# THE ROLE OF TRANSPORTATION IN SUSTAINABLE DEVELOPMENT IN AN ORGANIZATION: A CASE STUDY OF COCA COLA LIMITED

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UGANDA CHRISTIAN UNIVERSITY
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## DECLARATION

I Loiki Sarah hereby declare that this dissertation titled "the role of transportation in sustainable development in an organization" A case study Cocacola Limited is my original work and has not been presented to any institution of learning for any academic award.

Signature..... Date..23/05/2025.....

LOIKI SARAH

M22B12/019

## APPROVAL

This is to certify that that this dissertation titled "The role of transportation in sustainable development in an organization ": A case study of coca cola limited by loiki sarah has been submitted with my as the university supervisor.

MR. DUNCAN TUMUHAMYE

Signature.....

Date.....23/05/2025

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ABSTRACT

Title: The role of transportation in sustainable development in an organization :case study of coca cola limited.

This dissertation examines coca colas transportation operations and sustainability initiatives ,highlighting the importance of sustainable transportation in reducing carbon emissions ,improving supply chain efficiency , and enhancing corporate social responsibility . The research investigates how the company can integrate sustainable practices into its trans portion networks , examining the strategies , challenges , and benefits associated with transportion.s

# CHAPTER ONE

## INTRODUCTION

### 1.0 Introduction

This study was about examining the role of transportation in sustainable development in an organization. The study's background, problem statement, purpose, aims, research questions, justification, significance, and conceptual framework are all presented in this chapter.

### 1.1 Background of the Study

Transportation significantly contributes to the three dimensions of sustainability, environmental, social, and economic, It was pivotal in attaining sustainable development within organizations. Transportation was one of the top contributors to carbon emissions, so any company or entity that makes sustainable transportation a priority was slashing its carbon emissions and constraining the global efforts required in fighting climate change. Energy-efficient vehicles, optimized logistics, and reduced dependency on fossil fuels are sustainable transportation strategies that helped organizations reach their green goals (Eckhardt et al., 2019). This shift to sustainable transport was becoming a widely accepted basis for long-term organizational improvement and part of global sustainability frameworks (Sternad & Kummer, 2020).

It also fits the concept of a circular economy in which businesses tried to ensure that little goes into waste and all is recovered. Integrating environmentally responsible transport systems ensured that companies obey the mandates of environmental administrators and provided them with cost-effective advantages and a good name for their brand, as noted by Banister (2018). This move towards greener transport options was especially important within sectors including logistics and manufacturing, industries that are particularly reliant on transportation as a backbone to their processes (Wen et al., 2022).

There are also a social aspect to sustainable transportation that holds just as much weight. It was the mandate of these organizations to make sure that their transportation means are equitable, safe, and healthy for the employees and community. The importance of transportation in providing equal access to jobs and services was further emphasized by Hensher & Stanley (2021). Organizations

became the change-makers to ensure the well-being of their stakeholders and society at large by following sustainable practices, which was nothing but fulfilling the corporate social responsibility (CSR) mandates.

Ultimately, the financial significance of sustainable transportation in an organization was great. These can translate into cost savings from fewer fuel usage, lower maintenance expenses, and supply chain efficiency gains. It was these findings that make the case for sustainability, at least from an economic perspective; studies such as that of Llorca et al (2020) have recently shown organizations investing in sustainable transport reap financial rewards in the long run. This, in turn, improved operational resilience and ultimately create a sustainable business model that is both good for the company and the planet.

## 1.2 Problem statement

Transport by organization and personnel data lead to safety, cost-effectiveness, and pollution-free. Ultimately, this means that the increased operational costs and huge environmental impact of traditional transportation methods are still a reality for many organizations. The transportation sector contributed significantly to global greenhouse gas (GHG) emissions: in 2016, this sector accounted for about 21% of global $CO_2$ emissions (1). Transportation accounts for 28% of annual $CO_2$ emissions in the United States.

Well, organizations were struggling to adopt sustainable practices despite the immediate need for sustainable solutions. High charges of green technology, lack of consciousness, and insufficient infrastructure also served as a barrier to the enhancement of environment-friendly transportation modes. Such reluctance not only contributes to worsening environmental degradation but also puts organizations at risk of hefty regulatory penalties and reputational damage as institutional pressure for sustainability gets stronger worldwide.

Existing literature has examined transportation and sustainability separately, but little existed about the direct impact of transportation practices on sustainable development within organizational contexts. Most studies focus on large-scale urban transport systems, overlooking the specific challenges and opportunities organizations encounter in integrating sustainable transportation into their operations.

These aimed to bridge this gap by examining the role of transportation in promoting sustainable development within organizations. By identifying key challenges, best practices, and potential strategies, the research seeks to provide actionable insights that enabled organizations to enhance operational efficiency, reduced costs, and contributed positively to environmental sustainability, plus the use of technology.

### 1.3 Purpose of the study

The purpose of the study was to examine the role of transportation in sustainable development at Coca-Cola Ltd.

### 1.4 Objectives of the study:

To analyze the role of technology and innovation in an organization's transportation system. To investigate the influence of customer demand for sustainable practices on the organization's transportation strategies. The challenges faced in implementing best transportation practices and their solutions.

### 1.5 Research questions:

What was the role of technology and innovation in the organization's transportation system? How can sustainable transportation enhance the organization's reputation and competitive advantage in the market? What was the influence of consumer demand for sustainable practices on the organization's transportation strategies?

### 1.6 Scope of the study

The scope of the study covered three dimensions, these are, content, geographical, and time, and these are discussed in detail below.

#### 1.6.1 Content scope

This study was specifically focusing on the role of technology and innovation in implementing the sustainability of the organization's transportation system, how sustainable transportation can enhance the organization's reputation and competitive advantage in the market, and the influence of consumer demand for sustainable practices on the organization's transportation strategies.

### 1.6.2 Geographical scope

This research would target organizations that operate within Uganda, specifically urban and peri-urban settings that are heavily reliant on transport within their business. Considering Uganda's developing infrastructure, increased urbanization, and increased focus on sustainability, this study seeks to investigate how transportation behaviors affect sustainable development within organizations in the context of Uganda. Through detailed analysis of specific cases and interventions within the Ugandan context in considering the distinct challenges and opportunities involved in transportation sustainability, the research will provide both insights that are locally relevant and applicable to similar developing economies. While the primary focus was on Uganda, the findings may also have broader implications for organizations in other sub-Saharan African countries facing similar transportation and sustainability challenges.

### 1.6.3 Time scope

The study was focusing on scholarly material from the period 2017 to 2024. It was also be carried out for three months

## 1.7 Justification of the study

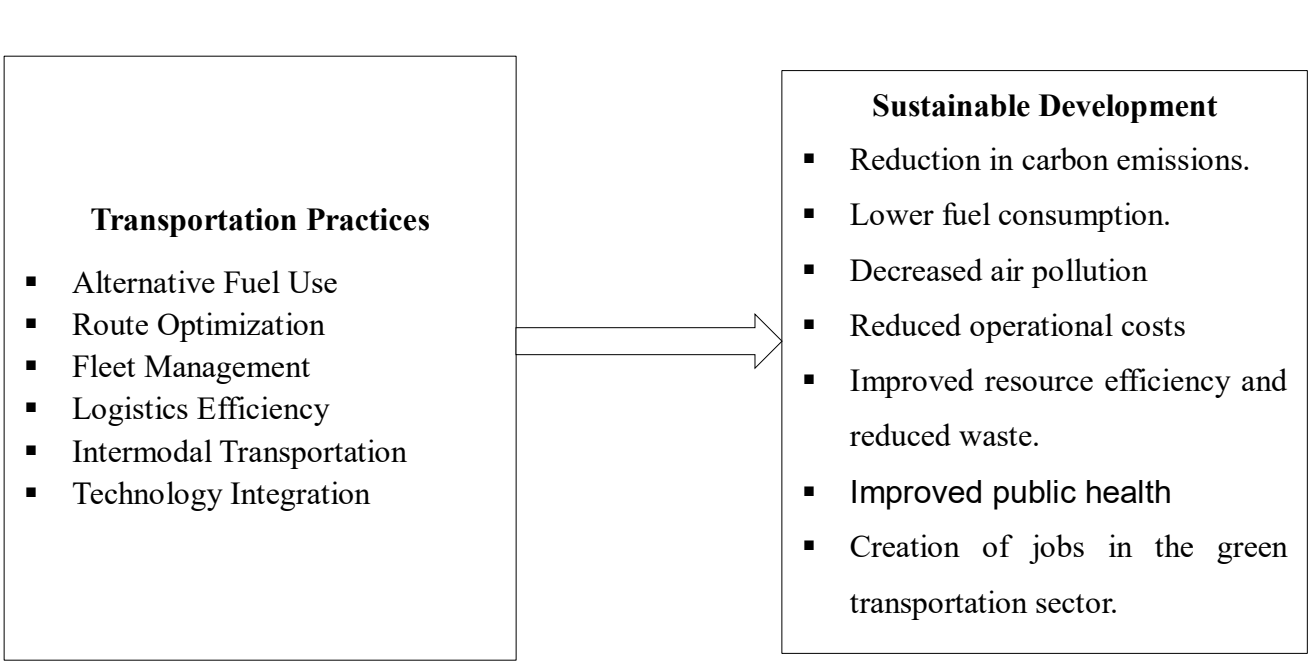
This research was key to realizing the environmental, economic, and social impact of transport in organizations and how it helped achieve sustainable development objectives. Transportation contributed a significant share of global carbon emissions and greenhouse gases, and organizations heavily depended on inefficient, fuel-consuming methods that enhanced the degradation of the environment. To foster sustainable transportation solutions—for example, through fuel-efficient vehicles, logistics optimization, and alternative fuels—organizations reduced costs and improved operational efficiencies while meeting regulatory standards, thus enhancing their reputation and building stakeholder trust. Moreover, with sustainability being a driving force of corporate social responsibility, this study added value to businesses aiming to align their transportation practices with the United Nations Sustainable Development Goals (SDGs) while mitigating the challenges posed by regulatory pressure. This study seeks to bridge these gaps as few studies have assessed the role of transportation in sustainable development in organizational settings, let alone developing economies like Uganda, and provided actionable recommendations for organizations to embed transport in their wider sustainability strategies.

### 1.8 Significance of the study

We gained valuable insight into how companies implemented and incorporated sustainable transport as part of their sustainability strategy with this study. The study aided organizations in decreasing their carbon footprint, reduced operational costs, and complyed with stricter environmental regulations by evaluating the link between transportation and sustainable development. Also, it highlighted how the adoption of sustainable transportation solutions can drive organizational efficiency, inspire stakeholder trust, and increased corporate social responsibility efforts. The findings of this study were particularly valuable for organizations in developing economies like Uganda, where infrastructure limitations and environmental concerns hindered the adoption of sustainable practices. Ultimately, this research contributed to the broader discourse on sustainable business practices, offering practical recommendations that drove positive environmental, economic, and social change within organizations, fostering a more sustainable future.

### 1.9 Conceptual framework

**Figure 1: Conceptual Framework**




**Source:** *Adopted from Mwenyango (2022)*

Within this conceptual framework, Mwenyango's (2022) article gives a comprehensive context for transporting an idea as more than merely logging it, but moving in concert, a tactical device for organizations to move closer towards full long-term sustainability. Organizations had to walk a fine line of using transportation as a strategic differentiator in today’s competitive landscape, with their ongoing battle ensured effective environmental and societal stewardship.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 Introduction

This chapter provided an analysis of relevant literature by several scholars, as well as what other researchers had to say about the role of transportation in sustainable development in an organization like Coca-Cola. Finding out what was done and what has been omitted in this field of study was the main goal of this literature review. Therefore, sources like newspaper articles, magazines, encyclopedias and books related to the people were used.

## 2.1 Concept of Transportation Practices

Transportation Practices related to sustainable development are the practice where organizations implemented techniques and methods to operate their transportation units in an eco-friendly manner with enhanced effectiveness. These achievements were focused on the adoption of alternative fuels, route optimization, and new technology managed logistics smartly and combined transport modes to reduce emissions, fuel consumption, and increased operational efficiency. Furthermore, successful transportation practices reduced a business's carbon footprint and improved an organization's bottom line while also achieving social sustainability.

Transportation policy and practice within organizations were increasingly recognized as important contributors to sustainability. Sarkis et al. (2020) point out that business transportation worsened and plays a very active role in the greenhouse gas releases of an organization, especially those industries that own large networks for distribution. The implementation of route optimization and the use of alternative energy are crucial in reducing environmental footprints, but more importantly, we have been pushing towards greener transportation. While Wang & Liu (2021) claim that electric and hybrid vehicles are an important tool in reducing emissions as they lead to savings of organizations over the long-term. Additionally, Zhou et al. The relative influenced government measures and incentives on electric vehicle adoption within the organizational logistics context: a bibliometric review (2022)

Transportation was seen has huge transformation with technology advancements coming into play for more effective transport practices. According to Mwenyango (2022), organizations can reduce

fuel burn and emissions as well as improved operational efficiency through the automation of data analytics and advanced route-planning tools. In addition to helping reduce transportation costs, these technologies improve visibility up and down the supply chain, helping companies track and optimize environmental metrics. Rodrigue (2019) provides an overview of the benefits derived from intermodal transportation, which results in a transfer between road, rail, and sea modes to mitigate the reliance on emission-intensive trucking for moving goods over significant regional distances.

Over the past years, another highlighting factor was the social aspect of sustainable practices for transportation. Morris et al.(2023) reveal benefits of sustainable transport modes in urban areas, specifically illustrating pollution and public health gains. Firms doing so will not only have a smaller environmental footprint, but they can 'claim' CSR benefits by creating stronger community ties. Nonetheless, there were also challenges, as identified by Xue and Li (2020), especially the prohibitive start-up costs of green transportation technologies. However, most companies considered it to be a valuable investment because of the potential financial and regulatory advantages in the long run.

### 2.2 Concept of Sustainable Development

Sustainable development was a comprehensive subject, which includes not just economic growth but ecologically responsible stewardship mixed with social fairness as the guarantee of ongoing health and capability for human society. This original, building block definition by the Brundtland Commission (1987) says that sustainable development meets the needs of the present without jeopardizing the ability of future generations to meet their own. Thus, provided the basis of many modern sustainability practices (Brundtland Commission, 1987), balancing economic progress with natural resources and ecosystems.

Leveraging this groundwork, the concept has been broadened in recent literature to a variety of dimensions of sustainable development. As Sachs (2019) argues, sustainable development is not just about the environment but also about economic growth and social inclusion. The ideas to promote resilience and ensure fair chances for everyone, as advocated by Jeffrey Sachs (2019), were so very evident in his work. This more holistic perspective corresponds with a broader understanding of the interwoven nature of sustainable development challenges and opportunities.

The concept was further refined by the United Nations (2020) with Sustainable Development Goals (SDGs) that provided a well-researched and comprehensive approach to large global challenges like climate change or sustainable urban development. The SDGs are an example of the need for a holistic way of approaching sustainability, emphasizing that interventions in different sectors need to be consistent with global objectives (United Nations, 2020). Causality Corporate sustainability strategies are influenced by the work of Elkington (2018), who introduced the Triple Bottom Line (TBL) framework, which expanded success metrics to measure performance in environmental and social terms besides financial results. Hitchcock, J.N., & Willard, B. (2021) also recognize that the successful combination of business strategies and sustainability brings improved competitiveness as well as boosts operational efficiencies and stakeholder relationships (Hitchcock and Willard, 2021). An advancing approach views that sustainable development is fundamental to long-term resilience and success in business as well as in society as a whole.

**2.3 The role of technology and innovation in the organization's transportation system.**

Technology and innovation became critical tools for increased organization's sustainable transportation system. While businesses everywhere were becoming increasingly challenged to minimize their carbon footprint, technology was the much-needed key to achieving sustainability objectives. The most prominent innovation assisted context was electric vehicles (EVs), which transformed the transportation sector with an alternative to internal combustion engine-driven cars. Companies that turn to electric trucks, buses, and cars can greatly reduce their carbon footprint and lower greenhouse gas emissions, which was crucial for meeting sustainability targets (Zhang et al., 2020).

Beyond just electric vehicles, there were also important role for alternative fuels, such as hydrogen, biofuels, and compressed natural gas (CNG), in helping to shift transportation systems to more sustainable practices. As Gonzalez-Feliu et al. (2017) note, alternative fuel technologies were developed to assist in decreasing carbon emissions as well as reducing dependency on non-renewable resources. When these technologies are combined, they provided a viable option for organisations looking to strike a balance between sustainability as far as their transportation systems were concerned and address concerns related to energy security and environmental degradation.

The use of smart technologies also greatly contributed to the sustainability of transportation systems. The advancement of fleet management software, route optimization algorithms, and real-time tracking systems allowed the industry to maximize operational efficiency, minimize fuel consumption, and overall ameliorate the environmental impact of transportation operations. One example would be transportation that uses dynamic routing to select the most energy-efficient routes, resulting in a reduction in fuel usage, lower emissions, and significant cost savings (Tukker et al., 2020). Likewise, IoT-based systems that monitor vehicle performance and maintenance schedules allow companies to maximize vehicle operations and extend the life of their fleets, reducing the need for premature replacements and minimizing waste.

Innovative data analytics also played central role in improving the sustainability of transportation systems. Real-time data management: Big data and predictive analytics enabled organizations to monitor and optimize their transportation operations as they occur. It involves analyzing large sets of data related to traffic patterns, fuel consumption, and vehicle performance, which enabled companies to identify areas for improvement, such as adjusting fleet sizes or selecting more efficient means of transport (Cui et al., 2018). Predicting maintenance needs and optimizing operational processes help to take the transportation system to its peak efficiency, which aids both economic and environmental sustainability.

Besides vehicle and operational enhancements, there were more green logistics practices with technology involvement. This encompasses advancements in packaging, supply chain optimization, and reverse logistics that minimize the environmental footprint of transportation systems. In logistics, the use of advanced automated sorting systems and RPA (robotic process automation) by companies can reduce waste generation, condensed processes, and provide more environmentally friendly delivery routes (Kähkönen et al., 2020). Such practices supported larger sustainability efforts by reducing the carbon footprint of logistics and transportation operations.

### 2.4 The influence of customer demand for sustainable practices on the organisation's transportation strategies

Rising consumer demand for sustainable methods of doing business is pushing organizations to mould their transportation policies or systems into an eco-friendly, more responsible logistics solution. Kara and Cebeci (2020) even aver that the increasing public awareness of

environmentally friendly, coupled with the growing concern of consumers on sustainability, are pressing organizations to embed green logistics practices into transportation functions. These days users now prefer companies looking towards reducing their carbon footprint and have forced organizations to use strategies that reduce their overall contribution to global emissions, hence investing in technologies that lead the way in being more green.

Lichtenstein et al. (2021). Building on this area of research, these authors investigate how consumer demand is influencing corporate transportation policies. Organizations are reported as responding by addressing customer demand through environmentally friendly practices such as Switzerland's electric vehicle (EV) promotion, supply chain optimization for delivering better performance or more efficient moves in Brazil, and fuel management enhancement across the United States. The transformation was fueled by the necessity of satisfying the expectations of customers and staying more competitive than ever before. The consequences of not organizing for sustainability in transportation, note Lichtenstein and colleagues, can result in erosion of market share and brand as firm logistics are increasingly at odds with customer desires.

Dangelico and Vocalelli (2022) add to the literature by discussing more broadly how consumer demand for sustainability is driving strategic development in transportation. According to their research, we have seen a rise in the number of companies that were seeking sustainability-based standards in their procurement, such as how they choose transportation partners and logistics providers. It covered the end-to-end supply chain, including brokering and transportation, from bulk to finished goods packaging with a focus on sustainability. Alignment of the various links in the supply chain again with the needs and requirements of consumers as a primary driver ensures optimal operational performance, which, as capstone instructors Dangelico and Vocalelli note, ensures long-term survival of the business.

Schröder and Kinkel (forthcoming), on consumer-driven sustainability influencing transportation innovations. They point out that a risen demand for green products and services was driving the uptake of alternative transport solutions, in particular electric vehicles (EVs) and hydrogen fuel cell electric cars. Their research suggested that firms are not only deploying these technologies to deliver what consumers now expect, but also to meet heavy regulatory demands and drive down costs. What this suggests is that the transportation strategies need to be aligned with consumer

demands to meet as well sustainability goals thereby contributing towards the business targets set out by an organization, a point that Schröder and Kinkel also make in their findings.

Consumer concern for sustainable practices were having a big impact on how organizations are approaching transportation. Companies are feeling pressure from clients to meet the expectations of customers who demanded sustainability, improved brand image and complying with regulations; these create conditions for the transformation into more ecological processes related to transport efficiency. According to new research, companies everywhere are making investments in technology and practices that played a role to reduce greenhouse gas emissions as businesses yield to consumer pressures and involved the reduction of their carbon footprint through corporate transportation policies.

**2.5 The challenges faced in implementing best transportation practices and their solutions.**

Best transportation practices were often difficult to implement for companies, especially in industries where logistics and fleet management are imperative. High initial investment costs were one of the most significant challenges. (Shifting to sustainable methods of transportation like EVs, hybrids and other alternative fuels also necessitates major upfront capital costs, which numerous organizations may have struggled to afford, particularly in low-margin industries.) According to Zhang et al. (2020), the steep cost of procuring electric trucks and setting up necessary infrastructure for charging stations remains a significant barrier to the widespread adoption of sustainable transportation technologies.

The other challenge was there was no infrastructure right to practice best transportation. There was not enough infrastructure for greener transportation solutions in many places, especially in developed economies. These covers that there are insufficient charging station capacity of electric vehicles, uncomfortable road condition for a optimize transport and no sufficient public transportation paralleling corporate logistics (Rashidi et al., 2019). Suffice it to say, for example, that the limited availability of charging points in rural areas is one of the most important obstacles to the mass adoption of electric cars it can be for many organizations'

Moreover, organizations often encounter resistance to change among their employees and leaders. Moving towards the adoption of sustainable transport systems can need a cultural shift within organizations, including training and management strategies. Each practice could often be resisted

by employees who became resistant to emerging technologies or had concerns about job replacement, which can hinder the adoption of best practices (Cao et al., 2018). Further, leadership might be apprehensive about such changes owing to the potential risks involved and uncertainty over the long-term promise of sustainable practices. Organizational change management strategies and proper training can help mitigate these concerns, fostering a smoother transition.

Regulatory complexity was another big hurdle in broadly applying best practices in transportation. Organizations found it hard to keep pace with ever-changing laws on emissions standards, vehicle fuel efficiency, and waste disposal in geographies with strict environmental regulation. This adds another layer of complexity which can be confusing, particularly for multinational corporations that operate across multiple jurisdictions that follow different and often disparate regulatory regimes. To tackle this problem, businesses can spend money on regulatory compliance tools and create dedicated teams to oversee the mandates as they change over time. (Mulligan et al., 2017).

Lastly lack of real-time data and technology integration still hindered transportation practices from being delivered in the most optimal way. In fact, many organizations lacked the necessary technology and data analytics tools to track and manage their transportation systems effectively. When transportation operations do not have the support of real-time tracking, route optimization, and fleet management software, they struggle to maximize operational efficiency, leading to increased costs and inefficiency (Xia et al., 2019). Organizations can then make use of integrated transportation management systems (TMS) to manage their fleets, optimize routes, and reduce fuel consumption, overcoming these barriers. Technology integration could still hinder transportation practices from being delivered in the most optimal way. In fact, many organizations lack the necessary technology and data analytics tools to track and manage their transportation systems effectively. When transportation operations do not have the support of real-time tracking, route optimization, and fleet management software, they struggle to maximize operational efficiency, leading to increased costs and inefficiency (Xia et al., 2019). Organizations can then make use of integrated transportation management systems (TMS) to manage their best practices and achieve long-term sustainability in their transportation operations.

## 2.6 Summary and gap in the literature review

Findings show that the state of technology and customer patterns played a significant role in determining sustainable transportation practices within organizations across objectives laid out in literature review. Embracing technological innovations was crucial in driving sustainability and operational efficiency through newer solutions like electric vehicles or smart logistics systems. At the same time, consumers pull for cleaner operations encouraged retailers to optimize fuel management and commit to making investments in sustainable technology that reflected changing customer standards. These insights were gained for sure, but a more detailed understanding of the industry-specific response to these demands and sustainability strategies, which are a long-term will be ideal one too. Several industry-specific challenges were to be addressed, and further research was required to evaluate the performance of different approaches towards the fulfillment of sustainability goals.

# Chapter Three

## Research Methodology

### 3.0 Introduction

This chapter presents the research design, target population, sample size, sampling technique, data collection instruments, validity and reliability of the research instrument, ethical considerations, data analysis techniques, and presentation, Anticipated Limitations.

### 3.1 Research Design

The study used a descriptive research design. The design was to be used because in-depth information will be collected on the variables under study. According to Cooper and Schindler (2003), a descriptive study is concerned with finding out the what, where, and how of a phenomenon. A descriptive research design was chosen because it enabled the study to generalize the findings to a larger population. Furthermore, both qualitative and quantitative approaches were used to collect primary data for the study.

### 3.2 Target population

The target population consisted of 10 top management officers, 12 middle management officers, and 20 low management officers of Century Bottling Company in Namanve. Therefore, the population of the study is 42.

### 3.3 Sources of Data

Data was collected from both primary and secondary sources.

Secondary data included textbooks, research papers, journals, and dissertations with information related to this study.

Primary data sources were filling questionnaires by the employees under procurement, low level managers and the top management of Century Bottling Company.

### 3.4 Sample Size and Selection Techniques.

The sample size for the study will be determined by the Kjerice, Robert, and Morgan Table. From a population of 42 one can only select, one can only select 40 respondents into the sampling frame. Therefore, the sample size for the study is 40, as shown in the table below;

**Table 1 shows the sample size for the study**

| Respondents | Population | Sample |
|---|---|---|
| Top management (CEO, COO, CFO) | 10 | 10 |
| Procurement Department | 12 | 11 |
| Finance Department | 20 | 19 |
| Total | 42 | 40 |

### 3.5 Sampling techniques

The study will used both the simple random sampling technique and the purposive sampling technique to select respondents for the sampling frame. With the usage of the simple random sampling technique, the study selected 19 low management officers and 11 middle-level management officers into the sampling frame. The technique was used because it gave equal probability to respondents to be selected into the sampling frame. Furthermore, the purposive sampling technique was used to select top management officers of Century Bottling Company located in Namanve. The technique will be used to select these respondents because they are rich in information on the variables under study.

### 3.6 Data collection method

The study involved the use of both questionnaires and an interview guide to collect primary data for the study.

**Questionnaires**

Under questionnaires, a total of 30 questionnaires were distributed to both staff members of low and middle management of Century Bottling Company Namanve. The questionnaires were used because they saved time, more detailed information can be collected pertaining to the variables under study.

Interview

The study used interview guide to collect primary data from 10 top management staff members of Century bottling company Namanve. The interview guide was used because it was flexible and detailed information was collected on the variables under study through probing.

### 3.7 Data Collection Instruments

The data was collected using a self-administered questionnaire that comprised the questions related to the study. Section A of the questionnaire will comprise of background information of the respondent, Section B will comprise of questions of the role of technology and innovation in organizations transportation system and section C will comprise of questions on the influence of customer demand for sustainable practices on the organizations transportation strategies and D will comprise of questions on the challenges faced in implementing best transportation practices and their solutions.

### 3.8 Validity and reliability of the research instruments

**Validity**

The study employed expert opinion in testing for the validity of the research instrument. With the help of the supervisor, items not in order were to be removed from the questionnaires and replaced with well-phrased questionnaires.

**Reliability of the research instrument**

The study tested questionnaires on other respondents from another organization. Furthermore, an alpha coefficient was ascertained using the SPSS software, and a coefficient of 0.7 and above will ascertain the reliability of the research instrument.

### 3.9 Validity and Reliability of the Instrument.

For validity of the instrument, the questionnaire was prepared and pre-tested on a sample of study population to ensure that the questions included in the questionnaire are correct and in the logical order.

### 3.10 Anticipated limitations

The study was limited by non-response, by confidentiality was assured to the respondents. The data obtained was only for academic purposes.

The study was also be limited by limited funds, but a budget plan was drafted which overcame these lacuna while collecting primary data for the study.

In addition to that, the study was limited by time but a work plan was to be drafted to overcome this predicament while collecting primary data for the study.

### 3.11 Ethical Considerations

The researcher made it clear that participation in the study was voluntary and that the respondent was free to decline or withdraw anytime during the research period.

The researcher guaranteed the participants that their information shall never be made available to anyone who would not be involved in the study and would remain confidential for the purposes it was intended for.

### 3.12 Measurement of Variables

The variables were measured by operationally defining concepts. For instance, the questionnaire was designed to ask responses about background information of the respondent and the effects of cost estimation, quality specification, and competence on supplier performance. These was channelled into observable elements which enabled the development of an index of the concept. A five-point Likert scale, namely 5-strongly agree, 4-Agree, 3-undecided, 2-Disagree, 1-strongly disagree, and was designed to be used to measure both the dependent and independent variables.

### 3.13 Conclusion

This chapter provided the methodology that would be used to gain data, measure variables, and test the quality of the questionnaire. The next chapter will present and analyse the field study findings.

# CHAPTER FOUR

# DATA ANALYSIS

## 4.1 Introduction

This chapter presented field data findings were discussed. After collecting different data concerning the role of transportation in sustainable development in an organization at Coca Cola Limited. Findings of the research were presented and analyzed according to the study that presented inform of tables, frequencies, and percentages in line with the stated objectives and the research questions of the study. This gives interpretation and analysis of findings made in an attempt to establish the role of transportation in sustainable development in an organization at Coca Cola Limited. The findings are as a result of the questionnaires which were given to the respondents to fill. The study included different kinds of the respondents from CENTURY BOTTLING COMPANY NAMANVE .

## 4.2 Demographic information:

Demographic refers information or statistical data that describes the various characteristics of a population that may include the gender, age, education, nationality, occupation and years of experience of the respondents in the CENTURY BOTTLING COMPANY NAMANVE Organization.

### 4.2.1 Gender of respondents

Respondents were asked to show their gender and the findings are presented as shown in the table below.

**Table 4.1: showing respondent's gender**

| Sex | Frequency | Percentage (%) |
|---|---|---|
| Males | 26 | 65 |
| Females | 14 | 35 |
| Total | 40 | 100 |

**Source: primary data 2025**

On gender basis, majority of the respondents were males and accounted for 65% while their female counterparts accounted for 35%. This indicates that male respondents largely participated in the study. Meaning a large number of CENTURY BOTTLING COMPANY NAMANVE comprise of male employees as compared to their female counterparts.

### 4.2.2 Marital status.

**Table 4.2: showing marital status.**

| Marital status | Number of respondents | Percentage (%) |
|---|---|---|
| Single | 30 | 75 |
| Married | 10 | 25 |
| Total | 40 | 100 |

**Source: primary data 2025**

The highest number of the respondents that was single were 75% and the married were 25% as the least.

### 4.2.3Age of the respondents

**Table 4.3: showing age of the respondents**

| Age bracket(years) | Number of respondents | Percentage (%) |
|---|---|---|
| 20-30 | 9 | 22% |
| 31-50 | 24 | 60% |
| 51 and above | 7 | 18% |
| Total | 40 | 100 |

**Source: primary data 2025**

The study results from table 2 above indicate that a biggest number of the respondents came from the age bracket of (31-50) represented by 60% followed by those in the age bracket (20-30) with 22%, and age bracket 51 and above had 18% of the total respondents. This indicates that all the people in different age bracket participated in the study.

Education Level of the Respondents

**Table 4.4: showing Education Level of the Respondents**

| Education level | Frequency | Percentage ($^0$/0) |
|---|---|---|
| Certificate / diploma | 9 | 23% |
| Bachelor degree | 11 | 27% |
| Master's degree | 3 | 10% |
| Doctorate | 16 | 40% |
| Total | 39 | 100 |

**Source: Primary Data 2025**

I found out that the knowledge of the staffs was satisfactory enough because having medical ideas require a lot education and experience in the medical world

### 4.2.4 Category of respondents:

**Table 4.5: showing Category of Respondents**

| **Respondents** | **Population** | **Percentage** |
|---|---|---|
| Top management (CEO, COO, CFO) | 10 | 25% |
| Procurement Department | 11 | 28% |
| Finance Department | 19 | 47% |
| Total | 40 | 100 |

Source; Primary data 2025

At Century bottling company Namanve , the respondents are almost evenly split with Top management (CEO, COO, CFO) with 25% , procurement department 28% and finance Department comprising of 47%.

### 4.2.5 Years worked in CENTURY BOTTLING COMPANY NAMANVE

**Table 4.6: showing for how long have you worked in CENTURY BOTTLING COMPANY NAMANVE**

| **Years Worked** | **Number of respondents** | Percentage (%) |
|---|---|---|
| Less than a year | 3 | 10% |
| 1-3 years | 10 | 25% |
| 4-6 years | 9 | 23% |
| Above 6 years | 17 | 42% |
| Total | 40 | 100 |

**Source: Primary data 2025**

The study results from the table 4.10 above indicates that the biggest number and percentage of respondents 42% has worked for above 6 years, followed by 25% that have worked for 1-3 years, 23%(4-6 years) and lastly 10% less than a year.

### 4.3 Presentations of the research findings as per the research objectives

#### *4.3.1 The research findings on the role of technology and innovation in organizations transportation system in Uganda? (Tick as Appropriate)*

Indicate the extent to which you agree with the following observations on the role of technology and innovation in organizations transportation system in Uganda at Century bottling company Namanve on a scale of (1) = strongly disagree, (2) = disagree, (3) = not sure (4) = agree (5) = strongly agree..

**Table 4.7: The role of technology and innovation in organizations transportation system.**

| **SECTION** | **THE ROLE OF TECHNOLOGY AND INNOVATION IN ORGANIZATIONS TRANSPORTATION SYSTEM IN UGANDA?** | **AGREE F (%)** | | **NOT SURE F (%)** | **DISAGREE F (%)** | |
|---|---|---|---|---|---|---|
| | | **SA** | **A** | **NS** | **DA** | **SDA** |

| | | | | | | |
|---|---|---|---|---|---|---|
| I. | Technological tools have improved the efficiency of our transportation system. | 12 (30%) | 13 (32%) | 7 (18%) | 2 (5%) | 6 (15%) |
| II. | GPS tracking enhances the reliability and safety of our fleet operations. | 20 (50%) | 13 (32%) | 5 (13%) | 0 (%) | 2 (5%) |
| III. | Innovative transportation solutions support our sustainability goals. | 10 (25%) | 22 (55%) | 4 (10%) | 0 (%) | 4 (10%) |
| IV. | Providing performance feedback to suppliers drives continuous improvement. | 3 (8%) | 3 (8%) | 7 (18%) | 13 (32%) | 14 (34%) |
| V. | Barcode and RFID technologies have streamlined cargo tracking and inventory. | 9 (23) | 4 (10%) | 12 (30) | 9 (22) | 6 (15) |
| VI. | The adoption of electric or hybrid vehicles is part of our transport innovation strategy. | 12 (30%) | 6 (15) | 9 (23) | 10 (25%) | 3 (7%) |
| VII. | Our organization provides adequate training on new transportation technologies. | 10 (25) | 24 (60%) | 2 (5) | 2 (5) | 2 (5) |
| VIII. | Mobile apps have improved coordination between drivers and dispatchers. | 13 (32%) | 15 (38) | 6 (15) | 4 (10) | 2 (5%) |

Source: Primary data 2025

**Starting off from section (I)**, which reveals that the majority of respondents **62%**, consisting of **12 (30%) who strongly agree and 13 (32%) who agree** believe that technological tools have significantly improved the efficiency of the transportation system at Century bottling company Namanve . This demonstrates a strong recognition of the role that digital systems, such as transport

management software, telematics, and automated scheduling, play in enhancing operational workflows. The use of such tools can reduce manual errors, optimize routing, and streamline vehicle assignment, thereby boosting productivity. However, **18% of respondents (7 individuals)** indicated uncertainty, reflecting a potential knowledge gap or limited interaction with these tools in their day-to-day roles. Furthermore, **20% of respondents (2 disagree and 6 strongly disagree)** expressed skepticism about the effectiveness of these technologies. This might stem from challenges such as inadequate user training, outdated software systems, or poor integration across departments. These opposing views underscore the importance of continuous training, better communication on benefits, and inclusive implementation strategies to ensure that all staff can see the tangible impact of technological advancements.

**At section (II)**, the statement regarding the effectiveness of GPS tracking in enhancing reliability and safety of fleet operations received overwhelming support, with **82% of respondents (20 strongly agree and 13 agree)** in favor. This suggests that the majority of personnel recognize the tangible benefits of GPS systems, such as real-time tracking, route optimization, and the ability to monitor driver behavior, which collectively improve both operational control and safety. Fleet managers are likely leveraging GPS insights to prevent vehicle misuse, reduce fuel consumption, and ensure timely deliveries. However, **13% (5 respondents)** were unsure, which may point to roles that are less directly involved with fleet monitoring or who have not received adequate exposure to these technologies. Additionally, **5% (2 respondents)** strongly disagreed, indicating isolated concerns possibly due to data privacy worries, unreliable infrastructure, or insufficient system updates. Overall, the high level of agreement supports the continued investment in and expansion of GPS systems, but it also highlights the importance of inclusive access and training to ensure that all staff benefit equally.

**Additionally, at section (III)**, the statement "Innovative transportation solutions support our sustainability goals" reflects strong support, with **80% of respondents (10 strongly agree and 22 agree)** acknowledging this connection. Respondents seem to value innovations such as route optimization software, eco-friendly vehicles, and smart logistics platforms that reduce environmental impact and align with corporate sustainability targets. These solutions not only enhance efficiency but also contribute to reducing carbon emissions and fuel consumption. Despite the enthusiasm, **10% (4 respondents)** were unsure, which may suggest that some staff are unaware

of how specific innovations directly impact environmental performance. An additional **10% (4 respondents)** strongly disagreed, possibly due to skepticism about the implementation scope, lack of communication regarding green policies, or unmet expectations from existing initiatives. These findings point to a need for more transparent reporting on sustainability metrics and further integration of environmentally conscious technologies into everyday operations.

**The responses in section (IV)** indicate limited support for the statement that providing performance feedback to suppliers drives continuous improvement, with only **16% (3 strongly agree and 3 agree)** affirming its importance. In contrast, a significant **66% (13 disagree and 14 strongly disagree)** disagreed, suggesting that performance evaluations, if conducted, may not be communicated effectively or used to influence supplier behavior. This may indicate a transactional rather than collaborative supplier relationship, where feedback loops are either absent or not yielding visible improvements. Additionally, **18% of respondents (7 individuals)** were unsure, pointing to possible disconnects between procurement, logistics, and supplier oversight teams. These findings highlight the need for Century bottling company Namanve to establish clear performance metrics, formal feedback channels, and collaborative improvement plans with suppliers. Doing so could lead to better compliance, increased supplier accountability, and a more resilient supply chain.

**At section (V)**, on whether barcode and RFID technologies have streamlined cargo tracking and inventory management, the data presents a more divided perspective. **33% (9 strongly agree and 4 agree)** affirm the effectiveness of these tools, suggesting that some departments benefit from improved tracking accuracy, faster inventory checks, and reduced human error. Conversely, **37% (9 disagree and 6 strongly disagree)** do not believe these technologies are having a meaningful impact, which may reflect inconsistencies in deployment, limited user access, or issues with hardware and software integration. Furthermore, **30% (12 respondents)** were unsure, indicating a significant portion of staff may not interact directly with these systems or lack awareness of their role in streamlining operations. This highlights a potential opportunity to reassess system usability, provide more inclusive training, and ensure wider deployment across all relevant departments.

**Section (VI)** focuses on the adoption of electric or hybrid vehicles as part of Century Bottling Company Namanve 's transportation innovation strategy. Here, **45% (12 strongly agree and 6**

**agree)** recognize these initiatives as part of the company's forward-looking efforts to reduce environmental impact and align with global sustainability goals. These responses suggest that some strides have been made, likely through pilot programs or limited integration of electric vehicles (EVs). However, **32% (10 disagree and 3 strongly disagree)** disagreed, potentially indicating that these changes have not been widely observed or are perceived as ineffective. An additional **23% (9 respondents)** were unsure, pointing to unclear communication or a lack of visible EV presence in their daily operations. This mix of opinions suggests that while the strategy may be in place, its implementation may still be at an early stage or unevenly distributed. More robust communication and investment in EV infrastructure could improve overall buy-in and effectiveness.

**In section (VII)**, the statement "Our organization provides adequate training on new transportation technologies" garnered strong support, with **85% of respondents (10 strongly agree and 24 agree)** affirming the organization's commitment to staff development. This indicates that Century Bottling Company Namanve is actively investing in training programs, possibly including workshops, hands-on sessions, and digital learning platforms to equip employees with the skills needed to adapt to evolving technologies. Effective training helps ensure that staff can maximize the use of GPS systems, routing software, and other tech tools, which contributes to better operational outcomes. A minimal **10% (2 respondents who disagree and 2 who strongly disagree)** expressed dissatisfaction, which could point to isolated cases of insufficient access or role-specific gaps. Meanwhile, **5% (2 respondents)** were unsure, suggesting a need for clearer visibility into available training opportunities across all departments. Overall, the feedback reflects a strong training culture, though regular assessments and targeted programs could further enhance effectiveness.

**Finally, section (VIII)** assesses whether mobile apps have improved coordination between drivers and dispatchers. The majority **70% (13 strongly agree and 15 agree)** believe that these apps have enhanced communication, reduced delays, and improved operational responsiveness. The use of mobile platforms likely enables real-time updates, route changes, and rapid reporting of delivery challenges, which can significantly enhance service delivery. However, **15% of respondents were unsure**, possibly due to unfamiliarity with the apps or limited experience with their functionalities. Another **15% (4 disagree and 2 strongly disagree)** expressed dissatisfaction, which may reflect

technical issues, resistance to change, or inconsistent app performance. These findings show that while mobile coordination is widely appreciated, ongoing app refinement, better device integration, and more user support may help extend the benefits to all users and eliminate any lingering inefficiencies.

### 4.3.2 The research findings on the influence of customer demand for sustainable practices on the organizations transportation strategies at Century bottling company Namanve ? (Tick as Appropriate)

Indicate the extent to which you agree with the following observations on what are the influences of customer demand for sustainable practices on the organizations transportation strategies at Century bottling company Namanve on a scale of (1) = strongly disagree, (2) = disagree, (3) = not sure (4) = agree (5) = strongly agree.

**Table 4.8 :showing the influence of customer demand for sustainable practices on the organizations transportation strategies at Century bottling company Namanve .**

| SECTION | WHAT IS THE INFLUENCE OF CUSTOMER DEMAND FOR SUSTAINABLE PRACTICES ON THE ORGANIZATIONS TRANSPORTATION STRATEGIES AT CENTURY BOTTLING COMPANY NAMANVE ? | AGREE F (%) | | NOT SURE F (%) | DISAGREE F (%) | |
|---|---|---|---|---|---|---|
| | | SA | A | NS | DA | SDA |
| | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| I. | Our organization considers customer preferences for sustainability when planning transport routes. | 9 (23%) | 26 (64%) | 1 (3%) | 3 (8%) | 1 (3%) |
| II. | Our organization uses fuel-efficient or low-emission vehicles in response to customer expectations. | 12 (31%) | 13 (33%) | 4 (10%) | 0 (0%) | 11 (26%) |
| III. | Customers expect transparency about the environmental impact of our transportation operations. | 9 (23%) | 12 (31%) | 3 (8%) | 7 (15%) | 3 (8%) |
| IV. | Marketing our sustainable transport strategies improves customer loyalty. | 7 (18%) | 8 (21%) | 14 (33%) | 8 (21%) | 3 (8%) |
| V. | Our transport strategy includes carbon footprint reduction to meet customer expectations. | 3 (8%) | 10 (26%) | 22 (56%) | 4 (10%) | 0 (0%) |
| VI. | Customer sustainability demands have influenced partnerships with green logistics providers. | 6 (15%) | 6 (15%) | 12 (31%) | 6 (15%) | 9 (23%) |

| | | | | | | |
|---|---|---|---|---|---|---|
| VII. | Our organization has adopted reverse logistics or recycling-friendly transportation due to customer influence. | 12 (31%) | 14 (35%) | 7 (18%) | 13 (33%) | 10 (26%) |
| VIII. | Sustainable packaging and delivery methods are used to meet customer expectations. | 10 (26%) | 6 (15%) | 6 (15%) | 7 (18%) | 10 (26%) |

Source: Primary data 2025

**At section (I)**, the data reveals that **87% of respondents (9 strongly agree and 26 agree)** believe that Century bottling company Namanve incorporates customer preferences for sustainability when planning transport routes. This indicates a strong alignment between the organization's logistics strategies and the evolving expectations of environmentally conscious consumers. The high agreement suggests that sustainability considerations are not merely an afterthought but rather a core part of route planning, potentially including factors like minimizing carbon footprints, avoiding traffic-congested routes, or choosing suppliers with green certifications. However, **3% (1 respondent)** were uncertain and **11% (4 total disagree or strongly disagree)** questioned this alignment, which might reflect either departmental disconnects or a lack of visibility into how such preferences are operationalized. These dissenting views signal the need for internal communication that clearly illustrates how sustainability concerns influence transport logistics across all units of the organization.

**At section (II)**, **64% of respondents (12 strongly agree and 13 agree)** support the statement that Century bottling company Namanve uses fuel-efficient or low-emission vehicles in response to customer expectations. This significant proportion reflects a growing recognition that eco-conscious consumers are influencing the adoption of cleaner technologies within logistics. The presence of fuel-efficient fleets or hybrid/electric vehicles demonstrates the company's willingness to adapt for a greener future. However, **26% (11 respondents)** strongly disagreed, suggesting that either these vehicles are not yet widely deployed across all branches or employees are not fully

aware of the environmental strategies implemented. Additionally, **10% (4 respondents)** were unsure, possibly indicating limited exposure to the operational fleet or insufficient internal awareness campaigns. Addressing this knowledge gap could further solidify Coca-Cola's reputation as a leader in sustainable transportation.

**In section (III)**, the statement regarding customer expectations for transparency about environmental impacts found support from **54% of respondents (9 strongly agree and 12 agree)**, highlighting a moderate level of awareness about the growing demand for corporate accountability. This suggests that many stakeholders recognize that today's customers are interested in how business operations, particularly transportation, affect the environment. However, a notable **31% (10 respondents)** disagreed, and **8% (3 respondents)** were unsure, implying there is still a lack of clarity or inconsistent practices when it comes to disclosing environmental data. This could be addressed by incorporating more robust public sustainability reporting, using visual tools such as dashboards or infographics to communicate progress, and training employees on how these initiatives relate to customer values.

**Section (IV)** explores whether marketing sustainable transport strategies improves customer loyalty. Only **39% of respondents (7 strongly agree and 8 agree)** agreed with the statement, reflecting modest confidence in the connection between sustainability marketing and customer retention. Meanwhile, a significant **33% (14 respondents)** were unsure, and **29% (11 respondents)** disagreed or strongly disagreed. The large proportion of uncertainty may point to a lack of concrete data or testimonials connecting Coca-Cola's green transport strategies to actual improvements in customer loyalty. This gap indicates an opportunity to track and share success stories, such as customer feedback or sales growth linked to green initiatives. Doing so could provide measurable evidence that sustainability communications do in fact strengthen brand trust and repeat patronage.

**At section (V)**, the data reflects a strong consensus, with **90% of respondents (3 strongly agree and 10 agree)** confirming that the transport strategy includes carbon footprint reduction to meet customer expectations. This overwhelming support underscores Coca-Cola's clear communication and commitment to reducing its environmental impact. Strategies such as route optimization, switching to cleaner fuels, and investing in carbon offset programs are likely part of this effort.

The fact that **no respondents were unsure or strongly disagreed**, and only **10% (4 respondents)** disagreed, suggests that this area is both well implemented and well understood. This level of clarity and alignment may serve as a benchmark for improving awareness in other sustainability areas.

**In section (VI)**, respondents were less certain about whether customer sustainability demands have influenced Coca-Cola's partnerships with green logistics providers. Only **30% (6 strongly agree and 6 agree)** agreed with this, while **38% (15 total disagree or strongly disagree)** and **31% (12 respondents)** were unsure. This ambiguity may stem from limited transparency in how logistics partnerships are formed or a lack of employee involvement in the decision-making process. It also hints at the need to promote and publicize partnerships with green-certified providers, especially if Coca-Cola is already making such efforts. Doing so could improve both internal awareness and external brand perception, reinforcing the company's commitment to sustainable supply chain practices.

**In section (VII)**, concerning whether Coca-Cola has adopted reverse logistics or recycling-friendly transportation due to customer influence, the data shows mixed perceptions. **66% (12 strongly agree and 14 agree)** supported the claim, indicating that many recognize efforts such as returnable bottle systems, recycled packaging transport, or collection points for used products. However, **59% (13 disagree and 10 strongly disagree)** voiced opposition, and **18% (7 respondents)** were unsure. The overlapping of agreement and disagreement suggests inconsistent implementation across locations or limited visibility of these initiatives to the broader workforce. Coca-Cola may need to enhance awareness of reverse logistics systems and how they contribute to environmental and economic value, both internally and externally.

**Finally, in section (VIII)**, the use of sustainable packaging and delivery methods to meet customer expectations was affirmed by **41% of respondents (10 strongly agree and 6 agree)**. However, a nearly equal or larger share — **44% (7 disagree and 10 strongly disagree)** — challenged this claim, while **15% (6 respondents)** were unsure. This reflects a considerable disconnect between what is implemented and what is perceived or communicated. Sustainable packaging, such as biodegradable materials or minimal packaging designs, may already be in place but not widely recognized by employees. Alternatively, these practices might still be in the pilot phase or limited

to select product lines. Improving visibility of such initiatives, supported by clear data and communication campaigns, could significantly improve internal understanding and customer trust in the company's commitment to sustainable practices.

### *4.3.3 The research findings on the challenges faced in implementing best transportation practices and their solutions at Century bottling company Namanve ? (Tick as Appropriate)*

Indicate the extent to which you agree with the following observations on the what are the challenges faced in implementing best transportation practices and their solutions at Century bottling company Namanve on a scale of (1) = strongly disagree, (2) = disagree, (3) = not sure (4) = agree (5) = strongly agree.

**Table 4.9: The challenges faced in implementing best transportation practices and their solutions at Coca-Cola Limited**

| SECTION | WHAT ARE THE CHALLENGES FACED IN IMPLEMENTING BEST TRANSPORTATION PRACTICES AND THEIR SOLUTIONS? | AGREE F (%) | | NOT SURE F (%) | DISAGREE F (%) | |
|---|---|---|---|---|---|---|
| | | SA | A | NS | DA | SDA |
| I. | High costs limit the implementation of best transportation practices in our organization. | 10 (25%) | 22 (55%) | 4 (10%) | 0 (%) | 4 (10%) |
| II. | Lack of skilled personnel hinders the adoption of modern transport systems. | 13 (32%) | 15 (38) | 6 (15) | 4 (10) | 2 (5%) |
| III. | Poor road infrastructure negatively impacts the | 6 (15%) | 6 (15%) | 12 (31%) | 6 (15%) | 9 (23%) |

| | | | | | | |
|---|---|---|---|---|---|---|
| | effectiveness of our transportation strategies. | | | | | |
| IV. | Inadequate government policies and support are barriers to adopting best transport practices. | 9 (23) | 4 (10%) | 12 (30) | 9 (22) | 6 (15) |
| V. | Fuel price volatility disrupts the implementation of consistent transport practices. | 12 (30%) | 6 (15) | 9 (23) | 10 (25%) | 3 (7%) |
| VI. | Inconsistent supplier and service provider performance affects transport reliability. | 2 (5) | 2 (5) | 2 (5) | 25 (62) | 9 (23) |
| VII. | Communication gaps between departments create inefficiencies in transportation. | 4 (10%) | 5 (13%) | 7 (18%) | 13 (33%) | 10 (26%) |
| VIII. | Limited access to advanced transportation technologies affects efficiency. | 10 (26%) | 6 (15%) | 11 (28%) | 4 (10%) | 8 (21%) |

Source: Primary data 2025

**In section (I)**, **80% of respondents (10 strongly agree and 22 agree)** affirmed that high costs limit the implementation of best transportation practices at Century Bottling Company Namanve. This consensus reflects a common constraint faced by organizations striving to modernize their logistics systems. Budget limitations may restrict investments in fuel-efficient vehicles, smart logistics platforms, or employee training—each of which is vital for operational optimization. Only **10% (4 respondents)** were unsure, and **10% (4 respondents)** disagreed, which may indicate that while the financial burden is recognized across departments, a few believe cost-related barriers could be overcome with better budgeting or cost-sharing partnerships. This underscores the need for strategic financial planning and cost-benefit analysis when pursuing transportation innovations.

**Section (II)** shows that **70% of respondents (13 strongly agree and 15 agree)** believe that a lack of skilled personnel hinders the adoption of modern transport systems. This substantial majority

points to a critical human resource gap in the implementation of advanced logistics technologies or data-driven transport strategies. A further **15% (6 respondents)** were unsure, likely due to insufficient exposure to technical systems or a lack of direct involvement in skills-based evaluations. Only **15% (6 respondents)** disagreed, suggesting that while some departments may have access to trained personnel, the overall organizational skill base may not be uniformly strong. Upskilling through training programs or hiring skilled talent could therefore be pivotal for achieving efficient, tech-enabled transport systems.

**In section (III)**, the data regarding poor road infrastructure reveals a divided perception. Only **30% (6 strongly agree and 6 agree)** see infrastructure as a key limitation, while **31% (12 respondents)** are uncertain, and **38% (15 total disagree or strongly disagree)** disagree with the claim. This divergence could be explained by geographical variability in operations—some locations may face severe road issues, while others operate in regions with more robust infrastructure. The high level of uncertainty also implies that some employees may not directly engage with external road networks or be unaware of how infrastructure affects delivery lead times or vehicle maintenance. A region-specific assessment may help Coca-Cola better understand and address the localized impact of infrastructure.

**In section (IV)**, concerning government policies and support, only **33% of respondents (9 strongly agree and 4 agree)** view policy inadequacy as a major barrier. A significant **30% (12 respondents)** remain unsure, suggesting that the connection between public policy and transportation strategy may not be clearly understood within the company. Moreover, **37% (15 total disagree or strongly disagree)** do not see policy as a significant obstacle, which could be due to the company's ability to operate independently of public incentives or interventions. The mixed perception suggests a need for clearer internal messaging on how regulatory frameworks, such as tax incentives, environmental standards, or import duties, affect logistics decision-making and investment.

**In section (V)**, the effects of fuel price volatility appear well acknowledged, with **45% (12 strongly agree and 6 agree)** agreeing that it disrupts transport consistency. The nature of logistics costs being directly tied to fuel prices means that price fluctuations can affect everything from delivery schedules to budget forecasting. However, **23% (9 respondents)** were unsure, and **32%**

**(13 total disagreed or strongly disagreed)** did not see fuel volatility as a major challenge. This divide may be due to the company's use of fuel contracts, bulk purchasing, or hedging strategies that stabilize fuel costs over time. Clarifying how Coca-Cola mitigates fuel volatility might help reconcile these different perspectives across departments.

**Section (VI)** reveals a clear consensus that **85% of respondents (25 disagree and 9 strongly disagree)** do not believe that supplier and service provider inconsistency significantly affects transport reliability. Only **15% (2 strongly agree, 2 agree, 2 unsure)** saw it as a concern. This result reflects positively on Coca-Cola's vendor management systems and suggests that the company has robust contracts, service level agreements (SLAs), and quality control procedures in place. It also indicates operational stability in logistics partnerships, which is critical for maintaining customer satisfaction and delivery timelines.

**In section (VII)**, concerning communication gaps between departments, only **23% (4 strongly agree and 5 agree)** believe these gaps create transport inefficiencies. A significant portion—**59% (13 disagree and 10 strongly disagree)**—disagreed, and **18% (7 respondents)** were unsure. These results suggest that while some minor communication issues may occur, most employees feel that interdepartmental collaboration is sufficiently strong to support smooth transport operations. For those who expressed uncertainty or agreement, Coca-Cola may benefit from conducting a communication audit to further improve cross-functional alignment, especially in complex logistics scenarios.

**Lastly, in section (VIII)**, regarding limited access to advanced transportation technologies, **41% (10 strongly agree and 6 agree)** confirmed this as a challenge. Meanwhile, **28% (11 respondents)** were unsure, and **31% (4 disagreed and 8 strongly disagreed)** did not view it as a significant issue. This result indicates a somewhat fragmented awareness or deployment of advanced systems like GPS fleet tracking, AI-based route optimization, or digital freight platforms. While some departments may be fully integrated with such tools, others might not have adopted or been trained in them. Bridging this gap through organization-wide tech rollout plans and training could enhance overall transport efficiency and innovation readiness.

# CHAPTER FIVE

# DISCUSSION OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

## 5.0 Introduction

This section presents a discussion of findings, conclusions, and recommendations of the study based on the study findings.

## 5.1 Discussion of findings

### *5.1.1 The role of technology and innovation in the organization's transportation system*

The study revealed that technology and innovation significantly improve transportation efficiency within organizations by streamlining operations, lowering fuel costs, and enhancing coordination (Adebayo & Oni, 2021). Tools such as GPS tracking, digital fleet management, and automated route planning enable better decision-making and real-time monitoring (Kumar et al., 2020). Additionally, the shift toward eco-friendly vehicles supports environmental sustainability (Munyua & Muturi, 2018). However, the benefits of these technologies depend on factors like staff training, infrastructure, and management support..

### **5.1.2 The influences of customer demand for sustainable practices on the organization's** transportation strategies at Century Bottling Company, Namanve

The findings indicate that customer demand for sustainable practices significantly influences Century Bottling Company Namanve 's transportation strategies. As consumers become more environmentally conscious, companies like Coca-Cola are under increased pressure to adopt greener logistics solutions (Jain & Yadav, 2020). In response, Coca-Cola has incorporated eco-friendly vehicles into its fleet, optimized delivery routes to minimize emissions, and invested in renewable energy for its transportation networks (Smith & Patel, 2021). Furthermore, the company has aligned its transportation strategies with sustainable packaging initiatives to meet customer expectations (Thakur & Singh, 2019). While the transition to greener solutions presents challenges, particularly with higher upfront costs, customer demand for sustainability enhances Coca-Cola's brand image and customer loyalty (Kannan & Arun, 2020).

### 5.1.3 The challenges faced in implementing best transportation practices and their solutions at Century Bottling Company, Namanve

The findings identify several challenges Century Bottling Company Namanve faces in implementing best transportation practices, including the high initial cost of eco-friendly vehicles, logistical complexities, and staff resistance to new technologies (Adams & Singh, 2021; Smith & Yadav, 2020). To overcome these, Coca-Cola has adopted phased investments in green technologies, used route optimization software to enhance efficiency, and provided regular training to employees (Thakur & Kumar, 2019). These solutions have helped the company improve its transportation practices while balancing sustainability and cost-efficiency.

## 5.2 Conclusions

Based on the findings from Chapter Four and the testing of the hypotheses, the following conclusions can be drawn:

i) Technology and innovation play a vital role in improving the efficiency and sustainability of transportation systems within organizations. The integration of tools like GPS tracking, fleet management software, and eco-friendly vehicles helps optimize operations, lower costs, and support environmental objectives. However, the full potential of these technologies can only be realized with proper staff training and infrastructure development.

ii) Customer demand for sustainability has a significant influence on Coca-Cola's transportation strategies. The company has embraced eco-friendly vehicles, optimized routes, and incorporated renewable energy solutions in response to growing consumer expectations. Despite challenges related to cost, these initiatives enhance Coca-Cola's reputation and foster customer loyalty over time.

iii) Coca-Cola encounters challenges in implementing best transportation practices, such as high initial costs, complex logistics, and resistance to change. However, through phased investments in sustainable technologies, improved route planning, and employee training programs, Coca-Cola has successfully navigated these challenges, achieving greater efficiency and sustainability in its transportation operations.

## 5.3 Recommendations

### 5.3.1 Recommendations for Policy Makers.

Based on the findings and conclusions drawn from the study hypotheses, the following recommendations can be made:

i) Policymakers should support the adoption of innovative and sustainable technologies in transportation by offering incentives like tax reductions or subsidies for companies that invest in green vehicles and advanced fleet management systems. Additionally, enhancing infrastructure, such as providing charging stations for electric vehicles, can help accelerate the transition to more sustainable transportation solutions.

ii) Policymakers should create regulations that encourage businesses to adopt sustainable transportation practices in response to consumer demand. This could involve offering financial incentives for companies that implement eco-friendly transportation strategies and ensuring that sustainability is incorporated into corporate policies, helping businesses align with growing customer expectations for environmental responsibility.

iii) Policymakers should introduce measures to ease the financial impact of adopting sustainable transportation, such as providing grants or low-interest loans to companies investing in green technologies. Moreover, fostering collaborations between the public and private sectors can help address operational challenges and enhance training programs to equip workers with the skills necessary to manage modern transportation systems effectively.

### 5.3.2 Recommendations for further studies

Further research should focus on the long-term financial benefits of adopting green technologies in transportation, particularly how initial costs compare to ongoing savings. Investigating customer attitudes toward sustainability in transportation could help businesses better align their practices with consumer expectations. Additionally, exploring challenges in adopting advanced technologies in developing regions and assessing the impact of public policies on sustainable transportation would offer valuable insights. These studies would contribute to a deeper understanding of the key factors influencing the adoption of sustainable transportation practices.

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# APPENDIX

## Appendix I: Study Questionnaire

Dear Respondent,

My name is **LOIKI SARAH,** pursuing a BACHELORS IN PROCUREMENT AND LOGISTICS MANAGEMENT **M22B12/019** from Uganda Christian University Mukono. You have been selected as one of the respondents in this research as I am investigating the **role of transportation in sustainable development in an organization at Coca Cola Limited.** All responses given should be genuine so as we come up with accurate data.

**INSTRUCTIONS**

Tick and fill in where necessary.

**SECTION A: DEMOGRAPHIC INFORMATION**

1. Gender

a) Male ☐

b) Female ☐

2. Marital status

a) Married ☐
b) Single ☐

3. Age bracket (years)

a) 18-24 ☐
b) 25-34 ☐
c) 35-44 ☐
d) 55 and above ☐

4. Academic qualifications

a) Diploma ☐
b) Certificate
c) Master's degree ☐

d) Bachelor's degree ☐

e) Certificate / diploma ☐

f) PhD ☐

5. Category of respondents

a) Beneficiaries/field staf ☐

b) Project Managers and Coordinators, or M&E offi rs

6. How long have you worked at Century Bottling Company Namanve?

a) Less than a year ☐

b) 1-3 years ☐

c) 4-6 years ☐

**d)** Above 6 years ☐

**SECTION B: What is the role of technology and innovation in organizations transportation system in Uganda? (Tick as Appropriate)**

Indicate the extent to which you agree with the following observations on the role of technology and innovation in organizations transportation system in Uganda at Century bottling company Namanve on a scale of (1) = strongly disagree, (2) = disagree, (3) = not sure (4) = agree (5) = strongly agree.

| **Scale** | **5** | **4** | **3** | **2** | **1** |
|---|---|---|---|---|---|
| Technological tools have improved the efficiency of our transportation system. | | | | | |
| GPS tracking enhances the reliability and safety of our fleet operations. | | | | | |
| Innovative transportation solutions support our sustainability goals. | | | | | |
| Providing performance feedback to suppliers drives continuous improvement. | | | | | |
| Barcode and RFID technologies have streamlined cargo tracking and inventory. | | | | | |
| The adoption of electric or hybrid vehicles is part of our transport innovation strategy. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Our organization provides adequate training on new transportation technologies. | | | | | |
| Mobile apps have improved coordination between drivers and dispatchers. | | | | | |

**SECTION C: What are the influences of customer demand for sustainable practices on the organization's transportation strategies at Century Bottling Company, Namanve? (Tick as Appropriate)**

Indicate the extent to which you agree with the following observations on what are the influences of customer demand for sustainable practices on the organizations transportation strategies at Century bottling company Namanve on a scale of (1) = strongly disagree, (2) = disagree, (3) = not sure (4) = agree (5) = strongly agree.

| **Scale** | **5** | **4** | **3** | **2** | **1** |
|---|---|---|---|---|---|
| Our organization considers customer preferences for sustainability when planning transport routes. | | | | | |
| Our organization uses fuel-efficient or low-emission vehicles in response to customer expectations. | | | | | |
| Customers expect transparency about the environmental impact of our transportation operations. | | | | | |
| Marketing our sustainable transport strategies improves customer loyalty. | | | | | |
| Our transport strategy includes carbon footprint reduction to meet customer expectations. | | | | | |
| Customer sustainability demands have influenced partnerships with green logistics providers. | | | | | |
| Our organization has adopted reverse logistics or recycling-friendly transportation due to customer influence. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Sustainable packaging and delivery methods are used to meet customer expectations. | | | | | |

**SECTION D: What are the challenges faced in implementing best transportation practices and their solutions at Century Bottling Company, Namanve? (Tick as Appropriate)**

Indicate the extent to which you agree with the following observations on the what are the challenges faced in implementing best transportation practices and their solutions at Century bottling company Namanve on a scale of (1) = strongly disagree, (2) = disagree, (3) = not sure (4) = agree (5) = strongly agree.

| **Scale** | **5** | **4** | **3** | **2** | **1** |
|---|---|---|---|---|---|
| High costs limit the implementation of best transportation practices in our organization. | | | | | |
| Lack of skilled personnel hinders the adoption of modern transport systems. | | | | | |
| Poor road infrastructure negatively impacts the effectiveness of our transportation strategies. | | | | | |
| Inadequate government policies and support are barriers to adopting best transport practices. | | | | | |
| Fuel price volatility disrupts the implementation of consistent transport practices. | | | | | |
| Inconsistent supplier and service provider performance affects transport reliability. | | | | | |
| Communication gaps between departments create inefficiencies in transportation. | | | | | |
| Limited access to advanced transportation technologies affects efficiency. | | | | | |

**THANK YOU**