**BINDURA UNIVERSITY OF SCIENCE EDUCATION**

**FACULTYOF COMMERCE**

 **DEPARTMENT OF ECONOMICS**

****

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THE IMPACT OF OUTSOURCING TRANSPORT SERVICES ON THE COMPETITIVENESS OF FAST FOOD INDUSTRIES. THE CASE OF LOBELS BAKERIES IN BINDURA.

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE HONOURS DEGREE IN PURCHASING AND SUPPLY OF BINDURA UNIVERSITY OF SCIENCE EDUCATION. FACULTY OF COMMERCE

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# RELEASE FORM

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# APPROVAL FORM

The undersigned certifies that they have supervised, read and recommended to Bindura University of Science Education for acceptance a research project entitled “THE IMPACT OF OUTSOURCING TRANSPORT SERVICES ON THE COMPETITIVENESS OF FAST FOOD INDUSTRIES” submitted in partial fulfilment of the requirements of the Bachelor of Commerce (Honors) degree in Purchasing and Supply.

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# DEDICATION

This work is dedicated to my parent and siblings who have tirelessly supported me in all aspects and provided me with encouragement, finance and moral support during my studies and endeavoured lots of displeasure and discomfort while l was at times away to write this dissertation. May the Almighty God continue to bless you.

# ABSTRACT

The aim of this project was to unearth the impact of outsourcing transport services in a fast moving food industry in the bread sector in Zimbabwe. The study examined the circumstances surrounding the outsourcing of transportation, identifying and evaluate its impact in the bread sector within Lobels Bindura. The study was guided by four objectives to seek the impact of outsourcing transport services using exploratory research design. It evidently conveyed the contents of the findings using questionnaires to collect relevant data. The population size and sample size was 45 employees and 40 employees respectively. Data was analyzed and presented using tables, graphs and charts. Content analysis was chosen for this particular study because it helps on understand the big picture and the data is used to describe the phenomenon and what it implies. The research purpose was to bring to light the effects of engaging with third party transporters in the bread sector at different organizations. The study revealed that Companies in the bread sector are adopting the arrangement of sourcing third party transporters in order to facilitate the logistics of bread and other fast moving products, for example, Cairns foods, Lobels Bread and Bakers inn to mention a few. Some of the challenges include delays in bread delivery to the market, late payments to the transporters, negligence and communication barriers. The study recommends that the firms in the bread sector should venture into the outsourcing of third part transportation so that they can supplement their own fleet. The study concluded that firms in the bread sector cannot operate in a void; they need to find the right transporters to contract in order to facilitate logistics without hindering the company objectives, vision and mission.

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God bless you.

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# CHAPTER ONE

## 1.1 Introduction

The goal of the research project is to examine how outsourcing transportation services affects the competitiveness of the fast food sector in Zimbabwe's Mashonaland Central area. This chapter will provide background of the study, the problem statement, research objectives, research questions, assumptions, and the study's significance. The study's limitations and delimitations will also be highlighted. The chapter will also include working definitions of important terminology and conclude with a summary.

## 1.2 Background of the study

According to Lysons (2016), shifting of major non-core functions to specialized, effective, external providers so that the management will focus on core activities is known as outsourcing. Where there are advanced capabilities, outsourcing is used to make available resources employed for other objectives by contracting out certain tasks (like transportation) to a third party. Risk sharing between the outsourced company and entity is ensured when certain key activities are outsourced to external organizations. The outsourcing of specific tasks to third parties is hampered by a number of obstacles, including the loss of complete control over the organization's operations and the resulting client dissatisfaction. According to Baily (2008), outsourcing could result in the disclosure of private information to rivals and a loss of control.

According to Moeen et al. (2013), when a company outsources its transport logistics, a service provider is hired to handle activities like distribution, warehousing, inventory control, and information processing. According to Rushton and Walaker (2007), moving things from one place to another is the main purpose of transportation. In less economically developed countries, there are measures put in place to deal with the issues that outsourcing poses. Among these steps are entities' agreement on specific quаlity standards with third-party service providers, management's avoidance of outsourcing to service providers with numerous contracts, the low switching costs associated with outsourcing logistics, and staff reassignment to other tasks.

Lobels Bread was established in 1948 which manufactures both bread and biscuits. According to Herald (2018), Lobels borrowed $1.8 million from Central Bank of Zimbabwe to purchase trucks for transportation of its products because it was struggling to purchase new spares for machinery and boost capital for raw materials. Moreover, according to the 2019 article written by African century says that, in November 2013 the acquisition of fifteen trucks enables the company to do away with hiring delivery trucks which was expensive and sometimes unreliable. In 2018 the time where Lobels sued for looting, enables the company to outsource transport services rather than acquiring their own fleets. Cailogistics private limited is a sister company of Lobels and Cairns and its formation was primarily as a result of the confluence of the discomforts originating from Cairns foods and Lobels Bread.

According to British International Investment, Cailogistics provides best in class integrated and flexible supply chain solutions across manufacturing, e-commerce, retail and wholesale markets. Cailogistics at Lobels Bindura depot boasts a fleet of fifteen trucks that are all branded with the delight of the customer. To be ready for breakdowns, additional trucks are kept on standby. Hence, according to Lysons (2016) outsourcing reduces costs, helps the organization to access information and communication technology infrastructure and levels of service performance are boosted. The ambition of this study is to find out the impact of outsourcing transport services on competitiveness in fast food industries and at the end to make recommendations to retail outlets.

Figure 1 showing type and number of fleets owned by Cailo Source**: Primary data (2023)**

However to date, Cailogistics is facing deterioration in the number of fleet and it is affecting Lobels bread and Cairns foods, because the transportation services are now being performed below the expectation. Cailogistics has resorted to the contracting of third party transporters so that they can complement their deteriorating number of fleet. The 3pls are there to perform logistics services, whereby they transport Lobels products and Cairns foods products; however Cailogistics if failing to meet service level agreement.

## This chapter covers the study's background, its research problem, its research questions, its significance, its scope, its limitations, definition of terms, how the study was conducted, and the summary.

## 1.3 Statement of the problem

Retail organizations in Mashonaland Central province Zimbabwe are being plagued by certain obstacles which are affecting the supply chain management of their firms. The problems comprises the use of old age technology, delay on products distribution, increased rates of fleet downtime, monitoring of goods and services is poor and glut stocking or under stocking, Currie & Parikh, (2006). Customers' unhappiness brought on by frequent stock outs results in a loss of sales as well. The widespread expiration of some foreign items and an increase in stock outs of basic supplies may be to blame for the drop in sales volume. Also, there are delivery delays, longer purchase cycles, communication problems, and higher procurement costs.

Supervisors should be exceptional on data, for example, stock, client interest and flexibly lead time. This data streams at the various phases of supply chain. Schonsleben (2007) have noticed that organizations today are investing more of amounts of energy on information technology so as to turn out to be more creative, accomplish a serious edge and adjust to the quick and complex climate. If the retail firms in Mashonaland Central province would adapt to the information and technology in this era, it would improve their supply chain management as most if not all of the challenges will be encountered. Therefore, the researcher sought to study if employing information and communication technology in these firms will improve their supply chain management.

## 1.4 **Research objectives**

1. To establish various ICT applications used in the organizations and how they have been deployed in the company for it to maintain its competitive position.
2. To determine challenges being faced in implementing information and communication technology in supply chain management.
3. To determine individual factors and supply chain factors which hinders the implementation of ICT the supply chain management.
4. To determine how ICT has contributed to efficiency and effectiveness of the supply chain.

## 1.5 Research questions

1. What are the impacts of developing ICT in supply chain management?
2. What are the challenges faced in adoption and use of ICT in supply chain management?
3. What are the benefits associated in implementation of ICT in supply chain management?
4. How do supply chain factors affect the use of ICT applications in supply chain management?

## 1.6 Significance of the study

This study is anticipated to be important in the following ways for all organizations, society, and the researcher:

The study's findings will suggest that other researchers perform additional research in the future.

This study is to enable the researcher to obtain potential expertise in the study's field.

The research will reveal the effects of ICT in an organization.

The completion and success of the study will enable the researcher to meet the partial requirements to be awarded (BCOM) degree at Bindura University.

Would put pressure on organizations to consider how to use ICT to carry out their SCM tasks while overcoming operational issues, and would offer possible solutions.

Contribute to the creation of and suggestions for successful information and communication technology applications for internal supply chain management

## 1.7 Assumptions

* Respondents will willingly co-operate by facilitating access to data and information that may be considered as sensitive and confidential.
* The research environment will remain constant throughout the study period.

## 1.8 Delimitations

## 1.8.1 Conceptual scope

The focus of this study is on the adoption of information and communication technology as the independent variable within the retail sector in Zimbabwe, while the supply chain management makes up the dependent variable.

This study will be carried out in Bindura, Zimbabwe mostly between two retail companies namely TM ‘Pick n Pay’ and Delta Beverages. The reason for this geographical scope is that each company represents different categories of products found in the retail sector.

## 1.8.2 Time period

The study will be carried from the period 2019 to 2023 because that is when the researcher has adequate time and also access to information from lecturers and internet.

## 1.9 Limitations

The study is going to be done under the following limitations:

## 1.9.1 Concept of confidentiality

Information is acquired using questionnaire and interview rather than using documentary sources because some information and sources of information are confidential meaning that, anyone who is not an integral component of the management is not permitted access to them.

## 1.9.2 Data availability

Research findings heavily depend on respondents' adaptability as well as understanding skills. The respondents must give reliable, measurable data and they must be responsible for the data they are disclosing.

A very poor thing in research is when respondents supply inaccurate information. Yet, occasionally they refuse to disclose data due to confidentiality and management concerns, which hinder the entire data access procedure. The researcher can only lessen this by discussing the purpose of the research with them openly and explicitly.

## 1.9.3 Limited cooperation

A number of respondents did not provide information and cooperation which may result in a researcher coming out with inaccurate and inadequate data. The best way out to this problem faced by researchers is to show good impression to the respondents and to clarify the main reasons why conducting the research and also the benefits they are going to enjoy after the research.

## 1.9.4 Finance

Financial constrains which includes the cost of gathering information and preparing the project for submission to the university.

## 1.10 Definition of terms

**Internal Supply Chain** – referred to different types of activities found within an organization, specifically, purchasing, production, sales and distribution.

**Information and Communication Technology** –refers to technologies that enable telecommunications-based information access. It is the same as information technology, but communication technology is its primary focus. Cell phones, wireless networks, the internet, and other forms of communication are all included.

**Retail sector** – defined as the element of country’s economy that consists with business that sells merchandise through stores, internet and more to the community.

## 1.11 Chapter summary

Basically, the chapter introduced and lay down the background of the study by establishing that a problem existed and there was need for a study to settle on the impact of information and communication technology on the supply chain management in the retail sector. In chapter two, related information and communication literature is reviewed.

#

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

Literature review serves as the basis for conducting research, Sanders et al (2009). The researcher gains a greater understanding of the subject by using the literature review to further define the research questions and gain insight into related previous studies. Rowley et al. (2004) agree with this goal of the literature and go on to say that literature reviews draw from a variety of sources and assessed, including books, articles, academic and professional journals, and web-based resources.

With a primary focus on the two research variables which are internal supply chain management and information and communication technology. This chapter includes the study's review of the relevant theoretical and empirical literature from other researchers. To identify the research gaps, a critical review was conducted by carefully evaluating the examined literature in connection to the current study. This chapter reviewed the literature with a focus on the goals and conceptual framework mentioned in the preceding chapter. Conceptualization of the primary theories used in the study will be highlighted within the theoretical foundation segment; however the literature review portion will place more emphasis on the results of empirical studies.

## 2.2 Conceptual Framework

Biklen (2003) defines conceptual framework as a collection of broad concepts and principles that are gathered from pertinent fields of study and used to make-up a presentation in the future. In this study, a conceptual framework was created to clarify how the independent and dependent variables relate to one another. It defines the appropriate objectives for the research procedure and maps out how they come together to draw coherent conclusions. It also maps out the action required in the course of the study given his previous knowledge of other researchers’ point of view and his observations on the subject of the research. Information and communication technology [ICT] is the independent variable in this research, whereas supply chain management is the dependent variable as depicted in the Figure 2 below.

**Independent Variables Dependent Variables**

Applications of ICT in procurement process

Individual factors: Management importance, Human resource capability

ICT adoption and use on supply chain management

Supply chain factors: Obstacles, collaboration level. Nature of relationship

ICT adoption challenges: Cost, Complexity

**Figure 2 Conceptual Framework Source**: Author (2023)

## 2.3 Theoretical Framework

## 2.3.1 Technology Acceptance Model (TAM)

Davis invented this model in 1989, and it is a study model that forecasts on how individual users would utilize and embrace technology and information systems. Technology acceptance is a product with a number of characteristics, which includes relative advantage and simplicity of use, which coexists with the diffusion innovation theory put forth by Rogers in 1983. According to Davies (1989), the two components of the technology acceptance model are perceived usefulness and perceived ease of use. The extent to which a person believes that using a system will improve his performance is defined as perceived usefulness. The extent to which a potential user expects the target technology to require little effort is known as perceived use. The model not only anticipates usage but also explains to academic and practitioners why a specific system could be inappropriate and how to acquire the best action.

Perceived usefulness

Behavioral Intention to Use Technology

Actual System Use

Attitude towards Technology

Perceived Ease of Use

External Variables

**Figure 3 Technology Acceptance Model Source: Nicholas Gibson (2018)**

Davis was searching for a method to forecast and explain system utilization for vendors as well as information technology managers at the period when computers were just being used in the workplace. According to the Technology Acceptance Model, adoption of new technology will be successful if individuals have favourable views towards perceived usefulness and perceived ease of use.

"Theory of reasoned action" has originated in previous research by Ajzen and Fishbein (1980), but Davies sought to utilize the Technology Acceptance Model to examine technology in the workplace.

A number of researchers have since improved and extends this model, evolving further multifaceted versions, but the original model is still utilized and usually recognized. It is recognized as a famous theory in describing users' behaviour to technology.

## 2.3.2 Technology diffusion Theory

The adoption and development of new ideas are typically examined by theorists through the perspective of technology diffusion theory. Diffusion referred as a procedure by which modernization is embraced and receives acceptability by the community. Adoption processes are collectively studied by the diffusion theory, which is a complicated collection of sub-theories. Rogers (1995) described diffusion theory as innovation that is disseminated through specific channels, embraced by participants in a social system, and that must account for a period of time. Innovation bears with features of relative advantage, compatibility, complexity and distinctiveness of results. People are more prone to adopt innovation if they can more quickly see its benefits.

While the process is not limited to the above traits, the factors are supportive in generating questions for potential embracer to better comprehend the conditions that make adoption desirable or practical. The endogenous growth theory contends that economic factors can affect both the speed of technological development and, in turn, the speed of long-term economic growth. Due to its perceived high cost, this would hinder the use of technology in procurement. It starts with the observation that innovations take the shape of new products, technologies, and markets as outcomes of economic activity, according to Lieberth (2007).

The effects of the technological revolution on purchasing have identified the reasons for transformation in the purchasing function, including the objectives of moving from a protected structure which supports procurer to pay as an objective of a world-class procurement which is seen to improve the performance of the procurement function to the elimination of paper transactions, Lysons (2012). In order to transition from old class traditional procurement to world class procurement, the firm needs guidance from the Technology Diffusion theory as it adopts new technologies and makes changes to existing ones.

###

## 2.3.3 Technology organization Environment (TOE) Model

This model was propounded by Tornatzky and Fleischer in 1990 and it pinpoint the technological, organizational and environmental context as the three contexts that affect how an enterprise adopts and applies technological innovation. Starbuck (1976) piercing out that technical context explains internal and external technologies important to the business. Organization external technologies available are also included along with the organizations current procedures and tools. Organizational context clarifies descriptive metrics of the organization which are scope, size and managerial or hierarchical structure. Furthermore, environmental context comprises of organization’s industry, rivals and government interactions. This is a setting in which a firm conducts its operations.

**Organization**

Formal and Informal Linking structures

Communication process

Size

Slack

**External Task Environment**

Industry characteristics and market structure

Technology Support Infrastructure

Government regulation

**Technological Innovation Decision Making**

**Technology**

Availability

Characteristics

**Figure 4 TOE Model Source: Tornatzky and Fleischer (1990)**

This approach is in line with Rogers' (1995) Diffusion of Innovation theory, which highlighted human qualities as well as internal and external organizational factors as motivators for organizational innovativeness. These are the same as the TOE framework's technological and organizational context, which also has a new and crucial element called environment context. Both opportunities and restrictions for technological innovation are presented by the environment context. Several concepts in the adoption predictors are predicated to apply more to large firms, where clients are assured of continuity and have fewer complaints, rather than to small or medium organizations. The knowledge of adoption behaviour can be improved, though, by combining with other models like TAM, where each adoption prediction offers many more characteristics than the original.

## 2.4 Empirical Literature Review

There are a number of studies regarding to the implementation of ICT.

**2.4.1K Shiralkar (2021) carried out a study on the assessment of the benefits of Information and Communication Technology adoption on downstream supply chain performance of the retail industry in India.**

During the COVID-19 pandemic the author carried out a study to deal with supply chain disruptions in the retail sector and he came up with a strategy of implementing information and communication technologies (ICT) to progress the effectiveness and sustainability of their supply chain. The retail industry in India benefitted between 9 and 41% from the adoption of ICT. According to research by Gartner, the adoption of ICT in the supply chain leads to significant income growth. The successful choice and administration of supply chain associate, as well as interchange of high-quality information, are all made possible by ICT adoption, which also increases a firm's competitiveness. ERP (economic resource planning) solutions with sound design greatly enhance the integration of internal company operations and enhance the flow of information across supply chain participants, Shiralkar (2021).

**2.4.2 Felix Ndungu Kamanga and Shale Noor Ismail (2016) carried out a study on the effects of outsourcing on organization performance in manufacturing sector in Kenya.**

Organizations are choosing to outsource non-core service activities like human resource, Finance, Transport, I.T And Engineering services to both local and global service providers who are better placed with the experience and technical know-how in such areas. In any case outsourcing such functions is a challenging process. The process is driven by factors which are beyond cost reduction, service design, and work management across different culture and business process redesign. It is also the responsibility of the service provider to implement changes in the service industry as necessary brought about by changes in technology. Similarly when a firm does not have the required capacity to perform its non-core activities, outsourcing may be an option.

With advancement in technology manufacturing operations have continued to become more and more complex and challenging, hence more knowledge is required to diagnose, solve and manage problems associated with production. The ever rising inflation rates has made product prices to keep increasing calling for more capital and putting pressure on firms to further reduce their costs so that they can maintain short and long term survival, Heber (2014). Production activities are costly and calls for huge operation expenditure, hence have become major targets for outsourcing. Firms can free costs, Moeen et al (2013), reduce long-term capital expenditure and shift internal costs, Holoomb & Hitt (2007).

### 2.4.3 Prashant R (2010) published the following article; Benefits of information technology implementations for supply chain management: An explorative study of progressive Indian companies.

The research conducted by the author was based on the Indian Companies. Developing software agents, virtual supply chains, e-commerce, web services and decision support played a vital role in supply chain thereby increasing international competitiveness. Virtual supply chains were utilized in companies and the supply movement enhanced significantly since deliveries becomes speedy. Some of the benefits cited by the author after implementing information technology in India include cost reduction and error reduction. The rapid acceptance of the internet as a means for connecting with all parties involved appears to be a reflection of the promise of new generation communication technology, which is demonstrating its ability to produce positive outcomes, Prashant (2010).

### 2.4.4 Information flows and supporting Technology in the Automotive Supply Chain: A case study of general motors, Ford and Chrysler in USA, Koperberg (2006).

Information Technology restructured automotive manufacture according to the author with huge effect which means suppliers communicate with their automotive colleague. Electronic Data Interchange (EDI) is a common method of communication used in the automotive industry. The use of electronic data interchange and internet facilitates the flow of information. Moreover, implementation of EDI in automotive supply chain helped the companies to react quickly to market changes.

Ford, Chrysler and General Motors sustain EDI since it enables them to communicate with their suppliers since 1997. The quantity of paperwork involved in transactions decreased. The following advantages of EDI in supply chain management were realized:

• General Motors has a solid track record of providing customers with comprehensive automation systems.

• To connect with its suppliers for electronic data interchange, Ford used a proprietary telecommunications network called Ford Net.

• Chrysler Company employed Extended Enterprise Network, an internet-based system with the intention of giving suppliers access to crucial information on product and invoice ordering, delivery schedules, and invoices. Chrysler advised all suppliers to switch to the new service and stop using ineffective traditional communication channels like phone, mail, and fax.

### 2.4.5 Dell Computer Corporation carried out a study about computer based supply chain management and information systems integration in 1993.

Michael Dell used a mail-order strategy for computer sales. New entrants in the market such as Compaq enables Dell to investigate further on information technology since it experienced dropping in sales. Dropping sales were a result of price war between Dell Corporations and Compaq. Dell conducted a research and arises with the subsequent solution for information technology:

* Orders placed by customers with suppliers have been relocated to the web, where customers can quickly construct their orders, find the products they need, and schedule deliveries.
* Dell builds computers after they are ordered and it used just in time approach for speedy deliveries, minimum inventories, lower marketing and administrative costs
* Dell gets components quickly which are sixty days never than the ones acquired by major rivals through using component warehouse.
* Shipments were done electronically and also collaborated electronically

The research carried out by Dell was useful because it brought out constructive impact of information technology systems in supply chain management.

### 2.4.6 The International Conference on Asia Pacific Business Innovation & Technology Management; A case study to answer the relationship between information technology and supply chain management at Vietnam textile industry.

The study was conducted to show the application of information technology which resulted in high firm performance constitutes market and financial performance and customer satisfaction. One of the systematic methods used to show the interrelationship is fuzzy dematel. Implementation of information technology at Vietnam Textile Industry ended up the firm considered as the best export industry. More so, the national gross domestic product of Asia was improved and the majority of textile companies use computers for client relationships, business operations, public administration, and online information access. The study proved companies without advanced production systems, partner relationship management software, and resource management find for them difficult to achieve system efficiency. Therefore the Vietnam Textile Industry’s results showed that information technology have major benefits for supply chain management.

## 2.5 Summary

In the above chapter, theoretical framework and empirical evidence were covered and it was explained how information technology and supply chain management are related. Detailed aspects of the variables were concretized by the theories and previous study works by other researchers. In chapter three the focus is on the methodology to the area of study, population, sample size, sampling criteria, reliability and viability and ethical considerations.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

Research methodology allows the researcher to reason logically about a phenomenon and research technique and is essential to the creation of knowledge. According to Kothari (2004), methodology is a systematic strategy used when conducting research. This chapter covers the following topics: study design, research technique, population and sample, sampling processes, research instruments, data collection procedures, data analysis and presentation procedures, validity and reliability, ethical consideration, and a chapter summary.

## 3.2 Research design

The research design is the framework for carrying out each task required to accomplish the aims of the study, including defining the required information, developing instruments, selecting samples, gathering data, and analyzing it. The exact plan a research study uses to accomplish its objectives is known as the research design, according to Aaker et al. (2004). In a manner similar to this, Kothari (2004) defines research design as a conceptual structure for carrying out research that acts as a road map for data collecting, measurement and analysis.

Kothari (2004), categorize research design into exploratory, descriptive/diagnostic and experimental.

* Exploratory research design-This can focus on a limited number of carefully selected cases and then study them thoroughly to discover crucial insights about the problem. A case study is a full study of a particular population, institution, or phenomena.
* Descriptive research design is applied when the problem is clearly defined and the research task is to portray a phenomenon, such as people, businesses, or products. Diagnostic research designs are used to determine how commonly things occur or are connected to another phenomenon. Descriptive and diagnostic methods share common requirements from the perspective of the research design, and as a result, we can develop them jointly, Kothari (2004). According to Robson (2002) and Saunders et al. (2004), descriptive design should be used if the goal of the study is to fully reflect an event, a person, or a situation. A descriptive design was employed within the retail sector of Zimbabwe.
* Experimental research design –is a research design used to found the reason and outcome relationship between independent variable and dependant variables or establishing casual relationship between variables. When experimental research design is introduced, the research attempts to control or/and manipulate the variables in the study to establish the effects they create to the dependant variable. This can be done by changing or holding variables constant in the experiment. Manipulated variables are known as independent variables. Adam and Kamuzora (2008) said that, the aim of the design is to conclude whether dependant variable truly depends on the independent variable or not.

## 3.3 Research method

The purpose of the study is to identify a framework for evaluating the effects of information and communication technology (ICT) on internal supply chain management (ISCM) within the retail sector in Zimbabwe. The research aims to justify the existing relationship using qualitative analysis. Therefore, exploratory research design is the appropriate research method.

## 3.3.1 Exploratory research design

This design is based on the notion that an exploration is necessary for a variety of reasons, such as the absence of tools or measures, the indeterminacy of the variables, or the lack of a theoretical or guiding framework. Because it begins qualitatively, the optimal use for this approach is to explore a phenomenon, according to Creswell et al (2003). This strategy is mostly useful when a researcher wants to construct and test an instrument since one is not available or identify key variables to explore quantitatively when the variables are unknown. Also it is proper when a researcher needs to generalize findings to other groups, test elements of arising theory or classification, or thoroughly investigate a phenomenon. Exploratory research design is categorized into two types which are exploratory descriptive research and exploratory experimental research.

Quantitative research relies on the measurement of quantity or variables of numerical system, Kothari (2004). It includes descriptive, correlation, quasi experiment and experimental research. It is appropriate to phenomenon that can be expressed in quantity. Nevertheless, qualitative research is concerned with qualitative phenomenon which used to understand people’s beliefs, attitudes, behaviour and interactions. Qualitative research method includes observations, interviews and focus groups.

The current study implemented the exploratory research design because it is straightforward to describe, implement, and report. More so, it allows for new ideas to emerge which allows researcher to arise with more detailed solutions to problems and also complex problems are solved easily. The main benefit of this research design is that, it is flexible and it allows multiple hypotheses to be tested, making good decisions, report truthful findings and it can lead to better research results.

However, exploratory research can be a powerful tool for gaining new knowledge but it has its own challenges. Researcher’s goal under this research is not clearly defined which may result in frustration and confusion of both the researcher and the respondents. In addition, information revealed is not always relevant to the problem in the sense that exploratory research often relies on open ended questions which are not well suited to reveal all the information which is critical for problem solving.

## 3.4 POPULATION AND SAMPLING

## 3.4.1 Population

According to Agarwal (2015), a population is the total set of objects or subjects under research. The information should be gathered from the interest group. The target population is a term used to describe a collection of elements that have many of the same traits and from which a research study hopes to draw a representative sample. In this instance, Delta Beverages and TM "Pick n Pay" in Zimbabwe's retail industry are the researcher's target populations.

**Table 1 Target population frame (TM Pick n Pay)**

|  |  |
| --- | --- |
| DEPARTMENT | TARGET POPULATION |
| PROCUREMENT | 4 |
| STORES | 10 |
| FINANCE | 3 |
| ICT | 5 |
| PRODUCTION | 3 |
| TOTAL | 25 |

**Source: Primary data (2023)**

Employees’ list was compiled using employee data. Since the records are confidential, access to them is negotiated. This facilitates obtaining sufficient and reliable information required for research. In addition, the group of people chosen is thought to provide information at a higher degree. 25 employees make up the target population.

**Table 2 Target population frame (Delta Beverages)**

|  |  |
| --- | --- |
| DEPARTMENT | TARGET POPULATION |
| PROCUREMENT | - |
| STORES | 12 |
| FINANCE | 3 |
| ICT | 5 |
| PRODUCTION | - |
| TOTAL | 20 |

**Source: Primary data (2020)**

Employees’ list was compiled using employee data. Since the records are confidential, access to them is negotiated. This facilitates obtaining sufficient and reliable information required for research. In addition, the demographic chosen is thought to provide information at a higher degree. The target population consists of 20 employees.

## 3.4.2 Sampling

Sample defined by Agarwal (2015) as a segment or subset of a population. In other words, a sample is a representative portion of a target population that is drawn to illustrate how the remainder of the population behaves. In cases where it is not possible to research the full population, it is ideally equivalent to conveniently scaling down the study components.

## 3.4.3 Sampling size

Due to the limitation of resources to conduct the survey since there are a lot of companies in the retail sector, the researcher managed to narrow down the companies to two which are TM ‘Pick n Pay’ and Delta Beverages. These companies have been selected because they have retail outlets in the study area of Mashonaland Central which is close to the researcher so as to acquire the needed information for the research to carry on. Researcher’s target population is going to be the addition of the two companies to come up with figures we are going to put per each department, which is, procurement department 5, stores department 22, finance department 5, ICT department 10, and production department 3.

Sampling size is calculated using Yamane’s formula which is expressed below;

 Where;

e is the precision level which is 5%

N is target population

 = 40 employees

Therefore, out of the entire population, 40 employees are chosen as the sample size.

## 3.5 Sampling procedure

Kothari (2004) identified two sample designs which can be used in a presentation. The sample may be probability sampling or non probability sampling. Under random sampling every component of the population has an equal chance of being included in the sample with this sampling strategy. Because it emphasizes on statistical regularity law, which states that if on average the sample picked is a random one, the sample will have the same composition and characteristics as the universe, probability sampling design is said to be the best. The four primary methods of probability sampling are stratified sampling, simple random sampling, cluster sampling, and systematic sampling.

The likelihood that each item in the population will be included in the sample cannot be estimated using a non-probability sampling approach. Non-probability sampling is also referred to by other names, including judgment sampling, convenience sampling, purposive sampling, quota sampling, and snowball sampling. It is faster and more cost effective than probability sampling. Non-probability sampling, however, does not give every item in the population an equal chance of selection.

Therefore, to construct the sample population, the researcher will employ a probability sampling approach called stratified random sampling. According to Hayes (2020), stratified random sampling is a sampling technique which divides a population into smaller subgroups known as strata. During stratified random sampling, groups of individuals are divided into strata based on shared characteristics, such as income or educational attainment. The researcher can use an existing stratum or develop a new one to meet the goals of the research.

This approach is acceptable for this research since it offered every staff person who utilizes Information and communication technology in procurement from all ranks within the sector an equal chance to partake. They were picked at random within the organization from each department. Neuman (2003) asserts that the requirement to maintain an acceptable sample size should be the main factor in sample size selection. According to Mugenda and Mugenda (2003), the alternative selected for this technique allows the researcher to acquire accurate information at an acceptable time, financial and human resource cost.

Target population was divided into four groups by the researcher: top managers, middle managers, officers, and clerks. Simple random selection with random sampling numbers was used to select a sample from each stratum, and the aggregate of these samples will make up the sample used for the research.

## 3.6 Research Instruments

The researcher will mostly use questionnaire with a Likert scale to collect data. Kothari (2004), explains self-administered questionnaire as the only method for gathering report on people's ideas, attitudes, beliefs, and values. According to Lavrakas (2015), a questionnaire is a set of uniform questions, commonly referred to as items, which follow a predetermined pattern in order to collect particular data regarding one or more specific subjects. The survey is divided into sections that correspond to the different study variables. Each section contains both closed-ended and open-ended questions that were designed to elicit replies from respondents about concepts, viewpoints, and attitudes that the researcher might have missed. To make sure that the questions are clear, straightforward, and objective, the researcher carefully crafted and arranged them. The questionnaire method was chosen by the researcher because it is a quick and inexpensive way to study a wide range of people.

It can be self-administration whereby a researcher personally delivers and collects a questionnaire by either drop or pick up the questionnaire sheets later, or ask participants directly for their responses. Another way of gathering information using questionnaires is done through mail distribution where the information from the researcher to the recipients is transferred via the internet. The information gathered from the field of study allows for the analysis of data and the creation of reports that serve as standards for future researchers.

## 3.6.1 Justification of using questionnaires as research instrument.

## 3.6.1.1 Cost savings

Using questionnaires is much more cost efficient in the sense that, using online submission there is less labour and paper cost.

## 3.6.1.2 Flexibility

Questionnaires they give the respondents’ vast time to complete their questionnaires which can help to boost the overall response rate.

## 3.6.1.3 Data accuracy

As compared to other research instruments, a questionnaire helps the researcher to arise with accurate data and also the risk of biased information is minimized.

However, some questions are ignored or left unanswered. There are differences in understanding and interpretation of the questions. Some respondents fail even to grasp the meaning of some questions. Also, open-ended questions allow individualized answers and provide too much information which is difficult to quantify and analyze. Therefore the researcher must clarify the questions asked to the respondents to obtain valid and unbiased data.

## 3.7 DATA COLLECTION PROCEDURES

## 3.7.1 Primary data

Primary sources are reliable sources from which the researcher independently collects new information. Primary sources grant a straight account of the investigation by the individual who really see the occurrence of an event, Moorhead and Griffin (1990). Methods of collecting primary data include interviews, observations, surveys and questionnaires and focus groups but questionnaires are used in this study to collect primary data. Primary data is advantageous because it makes it feasible for the researcher to collect data that is particular to the research and enables the researcher to track changes over time. The likelihood of missing the goal is decreased because it allows the researcher to deal with the real elements and aspects involved in the investigation.

## 3.7.2 Justification on primary data.

## 3.7.2.1 Accuracy

Data is gathered and developed by individuals giving personal attention to each of the questions they want to survey. The researchers rely on themselves than other’s data. Therefore, making data more valid and accurate.

## 3.7.2.2 Updated data

The data which is gathered is raw data which makes the researcher to come up with updated information.

## 3.7.2.3 Better understanding of what is surveyed

Simplicity and easy to understand the problem you are studying on and quickly come up with solutions.

However, primary data is time consuming, requires more labour and costly.

## 3.7.2 Questionnaire

A questionnaire is used by the researcher since it provides valid data in writing a project. Questions are crafted and arranged carefully so as to make sure that the questions are clear, straightforward, and objective. The questionnaire method is chosen by the researcher because it is a quick and inexpensive way to study a wide range of people. Regarding the influence of ICT on procurement optimization, the researcher led participants in answering questions. Additionally, the questionnaires are self-administered, giving respondents the freedom to complete them whenever it was convenient for them and have plenty of time to consider their answers. Questionnaires are cost saving and flexible in obtaining data. However, they cannot fully capture emotional responses or feelings of respondents.

## 3.8 DATA ANALYSIS AND PRESENTATION PROCEDURES

The researcher first gathered data from the field of study to address the study question using questionnaires, then altered and analyzed the data to provide an answer in question. Editing, coding, and analysis of data are all included in this process. Editing involved reviewing questionnaires for obvious inconsistencies, omissions, and incompleteness. For replies gathered through surveys or other data collecting tools, coding involved creating meaningful categories so that the results could be sorted into a useable categorization and analysis.

 By categorizing and quantifying comparable replies, qualitative data is evaluated. In order to examine the data and create pertinent diagrams electronically for use in the study of the research effort, Microsoft Excel is employed. Also, data is analyzed through graphs, tables and pie charts.

## 3.9 VALIDITY AND RELIABILITY

**Validity**

Content validity is when various components, abilities, and behaviours are sufficiently and successfully measured, Zohrabi (2013). Internal validity is primarily concerned with how closely the research results correspond to reality. It also addresses the extent to which the researcher pays attention to and measures the intended outcomes.

Utility criterion is included as a factor in the validity procedure. The level of utility that evaluation findings have for administrators, managers, and other stakeholders is referred to as utility. This criterion seeks to determine whether the research is effective. In other words, the utility criterion considers whether the evaluation effort yields sufficient data to tell decision-makers about the suitability and usefulness of the program. It is obvious that the utility criterion has been satisfied and the validity condition has been met when the evaluation process gives the various stakeholders adequate and accurate information. External validity is another thing to think about. The applicability of the results to other contexts or to different subjects is known as external validity, Zohrabi (2013).

In this study, thus:

* When distributing the questionnaires by hand or through electronic technologies, the researcher has the opportunity to see and record the participant's responses as well as any motions they make;
* The researcher made sure that each question linked to the issue and used open-ended questions to offer participants the freedom for sharing their opinions.

**Reliability**

In addition, External Reliability, as a whole, is concerned with the study's replication, as per Zohrabi (2013). Internal reliability refers to the accuracy with which data are gathered, analyzed, and interpreted.

In this study, therefore:

* The questionnaire approach gave participants time to contemplate the questions, resulting in high-quality data;
* Easy and clear questions are asked to eliminate misunderstanding and ambiguity. Terms are well defined. Related questions follow each other sequentially and this ensure a smooth flow of ideas;

In the data collection procedure, bias and errors are minimized. The researcher made an effort to guarantee the validity of the data before collecting the questionnaires by interacting with the participants about the points made on the note and appealing their input.

## 3.10 Ethical considerations

Flick (2014) referred ethical considerations as important aspect in a study for they are answerable for the behaviour and conduct of the researcher when engaging the respondents.

## 3.10.1 Ensure that participants give informed consent.

Writing letters of informed consent serves as informed consent for the study. The primary goal of the study and the method by which the investigation will be carried out must be properly defined. If a respondent decides they are no longer interested in participating, they are free to leave the study.

## 3.10.2 Ensuring no harm faced by respondents.

To protect participants from physical injury, the interview will take place on the grounds of their job. To protect participants from emotional harm, research questions were derived from the research problem. Participants are permitted to leave the study if they are uncomfortable.

## 3.10.3 Confidential and secrecy.

The respondents' information will be handled with the strictest secrecy and confidentiality. Other than the supervisor, no one else has access to the information.

## 3.10.4 Ensuring that authorization is obtained.

The most important thing that needs to be obtained from the institution and organization being studied is authorization. Authorization is requested in writing by authorization request letters, and it is granted via an authorized letter that has been signed. Once obtained, authorization letters must be combined together.

## 3.11 Summary of the chapter

Conceptual framework, research method, research design, research sample, research instruments, sources of data, validity and reliability, data collection techniques, and a plan for data presentation analysis were highlighted in the chapter. References to the topics covered in this chapter are used throughout the entire research project. The presentation and analysis of data will be covered in the following chapter.

# CHAPTER FOUR

# DATA PRESENTATION, ANALYSIS AND DISCUSSION

## 4.1 Introduction

The presentation, analysis, and discussion of the findings are all addressed in this section. The research questions, which were developed as specified in chapter one specifically in regard to the questions, were intended to establish relationships between various variables. The findings and discussion are based solely on qualitative as well as quantitative information that was acquired during the fieldwork. The review of all data collected throughout the time period led to conclusions that formed the basis for evaluating the research questions. The conclusions reached from these analyses may have an impact on how well the selected questions are answered. Study objectives and research questions in relation to the literature review analysis constitute the basic framework for discussion of the topics related to the literature review and theory. Data analysis in this chapter was obtained from the employees of TM Pick n Pay and Delta Beverages who responded to the questionnaires which were sent to them.

## 4.2 Response rate

The researcher's declaration of research objectives and conceptual framework provide as the foundation for the study's conclusions and data analysis. According to the suggested strategy of data collection, the researcher in this instance was successful in gathering pertinent information from 40 respondents for the entire population study.

The findings pertaining to questionnaire in figure 5 below. The graph clearly showing that out of the 40 questionnaires distributed only 35 were returned thus total response rate of 87.5% obtained. Four respondents' questionnaires were not collected, totalling 12.5%. Gay (1995) says that, 50% of response rate is sufficient; hence a response of 87.5% is likewise sufficient for the analysis and interpretation of the data.

**Figure 5 Response rate Source: Primary data**

## 4.2.1 Departmentalization response rate

Procurement officers, stores officers, ICT officers, production officers, and financial officials made up the responders. The majority of responders either worked for the ICT, shops, procurement, or finance departments. Due to their pivotal position in supply chain management and their wealth of knowledge, these individuals were essential to the study's accomplishment. This is shown in Table 3 below.

**Table 3 Department response rate**

|  |  |  |  |
| --- | --- | --- | --- |
| Department  | Frequency | Percentage (%) | Cumulative Percentage (%) |
| Procurement | 4 | 10 | 10 |
| Stores | 18 | 45 | 55 |
| Finance | 6 | 15 | 70 |
| ICT | 9 | 22.5 | 92.5 |
| Production | 3 | 7.5 | 100 |
| TOTAL | 40 | 100 |  |

**Source: Primary data**

## 4.3 Information Technology Applications in Supply Chain Management

**Figure 6 Graph of Information Technology Applications Source: primary data**

Findings showed that most of the respondents conclude that information and technology applications in supply chain are very important. Warehouse management system recorded 41.7% of the respondents strongly agree and 33.3% were agreeing, 8.3% of the respondents were neutral pertaining with this system, also 8.3% disagree and 8.3% strongly disagree. The results came out like this in the sense that, according to Graham et al (2013) identified the functions carried out by the warehouse management system such as planning commands and running day to day operations of a warehouse. He went on to describe the functions of the system, including the reception of goods, storage space allocation, inventory replacement, production of picking lists, order picking, and issue of items.

The graph also depicted that 50% respondents strongly agree with the application of ICT, EDI and WWW, 25% respondents agreed whilst 20% respondents were neutral and 5% of respondents were disagreeing. The growth of information and communication technologies (ICT), such as electronic data exchange (EDI), the internet, and the World Wide Web (WWW), has improved the fundamentals of supply chain design and management pattern. These technologies were created to outperform the complex and demanding systems that power the connection between suppliers and customers. According to Watson et al. (1998), the internet strengthens the line of contact between the business and the client. According to Srinivasan et al. (1994), the adoption of EDI technology in the supply chain promotes information sharing throughout the chain. This makes uncertainty reduction and enhances supplier shipment performance, improving the functioning of the supply chain.

Figure 6 also showed that 25% of the respondents strongly agreed that applying the enterprise resource planning system (ERP) can improve the supply chain performance as it integrate information along the supply chain, 40% agreed, 20% of the respondents remained neutral to the application and 15% of the respondents disagreed. A massive percentage of the respondents agreed with the application being implemented because it helps them to reduce wasting resources. Using an ERP system is a contemporary kind of enterprise management. A computer-aided information management system serves as its base. ERP systems turn supply chain operations into a network system by using modern information technology. The proper coordination of numerous operations, including as logistics, money flow, and information flow, is necessary to achieve the objective of optimal capital resource allocation and sharing, Xiaohiu (2012).

A 58.3% response rate was recorded for those who strongly agreed that request for information (RFI) is being adopted so as to reduce supply chain risks for example variance in stock caused by theft, 25% of the respondents agreed and 16.7% were neutral. RFI is a solicitation document used by the buyer to obtain information from the supplier about the products, services and even the supplier profile, Lysons (2016).

A 25% response rate was recorded for those respondents who strongly agreed that flexible management system is another information technology application that can be implemented in supply chain. Internet-based communication and information exchange made it easier for control systems to react quickly. Customer loyalty is a result of these systems' flexibility. According to Bower and Hout (1988), one instance of a company using FMS to meet customer demand is the Toyota Corporation. 25% of respondents said they agreed, 20% said they were neutral, 15% said they disagreed, and 15% said they strongly disagreed.

The Efficient Customer Response Movement, a collaborative movement with numerous technological and managerial advances, was founded in the Fast-Moving Consumer Goods sector by Jipoecr (1995). This movement’s aim is to combine producers, distributors, and retailers into one more effective networked organization.

The results of the findings clearly showed that all respondents in the retail sector agreed that the implementation of information systems such as warehouse management system, enterprise resources planning system, e-commerce and others be useful in the supply chain management operations.

## 4.4 Challenges being faced when implementing Information and Communication Technology.

**Figure 7 Challenges encountered in implementing ICT Source: Primary data**

Findings in this study prove that the majority of the respondents were in agreement (50% strongly agreed and 35% agreed whilst 15% of the respondents remained neutral) with this challenge because information and communication technology implementation within the supply chain of an organization tend to be expensive. Costs in terms of purchasing and installing ICT applications and materials needed to implement ICT, training of procurement and stores stuff on how to use the ICT applications and also hiring of consultants with the knowledge of information technology applications to be used within the organization thus affecting the sales revenue of the organization by increasing expenditure leading to reduced profit. Tanner (2006) found that 61.3% of the organizations he studied in Australia in 2005 mentioned high initial costs as the main obstacle to ICT adoption in procurement processes.

Relating supplier integration to the use of information technology figure 7 showed that a response rate of 35% strongly agree whilst 50% agreed that supplier’s integration to the system tend to be slow for they will require time to familiarize with the organization’s new system and 35% were neutral. Results from a study by Tanner (2006) show that 54.8% of the organizations surveyed identified weak supplier integration with the procurement system as one of the major challenges to efficiently utilizing appropriate ICT solutions.

Figure 7 above showed that a response rate of 35% strongly agreed that implementing information and technology within an organization be of less useful as the organization might lack system integration. A respondent’s rate of 35% also agreed whilst a respondent’s rate of 30% level of agreement was neutral. Particularly examining the barriers to ICT adoption in procurement, Angeles and Nath (2007) highlighted three key problems, including a lack of system integration standardization and the difficulties of integrating e-commerce with other systems. Huber (2004) discovered that one of the perceived obstacles to the adoption of electronic procurement was worries about the security and confidentiality of the data that had to be transferred in such environments.

Findings of this study showed that a respondent’s rate of 60% strongly agreed that implementing information and communication technology in their organizations will face challenges of their employees by lack of competency. A respondent’s rate of 20% agreed, whilst 20% was neutral. Beth (2003) cites a barrier to ICT adoption on procurement procedures as a lack of personnel competency. He asserts to ERP systems rightly give the procurement management the chance to produce the reliable, consistent, and relevant information required for achieving company goals. ERP helps the company to achieve its goals and objectives through providing a software map of business functional activities, improving accuracy rate of results, flexibility in operation and improving productivity.

In terms of system’s complexity in the implementation of ICT to supply chain management figure 7 showed that a response rate of 50% strongly agreed and 35% agreed that the complexity of the system may be a challenge which will lead to failure to adopt the ICT applications, whilst 15% of the respondents were neutral. Because of the new system's complexity, the company's personnel will require periodic training to guarantee that they are informed of any system updates, according to Gebuer (2010; 2011). As a result, the company will increase its expenditures for this ongoing training, much of which will be outsourced.

The findings prove that the respondents majority strongly agreed that the adoption of information technology systems in their organization was associated with challenges such as high introduction cost, lack of employee competency and to mention a few.

## 4.5 Benefits associated with Information and Communication Technology

**Figure 8 Benefits of implementing ICT Source: Primary data**

Findings showed that 35% of the respondents strongly agreed that if the organization implements information and communication technology may result in significant cost and value advantage. 15% and15% of respondents agreed and provided a neutral response respectively, whilst 35% of the respondents disagreed. According to Christiaanse Kumar (1999) a number of flexible supply chain design alternatives that can result in substantial cost and value advantages can be developed and implemented as a result of modern information and communication technologies (ICT). ERP systems, for example, have combined the data that is already present in operational business.

A 30% response rate was recorded from respondents who were strongly agreeing and 50% of the respondents agreed that if information and communication technology is implemented in an organization may improve the customer’s service whilst a rate response of 10% and 10% provided neutral responses and agreed respectively. Through the use of information technology, businesses have been able to improve customer service, reduce inventory, and streamline logistics processes. Information sharing throughout the supply chain is now easier due to the use of the internet. Businesses can respond to customer demand more swiftly because to information technology, which improves internal customer service. According to Shore (2001), one of the biggest global makers of electronics, Celestica Company, adopted a web-based system to more successfully manage its global supply chain. For example, order cycle times, product availability, distribution errors, product availability, and distribution flexibility are all improved through EDI.

Figure 8 showed that 40% of the respondents strongly agreed that implementing information and communication technology can benefit the organization by creating competitive advantage, 20% agreed that competitive advantage is created whilst 15% of the respondents were neutral. Outcomes of this study showed that 25% of the participants disagreed that the implementation of information and technology can create competitive advantage. According to Porter and Millar (1985), respondents agreed to this since IT alters industry structures and competitive rules, resultant in competitive advantage and new business opportunities. According to Levary (2002), cycle times are shortened, inventories are decreased, the bullwhip effect is minimized, and distribution network effectiveness is increased.

Thus giving a firm superior position in the industry and also out competing rivals in the retail industry.

Outcomes of the study showed that there was a very strong agreement about firms improving their information accuracy if they implement information technology as 30% and 50% of the respondents strongly agreed and agreed respectively. Only 10% of respondents said they were neutral or disagreed. Information sharing between buyers and sellers is now possible through vendor-managed inventory. On demand, buyers might provide their supplier access to their information. According to Graham et al. (2013), this is primarily evident at supermarkets.

Figure 8 showed that 35% of the respondents strongly agreed that implementing information and communication technology can benefit the organization by improving in decision making, 15% of the respondents agreed that it improves decision making whilst 20% of the respondents were neutral. Study results showed that 15% of the respondents disagreed that the implementation of information and technology improves decision making and 15% strongly disagreed. Respondents concurred with this because of the teamwork and coordinated structure in place to guarantee that all supply chain data is made readily accessible to all parties in a timely manner. Using the collected data, Decision Support Systems (DSS) develop workable and affordable plans that address various supply chain stages.

A 60% response rate was recorded from respondents supported that if information is implemented in an organization they may help in the reduction of operational costs whilst a rate of respondents of 15% and 10% agreed and provided neutral responses respectively. Also 15% of respondents disagreed on operational cost to be reduced by implementing information technology. IT helps a business to control costs. Organizations must be innovative in the environment that is changing quickly, provide fresh service options, and maintain strong customer relationships. This requires a discipline of change that promotes innovation while maintaining the consistency of current practices until innovations are ready for widespread adoption. Large businesses are also employing IT to manage the outsourcing of customer care functions and communicate with clients about order progress, Tippins & Sohi (2003).

The results showed that, majority of participants concurred that information and communication technology in their organization will provide benefits such as significant cost and value advantage, improves customers’ service, create competitive advantage, and improve quality.

## 4.6 The relationship between Information Technology and Supply Chain Management

**Table 4 The relationship between ICT and SCM**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Relationship between supply chain and ICT** | **SA** | **A** | **N** | **D** | **SD** |
| 1. ICT as an enabler of supply chain management | 30% | 20% | 20% | 15% | 15% |
| 2. Information Technology in Supply chain | 60% | 20% | 20% |  |  |
| 3. ICT integrates suppliers, distributors, customers | 35% | 35% | 15% | 15% |  |

**Source: Primary data**

Table 4 showed that the relationship between information and communication technology and supply chain management helps in attainment of financial and non-financial benefits. 60% of the respondents strongly agree, 15% agreed, 15% were neutral and 10% disagreed. According to Grover et al. (1994), the introduction of redesigned cross-functional processes and the capabilities of information technology infrastructure to support business efforts like cycle time reduction helped those programs establish a competitive edge.

 Based on the results, it was determined that supply chain management and information and communication technology had a significant relationship.

60% of respondents, compared to 20% who agreed and 20% who were neutral, expressed a strong agreement that information and communication technology in the supply chain contributes to improving performance and lowering risk. Harland (1996) asserts that information improves supply chain performance and lowers risk because it offers processes for transactions and gives decision-makers opportunities when they need them and in the formats they require. ICT, which consists of hardware and software applications, plays a part in this.

Information and communication technology integrates customers, distributors, manufacturers, and suppliers. 15% of respondents were indifferent, 15% disagreed, 35% strongly agreed, and 35% agreed with the statement. IT is essential in integrating suppliers, manufacturers, distributors, and customers to satisfy the quantity and quality of products. According to Tummala & Schoenherr (2008), firms can gain a competitive advantage by successfully implementing supply chain management because it permits them to collect essential information about the supply chain and act quickly in response to any anticipated market changes.

 These results led to the discovery that there is a major link between supply chain management and information and communication technologies.

## 4.7 Summary of the chapter

Data found was presented and critically analyzed using tables, pie charts and graphs which allowed the researcher to develop conclusions and suggestions pertaining to this study. Respondents gave vital information to research questions asked in the questionnaires of the study which paying attention to impact of information and communication technology on supply chain management in the retail sector Bindura Zimbabwe. The researcher came up with conclusions and recommendations which are going to be presented in chapter five.

# CHAPTER FIVE

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

Conclusions, recommendations, and results that were drawn from the data reported in chapter four in connection to the stated purpose are summarized in this chapter. Additionally, it suggests areas for additional research. This study's objectives were to analyze information and communication technologies effects on supply chain management and the retail industry in Zimbabwe.

## 5.2 Summary

The aim of the study was to find out the impact of information and communication technology on the supply chain management in the retail sector of Zimbabwe. Major companies which were selected in the retail sector are TM Pick n Pay and Delta beverages as each represented different categories in their products which they provide to the customers. The topic was divided into four objectives namely; establishing different IT applications utilized in the organization and how they were implemented, challenges being faced in introducing information and communication technology in supply chain, link between information technology and supply chain management, the benefits associated with information and communication technology as a driving force to the sector’s supply chain management.

Population of 45 respondents was drawn from all two respondents, and the researcher establishes a sample size of 40 respondents using stratified random sampling according to Hayes, (2020). Exploratory research design was used as the research method of the research methodology. Furthermore, the researcher used questionnaires as the research instrument of this study and results were presented using bar graphs, tables and pie chart. It was not an easy study to carry out because retail managers were generally very confidential and unwilling to convey information. In spite of these constraints, findings and observations were made and the conclusions were drawn.

## 5.3 Conclusions

Studies of the adoption of ICT in the past have placed more emphasis on recognizing the anticipated benefits than on determining the adoption's exact effects. Within this context, conclusions are made by the researcher.

**5.3.1 Different IT applications that are utilized in the organization and how they are used in the business to preserve its competitive position.**

* It is concluded that ICT has been adopted in the retail sector to a greater extent.
* Most respondents agreed to these factors driving the industry such as over or under stocking, reduce operational cost, information accuracy, improves communication systems, need to improve supply chain management is affecting the firms to pursue ICT
* Introduction of warehouse management system (WMS) maintain the competitive position of retail firms.

**5.3.2 Challenges being faced in implementing information and communication technology in supply chain management.**

* The results furthermore demonstrated that retail firms in Mashonaland Central province, Zimbabwe are facing challenges as the initiatives carry a high initial cost as evidenced by number of respondents agreeing.
* Lack of employee’s competency was another challenge concluded by the researcher that affects the implementation of ICT which is evidenced by more than 50% respondents agreeing.
* More so, lack of adequate knowledge by the retail employees also affects the implementation of ICT within these firms; this is evidenced by a number of respondents agreeing.
* At Delta Beverages the information technology system's ability to conduct business with suppliers and customers was hindered by the electronic data exchange system's lack of modern software components. Since they need the most recent software of the electronic data system, some capabilities of the electronic data exchange that may have aided in the delivery and receiving of items were not used.

**5.3.3 Relationship between supply chain management and information & communication technologies.**

* Respondents indicated that when retail firms implement ICT, the entire supply value chain will be greatly coordinated through ERP. This is supported by majority of respondents agreeing to this notion.
* The research findings outlined that there is a great improvement on efficiency in operations by automating the whole production chain through robotics operating throughout the day, real time monitoring of key departments such as warehouse, production, finance. This is evidenced by majority of respondents in agreement to the notion
* Respondents indicated that implementing ICT leads to efficient tracking of the movement of products and equipment through RFID and GPS respectively. More than 50% of the respondents are agreeing to this.

**5.3.4 Benefits of Information and communication technology as the driving force to the sector’s supply chain management.**

* The research finding outlined that ICT provides with efficiency warehouse management systems.
* Furthermore, the researcher concluded that cost reduction and increased profits is a benefit derived from implementing ICT since the use of autonomous fleets will increase productivity levels and lower personnel costs.
* The researcher discovered that ICT adds value to the firm through promoting preventive maintenance, enhancing equipment utilization, decreasing downtimes and equipment failures, and lowering health and safety issues. The vast percentage of respondents who accepted it served as proof of this.

## 5.4 Recommendations

The researcher has made recommendations for the retail industry to take in order to utilize the advantages of information and communication technology in supply chain management:

* Retail companies in Mashonaland Central province should opt for current ICT initiatives so as to improve the supply chain management in various aspects, as factored out by Pienaar and Vogt (2009) who suggested that traditional systems should be used in collaboration with the current and modern systems for better results
* In order to successfully and repeatedly connect with their suppliers and improve supply chain management, the study advises other retail enterprises to employ vendor managed inventory (VMI) systems more frequently.
* Reduce paperwork and make use of modern e-procurement systems.
* Training seminars must be regularly offered to improve ICT supply chain management skills and knowledge.
* When developing the policies and plans to implement ICT in supply chain management, senior management support is required.
* In order to encourage employees to adopt ICT applications within the organization, managers should aim to include them into their regular operations.

## 5.5 Further research

This analysis has room for development in the future. Only the retail industry was included in this analysis. In light of this, the researcher would advise further research on the subject of how ICT adoption affects supply chain management in firms. Additionally, it is critical to understand how to handle the system once it is deployed and operational.

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# Appendix 1

**Research permit**

Introductory letter

15 April 2023

To whom it may concern

REF: Research Project Assistance

I am pursuing towards a Bachelor of Commerce Honours Degree in Purchasing and Supply with Bindura University of Science Education. It is a requirement of the university that all students should carry out research projects in partial fulfilment of the degree’s requirements by choosing a research topic pertaining to his/her area of study. My research title is: The impact of outsourcing transport services on the competitiveness of fast food industries. Document in this letter is a questionnaire which will help me in collecting data. All the information provided is strictly confidential and will solely use for this academic purpose.

Your assistance in carrying out my research will be greatly appreciated.

Yours faithfully,

Jerrold

CONTACT DETAILS: [Cell: 0775 921 834, tinashejerrold@gmail.com]

SUPERVISOR: Dr Magura; Cell 0773104795, magurap@gmail.com

# Appendix 2

 **QUESTIONNAIRE**

 ****

Dear Respondents

Jerrold Tinashe Chinya is my name with registration number B192632B, a final year student at Bindura University of Science Education pursuing towards an honors degree in purchasing and supply. The title of a research I am working on is, ‘The impact of outsourcing transport services on competitiveness of fast food industries’. This research is purely for academic purposes and the information you are going to convey is confidentially treated. The information is going to be used in this study and will not be published. Your assistance in answering this questionnaire is much appreciated. For more information, you can contact the following:

**Researcher Research Supervisor**

**Jerrold T Chinya Dr P Magura**

**Phone number***: 0775921834 0773104795*

**Email**: tinashejerrold@gmail.commagurap@gmail.com

**SECTION A**

*Please kindly tick inside the box that corresponds to your answer*

**Age**

Under 20 years 20-30 years 31-40years 40 years and above

**Sex**

Male Female

**Department/ Category of interviewee**

Procurement

Stores

Finance

ICT

Production

**Qualification**

**‘**O’ level Degree

‘A’ level

Diploma

**Years of Experience**

Less than 1 year 6-10 years

1-2 years over 10 years

3-5 years

**SECTION B**

 SUBJECT OF THE STUDY

1. In business information and communication technology is:
2. A way of gathering and storing information
3. Analysing and transferring business information
4. Processing and retrieving business information
5. All of the above
6. Information in supply chain is communicated or transferred via:
7. Telephone
8. Email
9. World Wide Web
10. Navision
11. The advantage of technology in supply chain is that:
12. It enables electronic data interchange
13. Bridging the supplier and the customers
14. Facilitate production
15. All of the above
16. Information and communication technology act as a backbone which links supply chain to other departments.

 True False

1. The connection between departments is done via;
2. Enterprise resource planning
3. Flexible management system
4. Warehouse management system
5. ICT,WWW
6. Electronic data interchange
7. ICT tools ensures that right materials are supplied at right;
8. Time
9. Place
10. Quantity and quality
11. All of the above
12. a) Supply chain management and inventory management performance facilitated by ICT tools

True False

b) Support your answer

…………………………………………………………………………………………………………………………………………………………………

1. ICT tools provide feedback between supplies and manufacturers

True False

1. What is hindering the use of ICT in supply chain management? Lickert scale denotes.

**Key**: Strongly Agree [SA], Agree [A], Neutral [N], Disagree [D] and Strongly Disagree [SD]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Factors influencing the use of ICT | SA | A | N | D | SD |
| High cost |  |  |  |  |  |
| Slow integration of suppliers |  |  |  |  |  |
| Lack of system integration |  |  |  |  |  |
| Lack of employee competency |  |  |  |  |  |
| System complexity |  |  |  |  |  |
| Cyber crime |  |  |  |  |  |
| Lack of confidentiality |  |  |  |  |  |

 **SECTION C**

1. What are the solutions addressed to deal with above supply chain factors which affect the use of ICT applications in supply chain management?........................................................................................................................................................................................................................................................................................................................................................................................................................
2. In your own opinion, how do you Agree/Disagree to the fact that ICT influence the supply chain management? Lickert scale used denotes.

1= Strongly Disagree; 2= Disagree; 3= Not Sure; 4= Agree; 5= Strongly Agree

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Information and communication technology | 1 | 2 | 3 | 4 | 5 |

1. For the past 2 years how do you agree to the extent to which the adoption of information and communication technology tools affects the supply chain management within the fast food Industries? The likert scale denotes.

**Key**: Strongly Agree [SA], Agree [A], Neutral [N], Disagree [D] and Strongly Disagree [SD]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ICT tool | SA | A | N | D | SD |
| Enterprise resource planning |  |  |  |  |  |
| Warehouse management system |  |  |  |  |  |
| Request for information |  |  |  |  |  |
| Flexible management system |  |  |  |  |  |
| Electronic data interchange |  |  |  |  |  |
| E-commerce |  |  |  |  |  |
| World Wide Web |  |  |  |  |  |

Any other comments

……………………………………………………………………………………………………… ……………………………………………………………………………………………………… ……………………………………………………………………………………………………… ………………………………………………………………………………………………………

**THANK YOU**

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