2023). The RBV theory is the underpinning theory for the study's research model. Drawing insight from the RBV theory, Isichei *et al.* (2023) advanced strategic intelligence as a firm intangible resource that can affect export performance, even when channeled through learning orientation. The RBV theory of the firm

postulates that firms gain competitive advantage through bundles of valuable and rare resources and sustain that advantage over time when such resources are difficult to imitate or non-substitutable by competitors (Sharma, Alkatheeri, Jabeen, & Sehwat, 2022). Despite the broad application of the RBV theory in multiple disciplines, the theory has attracted certain criticisms which led to the evolution of the dynamic capability theory (Teece, 2023).

### Dynamic Capabilities Theory

The dynamic capabilities theory (DC) theory (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997) is an extension of the RBV theory (Chien & Tsai, 2021). The DC theory is considered as an extension for RBV to deal with the changes that occur in the highly turbulent environments due to digital technologies (Chatterjee, Chaudhuri, & Vrontis, 2021; Ortiz, García, Gardó, & Vivas, 2021). The DC theory posits that firms should develop the ability to build, integrate, and reconfigure resources and competencies to achieve competitive advantages (van de Wetering & Besuyen, 2021). The DC theory is a relevant theoretical framework that can be used to explain the effect of strategic intelligence capability on performance of logistics companies in Kenya. The DC theory is concerned with how firms can sustain and enhance their competitive advantage, notably when facing changing environments (Solem, Fredriksen, & Sjørebø, 2023). However, while the DC theory remains very helpful when addressing how to respond to the business changing environment, the theory has attracted certain criticisms (Steininger *et al.*, 2022). The major criticisms of the DC theory pertain to the assertions that the DC are difficult to identify and/or operationalize, and measure empirically, and in some cases, the very capabilities can lead to a core capability becoming core rigidity, and that the DC theory is vague and tautological (Collis, Anand, & Field, 2021).

### Knowledge-Based View Theory

The Knowledge-based view (KBV) theory of the firm (Garud & Kumaraswamy, 2002; Grant, 2002;

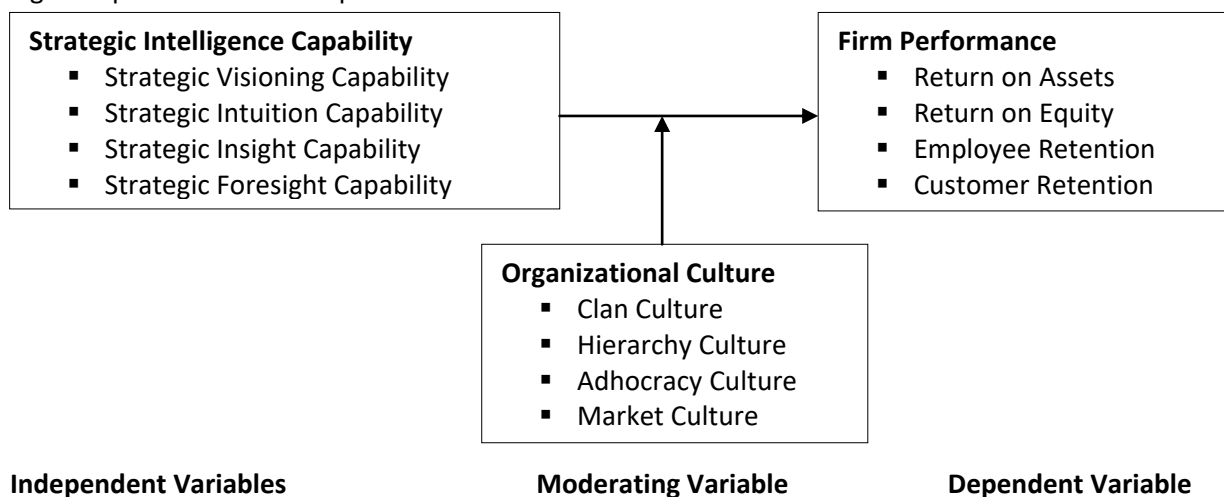
Guthrie, 2001; Mathews, 2003) of the firm is a recent extension of the RBV theory of the firm very adequate to the present economic context (Cooper, Pereira, Vrontis, & Liu, 2023). The KBV theory of the firm posits that knowledge is considered to be a very special strategic resource that does not depreciate in the way traditional economic productive factors do, and can generate increasing returns (Sahibzada & Mumtaz, 2023). The KBV theory of the firm is a relevant theoretical framework that helps to explain the effect of strategic intelligence on performance of logistics companies in Kenya. Under the umbrella of the KBV theory of the firm (Ariely, 2003; Drucker, 1993;

Sirois, 1999; Stewart, 1997), competitive intelligence process is a mechanism to achieve superior long-term strategic performance leading to sustainable competitive advantage (Hanif *et al*, 2023).

### Conceptual Framework

The conceptual framework depicts that firm performance is conceptualized as the dependent variable. From the conceptual framework, strategic intelligence capability is conceptualized as the independent variables. The conceptual framework suggests that organizational culture is conceptualized as the moderating variable.

Figure 1 presents the conceptual framework.



**Figure 1: Conceptual Framework**

### Review of Literature on Variables

#### Strategic Intelligence Capability

Strategic intelligence is a tool used in strategic management and is becoming more significant as a means for businesses to obtain long-term competitive advantage (Ahmed, Abduljabbar, & Hussein, 2021). It plays a special role for the purposes of increasing sustainability and competitiveness of companies during the period of growing uncertainty of the external environment (Gitelman, Kozhevnikov, & Chebotareva, 2021). Strategic intelligence provides a means of support for operational goals by predicting future challenges (Berkowitz & Goodman, 2021). It is one of the effective tools that contribute significantly to

directing companies towards achieving their long-term goals, helping them maintain their position, read their future, and help their leaders sense environmental opportunities and adapt to the surrounding variables (Hamour *et al.*, 2023). In this context, strategic intelligence plays a major role in every area of management and the organization's decisions regarding future (Miri Rami, Delgoshaei, & Mahmoudi, 2022). Strategic intelligence addresses the needs of high-level decision-makers and it is mainly focused on proactive activities.

Strategic intelligence is a fundamentally new management mechanism in organizations that provides information and analytical support for making anticipatory decisions and the company's

preparedness for unpredictable challenges of the future (Kitagawa & Vidmar, 2023). It is a systematic and continuous process of exploring trends and the market environment with the use of powerful analytical systems that ensure the generation of knowledge and digital tools for making long-term decisions and the organization's preparedness for the unpredictable challenges of the future (Gitelman *et al.*, 2021). Strategic intelligence is the generation and transformation of information or knowledge that can be employed in high level decision-making (Al-Zaqeba *et al.*, 2022a). Therefore, strategic intelligence pertains to the collection, processing, analysis, and dissemination of intelligence that is required for forming policy.

Strategic intelligence is based on digital tools for analyzing changes in consumer preferences, the transformation of employees into active developers and users of strategic solutions, and the establishment of communication networks aimed at accelerating the exchange of knowledge, experience, and projects (Gitelman *et al.*, 2021). Strategic intelligence is particularly important during digital transformation as it acts as a radar scanning the periphery and helps to set, most impartially, the priorities in the context of new product and investment areas, in making difficult decisions that require multi-criterion assessment of feasibility and consequences of certain actions (Kitagawa & Vidmar, 2023).

Strategic intelligence is a business tool within strategic management and is gaining importance to enable companies to achieve sustainable competitive advantage (Ahmed, Abduljabbar, & Hussein, 2021). It is one of the effective tools that contribute significantly to directing firms towards achieving their long-term goals (Walsh & Harrison, 2021). With regard to management, strategic intelligence performs the function of detecting, identifying, and solving problems that go beyond the past experience, and which the organization is going to face in the future (Gitelman *et al.*, 2021). Strategic intelligence provides a means of support for operational goals by predicting future challenges

(Berkowitz & Goodman, 2021). Existent literature posits that strategic intelligence can aid managers in learning about the relevant environments their organization interrelates to and in raising awareness of the threats and opportunities that are posed to them (Cavallo *et al.*, 2021). Therefore, strategic intelligence is one of the most important and latest systems that ensure the ability of organizations to maintain their position in a market characterized by change and intense competition (Kadour, 2021).

Various strategic intelligence dimensions are now being endorsed by an increasing number of studies. Strategic intelligence is a conceptual system that assists leaders in leading change and involves tools and qualities to develop foresight, visioning, system thinking, partnering, motivating and empowering (Zarafili & Zarafili, 2023). Strategic intuition capability is the ability to quickly see how to go into a particular situation which helps decision-makers contend with uncertainty and complexity (Abrahams *et al.*, 2024). With regard to strategic intelligence, strategic insight is the ability to anticipate trends that can pose a threat to an organization or provide opportunities (Abrahams *et al.*, 2024). Strategic visioning is the ability to conceptualize an ideal future state and to involve others in its implementation (Gitelman *et al.*, 2021).

Strategic foresight is a systematic approach to looking beyond current expectations and taking into account a variety of plausible future developments in order to identify implications for policies today (Torres & Pena Jr, 2021). Additionally, strategic foresight capability the ability to comprehend and perceive business trends that present opportunities and/or threats to organizations (Zarafili & Zarafili, 2023). The strategic foresight can provide businesses with a proactive approach to decision-making in the face of a VUCA world (Anggara, Wijaya, & Faradisi, 2024). Strategic foresight uses insight about the future state of an industry to guide present-day decision-making (Schwarz, 2023). However, to improve anticipation, companies can aim at extending the foresight time horizon and

focus on identifying changes in customer needs and behaviors (Uimonen, 2024).

### **Firm Performance**

Firm performance is a core theme in strategic management research. Firm performance as the firm's ability to increase market share, operate efficiently, and improve services, products, or sales, innovative practices, and overall profit shares (Walter, 2021). Extant literature posits that firm performance is the set of financial and nonfinancial indicators which provide information on the degree of achievement of set goals and objectives (Úbeda-García, Claver-Cortés, Marco-Lajara, & Zaragoza-Sáez, 2021). The financial performance indicators are expressed in monetary terms, while non-financial performance indicators such as customer retention, employee retention, are not expressed in monetary terms, and are characterized by greater subjectivity in regards to financial measures (Yoo, 2021).

### **Empirical Review**

This section presents an empirical literature review relevant to variables of the research. In the Kenyan context, Kori *et al.* (2021) examined the effect of strategic intelligence on firm performance in commercial banks in Kenya. The findings indicated that strategic intelligence had a positive and significant effect on firm performance in commercial banks in Kenya. The study suggested that strategic intelligence had a positive and significant effect on firm performance.

In the Indonesian context, Muzahid and Samputra (2023) examined the effect of strategic intelligence on competitive advantage of manufacturing firms. The findings indicated that strategic intelligence had a positive and significant effect on competitive advantage. The research showed that strategic intelligence has a significant effect on competitive advantage.

In the Iranian context, Dehghan, Aghaei, and Elahi (2022) examined the effect of managers' strategic intelligence on the organizational performance of the national olympic committee with the mediating

role of sustainable competitive advantage. The results showed that strategic intelligence had a positive and significant direct effect on organizational performance and sustainable competitive advantage. The findings indicated that sustainable competitive advantage had a positive and significant effect on organizational performance. In addition, the results showed that sustainable competitive advantage had a significant mediating effect in the relationship between strategic intelligence on organizational performance.

In the Jordanian context, Agha *et al.* (2021) investigated the effect of strategic intelligence on firm performance and the mediator role of strategic flexibility. The findings showed that strategic intelligence had a positive and significant effect on firm performance. Moreover, the results indicated that strategic intelligence foresight, visioning, and motivation had positive and significant effect on firm performance. Additionally, the findings showed that strategic intelligence had a positive and significant effect on strategic flexibility. Furthermore, the results indicated that strategic intelligence had a positive and significant effect on firm performance in the presence of strategic flexibility as a mediator variable.

In the context of Iraq, Zaidan *et al.* (2022) examined the effect of strategic intelligence on competitive advantage in the banking industry. The findings showed that strategic intelligence had a positive and significant effect on competitive advantage in the banking industry. The results suggested that strategic intelligence has a significant effect on competitive advantage in the banking industry.

In the Jordanian context, Hamour *et al.* (2023) examined the effect of strategic intelligence, effective decision-making and strategic flexibility on logistics performance. The findings showed that strategic intelligence had a positive and significant effect on logistics performance. The results indicated that strategic intelligence foresight, visioning, organized thinking, partnership, and motivation had positive and significant effect on

logistics performance. The findings showed that strategic intelligence had a positive and significant effect on strategic flexibility. The results indicated that strategic flexibility had a partial significant mediating effect in the relationship between strategic intelligence and logistics performance.

In the context of Iraq, Ahmed *et al.* (2021) conducted an exploratory study on strategic intelligence and sustainable competitive advantage of small and medium enterprises. The findings showed that strategic intelligence had a positive and significant effect on sustainable competitive advantage of small and medium enterprises. The research suggested that strategic intelligence is a business tool within strategic management and is gaining importance to enable companies to achieve sustainable competitive advantage.

In the context of Iraq, Zaidan, Sulaiman, Chin, Nadia, and Hasbullah (2022) examined the effect of strategic intelligence on competitive advantage in the banking industry. The findings showed that strategic intelligence had a positive and significant relationship with competitive advantage in the banking industry. The results indicated that strategic intelligence had positive and significant effect on competitive advantage in the banking industry.

In the context of Jordan, Jebiril, Almaslmani, Jarah, Mugableh, and Zaqeeba (2023) examined the effect of strategic intelligence and asset management on enhancing competitive advantage with the mediating role of cybersecurity. The findings indicated that strategic intelligence had a positive and significant effect on competitive advantage. The results showed that strategic intelligence had a positive and significant effect on competitive advantage through the presence of the mediating role of cybersecurity.

#### **Moderating Effect of Organizational Culture in the Relationship Between Strategic Intelligence Capability and Firm Performance**

The role of a moderator variable is to strengthen, diminish, or alter the relationships between the

dependent variable and independent variables in the research study. Over the past three decades, the concept of organizational culture and its role in the understanding of how knowledge resources can be perceived and applied by knowledge workers has received much attention (Khaksar *et al.*, 2023). In the South African context, Asghari, Targholi, Kazemi, Shahriyari, and Rajabion (2020) examined the influence of organizational culture on competitive intelligence. The results indicated that organizational culture had a positive and significant influence on competitive intelligence.

In Kenyan context, Waithaka (2023) examined the moderation effect of organizational culture on the relationship between strategic inputs of competitive intelligence and competitive advantage in commercial banks. The findings indicated that organizational culture had a positive and significant influence on competitive intelligence and competitive advantage. The results suggested that organizational culture moderates the relationship between strategic inputs of competitive intelligence and competitive advantage among commercial banks in Kenya.

In the Jordanian context, Al-Fawaeer and Alkhatib (2020) examined the moderating role of teamwork culture on strategic intelligence and operational performance in public shareholding industrial companies. The results showed that strategic foresight, future vision, and partnership intelligence had positive and significant on operational performance. However, the findings indicated that systemic thinking, motivation intelligence has insignificant effect on operational performance. The results showed that strategic intelligence had a positive and significant on operational performance in public shareholding industrial companies. Moreover, the results that there was a statistically significant effect on the teamwork culture as a moderating variable in the relationship between strategic intelligence and operational performance.

## METHODOLOGY

This section presented the research methodology focusing on the research philosophy, research design, target population, sampling frame, sample size and sampling technique, data collection methods, data collection procedures, pilot study, data processing and analysis, and model specification.

### Research Philosophy

The research was anchored on a positivist research philosophy which regards the world as made up of observable and measurable facts and assumes that there is an objective reality out there. The positivist research philosophy regards the world as made up of observable and measurable facts and assumes that there is an objective reality out there (Ma & Xie, 2023).

### Research Design

Drawing on a quantitative non-experimental research methodology, the research utilized a correlational cross-sectional survey research design to examine the non-causal relationship between study variables. The design was appropriate for collecting data once from many individuals at a single point in time to test statistical relationships between two or more variables without the researcher controlling or manipulating any of them (Aryuwat *et al.*, 2024).

### Target Population

**Table 1: Sample Size**

	Target Population	Sample Size
Logistics Companies in Kenya	849	272
<b>Total</b>	<b>849</b>	<b>272</b>

### Sampling Techniques

As the target population was homogeneous, the simple random sampling technique was used to select a sample size of 272 logistics companies from a target population of 849 logistics companies in Kenya. The simple random sampling technique is a probability sampling technique that allows all the units in the population to have an equal chance of being selected from a homogeneous target population (Hair Jr *et al.*, 2021).

The target population consisted of the 849 registered logistics firms in Kenya. The unit of analysis consisted of the logistics firm, while the unit of observation consisted of the chief executive officer of the logistics firm.

### Sampling Frame

The sampling frame consisted of the list of the 849 registered logistics firms in Kenya (Appendix III). The sampling frame was as per the Kenya International Freight and Warehousing Association (KIFWA, 2022)'s data base as at 31<sup>st</sup> December, 2022.

### Sample Size and Sampling Technique

This section presents the sample size and sampling techniques for this study.

### Sample Size

The Yamane (1967)'s formula was used to determine the desired sample size at the 5% significance level:

$$n = \frac{N}{1 + Ne^2} \quad n = \frac{849}{1 + 849(0.05)^2} = 272$$

Where:

$n$  = Sample Size

$N$  = Target Population

$e$  = level of precision (sample error)

Therefore, the minimum recommended sample size was 272 logistics firms in Kenya. Table 1 presents the target population and sample size.

### Data Collection Methods

A self-administered structured questionnaire was the means for collecting primary data. The data collection method was appropriate, because of its ability to collect a large amount of information in a reasonably quick span of time (Saunders & Kulchitsky, 2021).

### Data Collection Procedures

A cross-sectional survey-based approach was used to collect primary data from a random sample of

chief executive officers of 272 logistics firms in Kenya. Through the drop and pick method, the researcher and three research assistants hand delivered the survey questionnaire to chief executive officers of the logistics firms in Kenya. A continuous follow up on responses was made by the researcher and research assistants.

**Pilot Study**

A pilot study was conducted to test the validity and reliability of the constructed survey questionnaire. The pilot study involved a pilot trial sample size of 32 logistics firms in Kenya. Extant literature posits that at least 30 representative participants from the target population provides a reasonable minimum recommendation for a pilot study (Saunders & Kulchitsky, 2021; Snell *et al.*, 2021).

**Data Processing and Analysis**

The collected data was checked for accuracy, completeness and consistency. The data was coded, edited, and entered into the Statistical Package for Social Sciences (SPSS) version 26 to create a data sheet that was used for analysis. The descriptive statistics and inferential statistics were used for data analysis. The descriptive statistics were used to compute, summarize the data in respect to each of the study variables and describe the sample’s characteristics. The Pearson’s product moment correlation analysis was performed to confirm or deny the relationship between the study variables. A simple linear analysis was performed with firm performance as the dependent variable and strategic intelligence capability as the predictor variable.

A hierarchical moderated multiple linear analysis was performed to determine whether the relationship between strategic intelligence capability and firm performance moderated by organizational culture in logistics firms in Kenya. However, prior to the moderation analysis, the independent variable (strategic intelligence capability) was interacted with the moderating variable (organizational culture) to create an interactive variable (strategic intelligence capability\*organizational culture). The interactive

variable (strategic intelligence capability\*organizational culture) would be introduced to the model as a moderator.

In the first step for the moderation analysis, the strategic intelligence capability (the independent variable) was regressed on firm performance (the dependent variable). In the second step for the moderation analysis, strategic intelligence capability (the independent variable) and organizational culture (the moderating variable) were regressed on firm performance (the dependent variable). In the third step, strategic intelligence capability (the independent variable), organizational culture (the moderating variable) and strategic intelligence capability\*organizational culture (the interaction variable) were regressed on firm performance (the dependent variable).

The study set two alternative criteria for determining whether there was a moderating effect of the moderator (organizational culture) on the relationship between the independent variable (strategic intelligence capability) and dependent variable (firm performance). First, if the change in coefficients is significant after introducing the interactive term, then organizational culture is a moderator. Second, if the change in R<sup>2</sup> from model 1 to Model 3 is significant after introducing the interactive term, then organizational culture is a moderator.

**Model Specification**

The simple linear regressions model was specified as:

$$Y = \beta_0 + \beta_1 X + \varepsilon \dots\dots\dots \text{Model 1}$$

Where:

Y = Firm Performance

X = Strategic Intelligence Capability

$\beta_0$  = Constant Term

$\beta_1$  = Regression Coefficients to be estimated

$\varepsilon$  = Stochastic Error Term

The hierarchical moderated multiple linear regression models were specified as:

$$Y = \beta_0 + \beta_2 X + \varepsilon \dots\dots\dots \text{Equation 2.}$$

$$Y = \beta_0 + \beta_3 X + \beta_4 Z + \varepsilon \dots\dots\dots \text{Equation 3.}$$

$$Y = \beta_0 + \beta_5X + \beta_6Z + \beta_7X*Z + \varepsilon \dots\dots\dots \text{Equation 4.}$$

Where:

- Y = Firm Performance (the dependent variable),
- X = Strategic Intelligence Capability (the independent variable)
- $\beta_0$  = Constant (the coefficient of the Y intercept)
- $\beta_2 - \beta_6$  = Regression coefficients to be determined,
- Z = Organizational Culture (the moderating variable),
- X\*Z = Strategic Intelligence Capability\* Organizational Culture (the interactive variable),
- $\varepsilon$  = Stochastic Error Term

## FINDINGS

This section presents the research findings and discussions.

### Response Rate

Out of the 272 of survey questionnaires distributed for the main study, only 215 usable survey questionnaires were returned, Therefore, there was a valid response rate of 79.04%, which was sufficient for data analysis and reporting purposes. Existent literature posits that survey response rates of 70% or higher are needed if findings are to be considered generalizable (Ericson *et al.*, 2023). Table 2 presents the response rate results.

**Table 2: Response Rate**

Strata	Frequency	Response Rate
Response	215	79.04%
Non-Response	57	20.96%
<b>Total</b>	<b>272</b>	<b>100.00%</b>

### Validity

This section presents the face validity, content validity, construct validity, convergent validity, and discriminant test results.

#### Face Validity

Face validity was ensured by conducting extensive literature survey on the research problem and strengthened by developing the survey questionnaire based on validated scales. The researcher shared the draft survey questionnaire with an expert panel of 5 judges in the field of strategic management to judge whether, on the face of it, the questionnaire covered and measured the concepts it purported to measure. Results revealed that on the face of it, the draft survey questionnaire covered and measured the concepts it purported to measure. Their feedback related to the wording of some of the statements, the

structure, and the layout of the survey questionnaire.

#### Content Validity

Content validity was ensured by employing adapted scales considered appropriate in previous studies. For content validity test, the researcher shared the draft survey questionnaire with an expert panel of five judges in the field of strategic management to judge whether, in the field of strategic management to judge whether, it measured the concepts it purported to measure and whether the relevant content domain for all the constructs had been covered. Responses provided by the expert panel judges were analyzed to establish the percentage representation using the content validity index. The results showed that the content validity index was 0.938 and the congruency percentage was 93.8%, signifying content validity. Table 3 presents the content validity test results.

**Table 3: Content Validity Test Results**

Variable	No. of Items	Content Validity Index	Congruency Percentage	Decision
Strategic Intelligence Capability (X)	4	0.940	94.0%	Valid
Organizational Culture (Z)	4	0.946	94.6%	Valid
Firm Performance (Y)	4	0.936	93.6%	Valid
<b>Entire Scale</b>	<b>12</b>	<b>0.940</b>	<b>94.0%</b>	<b>Valid</b>

### Sampling Adequacy Results

Sampling adequacy was measured using both the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. Sampling adequacy was measured using both the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. Results showed that the KMO Measure of Sampling Adequacy was 0.816, greater than 0.7, while the Bartlett's Test of Sphericity was significant (Approx. Chi-Square =

537.224;  $df = 6$ ;  $p \leq 0.001$ ), confirming the appropriateness of the data for factor analysis. A KMO statistic of greater than 0.7, and an associated Bartlett's p-value of less than or equal to 0.05, and an Anti-image correlation statistic of greater than 0.6 indicates that an adequate correlation exists to justify factor analysis (Hair *et al.*, 2021). Table 4 presents the KMO test of sampling adequacy and Bartlett's test of sphericity results.

**Table 4: KMO Test of Sampling Adequacy and Bartlett's Test of Sphericity**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.816
Bartlett's Test of Sphericity	Approx. Chi-Square	537.224
	df	6
	Sig.	0.000

### Reliability Test Results

The reliability test results indicated that the Cronbach's alpha coefficient of the entire scale (12 items) for the pilot study was 0.896, greater than the threshold of 0.7, suggesting acceptable internal consistency reliability. From the results, the Cronbach alpha coefficients of the 3 study variables

ranged from 0.882 and 0.893, greater than the threshold of 0.7, suggesting acceptable internal consistency reliability. The general rule of thumb is that a Cronbach's alpha coefficient of 0.70 or greater indicates acceptable internal consistency reliability (Hair *et al.*, 2023). Table 5 presents the reliability test results.

**Table 5: Reliability Test Results**

Variable	n	No. of Items	No. of Items Deleted	Cronbach's Alpha ( $\alpha$ )	Decision
Strategic Intelligence Capability ( $X_1$ )	30	4	0	.882	Reliable
Organizational Culture (Z)	30	4	0	.891	Reliable
Firm Performance (Y)	30	4	0	.893	Reliable
<b>Entire Scale</b>	<b>30</b>	<b>12</b>	<b>0</b>	<b>.896</b>	<b>Reliable</b>

### Diagnostic Results

Diagnostic tests were performed to investigate whether the assumptions of multiple linear regression analysis were met.

### Normality Test Results

The normality test was performed using the Kolmogorov-Smirnov test and the Shapiro-Wilk test were performed. The Kolmogorov-Smirnov test and the Shapiro-Wilk test are most widely used methods to test the normality of the data (Bell *et*

*al.*, 2022). From the normality test results, the p-values of the Kolmogorov-Smirnov test and the Shapiro-Wilk test were greater than 0.05 ( $p > 0.05$ ), suggesting that the data was assumed to approximately meet the normality assumptions. Generally, if the p-value is less than or equal to the significance level, the decision is to reject the null hypothesis and conclude that the data do not follow a normal distribution (Hair *et al.*, 2021). Table 6 presents the normality test results.

**Table 6: Normality Test Results**

Variable	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			Decision
	Statistic	df	Sig.	Statistic	df	Sig.	
Strategic Intelligence Capability (X <sub>1</sub> )	.154	30	.170	.970	215	.176	Normal Distribution
Organizational Culture (Z)	.093	30	.200*	.973	215	.493	Normal Distribution
Firm Performance (Y)	.051	30	.090	.993	215	.207	Normal Distribution

**Linearity Test Results**

The linearity test was performed utilizing the Pearson's product moment correlation analysis. The linearity test results indicated that strategic intelligence capability had a weak positive and significant linear relationship with organizational culture ( $r = 0.385$ ,  $p \leq 0.05$ ). The linearity test results showed that strategic intelligence capability had a moderate strong positive and significant

linear relationship with firm performance ( $r = 0.524$ ,  $p \leq 0.05$ ). The linearity test results showed that organizational culture had a strong positive and significant linear relationship with firm performance ( $r = 0.849$ ,  $p \leq 0.05$ ). The linearity test results suggested that the assumption of linearity was not violated (Hair *et al.*, 2021). Table 7 presents the linearity test.

**Table 7: Linearity Test Results**

Variable		X	Z	Y
Strategic Intelligence Capability (X)	Pearson Correlation	1		
	Sig. (2-tailed)			
	n	215		
Organizational Culture (Z)	Pearson Correlation	.385**	1	
	Sig. (2-tailed)	.000		
	n	215	215	
Firm Performance (Y)	Pearson Correlation	.524**	.849**	1
	Sig. (2-tailed)	.000	.000	
	n	215	215	215

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

**Homoscedasticity Test Results**

The Levene's test for equality of variance was performed for the homoscedasticity test. The presence of homoscedasticity or the absence of heteroscedasticity is an assumption most commonly tested using the Levene's test for

equality of variance (Bell *et al.*, 2022). The homoscedasticity test results showed that Levene's statistics for each of the study variables were non-significant with p-values greater than 0.05, suggesting that equal variance was assumed. Table 8 presents the homoscedasticity test results of the study variables.

**Table 8: Homoscedasticity Test Results**

Variable	Levene Statistic	df1	df2	sig	Remarks
Strategic Intelligence Capability (X)	4.85	1	215	.278	Equal Variance Assumed
Organizational Culture (Z)	3.66	1	215	.298	Equal Variance Assumed
Firm Performance (Y)	4.51	1	215	.265	Equal Variance Assumed

**Autocorrelation Test Results**

The Durbin-Watson test was performed for autocorrelation test. The autocorrelation test results showed that the Durbin-Watson test had a

value of 2.220, falling within the optimum range of 1.5 to 2.5, suggesting that there was no autocorrelation detected in the in the residual

values in the datasets (Hair *et al.*, 2021). Table 9 presents the model summary results.

**Table 9: Autocorrelation Test Results**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.524 <sup>a</sup>	.275	.272	.298	
2	.875 <sup>b</sup>	.766	.764	.170	
3	.886 <sup>c</sup>	.785	.782	.163	2.220

a. Predictors: (Constant), Strategic Intelligence Capability (X)

b. Predictors: (Constant), Strategic Intelligence Capability (X), Organizational Culture (Z)

c. Predictors: (Constant), Strategic Intelligence Capability (X), Organizational Culture (Z), Strategic Intelligence Capability\* Organizational Culture (X\*Z)

d. Dependent Variable: Firm Performance (Y)

### Multicollinearity Test Results

The variance inflation factor (VIF) values and tolerance values for each of the independent variables were used for the multicollinearity test. The multicollinearity test results indicated that for each of the independent variables, the VIF values were less than 10, while the tolerance values were

greater than 0.1, suggesting that there was no significant multicollinearity that needed to be corrected. Generally, if the VIF value is higher than 10 or the tolerance value is lower than 0.1, there is significant multicollinearity that needs to be corrected (Davino *et al.*, 2022). Table 10 presents the multicollinearity test results.

**Table 10: Multicollinearity Test Results**

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	
1	(Constant)	2.746	.128		21.531	.000	
	Strategic Intelligence Capability (X)	.300	.033	.524	8.989	.000	1.000
2	(Constant)	.456	.130		3.498	.001	
	Strategic Intelligence Capability (X)	.133	.021	.232	6.457	.000	.852
	Organizational Culture (Z)	.746	.035	.759	21.116	.000	.852
3	(Constant)	.324	.129		2.507	.013	
	Strategic Intelligence Capability (X)	.139	.020	.242	6.993	.000	.848
	Organizational Culture (Z)	.646	.041	.658	15.705	.000	.580
	Strategic Intelligence Capability* Organizational Culture (X*Z)	.129	.030	.168	4.279	.000	.661

a. Dependent Variable: Firm Performance (Y)

### Correlation Results

The Pearson's product moment correlation analysis was performed to confirm or deny the relationships

between the study variables. The correlation results showed that strategic intelligence capability had a weak positive and significant relationship with

organizational culture ( $r = 0.385$ ,  $p \leq 0.05$ ) in logistics companies in Kenya. The correlation results showed that strategic intelligence capability had a moderate strong positive and significant relationship with firm performance ( $r = 0.524$ ,  $p \leq 0.05$ ) in logistics companies in Kenya. The

correlation results showed that organizational culture had a strong positive and significant relationship with firm performance ( $r = 0.849$ ,  $p \leq 0.05$ ) in logistics companies in Kenya. Table 11 presents the Pearson's product moment correlation results.

**Table 11: The Pearson's Product Moment Correlation Results**

Variable		X	Z	Y
Strategic Intelligence Capability (X)	Pearson Correlation	1		
	Sig. (2-tailed)			
	n	215		
Organizational Culture (Z)	Pearson Correlation	.385**	1	
	Sig. (2-tailed)	.000		
	n	215	215	
Firm Performance (Y)	Pearson Correlation	.524**	.849**	1
	Sig. (2-tailed)	.000	.000	
	n	215	215	215

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

### Simple Linear Regression Results

A simple linear analysis was performed with firm performance as the dependent variable and strategic intelligence capability as the predictor variable.

### Model Summary

From the model summary in table, the value of coefficient of correlation (R) was 0.524, while the value of coefficient of determination ( $R^2$ ) was 0.275, and the value of the adjusted  $R^2$  was 0.272. The R value of 0.524 suggested that there was a strong positive correlation between the strategic intelligence capability and firm performance in logistics companies in Kenya. The  $R^2$  value of 0.275 suggested that the overall model as a whole (the model involving constant, strategic intelligence capability) was able to significantly predict and

explain approximately 27.5% of the variance in the performance of logistics companies in Kenya. The Adjusted R Square value of 0.272 suggested that the overall model as a whole (the model involving constant, strategic intelligence capability) significantly predicted and explained 27.2% of the variance in the performance of logistics companies in Kenya. The Std. Error of the Estimate value of 0.298 suggested that other factors not included in the model in the current study that could also predict and explain the remaining 72.8% of the variance in the performance of logistics companies in Kenya. Therefore, there is in need for future research to discover the other variables not included in the model in the current study that also predict the remaining variance in the performance of logistics companies in Kenya. Table 12 presents the model summary results.

**Table 12: Model Summary<sup>b</sup> Results**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.524 <sup>a</sup>	.275	.272	.298	2.449

a. Predictors: (Constant), Strategic Intelligence Capability ( $X_1$ )

b. Dependent Variable: Firm Performance (Y)

### Analysis of Variance

From the Analysis of Variance (ANOVA) table, the overall model as a whole (the model involving

constant, strategic intelligence capability), achieved a high degree of fit, as reflected by  $R^2 = 0.275$ , adj.  $R^2 = 0.272$ ,  $F(1, 213) = 80.798$ ,  $p \leq 0.05$ . The null

hypothesis was that the overall model as a whole (the model involving constant, strategic intelligence capability) was not able to significantly predict the performance of logistics companies in Kenya. However, the alternative hypothesis was that the overall model as a whole (the model involving constant, strategic intelligence capability) was able to significantly predict the performance of logistics

companies in Kenya. From the results, the null hypothesis was rejected in favor of the alternative hypothesis. Therefore, the overall model as a whole (the model involving constant, strategic intelligence capability) was able to significantly predict the performance of logistics companies in Kenya. Table 13 presented the ANOVA results.

**Table 13: ANOVA<sup>a</sup> Results**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.188	1	7.188	80.798	.000 <sup>b</sup>
	Residual	18.948	213	.089		
	Total	26.135	214			

a. Dependent Variable: Firm Performance (Y)

b. Predictors: (Constant), Strategic Intelligence Capability (X<sub>1</sub>)

### Simple Linear Regression Coefficients

From the coefficients table, when the unstandardized regression coefficients (B) were substituted to the simple linear regression model specified for the study, the final predictive equation was:

$$Y = 2.746 + 0.300X$$

The final predictive equation suggested that holding all factors in to account constant (strategic intelligence capability), constant at zero, the

performance of logistics companies in Kenya would be 2.746. The final predictive equation suggested that with all other factors held constant, a unit increase in strategic intelligence capability would lead to 0.300 unit increase in the performance of logistics companies in Kenya. The regression results indicated that strategic intelligence capability had a positive and significant effect on the performance ( $\beta_1 = 0.524$ ;  $t = 8.989$ ;  $p \leq 0.05$ ) of logistics companies in Kenya. Table 14 presents the simple linear regressions coefficients results.

**Table 14: Simple Linear Regression Coefficients<sup>a</sup> Results**

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	2.746	.128		21.531	.000		
	Strategic Intelligence Capability (X <sub>1</sub> )	.300	.033	.524	8.989	.000	1.000	1.000

a. Dependent Variable: Firm Performance (Y)

### Moderated Multiple Regression Results

This section provides the results for the moderating effect of organizational culture on the relationship between strategic intelligence capability and firm performance of logistics companies in Kenya. A moderated multiple linear regression analysis was performed to test the moderating effect of organizational culture in the relationship between

competitive intelligence capabilities and performance of logistics companies in Kenya.

### Model Summary Results

From the model summary table, it is clear that the value of the coefficient of correlation (R) was 0.524 for model 1, suggesting a strong positive correlation between the predictor variable (strategic intelligence capability) and performance of logistics

companies in Kenya. Additionally, the value of the coefficient of determination ( $R^2$ ) was 0.275 for model 1, suggesting that the overall model (the model involving constant and strategic intelligence capability) could significantly predict and explain approximately 27.5% of the variance in the performance of logistics companies in Kenya. Moreover, the value of the adjusted  $R^2$  was 0.272 for model 1, suggesting that the overall model (the model involving constant and strategic intelligence capability) significantly predicted approximately 27.2% of the variance in the performance of logistics companies in Kenya. Furthermore, the value of the std. error of the estimate was 0.298 for model 1, suggesting that there are other factors not included in the model that could predict the remaining 72.8% of the variance in the performance of logistics companies in Kenya.

From the model summary table, it is clear that the value of the coefficient of correlation (R) was 0.875 for model 2, suggesting a strong positive correlation between the predictor variables (strategic intelligence capability and organizational culture) and performance of logistics companies in Kenya. Additionally, the value of the coefficient of determination ( $R^2$ ) was 0.766 for model 2, suggesting that the overall model (the model involving constant, strategic intelligence capability and organizational culture) could significantly predict and explain approximately 76.6% of the variance in the performance of logistics companies in Kenya. Moreover, the value of the adjusted  $R^2$  was 0.764 for model 2, suggested that the overall model (the model involving constant, strategic intelligence capability and organizational culture) significantly predicted approximately 76.4% of the variance in the performance of logistics companies in Kenya. Furthermore, the value of the std. error of the estimate was 0.170 for model 2, suggesting that there are other factors not included in the model that could predict the remaining 23.6% of the variance in the performance of logistics companies in Kenya.

From the model summary table, it is clear that the value of the coefficient of correlation (R) was 0.886 for model 3, suggesting a strong positive correlation between the predictor variables (strategic intelligence capability, organizational culture and strategic intelligence capability \*organizational culture) and performance of logistics companies in Kenya. Additionally, the value of the coefficient of determination ( $R^2$ ) was 0.785 for model 3, suggesting that the overall model (the model involving constant, strategic intelligence capability, organizational culture and strategic intelligence capability\*organizational culture) as a whole could significantly predict and explain approximately 78.5% of the variance in the performance of logistics companies in Kenya. Moreover, the value of the adjusted  $R^2$  was 0.782 for model 3, suggesting that the overall model (the model involving constant, strategic intelligence capability, organizational culture and strategic intelligence capability\*organizational culture) significantly predicted approximately 78.2% of the variance in the performance of logistics companies in Kenya. Furthermore, the value of the std. error of the estimate was 0.163 for model 3, suggesting that there are other factors not included in the model that could predict the remaining 21.8% of the variance in the performance of logistics companies in Kenya.

From the model summary table, the Durbin-Watson test statistic had a value of 2.220, falling within the optimum range of 1.5 to 2.5, suggesting that there was no severe autocorrelation detected in the in the residual values in the datasets. Generally, Durbin-Watson statistics falling within the optimum range of 1.5 to 2.5 indicate that there is no severe autocorrelation detected in the in the residual values in the datasets (Hair *et al.*, 2021). Table 15 presents the moderated multiple linear regression's model summary results.

**Table 15: Model Summary<sup>d</sup> Results**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.524 <sup>a</sup>	.275	.272	.298	
2	.875 <sup>b</sup>	.766	.764	.170	
3	.886 <sup>c</sup>	.785	.782	.163	2.220

a. Predictors: (Constant), Strategic Intelligence Capability (X)

b. Predictors: (Constant), Strategic Intelligence Capability (X), Organizational Culture (Z)

c. Predictors: (Constant), Strategic Intelligence Capability (X), Organizational Culture (Z), Strategic Intelligence Capability\* Organizational Culture (X\*Z)

d. Dependent Variable: Firm Performance (Y)

### ANOVA<sup>a</sup> Results

From the ANOVA table results, the overall model 1 (the model involving constant, strategic intelligence capability), as a whole achieved a high degree of fit, as reflected by  $R^2 = 0.275$ , adj.  $R^2 = 0.272$ ,  $F(1, 213) = 80.798$ ,  $p < 0.001$ . The null hypothesis was that the linear combination of predictor variables was not able to significantly predict the performance of logistics companies in Kenya. However, the alternative hypothesis was that the linear combination of predictor variables was able to significantly predict the performance of logistics companies in Kenya. The regression results showed that the linear combination of predictor variables (strategic intelligence capability) was able to significantly predict the variance in the performance of logistics companies in Kenya in Kenya. The null hypothesis was rejected in favor of the alternative hypothesis. Therefore, the decision was that strategic intelligence capability significantly predict the performance of logistics companies in Kenya.

From the ANOVA table results, the overall model 2 (the model involving constant, strategic intelligence capability and organizational culture), as a whole achieved a high degree of fit, as reflected by  $R^2 = 0.766$ , adj.  $R^2 = 0.764$ ,  $F(2, 212) = 347.710$ ,  $p < 0.001$ . The null hypothesis was that the linear combination of predictor variables (strategic intelligence capability and organizational culture) was not able to significantly predict the performance of logistics companies in Kenya. However, the alternative hypothesis was that the linear combination of predictor variables (strategic

intelligence capability and organizational culture) was able to significantly predict the performance of logistics companies in Kenya. The regression results showed that the linear combination of predictor variables (strategic intelligence capability and organizational culture) significantly predicted the variance in the performance of logistics companies in Kenya. The null hypothesis was rejected in favor of the alternative hypothesis. Therefore, the decision was that the linear combination of predictor variables (strategic intelligence capability and organizational culture) significantly predict performance of logistics companies in Kenya.

From the ANOVA table results, the overall model 3 (the model involving constant, strategic intelligence capability, organizational culture and strategic intelligence capability\*organizational culture), as a whole achieved a high degree of fit, as reflected by  $R^2 = 0.785$ , adj.  $R^2 = 0.782$ ,  $F(3, 211) = 256.842$ ,  $p < 0.001$ . The null hypothesis was that the linear combination of predictor variables (strategic intelligence capability, organizational culture and strategic intelligence capability\*organizational culture) was not able to significantly predict the performance of logistics companies in Kenya. However, the alternative hypothesis was that the linear combination of predictor variables (strategic intelligence capability, organizational culture and strategic intelligence capability\*organizational culture) was able to significantly predict the performance of logistics companies in Kenya. Table 16 presents the standard multiple linear regression's ANOVA results.

**Table 16: ANOVA<sup>a</sup> Results**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.188	1	7.188	80.798	.000 <sup>b</sup>
	Residual	18.948	213	.089		
	Total	26.135	214			
2	Regression	20.029	2	10.015	347.710	.000 <sup>c</sup>
	Residual	6.106	212	.029		
	Total	26.135	214			
3	Regression	20.517	3	6.839	256.842	.000 <sup>d</sup>
	Residual	5.618	211	.027		
	Total	26.135	214			

a. Dependent Variable: Firm Performance (Y)

b. Predictors: (Constant), Strategic Intelligence Capability (X<sub>1</sub>)

c. Predictors: (Constant), Strategic Intelligence Capability (X<sub>1</sub>), Organizational Culture (Z)

d. Predictors: (Constant), Strategic Intelligence Capability (X<sub>1</sub>), Organizational Culture (Z), Strategic Intelligence Capability\* Organizational Culture (X<sub>1</sub>\*Z)

### Multiple Regression Coefficients<sup>a</sup> Results

From the coefficients table, when the unstandardized regression coefficients (B) were substituted to the moderated multiple regression models specified for the study, the final predictive equations were:

$$Y = 2.746 + 0.300X \dots\dots\dots \text{Equation 5}$$

$$Y = 0.456 + 0.133X + 0.746Z \dots\dots\dots \text{Equation 6}$$

$$Y = 0.324 + 0.139X + 0.646Z + 0.129X*Z \dots\dots \text{Equation 7}$$

The first final predictive equation suggested that holding all factors in to account constant (strategic intelligence capability), constant at zero, the performance of logistics companies in Kenya would be 2.746. Additionally, the first final predictive equation suggested that with all other factors held constant, a unit increase in strategic intelligence capability would lead to 0.300 unit increase in the performance of logistics companies in Kenya.

The second final predictive equation suggested that holding all factors in to account constant (strategic intelligence capability and organizational culture), constant at zero, the performance of logistics companies in Kenya would be 0.456. Additionally, the second final predictive equation suggested that with all other factors held constant, a unit increase in strategic intelligence capability would lead to 0.133 unit increase in the performance of logistics

companies in Kenya. Moreover, the second final predictive equation suggested that with all other factors held constant, a unit increase in organizational culture would lead to 0.746 unit increase in the performance of logistics companies in Kenya.

The third final predictive equation suggested that holding all factors in to account constant (strategic intelligence capability, organizational culture and strategic intelligence capability\*organizational culture), constant at zero, the performance of logistics companies in Kenya would be 0.324. Additionally, the third final predictive equation suggested that with all other factors held constant, a unit increase in strategic intelligence capability would lead to 0.139 unit increase in the performance of logistics companies in Kenya. Moreover, the third final predictive equation suggested that with all other factors held constant, a unit increase in organizational culture would lead to 0.646 unit increase in the performance of logistics companies in Kenya. Furthermore, the third final predictive equation suggested that with all other factors held constant, a unit increase in strategic intelligence capability\*organizational culture would lead to 0.129 unit increase in the performance of logistics companies in Kenya.

In the first step for the moderation testing, the independent variable (strategic intelligence

capability) was regressed on the dependent variable (performance) of logistics companies in Kenya. Therefore, model 1 was fitted with strategic intelligence capability predicting performance of logistics companies in Kenya. From the regression coefficients table in model 1, the regression results indicated that strategic intelligence capability had positive and significant effect on the performance ( $\beta_2 = 0.524$ ;  $t = 8.989$ ;  $p \leq 0.05$ ) of logistics companies in Kenya.

In the second step for the moderation testing, the independent variable (strategic intelligence capability) and the moderating variable (organizational culture) were regressed on the dependent variable (performance) of logistics companies in Kenya. From the regression coefficients table in model 2, the regression results indicated that strategic intelligence capability had positive and significant effect on the performance ( $\beta_3 = 0.232$ ;  $t = 6.457$ ;  $p \leq 0.05$ ) of logistics companies in Kenya. Additionally, for model 2, the regression results indicated that organizational culture had a positive and significant effect on the

performance ( $\beta_4 = 0.759$ ;  $t = 21.116$ ;  $p \leq 0.05$ ) of logistics companies in Kenya.

In the third step for the moderation testing, the independent variable (strategic intelligence capability) and the moderating variable (organizational culture) and the interaction term (strategic intelligence capability\* organizational culture) were regressed on firm performance. From the regression coefficients table in model 3, the regression results indicated that strategic intelligence capability had a positive and significant effect on the performance ( $\beta_5 = 0.242$ ;  $t = 6.993$ ;  $p \leq 0.05$ ) of logistics companies in Kenya. In addition, for model 3, the regression results indicated that organizational culture had a positive and significant effect on the performance ( $\beta_6 = 0.658$ ;  $t = 15.705$ ;  $p \leq 0.05$ ) of logistics companies in Kenya. Besides, for model 3, the regression results indicated that strategic intelligence capability\*organizational culture (the interactive term) had a positive and significant effect on the performance ( $\beta_7 = 0.168$ ;  $t = 4.279$ ;  $p \leq 0.05$ ) of logistics companies in Kenya. Table 17 presents the moderated multiple linear regression coefficients results.

**Table 17: Multiple Regression Coefficients<sup>a</sup> Results**

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Error Std.	Beta	t	Sig.		
1	(Constant)	2.746	.128		21.531	.000		
	Strategic Intelligence Capability (X)	.300	.033	.524	8.989	.000	1.000	1.000
2	(Constant)	.456	.130		3.498	.001		
	Strategic Intelligence Capability (X)	.133	.021	.232	6.457	.000	.852	1.174
	Organizational Culture (Z)	.746	.035	.759	21.116	.000	.852	1.174
3	(Constant)	.324	.129		2.507	.013		
	Strategic Intelligence Capability (X)	.139	.020	.242	6.993	.000	.848	1.179
	Organizational Culture (Z)	.646	.041	.658	15.705	.000	.580	1.724
	Strategic Intelligence Capability* Organizational Culture (X*Z)	.129	.030	.168	4.279	.000	.661	1.513

a. Dependent Variable: Firm Performance (Y)

### Hypotheses Test Results

In this research, 4 null hypotheses were tested. The hypotheses were tested at 5% level of significance,  $\alpha = 0.05$ ,  $t = 1.960$ , and 95% confidence level to statistically help draw acceptable and realistic inferences. Therefore, the decision rule was to reject the null hypothesis  $H_{0i}$  if the  $P \leq 0.05$ , and otherwise fail to reject the null hypothesis  $H_{0i}$  if the  $P > 0.05$ .

#### Hypothesis One Test Results

The first null hypothesis ( $H_{01}$ ) predicted that strategic intelligence capability has no significant effect on firm performance in Kenya. The decision rule was to reject the null hypothesis  $H_{01}$  if the  $\beta_1 \neq 0$ ,  $t \geq 1.960$ ,  $P \leq 0.05$ , and otherwise fail to reject the null hypothesis  $H_{01}$  if the  $\beta_1 = 0$ ,  $t < 1.960$ ,  $P > 0.05$ . The correlation results showed that strategic intelligence capability had a moderate strong positive and significant relationship with firm performance ( $r = 0.524$ ,  $p \leq 0.05$ ) in logistics companies in Kenya. The simple linear regression results indicated that strategic intelligence capability had a positive and significant effect on firm performance ( $\beta_1 = 0.524$ ;  $t = 8.989$ ;  $p \leq 0.05$ ) in logistics companies in Kenya. Therefore, the  $H_{01}$  was rejected, in the favor of the  $H_{A1}$ . Subsequently, the decision was made that strategic intelligence capability has a significant effect on firm performance in logistics companies in Kenya.

#### Hypothesis Two Test Results

The second null hypothesis ( $H_{02}$ ) predicted that organizational culture has no significant moderating effect on the relationship between competitor and firm performance in Kenya. The decision rule was to reject the null hypothesis  $H_{01}$  if the  $\beta_1 \neq 0$ ,  $t \geq 1.960$ ,  $P \leq 0.05$ , and otherwise fail to reject the null hypothesis  $H_{01}$  if the  $\beta_1 = 0$ ,  $t < 1.960$ ,  $P > 0.05$ . The moderated hierarchical multiple regression results showed that organizational culture had a significant

moderating effect on the relationship between competitor and firm performance in Kenya.

In model 1, the regression results indicated that strategic intelligence capability had positive and significant effect on the performance ( $\beta_2 = 0.524$ ;  $t = 8.989$ ;  $p \leq 0.05$ ) of logistics companies in Kenya. In model 2, the regression results indicated that strategic intelligence capability had positive and significant effect on the performance ( $\beta_3 = 0.232$ ;  $t = 6.457$ ;  $p \leq 0.05$ ) of logistics companies in Kenya. Additionally, for model 2, the regression results indicated that organizational culture had a positive and significant effect on the performance ( $\beta_4 = 0.759$ ;  $t = 21.116$ ;  $p \leq 0.05$ ) of logistics companies in Kenya.

In model 3, the regression results indicated that strategic intelligence capability had a positive and significant effect on the performance ( $\beta_5 = 0.242$ ;  $t = 6.993$ ;  $p \leq 0.05$ ) of logistics companies in Kenya. In addition, for model 3, the regression results indicated that organizational culture had a positive and significant effect on the performance ( $\beta_6 = 0.658$ ;  $t = 15.705$ ;  $p \leq 0.05$ ) of logistics companies in Kenya. In addition, for model 3, the regression results indicated that strategic intelligence capability\*organizational culture (the interactive term) had a positive and significant effect on the performance ( $\beta_7 = 0.168$ ;  $t = 4.279$ ;  $p \leq 0.05$ ) of logistics companies in Kenya. Table 18 presents the moderated multiple linear regression coefficients results. Therefore, the  $H_{02}$  was rejected, in the favor of the  $H_{A2}$ . Subsequently, organizational culture has significant moderating effect on the relationship between competitor and firm performance in Kenya. Table 18 presents the hypotheses test results.

**Table 18: Hypotheses Test Results**

Hypothesis	$\beta$	t	Sig.	Decision
H <sub>0</sub> 1: Strategic intelligence capability has no significant effect on firm performance in Kenya.	.524	8.989	.000	Reject the H <sub>0</sub> 1
H <sub>0</sub> 2: Organizational culture has no significant moderating effect on the relationship between strategic intelligence capability and firm performance in Kenya.				Reject the H <sub>0</sub> 2
Strategic Intelligence → Firm Performance	.242	6.993	.000	
Organizational Culture → Firm Performance	.658	15.705	.000	
Strategic Intelligence → Firm Performance				
Capability*Organizational culture	.168	4.279	.000	

**Discussions**

The purpose of this quantitative correlational study was to investigate the effect of strategic intelligence capability on firm performance and the moderating effect of organizational culture on the relationship between competitor and firm performance in Kenya. Specifically, the research sought to examine the effect of strategic intelligence capabilities on firm performance in logistics companies in Kenya. The correlation results indicated that strategic intelligence capability had a positive and significant relationship with firm performance in logistics companies in Kenya.

The regression results showed that strategic intelligence capability on firm performance in logistics companies in Kenya. The findings are consistent with the results of prior studies (Agha *et al.*, 2021; Dehghan *et al.*, 2022; Hamour *et al.*, 2023; Kori *et al.*, 2021). The research examined the moderating effect of organizational culture on the relationship between competitor and firm performance in Kenya. The regression results indicated that organizational culture had significant moderating effect on the relationship between competitor and firm performance in Kenya. The findings are consistent with the results of previous studies (Al-Fawaer & Alkhatib, 2020; Waithaka, 2023).

**SUMMARY**

The purpose of this quantitative correlational study was to investigate the effect of strategic intelligence capability on firm performance and the moderating effect of organizational culture on the relationship between competitor and firm performance in Kenya. Specifically, the research sought to establish the effect of strategic intelligence capabilities on firm performance in logistics companies in Kenya. The research found that strategic intelligence capability had a positive and significant effect on firm performance in logistics companies in Kenya. The research examined the moderating effect of organizational culture on the relationship between competitor and firm performance in Kenya. The research found that organizational culture had significant moderating effect on the relationship between competitor and firm performance in Kenya.

**CONCLUSION**

The purpose of this quantitative correlational study was to investigate the effect of strategic intelligence capability on firm performance and the moderating effect of organizational culture on the relationship between competitor and firm performance in Kenya. Specifically, the research sought to establish the effect of strategic intelligence capabilities on firm performance in logistics companies in Kenya. The research found that strategic intelligence capability had a positive and significant effect on firm performance in logistics companies in Kenya.

The first conclusion was that has a positive and significant effect on firm performance. The research examined the moderating effect of organizational culture on the relationship between competitor and firm performance in logistics companies in Kenya. The research found that organizational culture had significant moderating effect on the relationship between competitor and firm performance in logistics companies in Kenya. The second conclusion was that organizational culture has significant moderating effect on the relationship between competitor and firm performance.

### RECOMMENDATIONS

From the findings of this research, the research recommends that managers to foster the performance of logistics companies. From the findings of this research, the research also recommended that policy makers within the travel and tourism sector should to revise polices so that are more appropriate for the development of strategic intelligence capabilities namely strategic visioning capability, strategic intuition capability, strategic insight capability and strategic foresight capability for logistics companies to foster firm performance in the logistics sector.

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### Limitations and Future Research

This research paper generates novel insights into how strategic intelligence capabilities predict firm performance in logistics sector. However, the current research has a number of limitations, that need to be taken into consideration. First, the research was limited to the logistics companies in Kenya. Subsequently, caution should be taken when attempting to generalize the results beyond the logistics sector or in other regions. Future research could examine into how strategic intelligence capabilities predict firm performance in other sectors or in other regions. Second, the research was contextually limited to only strategic intelligence capabilities, namely strategic visioning capability, strategic intuition capability, strategic insight capability and strategic foresight capability. Future research could investigate other important strategic intelligence capabilities and their effect on firm performance. Third, because this research paper relied on a cross-sectional survey design, no inferences about the causality of relationships can be made. Future researchers should consider conducting a longitudinal study on strategic intelligence capabilities and firm performance

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