

**THE EFFECT OF ELECTRONIC TAX SYSTEMS ON TAX COMPLIANCE
AMONG SMALL AND MEDIUM ENTERPRISES**

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**UGANDA CHRISTIAN
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DECLARATION.

I, **GUMA CHRISTIAN EDEGA**, **REG NO: S21B12/124**, do hereby declare that this research report has never been published by any other person and so is purely done by myself with a close guidance of my academic supervisor.

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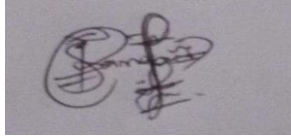
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APPROVAL.

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A rectangular box containing a handwritten signature in black ink. The signature is cursive and appears to read 'P. Nagawa'.

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.....

DATE: 26/09/2024

DEDICATION.

I dedicate this research report to my family, relatives, friends and loved ones for the love, care and support they have rendered to me during my academic journey and in the process of writing this research report, may all might GOD bless you all abundantly.

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I could not have completed this research successfully without your help, love, and support from the team of Uganda Christian University. My sincere appreciation goes to the school of Business and its staff for their help and tirelessly support in line with research. I would like to thank my academic supervisor in a special way **MS. NAGAWA PAMELA** from the school of business for the time he undertook to guide me through research work and encouragement he rendered right from the beginning. I also want to acknowledge Uganda Christian University-Mukono for having research exercise as part of my academic training while undertaking my bachelor's degree of procurement and logistics management. In a special way I appreciate Mr. and Mrs. Edemaga for the Financial support ranging from tuitions to upkeep money that have enabled me accomplish this level of my academic journey and in building my career successfully not forgetting Mr. Duncan Tumuhamyé, Mr. Muloosi Pascal and Mrs. Tumuhamyé Comfort and Mr. Tusiime Nickson (Fisher) lecturers at Uganda Christian university Mukono and others for their support spiritually, physically, emotionally and socially, I cannot thank you all enough.

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ABSTRACT

This study looks at how the adoption of Information and Communication Technology has affected supply chain operations in service delivery, focusing on Century Bottling Company, Coca-Cola's Namanve branch. In modern times characterized by dynamic business environments, ICT has become vital in operational efficiencies, streamlining processes, and bettering decision making in supply chains. It will explore how different ICT tools and systems influence inventory management, order processing, logistics, and, ultimately, service delivery in the beverage industry. This study employs a case study approach in collecting qualitative and quantitative data through the use of questionnaires and interviews with key personnel. The findings are certain to highlight how ICT has hugely facilitated immense improvement in operational efficiency and service delivery, yet system integration challenges and training needs persist. The study helps embed knowledge on the crucial role that ICT now plays within contemporary supply chains and provides insight for companies looking to optimize their operations through technology adoption.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Service delivery encompasses the processes and systems that ensure goods and services are provided to customers in a manner that efficiently meets their needs and expectations. In the modern business landscape, Information and Communication Technology (ICT) plays a pivotal role in enhancing service delivery, reshaping how businesses manage customer interactions and internal operations. By leveraging ICT tools such as Enterprise Resource Planning (ERP) systems and Customer Relationship Management (CRM) software, companies can offer more responsive and personalized services, ensuring accuracy and efficiency (Laudon & Laudon, 2018).

The adoption of ICT in service delivery enhances operational efficiency, streamlining communication and reducing the potential for errors. This integration allows for real-time monitoring of activities, enabling prompt responses to any challenges that may arise, which in turn improves the overall quality of service (Chopra & Meindl, 2016). Additionally, the advent of e-commerce platforms and mobile technologies has transformed customer expectations, driving demand for seamless and instant service experiences (Hagberg et al., 2016).

1.1.1 Historical Background

Service delivery has come a long way since its inception, as the initial focus was on less innovative, more labor-dominated methods. The first part of the 20th century saw the introduction of mass production systems typified by the assembly line introduced by Henry Ford that heralded organized service delivery which enabled business organizations to produce goods and render services more effectively (Chopra & Meindl, 2016). This age was typified by minimal engagement with the customer, in which the process of delivering services was greatly limited to the provision of products.

In the middle of the twentieth century, logistics and distribution management made significant changes to the agent's service delivery. As the supply chain network improved, there was the realization in the business world that it was necessarily important to improve on the distance to delivery and increase the inventory turnover ratio in attempts to lower costs and enhance service levels (Ballou, 2004). During this period were also developed ideas such as Total Quality Management (TQM) and Just In Time (JIT) which further developed the delivery of service by

enhancing service efficiency and reducing waste with the need of adhering to clients' demands (Deming, 1986).

With a rise in globalization towards the end of the twentieth century there came also an increase in the complexity of service delivery as firms began to take their business s to other countries. Thanks to closer relationships of the global supply chains, eventually countries were asking for more sophisticated systems of service delivery which were more or less appliance cross borders managing more complex customer needs (Christopher, 1998). In this period, there was also emergence of performance, as the pressure to meet particular market needs increased, which called for improvement of consumers' satisfaction.

The most pronounced change the service delivery underwent can be remarked when Information and Communication Technology (ICT) came into existence around the late 1990s early 2000s. Intergration of technology into supply chain management facilitated communication in real time, precise delivery of services as well as automating various processes and tasks (La Londe & Masters, 1994). The introduction of e-business changed the delivery of services as it enabled companies to deliver their products and services worldwide, handle customers' orders promptly, and provide quality service (Hagberg et al., 2016). This period signified changing from the ordinary service delivery to purely and technology-based systems.

Today, the development of emerging technologies like Artificial Intelligence (AI), Internet of Things (IoT), and blockchain continues to push the boundaries of service delivery. These innovations enable businesses to offer more transparent, efficient, and personalized services while improving operational efficiency (Kumar & Singh, 2021). The evolution of service delivery over the years highlights the growing importance of technology in meeting the increasing expectations of customers and improving overall service quality.

1.1.2 Theoretical Background

The study is currently grounded in two primary theories: Resource Dependence Theory (RDT) and Information Processing Theory.

Resource Dependence Theory (RDT)

Advocated by Salancik and Pfeffer (1978), resource dependence theory explains the relationships that develop due to reliance on resources owned by other organizations. Under such conditions,

there is no single organization that can claim to be self-sufficient; each and every one has to link with others so as to access other resources or raw materials, technologies, even markets (Pfeffer & Salancik, 1978). This dependence on other organizations forces them to innovative measures through which these interdependencies will be managed, and more control over the critical resources maintained (Hillman, Withers, & Collins, 2009). At other times, organizations work towards the reduction of uncertainties and take advantage of external relations to reduce potential risks to their sustainability (Casciaro & Piskorski, 2005). These strategies often include partnerships, mergers, alliances, and dominance in many markets for the supply of the same material that make it possible for organizations to reduce the impact of being resource bound.

While RDT offers valuable insights into how organizations adapt to external pressures and resource dependencies, it has limitations. One critique of RDT is that it overemphasizes external environmental factors, such as market conditions and supplier relationships, while overlooking internal dynamics that also shape organizational behaviour (Hatch & Freeman, 2001) Thus, while Resource Dependence Theory (RDT) underscores the importance of managing external resource dependencies, it must be complemented by a focus on internal capabilities to achieve sustainable, long-term success (Barney, 1991). A balance between external resource management and internal development is crucial for fully leveraging ICT to improve service delivery and gain a competitive advantage.

Information Processing Theory, initially advanced by Herbert Simon, places strong emphasis on the organizational management of information flow to achieve better decision-making and operational efficiency. An organization, in this theoretical approach, is perceived as a system of processing information with necessary access to appropriate and timely data, lessening uncertainty and paving the ways of coordination between various stakeholders. The more appropriately an organization processes and utilizes information, the better it becomes at decision-making and enhancing its performance. (Simon, 2005).

Probably the most telling strength of information processing theory is that it insists information throughput is one of the main principles in decision-making activities, which are increasingly common in modern supply chain operations that involve numerous actors. The approach permits the firm to deal with the complexity required in terms of coordination of activities across stakeholders and their response to dynamic environments. (Tushman & Nadler, 2006). By

optimizing information processing, organizations can improve operational efficiency, reduce delays, and deliver higher-quality customer service (Galbraith, 2007). Timely and accurate access to information streamlines decision-making processes and aligns supply chain actors, reducing uncertainty and enhancing overall performance.

1.1.3 Conceptual Background

Information and Communication Technology (ICT) encompasses a broad array of technologies that provide access to information through telecommunications, digital platforms, and data processing tools (Turban et al., 2018). ICT is increasingly recognized as a fundamental component of efficient operations in contemporary business environments. It enables organizations to collect, process, and disseminate information with high accuracy and speed, facilitating better decision-making, enhanced coordination, and improved operational efficiency (Laudon & Laudon, 2018).

The use of ICT in contemporary business generally supports data management, communication, and transaction processing. ICT tools' integration, such as ERP, CRM platforms, and supply chain management software, supported services delivery, improved organizations' efficiency, and provided competitive advantages. (Chopra & Meindl, 2016; Bakker et al., 2010). These tools allow for real-time data access, better coordination among stakeholders, and improved customer service.

Whereas this highlights benefits, the current state of knowledge regarding the overall impact of ICT on various dimensions of service delivery across various sectors and regions is very limited. For example, specific gaps include identifying how new emerging technologies like AI and blockchain will continue to affect service delivery. (Kumar & Singh, 2021). Additionally, the effects of ICT on service delivery in less developed economies, such as Uganda, where infrastructure and digital skills may be limited, remain underexplored (Kisaka & Musoke, 2018). Understanding these dynamics is crucial for tailoring ICT solutions to diverse contexts and addressing the challenges faced by different regions.

Service delivery is defined by Kotler and Keller as the physical environment, people, and processes that are involved in the development and provision of services. It hence involves the aspects related to operational issues, such as process efficiency, and human factors, such as employee performance. Designing service interfaces, such as online platforms and customer touchpoints, is therefore crucial in ensuring smooth coordination of such components toward overall success in service delivery. (Kotler & Keller, 2016).

While some aspects of the issues in these service delivery components may be fully comprehended, there are areas that are less explored. Specific influences of new or emerging technologies would be attached to the service interfaces and customer touchpoints. For example, while conventional aspects like process efficiency or employee influence have been widely researched as factors influencing such elements in traditional contexts, modern contexts have barely explored advanced ICT tools like AI and machine learning. (Ostrom et al., 2015). Additionally, the effectiveness of integrating online platforms and digital interfaces in enhancing service delivery across various industries and cultural contexts remains underexplored (Lemon & Verhoef, 2016).

Knowing such gaps is important for a number of reasons. Organizations will have to adapt their service delivery strategies to the continuous evolution of technology through effective integration of new tools and technologies. Insights into how these emerging technologies will finally impact service interfaces and touchpoints will help organizations in optimizing the digital interactions and enhancing overall customer experience. Second, analysis of the dynamics at play herein may enable an organization to respond to various customer needs and preferences for respective markets with increased effectiveness and personalized service. (Verhoef et al., 2021). Research in these areas will contribute to developing more sophisticated service delivery models that leverage technological advancements to meet evolving customer expectations and achieve competitive advantage.

1.1.4 Contextual Background

In Uganda, service delivery across various sectors faces unique challenges and opportunities influenced by the country's socio-economic context. Service delivery in Uganda encompasses sectors such as healthcare, education, and public services, where the efficiency and effectiveness of services are critical to improving quality of life and promoting economic development.

One of the primary challenges in service delivery in Uganda is infrastructure inadequacy. Limited access to reliable infrastructure, such as transportation and communication networks, hinders the effective delivery of services, particularly in rural and underserved areas (Mugisha et al., 2020). Additionally, there are significant issues related to the quality and availability of human resources. For instance, the healthcare sector struggles with a shortage of trained medical professionals and inadequate facilities, impacting service quality and accessibility (Waiswa et al., 2012).

With all these different challenges, there is still ample opportunity for improving service delivery through the adoption of ICT in Uganda. To this end, increasing mobile technology and access to the internet create an avenue for improving the mechanisms for delivering such services. Secondly, mobile health initiatives are applied as innovative means of addressing healthcare services through consultation over a distance, health information, and patient monitoring. (Ahlfeldt & Maier, 2020). Similarly, digital platforms are being explored to enhance educational delivery and access, providing remote learning solutions and digital resources to students and educators (Wang et al., 2021).

1.2 Statement of the Problem

Service delivery in Europe faces various challenges mainly related to the integration of new technologies and the needs of a diverse population. As many European countries are further advancing towards full digitalization, issues also involve their implementation across regions and sectors. While most Western European countries have adequate digital infrastructure and services, for instance, access in and the quality of these services usually lag in Eastern Europe, hence a factor that would affect service delivery. (European Commission, 2021). Additionally, the increasing complexity of digital services and data privacy concerns pose challenges for maintaining high standards of service quality and ensuring that all citizens benefit from technological advancements (Rendell & Gunter, 2019).

Inadequate infrastructure, restricted access to technology, and socioeconomic inequality have a substantial influence on service delivery in Africa. Many regions face inadequate infrastructure, such as unreliable electricity and poor transportation networks, which hampers the effective delivery of services (Munyoka et al., 2020). Moreover, in addition, it is relevant to underline the big digital gap that many rural and under-served areas suffer from; indeed, ICT tools and digital services are nearly completely lacking. This kind of digital gap fosters not only inequality in service delivery but also worsens the situation in such sectors as health and education, where technology could really play a very important role in improving access and quality. (Aker & Mbiti, 2010). The challenge is to bridge this gap by investing in infrastructure, enhancing digital literacy, and implementing solutions tailored to local needs.

Inefficiency in service delivery in Uganda can be accredited to structural inefficiencies, a low rate of technological adoption, and generally poor infrastructure. The health care and education,

production industry is being hit particularly by poor infrastructure, absence of skilled workers, and restricted access to modern technologies. (Waiswa et al., 2012; Wang et al., 2021). Efforts to enhance service delivery are made more difficult by the absence of dependable infrastructure, particularly in rural areas where transportation and internet access are lacking (Mugisha et al., 2020). Though the integration of ICT may seem to improve service delivery in Uganda, there are various barriers to technology adoption that hinder it, including high costs, lack of digital skills, and overall lack of support mechanisms. (Kisaka & Musoke, 2018). To tackle these obstacles, focused measures are needed to enhance infrastructure, expand technological accessibility, and develop service delivery capabilities.

1.3 Purpose of the study

The purpose of this study will be to assess the impact of ICT on supply chain operational performance on service delivery in century bottling company Coca-Cola in Namanve.

1.4 Objectives of the study

1. To assess the impact of ICT on supply chain operational performance on service delivery in Century bottling company
2. To examine the role of ICT hardware in service delivery networks at the Century Bottling Company.
3. To investigate the role of ICT software in the service delivery supply chains at the Century Bottling Company.

1.5 Research questions

- i. What is the impact of ICT on supply chain operational performance on service delivery in Century bottling company
- ii. What role is ICT-hardware currently playing in service delivery networks of Century bottling company?
- iii. How does ICT software influence service delivery supply chains at Century bottling company?

1.6 Scope of the study

1.6.1 Subject scope

This study aims to investigate the impact of ICT on supply chain operations in service delivery at Century Bottling.

1.6.2. Geographical scope

The study will be conducted at Namanve Century bottling company plant under Coca-Cola international in central Uganda.

1.6.3. Time scope

The study will focus on a specific period within the past ten years, ranging from 2003 to 2023 as there is significant growth in ICT. The study will take four months.

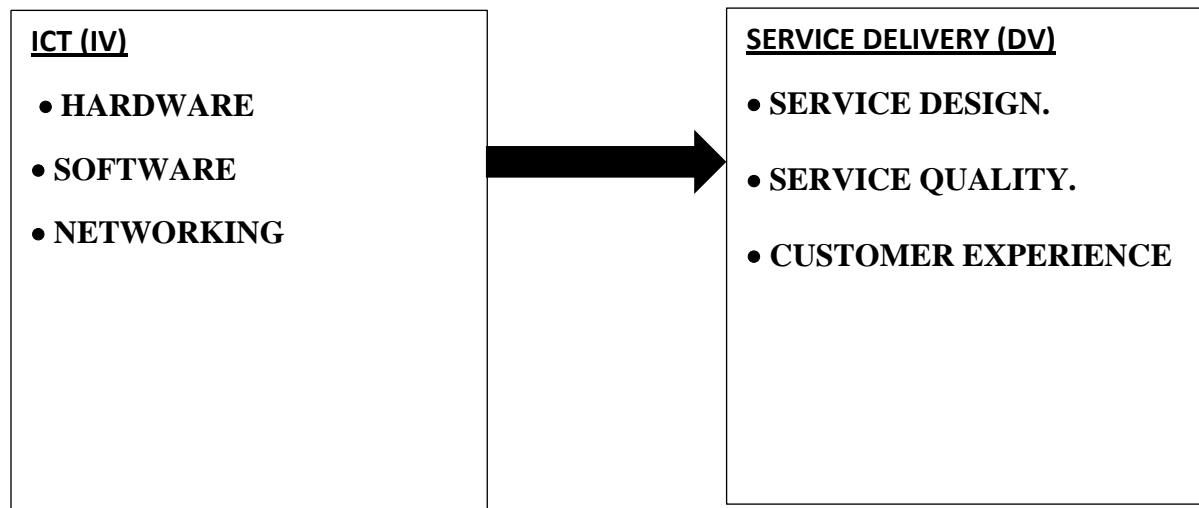
1.7 Significance of the Study

The research provides key insights to shape policies promoting digital transformation in service delivery, enhancing efficiency and customer satisfaction. It can inform the creation of ICT adoption frameworks and stimulate investments in ICT infrastructure, driving economic growth.

With the help of ICT, managers will be able to minimize inefficiencies, enhance decision-making, and optimize supply chain performance. In an ever-evolving company environment, the findings assist managers in improving coordination, reducing operating expenses, and preserving competitiveness.

The study contributes to academic discourse on ICT's role in supply chains. It provides a foundation for future research across industries and regions, exploring ICT's long-term impact on efficiency, customer satisfaction, and global supply chain trends.

1.8 CONCEPTUAL FRAMEWORK



DESCRIPTION OF CONCEPTUAL FRAMEWORK

Description of the Model

The impact of ICT on supply chain operations in service delivery can be measured using a model that focuses on key independent variables, namely hardware, software, and networks. These are the most important areas of ICT that have a significant role in enhancing supply chain processes and improving outcomes in service. Some dependent variables here are service design, service quality, and customer experience, which emanate directly from effective use of ICT.

This framework highlights how Century Bottling Company can leverage ICT to enhance service delivery, improve operational efficiency, and elevate customer experiences, ultimately leading to better organizational performance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents a comprehensive literature review about the impact of Information and Communication Technology (ICT) on supply chain operations with an emphasis on service delivery. The literature review is organized into several key sections that delve into relevant theories, highlight empirical research findings, and analyses the conceptual frameworks surrounding ICT's role in enhancing supply chain efficiency and overall service delivery.

2.2 Theoretical Review

2.2.1 Resource Dependence Theory (RDT)

Resource Dependence Theory, introduced by Salancik and Pfeffer (2005), Assumes that organizations are never self-sufficient and are hence perpetually striving to develop ties with others in order to access the necessary resources. In dynamic environments, such as supply chains, organizations regularly rely on different external companions for technological resources, materials, and information to perpetuate competitive advantages. (Pfeffer & Salancik, 2003).

One strength of Resource Dependence Theory (RDT) lies in its capacity to explain the interdependencies among organizations, which can lead to collaborations, partnerships, and joint ventures aimed at resource sharing (Pfeffer & Salancik, 2005). Yet, critics caution that the theory has been shaped by a reliance on externals and cannot account for important internal dynamics, such as culture and employee engagement, also drivers of performance. (Hatch & Freeman, 2001). Thus, while RDT provides a useful lens to explore ICT's role in supply chains, it must be complemented with an understanding of internal factors to form a complete picture.

2.2.2 Information Processing Theory

Information Processing Theory, as proposed by Herbert Simon (2005), elaborates on how information flow plays a major role in organizational decision-making and operations. According to Simon, organizations are information processors whereby efficient management of data enables higher capabilities in making informed decisions in enhancing operational efficiency. In a supply chain context, this has come to mean that accurate, correct, and up-to-date real-time data is a prelude to informed decision-making. (Daft & Lengel, 2006). The strength of Information Processing Theory lies in its focus on the critical function of information management and the inherent value of data in shaping organizational performance. Improved information processing

through ICT can yield benefits in areas such as inventory management, forecasting, and demand planning (Lee et al., 2018).

However, critics argue that the theory does not thoroughly address the socio-political influences that can impact the flow of information and decision-making within organizations (Mackenzie, 2019). Thus, while the theory offers a noteworthy perspective on the importance of data in supply chains, acknowledging the external variables remains essential for practical applications.

2.3 Conceptual Review

Information and Communication Technology (ICT) encompasses a broad array of technologies that provide access to information through telecommunications, digital platforms, and data processing tools (Turban et al., 2018). It is also widely regarded that ICT is a critical element at the core of effective operations within most business environments today. It builds the organizational capacity to gather, process, and disseminate information at a very high degree of accuracy and speed, thus enabling better decision-making, coordination enhancement, and operational effectiveness. (Laudon & Laudon, 2018).

In fact, this has driven organizations to rely heavily on ICT to support organizational functions in data management, communication, and transaction processing. This integration, e.g., ERP systems, CRM platforms, and supply chain management software, is bound to enhance service delivery, improve organizational efficiency, and hence a competitive advantage. (Chopra & Meindl, 2016; Bakker et al., 2010). These tools allow for real-time data access, better coordination among stakeholders, and improved customer service.

While the various benefits are acknowledged, little is known about the full implications of the impact ICT has in all their ramifications on different aspects of service delivery across many industries and various regions. Specific gaps include how emerging technologies like AI and blockchain would further influence service delivery. (Kumar & Singh, 2021). Additionally, the effects of ICT on service delivery in less developed economies, such as Uganda, where infrastructure and digital skills may be limited, remain underexplored (Kisaka & Musoke, 2018). Understanding these dynamics is crucial for tailoring ICT solutions to diverse contexts and addressing the challenges faced by different regions.

Service delivery is defined by Kotler and Keller (2016) The combination of the physical environment, people, and processes involved in developing and providing the services can be regarded as a service. Services constitute operational elements like process efficiency and human factors like employee performance. The design of service interfaces, including online platforms and customer touchpoints, is also highly necessary to be sure of smooth coordination of these components and overall success in service delivery. (Kotler & Keller, 2016).

It will definitely help an organization create a rounded understanding of the impact of ICT on service delivery and use technology to its advantage in operational improvement and sustaining competitive advantage. Understand how emerging technologies will continue to reshape service delivery to better inform strategic investments and technology adoption decisions. This in return will reduce the digital divide, allowing for inclusive growth by addressing the special challenges of less developed economies. The implications of such a research study would be of great importance in order to develop appropriate strategies for the use of ICT that enhance service quality, operational efficiency, and customer satisfaction within different contexts. (Hagberg et al., 2016; Zhu et al., 2020).

While the elements of service delivery have been reasonably understood, some areas remain unexplored. For example, how the emerging technologies exactly affect the service interfaces and customer touchpoints remains mysterious. Also, from the traditional factors such as process efficiency to employee performance, very limited research is there on advanced ICT tools like AI and machine learning in the modern service delivery contexts. (Ostrom et al., 2015). Additionally, the effectiveness of integrating online platforms and digital interfaces in enhancing service delivery across various industries and cultural contexts remains underexplored (Lemon & Verhoef, 2016).

Understanding these gaps is important for a number of reasons: first, because business functions must change with every evolution of technology and find appropriate strategies to integrate new tools and technologies into the delivery of services. Insights into the impacts that emerging technologies create within service interfaces and touchpoints can guide organizations in optimizing their digital interactions and improving overall customer experience. The second reason is that such research into these dynamics would allow organizations to attend to the many needs and preferences of various customers in different markets concerning personalized and efficient

service. (Verhoef et al., 2021). Research in these areas will contribute to developing more sophisticated service delivery models that leverage technological advancements to meet evolving customer expectations and achieve competitive advantage.

2.4 Empirical Review

2.4.1 Impact of ICT on Supply Chain Operational Performance and Service Delivery

The integration of ICT in supply chain operations significantly impacts service delivery performance. High-performing organizations, equipped with advanced ICT systems, experience improved operational efficiency, reduced costs, and enhanced customer satisfaction (Zhou et al., 2018). For instance, companies like Century Bottling Company that invest in ICT systems such as ERP and real-time data analytics are better able to streamline operations, resulting in improved service delivery (Mithas et al., 2013). On the other hand, organizations with limited ICT capabilities may struggle with inefficiencies, negatively affecting service quality and customer experience (Miller et al., 2017).

2.4.2 The Role of ICT Hardware in Service Delivery Networks

Hardware is the backbone of efficiency and effectiveness within ICT service delivery networks. Efficient hardware such as reliable, standardized servers, computers, and mobile devices guarantee smooth communication and data processing that manage supply chain operations. (Hollander et al., 2021). At Century Bottling Company, the use of robust ICT hardware helps maintain uninterrupted connectivity and facilitates real-time monitoring of supply chain activities, leading to improved coordination and service quality (Giannakis & Papalambros, 2020). Without proper investment in ICT hardware, organizations may face delays and disruptions in their service delivery networks (Poon & Yu, 2018).

2.4.3 Influence of ICT Software on Service Delivery Supply Chains

Efficiency in the supply chain operations, mainly in service delivery, greatly depends on the ICT software. These are ICT software packages like ERP systems, CRM tools, and supply chain management software that will enable the company to automate and optimize processes right from procurement to customer service. (Hsu et al., 2019). Century Bottling Company's use of advanced software solutions allows for improved accuracy in order fulfillment, enhanced decision-making, and faster response times, all of which positively impact service delivery (Klaus & Gable, 2006). In contrast, companies lacking sophisticated ICT software may struggle with inefficiencies, higher operational costs, and reduced service quality (Akkermans et al., 2003).

2.4.4 Relationship Between ICT and Supply Chain Operations on Service Delivery

ICT plays a pivotal role in enhancing supply chain operations, which in turn significantly impacts service delivery. Organizations that invest in advanced ICT systems, such as Enterprise Resource Planning (ERP) and real-time data analytics, experience more streamlined operations and improved service quality (Chen & Paulraj, 2004). The integration of ICT tools in Century Bottling Company has ascertained a more adequate supply chain management characterized by quick response times, proper fulfillment of orders, and improved coordination from the suppliers. The above benefits, therefore, translate into improved service delivery as the company is able to comply with customer demands and ensures a high level of satisfaction. (Yang & Chen, 2014).

The use of ICT in supply chain operations enhances service delivery by optimizing processes like procurement, inventory management, and logistics. For example, e-sourcing and e-tendering platforms allow for more efficient supplier selection and competitive pricing, which ultimately translates into cost savings and improved customer experiences (Mason et al., 2004). Companies that effectively leverage ICT can reduce bottlenecks, improve service quality, and deliver more personalized services to customers. In contrast, organizations with limited ICT adoption may struggle with inefficiencies, leading to slower service delivery, higher operational costs, and lower customer satisfaction (Hsu et al., 2019).

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter encompassed the research design, target population, sampling technique, data collection methods and instruments, and analysis procedures.

3.2 RESEARCH DESIGN

The study utilized a quantitative research approach. The quantitative approach involved measuring variables using statistical procedures. A cross-sectional survey design was implemented, meaning that data was collected from various respondents at a single point in time without repeated visits (Amin, 2005). This design was chosen for its efficiency in terms of both time and cost. Specifically, the cross-sectional design allowed for data collection from different individuals across various departments within the organization, providing a comprehensive view of the topic under investigation.

3.3 STUDY POPULATION

The target population consisted of 50 employees from various departments (procurement, logistics, IT, administration, finance) within Century Bottling Company. The demographic diversity ensured a comprehensive understanding of how different roles interacted with and were affected by ICT systems in supply chain operations (Kothari et al., 2017).

3.4 SAMPLING TECHNIQUE

The study conducted purposive random sampling to select Century Bottling Company staff members. This technique was chosen to prevent bias from the respondents and to ensure the selection of relevant participants.

3.5 DATA COLLECTION METHODS AND INSTRUMENTS

3.5.1 Primary Data Sources

Primary data was gathered through interviews and questionnaires to gain firsthand insights into ICT's impact (Lester & Lester, 2015).

Questionnaire

The researcher used both closed-ended and open-ended questionnaires in the study. Closed-ended questions were used because they were easy and quick to answer and helped improve the consistency of the responses. Open-ended questions were also used because they did not place any limits on the response, allowing the respondents to provide any relevant information they felt was important. A Likert scale was applied in the questionnaires to evaluate perceptions of ICT's impact

on service delivery dimensions. Respondents rated their agreement on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), facilitating statistical analysis of responses.

3.5.2 DATA COLLECTION PROCEDURES

Approved questionnaires were the primary tool for data collection. This method gave respondents time to answer questions without interference, and since the respondents were literate, they could freely express their views by writing and filling in answers as required.

3.6 VALIDITY

According to Somekh and Cathy (2005), validity is the degree by which the sample of test items represents the content the test is designed to measure. The validity of research instruments ensured the scientific usefulness of the findings arising from data collection (Williams, 2016). The researcher also ensured that the right questions for the study were guided by the objectives and, in addition, computed the content validity index (CVI). The researcher used the following formula to establish the validity of the research instruments:

Content Validity Index (CVI) = (Relevant items by all judges as suitable) / (Total number of items judged).

If the CVI was equal to or greater than the recommended 0.70 (Kent, 2001), this implied that the questionnaire was valid for data collection.

3.7 RELIABILITY

Reliability sought to establish whether an assessment instrument gave the same results each time it was used in the same setting with the same type of subjects. It essentially meant consistent or dependable results (Wildermuth, 2016). The researcher used coding information, pie charts, and bar graphs to ensure the reliability of data.

3.8 ETHICAL CONSIDERATIONS

Ethical considerations included obtaining informed consent from participants and ensuring anonymity for sensitive data. An authorization letter from the university reinforced the study's integrity and adherence to ethical standards.

Data processing involved organizing and coding responses for analysis. Quantitative data was analyzed using statistical tools.

3.9 LIMITATIONS OF THE STUDY

The researcher faced challenges such as delays in receiving information from respondents, especially during working hours, and delays in retrieving completed questionnaires. There was also a chance that some questionnaires were not completed. During interviews, the researcher encountered difficulties with respondents being preoccupied with office duties; however, through the use of concise interview techniques, data was successfully collected.

CHAPTER FOUR

PRESENTATION, ANALYSIS, AND INTERPRETATION OF RESEARCH FINDINGS

4.0 Introduction

This chapter presents the analysis of data collected from the field, focusing on background variables, the description of the dependent variable, and the assessment of staff members at Century Bottling Company, Coca-Cola Namanve Branch. The chapter also examines the study objectives, specifically the relationship between the use of ICT in supply chain operations and the quality-of-service delivery at Century Bottling Company. This includes an evaluation of the effectiveness of ICT in enhancing supply chain operations and its impact on service delivery at the company. The findings are presented in the form of tables, frequencies, graphs, and percentages, aligned with the study's objectives and research questions.

4.1 ORGANIZATIONAL CHARACTERISTICS

Product Distribution

Table 4.1: Product Distribution

Products	Frequency	Percentage (%)
Carbonated soft drinks	35	40
Non-carbonated beverages	15	60
Other	0	
total	50	100

Source: Primary data, 2024

The data presented in the table provides insights into the distribution of Century Bottling Company's primary product offerings as perceived by the respondents. A total of 50 responses were collected, categorized into three product types: carbonated soft drinks, non-carbonated beverages, and others. The findings can be summarized as follows; Out of the total respondents, 35 (40%) indicated that the company's primary product offering is carbonated soft drinks such as Coca-Cola, Fanta, and Sprite. This suggests that a significant portion of the company's product focus lies in the production and distribution of carbonated beverages, which aligns with Coca-Cola's global brand identity.

Non-carbonated beverages accounted for 15 responses, representing 60% of the cumulative total. This indicates that the company also has a growing presence in the non-carbonated beverage

market, which may include products such as juices, water, and energy drinks. No respondents selected "Other," which implies that the company's product range is well-defined within the categories of carbonated and non-carbonated beverages.

Company’s Distribution Network

Table 4.2: Distribution Network

company's distribution network	Frequency	Percentage (%)
Excellent	17	34
Good	27	54
Average	5	10
Poor	1	2
Total	50	100

Source: Primary data, 2024

The data presented in the table outlines the respondents' perceptions of Century Bottling Company’s distribution network within Uganda. A total of 50 responses were analyzed, classified into four categories: Excellent, Good, Average, and Poor. The results are described below: 34% of the respondents (17 out of 50) rated the distribution network as Excellent, indicating that a substantial portion of employees or stakeholders perceive the company’s distribution network to be highly efficient and effective in ensuring product availability across Uganda.

The majority of the respondents, 54% (27 out of 50), rated the distribution network as Good. This suggests that while many recognize the network's overall effectiveness, there may still be room for improvement to elevate it to an excellent standard. A smaller group, 10% (5 out of 50), rated the distribution network as Average, suggesting that while the distribution system is functional, some respondents perceive limitations that prevent it from being fully optimized. Only 2% of respondents (1 out of 50) rated the distribution network as Poor, indicating that dissatisfaction with the distribution process is very low and largely isolated.

Profit Estimation

Table: Estimated Profits

Profits made	Frequency	Percentage
Less than UGX 1 billion	6	12
UGX 1 billion – UGX 5 billion	23	46
UGX 5 billion – UGX 10 billion	5	10
More than UGX 10 billion	2	4
Not sure	14	28
Total	50	100

Source: Primary data, 2024

The data presented in the table shows respondents' perceptions of Century Bottling Company's approximate annual profit range. A total of 50 responses were collected, with categories ranging from less than UGX 1 billion to more than UGX 10 billion, including an option for those unsure of the company's profit. The analysis of this data is as follows: 12% of the respondents (6 out of 50) estimated the company's annual profit to be less than UGX 1 billion, suggesting that a small proportion perceives the company's profit to be relatively low.

The majority of the respondents, 46% (23 out of 50), believe the annual profit is in the range of UGX 1 billion to UGX 5 billion. This indicates that nearly half of the respondents estimate the company's profits to be within this mid-range, reflecting a relatively strong financial performance. 10% of respondents (5 out of 50) estimated the profit to be between UGX 5 billion and UGX 10 billion, which suggests a slightly higher financial performance, though fewer respondents selected this category compared to the previous range. Only 4% (2 out of 50) estimated the company's profits to be more than UGX 10 billion, indicating that a small fraction perceives the company's annual revenue as being very high. 28% of the respondents (14 out of 50) selected not sure,

demonstrating that a significant portion of staff or stakeholders may not have precise knowledge of the company’s financial performance.

Number of Employees

Table: Number of Employees

Number of employees	Frequency	Percentage (%)
Less than 100	17	34
110-200	20	40
210-300	9	18
310 and above	4	8
Total	50	100

Source: Primary data, 2024

The table provides insights into the number of employees within departments at Century Bottling Company, based on responses from 50 participants. The data is categorized into four ranges: Less than 100, 110-200, 210-300, and 310 and above. The analysis is as follows; 34% of respondents (17 out of 50) reported having less than 100 employees in their department. This suggests that a significant portion of departments within the company are relatively small, operating with fewer than 100 staff members.

The largest group, 40% (20 out of 50), indicated that their department has 110-200 employees, implying that a considerable number of departments operate within this range, which could reflect medium-sized teams supporting various operational areas. 18% of respondents (9 out of 50) stated that their department has between 210-300 employees, indicating the presence of larger departments, though fewer in number compared to those in the 110-200 employee range.

Only 8% (4 out of 50) of respondents reported having 310 or more employees in their department, showing that very large departments are relatively uncommon within the company. The cumulative percentage shows that by the time departments with 210-300 employees were accounted for, 92% of the responses had been collected, leaving only a small fraction representing departments with more than 310 employees.

Impact of ICT on Supply Chain Operations

Table: Impact of ICT on Supply Chain Operations

ICT enhance	Frequency	Percentage (%)
Greatly enhances	27	54
Somewhat enhances	21	42
Minimally enhances	2	4
No impact at all	0	
Total	50	100

Source: Primary data, 2024

The data presented in the table reflects respondents' perceptions of how Information and Communication Technology (ICT) enhances supply chain operations at Century Bottling Company. The analysis is based on feedback from 50 respondents, classified into four categories: Greatly enhances, somewhat enhances, minimally enhances, and No impact at all. The findings are as follows:

The majority, 54% (27 out of 50), believe that ICT greatly enhances supply chain operations. This indicates that over half of the respondents view ICT as playing a critical role in improving various aspects of supply chain efficiency, decision-making, and overall operational performance. 42% of respondents (21 out of 50) indicated that ICT somewhat enhances supply chain operations. This suggests that while many acknowledge the positive influence of ICT, they believe there may be room for further improvement or that the impact is not maximized in all areas.

Only 4% (2 out of 50) feel that ICT minimally enhances supply chain operations, indicating that a small minority perceive the benefits of ICT in supply chain operations to be limited. No respondents (0%) selected No impact at all, reinforcing the overall consensus that ICT plays a meaningful role in supporting supply chain processes at Century Bottling Company.

4.2 RESPONDENT CHARACTERISTICS

Gender Distribution of Respondents

Table 4.1: Gender Distribution

Gender	Frequency	Percent (%)
Male	31	62
Female	19	38
Total	50	100

Source: Primary data, 2024

62% of the respondents were male and 38% were female since the selection was done at random, one can conclude that Century Bottling Limited employs more male than female. This gender distribution reflects a workforce where male employees make up a significant majority.

Age Distribution of Respondents

Table: Age of Respondents

		Frequency	Percent (%)
Valid	20-30 years	3	6
	31-40 years	27	54
	Above 40 years	20	40
	Total	50	100.0

Source: Primary data, 2024

The data presented in the table provides insights into the age distribution of respondents working at Century Bottling Company, based on 50 participants. The results are categorized into three age groups: 20-30 years, 31-40 years, and above 40 years. The analysis is as follows: 6% of the respondents (3 out of 50) fall within the 20-30 years age group, indicating that a small portion of the workforce consists of younger employees, possibly in early career stages or entry-level positions.

The majority, 54% (27 out of 50), are between 31–40-year-old. This suggests that the bulk of the workforce consists of employees in their mid-career, likely with significant experience and playing key roles in various departments. 40% of the respondents (20 out of 50) are above 40 years of age,

showing that a substantial portion of the workforce is more experienced, possibly holding senior or leadership positions within the company.

Academic Qualification of Respondents

Table: Academic Qualification

	Frequency	Percent
Certificate	3	6
Diploma	14	28
Degree	25	50
Masters	8	16
Total	50	100.0

Source: Primary data, 2024

The table provides data on the academic qualifications of respondents working at Century Bottling Company, based on 50 participants. The qualifications are grouped into four categories: Certificate, Diploma, Degree, and Masters. The analysis is as follows: 6% of the respondents (3 out of 50) hold a Certificate qualification, indicating that a small portion of the workforce has entry-level academic qualifications, likely in technical or specialized roles requiring foundational skills. 28% of respondents (14 out of 50) have a Diploma qualification, suggesting that a significant number of employees have attained intermediate-level education, which may equip them with practical and professional skills relevant to their roles.

The largest group, 50% (25 out of 50), hold a degree, demonstrating that half of the workforce is composed of employees with undergraduate education. This reflects a well-educated workforce, likely occupying various managerial, technical, or professional roles within the company. 16% of the respondents (8 out of 50) have a Masters qualification, indicating that a notable portion of the workforce has advanced education, likely holding senior, executive, or specialized positions within the company.

Work Experience of Respondents

Table: Work Experience

		Frequency	Percent
Valid	Less 1 year	8	16
	1-3 years	4	8
	4-6 years	20	40
	7-10 years	10	20
	>10 years	8	16
	Total	50	100.0

Source: Primary data, 2024

The data presented summarizes the length of service of respondents within Century Bottling Company. It provides insight into the experience levels of employees, which may influence their perspectives on the effectiveness of ICT in supply chain operations.

Less than 1 year: 16% of respondents have been with the company for less than one year. This group represents entry-level employees who may have limited exposure to company processes and systems.

From 1-3 years: Only 8% of respondents fall within this category, indicating a relatively small proportion of employees who are in the early stages of their careers at the company.

Furthermore, 4-6 years: A significant 40% of respondents have been with the company for 4 to 6 years. This group likely possesses a moderate level of experience and understanding of the company's operations and the impact of ICT. 7-10 years: 20% of respondents have worked at the company for 7 to 10 years. These employees may have considerable experience and insight into the evolution of the company's procurement processes.

More than 10 years: Another 16% have been employed for over 10 years, representing a cohort with extensive experience who can provide valuable insights into long-term changes and trends within the organization.

4.3 SECTION C: EFFECTIVENESS OF ICT IN PROCUREMENT PROCESSES

S/N		SD	D	N	A	SA
1	ICT helps in responding quickly to competitive market changes.	6.3%	22.9%	4.2%	47.9%	18.8%
2	E-procurement tools (e.g., e-tendering) simplify the selection of competent suppliers	14.6%	27.1%	4.2%	52.1%	2.1%
3	ICT reduces lead time for the delivery of raw materials from suppliers	10.4%	31.3%	6.3%	31.3%	20.8%
4	E-procurement tools (e.g., e-tendering) simplify the selection of competent suppliers	25.0%	29.2%	0.0%	31.3%	14.6%
5	The procurement department is well-trained in utilizing ICT for procurement activities	14.6%	18.8%	0.0%	58.3%	8.3%
6	Century Bottling Company has a robust IT infrastructure supporting e-procurement processes	8.3%	20.8%	0.0%	31.3%	39.6%
7	The suppliers of Century Bottling Company have the necessary e-business technology capabilities	18.8%	25.0%	0.0%	54.2%	2.1%
8	ICT enhances the exchange of critical information between the company and its suppliers	16.7%	16.7%	0.0%	31.3%	35.4%
9	E-procurement reduces inventory levels, leading to lower costs in inventory management	8.3%	8.3%	2.1%	45.8%	35.4%
10	ICT in procurement reduces the overall costs associated with purchasing activities	10.4%	18.8%	18.8%	50.0%	2.1%

The data presented in Section C evaluates the effectiveness of Information and Communication Technology (ICT) in procurement processes at Century Bottling Company. Respondents were asked to indicate their level of agreement with various statements, categorized as Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), and Strongly Agree (SA). The analysis of the responses is as follows:

ICT helps in responding quickly to competitive market changes, 47.9% agreed, indicating a strong belief that ICT enhances responsiveness to market dynamics. However, 22.9% disagreed, suggesting some respondents may not fully recognize this benefit.

E-procurement tools (e.g., e-tendering) simplify the selection of competent suppliers. The majority, 52.1%, agreed, while 27.1% disagreed, demonstrating a positive perception of e-procurement's role in supplier selection, though there is notable skepticism.

ICT reduces lead time for the delivery of raw materials from suppliers, 31.3% agreed, while 31.3% disagreed, indicating mixed opinions on the effectiveness of ICT in lead time reduction. E-procurement tools simplify the selection of competent suppliers. This statement was repeated and garnered 31.3% agreement, with 25.0% strongly disagreeing, highlighting a need for clarity as to the effectiveness of these tools.

The procurement department is well-trained in utilizing ICT for procurement activities, 58.3% agreed, suggesting confidence in the training provided, while 14.6% strongly disagreed. Century Bottling Company has a robust IT infrastructure supporting e-procurement processes. 39.6% agreed, indicating a favorable view of the IT infrastructure, while 20.8% disagreed, suggesting potential concerns about adequacy.

The suppliers of Century Bottling Company have the necessary e-business technology capabilities, 54.2% agreed, reflecting a belief in the suppliers' technological readiness, though 18.8% disagreed.

ICT enhances the exchange of critical information between the company and its suppliers, 35.4% agreed, with 16.7% strongly disagreeing, indicating a perceived improvement in communication, though some skepticism remains.

E-procurement reduces inventory levels, leading to lower costs in inventory management, 45.8% agreed, while only 8.3% disagreed, indicating a strong belief in e-procurement's cost-saving benefits. ICT in procurement reduces the overall costs associated with purchasing activities, 50.0% agreed, suggesting a significant perception of cost reduction benefits, with 10.4% disagreeing.

In summary, the data indicates a generally positive view of the effectiveness of ICT in enhancing procurement processes at Century Bottling Company. While many respondents recognize the benefits of ICT and e-procurement tools, there are areas of skepticism, particularly regarding lead time reduction and the overall impact on supplier selection. Overall, the findings suggest that while the procurement department is perceived to be well-trained and supported by robust IT infrastructure, ongoing assessments and improvements may be needed to maximize the advantages of ICT in procurement.

4.4 SECTION D: SERVICE DELIVERY

S/N		SA	A	N	D	SD
1	Services are provided on time due to ICT integration	27.1%	35.4%	0.0%	18.8%	18.8%
2	Services are easily accessible to customers due to effective ICT systems	25.0%	25.0%	6.3%	25.0%	18.8%
3	Century Bottling Company responds effectively to customer needs and demands using ICT	41.7%	29.2%	0.0%	25.0%	4.2%
4	Employees are willing to provide high-quality services, supported by ICT tools	27.1%	37.5%	4.2%	22.9%	8.3%
5	There is efficient exchange of information regarding service delivery performance between the company and its customers	29.2%	27.1%	0.0%	25.0%	18.8%
6	ICT improves the speed and timeliness of service delivery	22.9%	31.3%	4.2%	29.2%	12.5%

7	The use of ICT tools (e.g., e-procurement platforms) helps identify and manage potential suppliers more efficiently	35.4%	35.4%	0.0%	12.5%	16.7%
8	ICT has strengthened the business relationship between Century Bottling Company and its suppliers	29.2%	29.2%	0.0%	29.2%	12.5%
9	ICT integration has reduced inventory management costs	20.8%	52.1%	4.2%	22.9%	0.0%
10	ICT has enabled timely production and meeting customer demand for products	25.0%	35.4%	8.3%	16.7%	14.6%
11	Customer complaints have significantly reduced after the implementation of ICT systems	29.2%	27.1%	0.0%	25.0%	18.8%
12	ICT has significantly contributed to improving the overall quality of service delivery performance	35.4%	35.4%	0.0%	12.5%	16.7%

The data presented in Section D evaluates the effectiveness of Information and Communication Technology (ICT) in enhancing service delivery at Century Bottling Company. Respondents rated their level of agreement with various statements on a scale from Strongly Agree (SA) to Strongly Disagree (SD). The analysis of the responses is as follows:

Services are provided on time due to ICT integration, 27.1% strongly agreed, and 35.4% agreed, indicating a positive perception of ICT's role in timely service delivery. However, 37.6% of respondents either disagreed or strongly disagreed, suggesting that some employees feel that ICT integration may not consistently ensure timely services.

Services are easily accessible to customers due to effective ICT systems, 25.0% strongly agreed and 25.0% agreed, while 25.0% disagreed, highlighting a split perception regarding accessibility. 18.8% strongly disagreed, indicating a notable concern about the effectiveness of ICT systems in facilitating customer access.

Century Bottling Company responds effectively to customer needs and demands using ICT. A strong 41.7% strongly agreed, and 29.2% agreed, showing confidence in the company's ability to meet customer demands through ICT. Only 4.2% strongly disagreed, indicating a favorable view overall. Employees are willing to provide high-quality services, supported by ICT tools. 27.1% strongly agreed and 37.5% agreed, suggesting that employees generally feel empowered by ICT tools. However, 22.9% disagreed, which points to some concerns about service quality despite ICT support.

There is efficient exchange of information regarding service delivery performance between the company and its customers, 29.2% strongly agreed and 27.1% agreed, indicating a belief in effective communication. However, 43.8% disagreed or strongly disagreed, suggesting room for improvement in information exchange.

ICT improves the speed and timeliness of service delivery. 22.9% strongly agreed and 31.3% agreed, but 41.7% of respondents expressed disagreement, highlighting a divided opinion on ICT's impact on delivery speed.

The use of ICT tools helps identify and manage potential suppliers more efficiently, 35.4% strongly agreed and another 35.4% agreed, indicating strong support for the effectiveness of ICT tools in supplier management. However, 16.7% strongly disagreed, reflecting some skepticism.

ICT has strengthened the business relationship between Century Bottling Company and its suppliers. Both 29.2% strongly agreed and agreed, showing positive sentiments, but the 29.2% who disagreed highlight potential concerns about the quality of supplier relationships.

ICT integration has reduced inventory management costs. A significant 52.1% agreed, indicating a strong belief in the cost-saving benefits of ICT. Notably, 20.8% strongly agreed, and 0.0% disagreed, suggesting general consensus on cost reduction.

ICT has enabled timely production and meeting customer demand for products, 25.0% strongly agreed and 35.4% agreed, with only 16.7% disagreeing, indicating a favorable perception of ICT's role in production and customer satisfaction.

Customer complaints have significantly reduced after the implementation of ICT systems, 29.2% strongly agreed and 27.1% agreed, but 43.8% disagreed or strongly disagreed, indicating mixed

perceptions about the effectiveness of ICT in reducing complaints. ICT has significantly contributed to improving the overall quality of service delivery performance, 35.4% strongly agreed and 35.4% agreed, demonstrating a strong belief in ICT's contribution to service quality, although 29.2% disagreed, indicating that not all respondents share this view.

Therefore, the data suggests a generally positive perception of ICT's effectiveness in enhancing service delivery at Century Bottling Company. While many respondents recognize the benefits of ICT in improving service quality, speed, and accessibility, there are notable areas of skepticism, particularly regarding customer complaints and the efficiency of information exchange. Overall, the findings indicate that while ICT is perceived as a valuable asset, further improvements may be needed to maximize its impact on service

4.5 QUANTITATIVE ANALYSIS

A total of 62.5% of the respondents claimed that the incorporation of ICT has also resulted in timely service delivery. But 18.8% disagreed, indicating that some workers still see obstacles or delays in spite of ICT systems.

With the help of effective ICT systems, services are more accessible to customers; 25% strongly agreed to this statement and another 25% agreed. This shows that there is a consensus of 50% with regards to accessibility of services. However, 25% were in disagreement and 18.8% strongly disagreed to show that probably ICT systems have not reached a point where accessibility is fully realized by a portion of the respondents.

Use of ICT in Century Bottling Company enables the organization to respond effectively to customers' needs and demands; 41.7% strongly agreed, while 29.2% agreed. This shows full agreement that indeed ICT enhances responsiveness to customers' needs. However, 25% disagreed, meaning there is more work needed for full optimization of customer response systems.

With the support from ICT tools, employees are willing to deliver high-quality services, as 27.1% strongly agreed and 37.5% agreed. This means that a total of 64.6% of the responses felt that ICT tools positively influence the willingness of an employee to deliver quality services, though 22.9% disagreed.

There is efficient information exchange between the company and its customers on the performance of service delivery. 29.2% strongly agreed and 27.1% agreed. However, it was

indicated that 25% disagreed and 18.8% strongly disagreed with it, showing that at different levels of communication, some possible lapses may exist between the company and its customers.

It has increased timeliness in the delivery of services. 22.9% strongly agreed, and 31.3% agreed, though 29.2% disagreed. This split demonstrates a divergence of opinion on whether ICT has had an improving effect on the speed, and there is need to improve on the critical factors to ensure that results will always be consistent.

It also allows the identification and management of potential suppliers with ICT tools, including e-procurement platforms, in which 35.4 percent strongly agree and 35.4 percent agree that there is significant confidence in the enhancement of ICT in supplier management. Only 12.5 percent disagreed.

It has improved the business relationship between Century Bottling Company and its suppliers; 29.2% strongly agreed, 29.2% agreed to the fact that most of the respondents perceive positive outcomes in the regard to the supplier's relations through the use of ICT though 29.2% disagreed.

The integration of ICT has reduced the cost of managing inventory: Strongly agree 20.8%; Agree 52.1% This indicates strong perception in the cost-saving potentials of ICT. None strongly disagreed, though 22.9% disagreed, probably reflecting areas where ICT hasn't fully optimized the management of costs.

This has enabled the timely production of products to meet customer demand; 25% strongly agreed and 35.4% agreed that the possibility of a greater perception was maintaining the production schedules by the means of ICTs in order to meet the demand. To the contrary, 16.7% disagreed while 14.6% strongly disagreed.

Only 29.2% strongly agreed, and 27.1% agreed, meaning that 56.3% of respondents feel ICT has helped reduce complaints from customers. A total of 25% disagreed and there is still room for improvement.

The application of ICT in service delivery has greatly enhanced the quality of service delivery performance; 35.4% strongly agreed, while 35.4% simply agreed. This shows an overwhelming general belief in the positive contribution of ICT to quality service. However, 12.5% disagreed and 16.7% strongly disagreed, indicating that the benefits of ICT in enhancing service delivery are yet to be fully realized due to a few challenges.

CHAPTER 5: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a comprehensive discussion of the research findings based on the data collected on the impact of ICT on supply chain operations at Century Bottling Company (Coca-Cola, Namanve branch). The discussion is structured around the key research objectives, integrating the study's findings with existing literature. Furthermore, conclusions are drawn based on the study's results, and recommendations are made for both practical implementation and future research.

5.2 Summary of Findings

5.2.1 Product Distribution

From the sampled population, the research indicated that 40% named carbonated soft drinks as the main product dealt with by Century Bottling Company, and 60% named non-carbonated beverages. It shows a high product concentration on carbonated products but also an increasing focus on non-carbonated beverages. This follows the recent global trends of switching to healthier drink options such as juices and water.

5.2.2 Distribution Network

54% described the company's distribution network as "Good," while 34% described it as "Excellent." Only 2% said the network was "Poor." This would indicate that, indeed, the company does have an effective distribution system, but this can be improved to become excellent.

5.2.3 Profit Estimation

The perceptions of the actual profits made by the company ranged between 46% estimating it to fall between UGX 1 billion to UGX 5 billion and an only 4% suggesting it exceed UGX 10 billion. As many as 28% were undecided again showing internal communication gaps regarding finances may be present.

5.2.4 Employee Composition

From these results, 40% of respondents were found to work in departments that comprise between 110-200 employees; this has reflected the company's departments as being of medium size. An impressive 8% reported departments with over 310 employees, showing the wide nature of the workforce structure regarding operations.

5.2.5 Impact of ICT on Supply Chain Operations

54% of the respondents indicated that the use of ICT overwhelmingly improves supply chains; none responded that ICT has no effect. This should point out that there is an agreement on the use of ICT for achieving the highest efficiency of the chain though 4% feel its effect is minimal.

5.2.6 Respondents Characteristics

- Gender: The workforce is highly male dominant; 62 percent.
- Age: 54% fall in the group from 31-40 years, meaning a mid-career and experienced workforce.

Qualification: The respondents are qualified- half of the respondents, or 50%, reported having a degree, implying a well-educated working population.

Tenure in the Organization: Respondents reported that 40% have been with the organization between 4-6 years, indicating an average level of experience in the organization.

5.2.7 Usefulness of ICTs in Procurement Practices

Participants generally perceive that ICT-based procurement systems, like e-procurement, would not only simplify the selection process but will also reduce the lead times. However, participants seemed skeptical about the aspect of lead time reduction as most of them reported mixed opinion on the success level of lead time reduction.

5.2.8 Service Delivery

Majority of the respondents supported the notion that service delivery has been improved through the integration of ICT. Timeliness and the accessibility of services have improved though there is still a ceiling to which the services by ICT can meet the expectations of customers as well as reduce customer complaints.

5.3 Discussion of the Study

5.3.1 Product Distribution and Profitability

The dominant inclination that estimated the company's profits at UGX 1-5 billion shows that while the product portfolio is expanding, it may not be fully capitalized in terms of profitability. This is mirrored by global research indicating that companies expanding into non-carbonated products often face challenges in reaping profitability from the same during early stages.

5.3.2 Distribution Network Efficiency

Results show that to a large extent, the distribution network of Century Bottling Company is effective, as 88% of the respondents perceive it to be either "Good" or "Excellent." This stands as

an endorsement on the role of ICT in the management of logistics and distribution since there is literature that supports the fact that it can smooth the supply chain operations and thereby enhance the efficiency of distribution.

5.3.3 Impact of ICT on Supply Chain Operations

This is in line with Resource Dependence Theory, where the strong consensus (96%) testifies to the organizations' dependence on technology to lessen uncertainty and amplify decision making. However, the 4% who showed the level of enhancement as minimal reflects those departments without extensive access or use of ICT tools.

5.3.4 Service Delivery and Customer Relations

It enhanced service delivery through timeliness and the ability to respond to customer demands. According to the theory of information processing, every additional unit of ICT within an organization improves the organization's responsiveness to external changes. However, mixed responses on its effect regarding customer satisfaction suggest its full potential has not yet been realized as far as customer relationship management is concerned.

5.3.5 ICT in Procurement Processes

It has been found that ICT reduces procurement processes, especially in choosing suppliers and cost-cutting. This will also be consistent with the literature related to e-procurement systems, that ICT tools support given firms in functional efficiency by reduction of transaction times and enabling better relations with suppliers.

5.4 Conclusion

The results from this research have proven that, indeed, at Century Bottling Company, ICT is crucial in its efforts towards enhancing its supply chain operations and putting in place measures for effective service delivery. In fact, ICT tools, especially in areas of distribution and procurement, have increased efficiency and lowered costs while at the same time giving a greater ability to respond to market fluctuations. However, the study also pinpoints areas where the impact of ICT is not fully utilized in reducing lead times and enhancing customer satisfaction.

5.5 RECOMMENDATIONS

- **Employee Training.** It is recommended that Century Bottling Company invest in continuous ICT training programs for employees to ensure they are fully equipped to utilize advanced technologies. This will maximize the benefits of ICT integration in supply chain management.

- **Supplier Collaboration.** The company should enhance its collaboration with suppliers by integrating their systems through ICT platforms. This would improve communication, reduce lead times, and create a more responsive and agile supply chain.
- **Investment in Emerging Technologies.** In addition to improving current systems, the company should explore investment in emerging technologies such as blockchain for supply chain transparency and artificial intelligence (AI) for process automation. These technologies have the potential to revolutionize supply chain operations by improving traceability, reducing fraud, and automating routine tasks.

5.6 Areas for Future Research.

Impact of AI and Automation on Supply Chain Management

Impact of ICT on Customer Satisfaction

ICT in Lead Time Optimization

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APPENDICES.

APPENDIX 1: QUESTIONNAIRE

My name is GUMA CHRISTIAN EDEGA, a student of Uganda Christian University Mukono pursuing a bachelor's degree in Procurement and Logistics under registration number S21B12/124. My research topic is entitled "The Impact of ICT on Supply Chain Operations in Service Delivery: A Case Study of Century Bottling Company Coca-Cola Namanve." I kindly request you to take some time to fill in my questionnaire. This research is purely for academic purposes.

Thank you for your cooperation.

SECTION A: ORGANIZATIONAL CHARACTERISTICS

Which of the following best describes Century Bottling Company's primary products?

1. Carbonated soft drinks (e.g., Coca-Cola, Fanta, Sprite)
2. non-carbonated beverages
3. Other (Please specify): _____

How would you rate the company's distribution network within Uganda?

1. Excellent
2. Good
3. Average
4. Poor

What is the approximate annual profit range for Century Bottling Company?

1. Less than UGX 1 billion
2. UGX 1 billion – UGX 5 billion
3. UGX 5 billion – UGX 10 billion
4. More than UGX 10 billion

5. Not sure

Number of employees in your department

1. Less than 100

2. 110-200

3. 210-300

4. 310 and above

To what extent does ICT enhance supply chain operations in Century Bottling Company?

1. Greatly enhances

2. Somewhat enhances

3. Minimally enhances

4. No impact at all

SECTION B: RESPONDENT CHARACTERISTICS

Gender

1. Male

2. Female

Age

1. 20-30

2. 30-40

3. 40 and above

Level of Education

1. Certificate

2. Diploma

3. Degree

4. Postgraduate

Length of service in the organization

1. Less than 1 year

2. 1-3 years

3. 4-6 years

4. 7-10 years

5. More than 10 years

For each of the following statements, please indicate your level of agreement using the scale below:

1 - Strongly agree | 2 - Agree | 3 - Neutral | 4 - Disagree | 5 - Strongly Disagree

SECTION C: EFFECTIVENESS OF ICT IN PROCUREMENT PROCESSES

S/N		SA	A	N	D	SD
1	ICT helps in responding quickly to competitive market changes.					
2	E-procurement tools (e.g., e-tendering) simplify the selection of competent suppliers					
3	ICT reduces lead time for the delivery of raw materials from suppliers					
4	E-procurement tools (e.g., e-tendering) simplify the selection of competent suppliers					

5	The procurement department is well-trained in utilizing ICT for procurement activities					
6	Century Bottling Company has a robust IT infrastructure supporting e-procurement processes					
7	The suppliers of Century Bottling Company have the necessary e-business technology capabilities					
8	ICT enhances the exchange of critical information between the company and its suppliers					
9	E-procurement reduces inventory levels, leading to lower costs in inventory management					
10	ICT in procurement reduces the overall costs associated with purchasing activities					

SECTION D: SERVICE DELIVERY

S/N		SA		A	N	D	SD
1	Services are provided on time due to ICT integration There is a consistent supply of raw materials, enabled by ICT systems						
2	Services are easily accessible to customers due to effective ICT systems						
3	Century Bottling Company responds effectively to customer needs and demands using ICT						
4	Employees are willing to provide high-quality services, supported by ICT tools						
5	There is efficient exchange of information regarding service delivery						

	performance between the company and its customers						
6	ICT improves the speed and timeliness of service delivery						
7	The use of ICT tools (e.g., e-procurement platforms) helps identify and manage potential suppliers more efficiently						
8	ICT has strengthened the business relationship between Century Bottling Company and its suppliers						
9	ICT integration has reduced inventory management costs						
10	ICT has enabled timely production and meeting customer demand for products						
11	Customer complaints have significantly reduced after the implementation of ICT systems						
12	ICT has significantly contributed to improving the overall quality of service delivery performance						

APPENDIX 2: DATA COLLECTION LETTER



UGANDA CHRISTIAN UNIVERSITY

A Centre of Excellence in the Heart of Africa

SCHOOL OF BUSINESS

19th Aug, 2024

TO WHOM IT MAY CONCERN

Name: GUMA CHRISTIAN EDEGA Reg. S21B12/124

A bachelor's student who is seeking permission from your office to collect data for his dissertation titled

THE IMPACT OF INFORMATION COMMUNICATION TECHNOLOGY ON SUPPLY CHAIN

OPERATIONS IN SERVICE DELIVERY. CASE STUDY: CENTURY BOTTLING COMPANY

COCA-COLA, NAMANVE BRANCH.

We shall be grateful if you could render assistance to him in collecting the necessary data for his dissertation.

The Uganda Christian University School of Business thanks you in advance

A handwritten signature in blue ink, appearing to read 'Mukisa Simon Peter'.

Mukisa Simon Peter
Research coordinator