INVENTORY CONTROL MANAGEMENT AND THE BUSINESS PERFORMANCE IN THE RWANDAN MANUFACTURING SECTOR

CASE OF SKOL RWANDA

By

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RESEARCH THESIS SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN PROCUREMENT AND SUPPLY CHAIN MANAGEMENT OF THE UNIVERSITY OF KIGALI

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ABSTRACT

The main purpose of this research was to analyze Inventory Management and Business Performance in manufacturing Sector. The research was guided by the following specific objectives: i) to study effect of information technology on the business performance ii) to analyses effect of inventory forecasting on business performance iii) To examine effect of inventory technique on business performance. Descriptive research was used in this study. The total population for this study was be 700 persons from whom a sample of 255 respondents was calculated using Yamane formula. The purposive sampling technique used to select the participants. Data was collected using questionnaire and analyzed using Data analyzed by descriptive statistics and regression. Alternative hypothesis was accepted because there is significance change 0.021 of business performance due to information technology, there is also 0.000 significance change of business performance because of inventory forecasting lastly an alternative hypothesis was accepted due to 0.043 significance change of business performance because of inventory technique .They should always use inventory forecasting method, also they should update Information technology software and providing periodical Trainings to all inventory staff. This have been provided to SULFO as recommendations.

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CHAPTER ONE

GENERAL INTRODUCTION

1.0 Introduction

The study was about inventory management and business performance of manufacturing firms in Rwanda. This chapter deals with the background, statement of the problem, purpose and objectives of the study, research questions, and scope of the study, significance of study.

1.1 Background of the study

Over the years the nature of competition has changed to the extent that companies no longer compete against each other on the basis of quality as traditionally practiced in the 80`s (Fawcett, 2014). However the new sources of business competition link their operation with their inventory partners; suppliers, distributors, wholesalers, retailers and end customers (Petrovic, 2010). Being able to create business relationships with customers, suppliers and other strategic partners anchored on trust and long term commitment then becomes a crucial competitive parameter (Mattson, 2012). For this and other factors like shorter product lifecycle and customer expectation, businesses have had to invest and re-focus greater attention on relationship with customers and suppliers. Consequently an organization inventory has become a strategic agenda driving decision making at senior management level. In the 1990s organizations began to realize that it is not enough to improve efficiencies within an organization but their whole inventory has to be made competitive. The understanding and practicing of inventory management practices has become an essential for staying competitive in the global market and for enhancing profitability (Storey, 2010). 1 Alvarado and Kotzab (2010) focused on inter-organizational system use, core competencies, and elimination of excess inventory through postponement, as inventory management practices. Using factor analysis, Tanet al. (2012) identified: supply chain integration, information sharing, customer service management, geographic proximity, and JIT capability, as the key aspects of inventory management practice. Lee (2014) in his case study based research identified five practices at the supply chain level that are a key to creating supply chain

1.2 Statement of the problem

Poor inventory control strategies have led to low profitability of business organization through much costs that the organization incur (Donald Waters 2003). Over past years different people in Rwanda have experienced a lot of challenges in running the manufacturing and sale businesses. They open and close the doors soon, they start manufacturing companies but they are unable to continue for a long time, they are not durable. This may due to different causes and the lack of modern inventory control and management technology appears to be the major cause of their failure. Overstocking can impact the profitability of a business which is also bad. This is because more stock is bought than being sold. Management of inventory to stock the correct quantity of items is essential to a company's financial well-being. Overstocking also results in the buildup of obsolete stock. This is the material that has been bought or stocked in excess and is no longer in demand.

Understocking can slow down production or even bring it to a halt. Not utilizing the available warehouse space is also money wasted. Improper inventory management does not make the best use of all the available warehousing space that the company is paying for or bearing overheads on.

Lack of trend forecasting, Trend forecasting is essential to managing a business. Projections and forecasts for inventory stocks are accurate when based on actual numbers and trends. Manual systems cannot quickly deliver summaries and reports. Inaccurate forecasting of trends could also lead to the company not anticipating seasonal rises and falls in demand. Lack of historical data to forecast trends is essential to overstocking and understocking.

1.4 Objectives of the Study

This study was guided by the following objectives

1.4.1 General Objective

The reason of this research become to find out inventory control management and business

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performance in manufacturing organization case study SULFO

1.4.2 Specific objective

a) To study effect of information technology on business performance

b) To analyze effect of inventory forecasting on business performance

c) To examine effect inventory techniques on business performance

1.4 Researcher question

a. Is there any effect of Information technology on business performance?

b. Is there any effect of inventory forecasting on business performance?

c. Is there any effect of Inventory technique on business performance?

CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction

The chapter review as part of this research provides theoretical review of the dependent and independent variable. On the other hand, it will provide the review of what other author have written on inventory management and business performance in manufacturing companies.

2.1 Conceptual review

A conceptual framework is important to a researcher because it helps in limiting the scope of data relevant to the study by focusing on specific variables and viewpoint. As defined by Cherry (2015) concept as a fixed principle that has been developed to elucidate some characteristic of the natural world. A conceptual framework should reveal an understanding of concepts that are relevant to the research topic. The concepts reviewed for this study was based on the relevant theories that explain Inventory management, and business performance

2.1.1 Inventory Control Management

According to Chase, Jacobs and Aquilano (2004), inventory is the stock of any item or resource used in an organization. An inventory system is the set of policies and controls that monitor levels of inventory and determine what levels should be maintained, when stock should be replenished, and how large orders should be. Finally, Pycraft et al (2000) defined inventory or stock as "the stored accumulation of material resources in transformation system. So, a manufacturing company will hold stocks of materials, a tax office will hold stocks of information and a theme park will hold stocks of customer

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.0. Presentation of Findings

This section of presentation of findings presents the findings from primary data analysis obtained by the researcher, following the objectives of the study as stated in chapter one.

Table 7 information technology and business performance

	N	Minimum	Maximum	Mean	Std. Deviation
Sulfo update inventory software every year	255	1.00	3.00	1.3373	.54338
Sulfo invest in modern technology	255	1.00	3.00	1.4549	.60585
Use of IT to evaluate supplier	255	1.00	2.00	1.2157	.41211
By not using automated processes to control your inventory's receipt, reordering, and rotation does it affect profit	255	1.00	5.00	1.7176	.75730
Sulfo use IT to track sales	255	1.00	5.00	4.8549	.66294
Valid N	255				

Source: Primary data, 2022

This table show how if sulfo update software ever year and respondent average believe that they do not by 1.3 while 1.4 average believe that sulfo dos not invest in modern technology .respondent average on whether sulfo use information technology to evaluate supplier it is 1.2 .respondent average to use of information technology to track sales is 4.8 and 1.7 is average of respondent for not using automated processes to control your inventory's receipt, reordering, and rotation does it affect profit.

The analysis indicates that , Most of respondent they do not powerfully believe that sulfo bring up-to-date inventory software occasionally, capitalize in modern technology, evaluation of supplier by using information technology and company does not have automated process to control inventory and Information Technology affect profit however Sulfo use information technology to track sales

Table 8: Inventory forecasting and business performance of SULFO

	N	Minimum	Maximum	Mean	Std. Deviation
Sulfo have better forecasting accuracy	255	1.00	2.00	1.1686	.37516
Sulfo have periodic training on inventory forecasting	255	1.00	2.00	1.2235	.41743
Experience stock and over stock because poor inventory forecasting and affected customer satisfaction	255	4.00	5.00	4.2706	.44514
Does sulfo finance external researcher	255	1.00	2.00	1.0824	.27544
Did you use Qualitative forecasting during pandemic	255	1.00	22.00	1.4745	1.37981
Valid N	255				

Source: Primary data, 2022

This table shows results about Sulfo having forecasting accuracy to improve customer satisfaction, periodic training, and sulfo to finance external researcher and average respondent is 1.1, 1.2, and 1.0 Respectively. Answer to whether qualitative forecasting during pandemic is 1.4 average while 4.2 is about whether they experienced stock and over stock because poor inventory forecasting and affected customer satisfaction.

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Greatest number of respondent state that occasionally sulfo experience stock out and over stock due to poor inventory forecasting, and it affect customer satisfaction however many respondent agree that there was not any qualitative forecasting during pandemic and they strongly disagree that company support economically external researcher to make a research and they do not get education workshop about inventory forecasting periodically yet they believed that their inventory forecasting is not accurate.

Table 9: Inventory technique and business performance

	N	Minimum	Maximum	Mean	Std. Deviation
Does your inventory technique contributed to the business expansion	255	4.00	5.00	4.2431	.42982
Sulfo changed inventory technique each year	255	1.00	2.00	1.2392	.42744
There is damaged in the stores of sulfo	255	4.00	5.00	4.1098	.31326
Optimize ware house Space	255	4.00	5.00	4.6392	.48117
There are often sales returns from SULFO Rwanda customers	255	1.00	1.00	1.0000	.00000
Valid N	255				

Source: Primary data, 2022

Table above show that 4.2 average respondent on whether inventory technique to business expansion, but also 1.2 was average for change of inventory technique and damage in store, warehouse optimization and sales return , respondent average is 4.1,4.1and 1 respectively

Respondent approve both optimization of warehouse, improvement of commercial expansion due to inventory techniques and that there was some damaged merchandise in stock, however they strongly disagree that there was not any sales return

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Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	IV3, IV2, IV1[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: IV4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.713[a]	.508	.501	.60301

a. Predictors: (Constant), IV3, IV2, IV1

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.264	3	7.421	5.345	.000[a]
	Residual	348.485	251	1.388		
	Total	370.749	254			

a. Predictors: (Constant),

Information technology

Inventory forecasting

Inventory technique

b. Dependent Variable: : business
performance

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Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.987	1.399		2.849	.005
Information technology	.197	.244	.050	.806	.021
Inventory forecasting	.774	.195	.246	3.966	.000
Inventory technique	.246	.404	-.037	.610	.043

a. Dependent Variable: business

performance

Table 9: Effect of information technology, inventory forecasting, and inventory technique and business performance by using regression.

Independent Variable	Sig value	Hypothesis Testing Result at 95% confidence interval	Interpretation
Information technology	.021	alternative hypothesis	The significant change in business performance due to the promotion of information technology, because of the Sig. value is 0.021, which is less than the acceptable value of 0.05. With a 1% increase in the promotion of information technology, business performance will increase by 0.464% (B value).
Inventory forecasting	.000	alternative hypothesis	The significant change in business performance due to the Inventory forecasting, because of the Sig. value is 0.000, which is less than the acceptable value of 0.05. With a 1% increase in the promotion of illegal activities, the crime rate will increase by 0.774% (B value).

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Inventory technique	.043	alternative hypothesis	The significant change in business performance due to the Inventory technique, because of the Sig. value is 0.043, which is less than the acceptable value of 0.05. With a 1% increase in the promotion of illegal activities, the crime rate will increase by 0.246% (B value).

Therefore, the analysis suggests that the information technology, inventory forecasting, inventory technique has a significant positive relationship with the business performance

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This chapter summarizes the major findings presented in chapter four in line with the research objectives. The objectives of the study were achieved by answering the research questions thereafter the conclusion was made from the research findings. The research findings and the general conclusion were based on to give recommendation. The purpose of this study was to examine inventory control management and the performance of the company

5.2. Summary of findings

The study was conducted on the basis of three objectives which are to identify approaches to inventory control management, to determine the business performance in SULFO industry and to establish the relationship between the inventory control management and the business performance in SULFO industry.

For the objective one: to study effect of information technology on business performance
: the researcher concluded that, there is change of business performance due to information technology and business performance, Most of respondent they do not strongly believe that sulfo update inventory software periodically, invest in modern technology, evaluation of supplier by using information technology and company does not have automated process to control inventory and IT affect profit however Sulfo use information technology to track sales

For the objective two: **to Analyze effect of inventory forecasting on business performance** , the researcher concluded that, there is a significant change forecasting business performance due to inventory e Most respondent state that sometimes sulfo experience stock out and over stock due to poor inventory forecasting, and it affect customer satisfaction however respondent agree that there was not any qualitative forecasting during pandemic and they strongly disagree that company support financial external researcher to make a research and they do not get training about inventory forecasting periodically yet they believed that their inventory forecasting is not accurate.

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According to objective three to examine effect of inventory technique on business performance: the researcher concluded that, there is a significant effect of inventory technique on business performance and Respondent agree both optimization of warehouse, improvement of business expansion due to inventory techniques and that there was some damaged product in stock, however they strongly disagree that for company sales return

5.3. Conclusion

The research was carried out to examine the impact of inventory control management on the business performance in manufacturing sector in Rwanda. The study was conducted using Sulfo Rwanda Industry Ltd as a case study. The target population was 255 respondents.

The major finding was that Sulfo Rwanda Industry Ltd as a manufacturing industry try to pays attention on inventory control management to protect the performance of the whole industry. And as finds shows that there are effect of inventory control management on business performance. However they have to improve also by using below recommendation

5.4. Recommendations

At the end of this study, some recommendations were put forward by the researcher basing on the research objectives, major findings and general conclusion of the study:

It could be better for SULFO industry to introduce the information technology by updating software periodically, they should use it also for evaluation of supplier because it carry more information and investing in new technology like automation might help them in higher productivity, reliability, availability, it should increase performance, and reduce operating costs. For efficiency inventory control management, there should be periodical trainings to all staff in inventory management concerning methods and techniques of inventory control management in order to reduce the costs associate with inventory holding especially on inventory levels management to reduce or to prevent the damaged goods that are sometimes available in stores. They might also finance external researcher because forecasting is valuable to businesses because it gives the ability to make informed business decisions and develop data-driven strategies.

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Ref: 423/SUL/DG/BC/22

Kigali,
16th June, 2022

Mr. MUGISHA Jean Remy
University of Kigali
GASABO DISTRICT

Re: Your request for research on "Inventory control management and business performance in Rwanda manufacturing Company".

With reference to your letter dated 06/06/2022, we are pleased to grant you permission to conduct your research on 17/06/2022 in our Accounts Department.

During your research, you will be facilitated by our Assistant Manager - Accounts. However, it should be noted that confidentiality is needed for the data collected.

With kind regards,

H. Dharmarajan
Managing Director

CC:
-Manager Finance and Accounts
-HR Department

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