THE RELATIONSHIP BETWEEN INVENTORY TURNOVER AND FINANCIAL PERFORMANCE OF SUPERMARKETS IN KENYA

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NOVEMBER, 2013
DECLARATION

This research proposal is my original work and has not been submitted for a degree award in any other university or for any other award.

Signed……………………………………………………..Date…………………………

James Mbugua Mburu
D61/72172/2011

Supervisor

I confirm that the research proposal was carried out by the candidate under my supervision.

Signed……………………………………………………..Date…………………………

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ACKNOWLEDGMENT

I am grateful to Almighty God for His guidance and strength throughout this research project. Special thanks to my supervisor Mr. Cyrus Iraya for his tireless effort in guiding, encouraging and directing me through the whole research period. To my MBA colleagues it was through your suggestions and contributions that I managed to go through the research process. I acknowledge the support and encouragement from my family members. To all other individuals who contributed to this project May God bless you.
DEDICATION

I humbly dedicate this work to my lovely wife Damaris and our children Bridget and Calvin.
ABSTRACT

Inventory turnover is a key element of working capital management. Supermarkets being in retail business are greatly affected by the rate of inventory turnover. It is therefore important to determine the relationship between inventory turnover and financial performance. The objective of this study is to determine the relationship between inventory turnover and financial performance of supermarkets in Kenya.

Inventory turnover was measured by dividing cost of goods sold by average inventory. Financial performance was measured by return on assets (ROA). ROA is calculated by dividing profit before interest and tax by total assets. Data was collected from financial statements of five supermarkets namely Uchumi, Naivas, Ukwala, Nakumatt and Tuskys. Data was collected for five years between 2008-2012. Descriptive research design was used and convenient sampling method used. Data was analyzed using Ms Excel and presented using tables. Regression and correlation analysis was used to determine the relationship between the variables.

The study found out that there is strong positive relationship between inventory turnover and financial performance of supermarkets in Kenya at 0.879. This means that 87.9% of ROA is caused by inventory turnover while the rest is influenced by other factors. It is therefore clear that the higher the inventory turnover the higher the return on assets. Supermarkets should aim at improving the inventory turnover which will greatly improve their financial performance.
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LIST OF ABBREVIATIONS

CCC: Cash conversion cycle
EOQ: Economic order quantity
GP: Gross profit
IT: Inventory turnover
JIT: Just in time
NP: Net profit
NSE: Nairobi Stock Exchange
PBIT: Profit before interest and tax
PIEA: Petroleum Institute of East Africa
ROA: Return on Assets
SME: Small and medium enterprises
WCM: Working capital management
CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Working capital management is a critical factor that influences financial performance of firms. Working capital is one of the key functions of a financial manager. Working capital includes maintaining optimal balance of working capital components namely receivables, payables, inventories and cash. Optimization of working capital means minimizing the working capital requirements and realizing maximum possible returns (Nwankwo, 2007).

Inventories occupy the most strategic position in the structure of working capital of most business enterprises. It constitutes the largest component of current assets in business enterprises. Inventory means aggregate of those items which are held for sale in ordinary course of business. Therefore, it is absolutely imperative to manage inventories efficiently and effectively in order to avoid unnecessary investment in them. An undertaking of neglecting the management of inventories will be jeopardizing its long run profitability. Controlling inventory turnover is one of the fastest ways to get more money out of business without having to increase sales. A higher inventory turnover rate can lead to higher growth. Therefore, a higher inventory turnover means a lower investment for the same level of profit. Inventory turnover also promotes realistic assessment of products they are selling (Pandey, 2010).
1.1.1 Inventory Turnover

Inventory turnover indicates the efficiency of the firm in producing and selling its products. It is calculated by dividing the cost of goods by the average inventory. It is calculated by dividing the cost of goods sold by the average inventory (Manasseh, 2007).

The importance of inventory turnover is to indicate how rapidly the inventory is turning into receivables through sales. Generally a high turnover is indicative of good inventory management. A low inventory turnover implies excessive inventory levels than warranted by sales activities, slow moving or obsolete inventory. However, a relatively high inventory turnover may be a result of low levels of inventory will results in frequent stock outs; the firm may be living from hand to mouth. The turnover will also be high if the firm replenishes the inventory in small batches.

1.1.2 Financial Performance

The financial performance of a firm usually relates to how well a company can use its assets to generate revenue. Financial performance is a subjective measure of how well a firm can use its assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firms overall financial health over a given period of time (Manasseh, 2007). Financial performance is the level of performance of a business over a specified period of time, expressed in terms of profits and losses during that time (Pandey, 2010). Financial performance is the degree to which financial objectives has been accomplished. It is the process of measuring the results of a firm’s policies and operations in monetary terms (Ojiuko, 2001).
Importance of financial performance helps in judging the development of a company position in the market. It is used to indicate firm’s success, conditions and compliance. It is used to measure the firms overall health over a given period helps to identify the financial strength and weaknesses of the firm by properly establishing relationship between balance sheet and profit and loss account (Ojiuko, 2001).

In financial management, ratios are used to measure and to gauge the financial performance and position of a company over a specified period of time. Return on assets evaluates how efficiently assets are used to produce profits. It is widely considered the best measure of profitability. ROA is used internally by companies to track asset use overtime, monitor firm’s performance. ROA is measured by dividing profit before tax and interest by total assets (Manasseh, 2007).

1.1.3 Relationship Between Inventory Turnover and Financial Performance

Inventories constitute the most significant part of current assets. Because of the large size of inventories maintained by firms, a considerable amount of funds is required to be committed to them. It is therefore absolutely imperative to manage inventories efficiently and effectively to avoid unnecessary investment. The reduction in ‘excessive’ inventories carries a favourable impact on company’s financial performance (Pandey, 2010).

Maintaining high level of inventories also helps in reducing the cost of supply products and protects the firm against price fluctuations as a result of adverse macroeconomic factors.
(Blinder et al, 1991). Most studies have found relationship between inventory turnover and financial performance to be significant (Lazaridis et al, 2006; Padachi, 2006). Mathuva (2009) observed positive relationship between inventory turnover and corporate profitability by using sample of 30 listed firms in NSE. According to Salawati (2012) study on relationship between inventory turnover and financial performance it was found to be significantly positive. This is consistent with prior studies (Fullerton et al, 2003; Erogli et al, 2011).

1.1.4 Supermarkets in Kenya

According to Kenya National Bureau of Statistics the current population of supermarkets is 762. This range from well established retail chains to independent one store supermarket. Only Uchumi supermarket is listed in NSE. All the supermarkets are locally owned and deal with both food and non food items. The growth of supermarkets in Kenya has been attributed to such factors a increased urbanization, growing middle class and its changing lifestyles and market liberation that has led to increased competition in the sector.

Supermarkets in Kenya deal in both food and non food items. Nakumatt and Uchumi have opened branches in other East Africa countries. Most of the supermarkets sell both local and international brands. The major players in the sector are concentrated in Nairobi, Mombasa and Kisumu.
1.2 Research Problem

Supermarkets hold inventories for transaction motive; facilitate smooth sales operations. Most of the supermarkets current assets are in inventories. In addition, inventories serve as collateral in external financing. Thus, inventory turnover is particularly important in supermarkets. The optimal level of inventory will lie between two danger points of excessive and inadequate inventories. Both excessive and inadequate inventories are not desirable. The firm should avoid a situation of over investment or under investment in inventories. The major dangers of over investment are unnecessary tie up of firm’s funds and loss of profit, excessive carrying costs and risk of liquidity. The consequence of under investment is loss of sales. Therefore, this proposal is seeking to establish the relationship between inventory management and financial performance.

Over the last ten years the sector has experienced phenomenal growth in sales, customers and inventory. The leading supermarkets have opened branches in leading towns in the country. But on the other hand some supermarkets have experienced operating problems and closed. A good example is Uchumi Supermarket. On 31st May 2006, Uchumi Supermarket the second dominant player in the sector in terms of sales and the only listed supermarket closed down to seek ‘financial solution’. It closed 17 branches leaving only 5 franchised branches operating. Its collapse was partly blames on poor inventory management. Due to the rapid expansion efficient and effective inventory management is critical for their survival and growth.
Mathai (2012) carried out research on relationship between working capital management and profitability of retail supermarkets in Kenya which dealt with all the components of working capital. Ngubia (2010) carried research on a survey of inventory control techniques adopted by supermarkets in Kenya which she looked at control mechanism such as JIT and EOQ. Although several studies have been done concerning overall working capital, very few have specifically dealt with inventory management and financial performance. Mathai (2012) study did not reveal whether the relationship between inventory management and financial performance is positive or negative, significant or insignificant. Therefore, no study has been carried out on relationship between inventory turnover and financial performance in supermarket in Kenya. Research question for the study is; what is the relationship between inventory turnover and financial performance in supermarkets in Kenya?

1.3 Research Objective

The objective of this study is to determine the relationship between inventory turnover and financial performance in supermarkets in Kenya.

1.4 Value of the Study

This empirical research contributes to the existing literature by examining the relationship between inventory turnover and financial performance of supermarkets in Kenya. By empirically determining the relationship between inventory turnover and financial performance the findings of the study helps to answer the stated problem of research. Besides, policy makers have a better understanding of the issues relating to the study and this helps in tackling issues relating to inventory turnover.
The understanding of the relationship between inventory turnover and financial performance is crucial for policymakers in formulating policies relating to inventory because it determines growth and stability of the firms. Therefore this study aims to aid policymakers in their decision making by providing clear reference of how inventory affects financial performance.

In addition, the study contributes to the existing knowledge relating to working capital management and specifically inventory turnover. It also provides a platform for further research of the concerned variables.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter seeks to identify theoretical literature on inventory turnover and financial performance. The chapter also highlights empirical studies carried out in the area and points out the knowledge gap in the area under study and how this research intends to fill the gap.

2.2 Theoretical Literature Review

2.2.1 Economic Order Quantity model

Economic order quantity (EOQ) is an inventory management model that aims at minimizing total inventory holding costs and ordering costs. The model developed by Ford Harris in 1913 assumes that ordering cost is constant, rate of demand is known and spread throughout the year, lead time is fixed, the purchase price of the item is constant and replenishment is made continuously.

The implication of EOQ is that it minimizes storage and holding costs. The model suggests buying a larger quantity in fewer orders to take advantage of bulk buying and minimize ordering costs. It smoothes out the restocking process and results in better customer service as inventory is available when needed. The model requires continuous monitoring of inventory levels. Its effectiveness is limited by assumption of one product business and the model does not allow combination of several products in the same order (Pandey, 2010).
Figure 2.1: Economic Order Quantity

2.2.2 Just In Time

Just in time (JIT) inventory management technique seeks to ensure that the delivery of materials immediately precede their use. By arranging with suppliers for more frequent deliveries, stock can be cut to minimum. According to JIT philosophy, storage of unused materials is waste of resources. JIT inventory control technique requires the supplier to inspect materials before their delivery to guarantee their quality. A major feature of JIT is that suppliers are not selected on the basis of price alone. Performance in terms of the quality of the components and materials supplied the ability to always deliver as needed and commitment to JIT purchasing is key consideration. Its implication is considerable reduction in ordering and handling cost.
The implication of JIT is reduced set up time. By cutting set up time it allows the firm to reduce or eliminate inventory for change over time. Secondly, it improves flows of goods from warehouse to shelves in small or individual piece of lot sizes which reduce lot delay inventories. It enhances supplier relationship since a firm without inventory does not want a supply shortage. It minimizes storage space needed and chances of breakage. Finally, it exposes suppliers and consumers to supply shocks and flow interruptions (Drury, 2005).

2.2.3 Vendor managed inventory

This model employs the same principle as those of JIT inventory technique, however the responsibility of managing inventory is placed with vendor. Its impact is that the vendor may have industry experience and expertise and therefore anticipate demand and inventory needs better. The inventory planning and controlling is facilitated by applications that allow vendors to their customer’s inventory data.

The implication of vendor managed inventory is that it is less likely that business will unintentionally be out of stock. Secondly, it reduces inventory in the supply chain. Furthermore, supplier representatives in a store benefit the vendor by ensuring the product is properly displayed and store staff are familiar with features of the product line. Vendors benefit from more control displays and customer contact for their employees, better staff knowledge and reduced display maintainance costs (Nwanko, 2005).
2.2.4 Newsvendor model

It is mathematical model in operations research used to determine optimal inventory levels. It is typically characterized by fixed prices and uncertain demand for a perishable product. This model is also known as newsvendor problem by analogy with the situation faced by a newspaper vendor who must decide how many copies of the day’s papers to stock in face of uncertain demand and knowing that unsold copies will be worthless at the end of the days. Its implication is that eliminates the risk of over stocking (Manasseh, 2007).

The implication of newsvendor model is the reward effect. The decision maker are instructed to optimize expected profit but are then instructed to reduce lost sales or excessive inventory. This mixed signal lead the decision maker to respond to the voice that is yelling loudest and ignore the hard to measure variables. Decisions in high margin conditions tend to be anchored on previous demand. In addition, expected shortage is equivalent to lost sales.

2.2.5 ABC Analysis

ABC analysis is an analytical approach which measures the significance of each item of inventory in terms of value. The high value item would be classified as ‘A’ items and would be under the tightest control. Items in ‘C’ represent least value and would be under simple control. Items in ‘B’ are those that fall in between category A and B. This enables the firm to pay maximum attention to those items of high value.

The implication of this model is that A items should have tight inventory control, more secured storage areas and better sales forecast. Reorder should be frequent with weekly and
even daily order. Avoiding stock out on A items is a priority. Reordering C items is made less frequently. A typical inventory policy for C items consist of having only one unit on hand and reordering when an actual purchase is made. This approach leads to stock out situation after each purchase which can be acceptable situation as C items present both low demand and higher risk of excessive inventory costs (Drury, 2005).

2.2.6 Inventory Financing Policies

There are three inventory financing policies that can be adopted by a firm namely conservative, aggressive and matching. Each option presents trade-off between profitability and risk. The financing policy of the firm is said to be conservative when it depends more on long term funds for financing needs. Under a conservative plan the firm finances its permanent assets and also part of the temporary current assets with long term financing. The conservative plan relies heavily on long term financing and therefore the firm has less risk of facing problem of shortage of funds (Pandey, 2010). An aggressive management policy with low levels of current assets as percentage of total assets or it may also be used for financing decisions of the firm in the form of high level of current liabilities as percentage of total liabilities (Wachowicz et al, 2004). Matching also referred as hedging approach is used in the sense of risk reducing investment strategy involving transactions of simultaneous but opposing nature so that the loss arising out of one transaction is likely offset in the other due to financial needs. In this approach the maturity of source of funds should match the nature of assets to be financed. This approach suggests that long term funds should be used to finance the fixed portion of current assets requirements as spelt out in a manner similar to financing of fixed assets. The purely temporary requirements that are the seasonal variation
over and above permanent financing needs should be appropriately finances with short term funds or current liabilities (Nwankwo, 2005).

The implication of conservative approach is that it yields a lower expected profitability resulting in lower risk. This approach also increases net working capital situation but the firm will be short of funds to be used in other productive sectors. The implication of aggressive approach is that it yields higher profitability resulting in higher risk and lower working capital. The implication of moderate approach is that it minimizes the risk of firm being unable to meet its matured obligations (Nwankwo, 2005).

Figure 2.2: Alternatives current asset financing policies
2.3 Measures of Inventory Turnover and Financial Performance

2.3.1 Determinants of Inventory Turnover

Inventory turnover indicates the efficiency of the firm in producing and selling its products. It is calculated by dividing the cost of goods by the average inventory.

\[
\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}
\]

The average inventory is the average of opening and closing balances inventories. It is appropriate to use average inventory because levels of inventories fluctuates over the year. Inventory turnover shows how rapidly the inventory is turning into receivable through sales. Generally, a high inventory turnover is indicative of good inventory management. A low level inventory turnover implies excessive inventory levels than warranted by sales activities or a slow moving or obsolete inventory. A high level of sluggish inventory amounts to unnecessary tie up of funds reduced profits and increased costs. If the obsolete inventories have to be written off this will adversely affect the working capital and liquidity of the firm (Pandey, 2010).

2.3.2 Determinants of Financial Performance

Return on Assets (ROA) is an indicator of how profitable a firm is relative to its assets. It provides an idea of how efficient management is using its assets to generate earnings. It widely considered the best measure of performance. An increasing trend is favourable and
indicates increasing profitability. It is calculated by dividing profit before interest and tax by total assets (Manasseh, 2007).

\[
\text{Return on assets} = \frac{\text{Profit before interest and tax}}{\text{Total assets}}
\]

2.4 Empirical Literature

Mathai (2012) carried out research on relationship between working capital management and profitability of retail supermarkets in Kenya. The study was done on six supermarkets in Kenya between 2005 to 2009 using causal study design. The supermarkets are Nakumatt, Tuskys, Uchumi, Ukwala, Naivas and Eastmatt. The researcher used secondary data from financial statements. The result of the findings was that there exist relationship between working capital management and profitability.

Waithaka (2012) carried out research on relationship between working capital management (WCM) practices and financial performance of agricultural companies listed at Nairobi Stock exchange (NSE). Research was done on seven agricultural companies using prospective research design. Findings of the study were that financial performance was positively related to efficiency of inventory management.

Mutungi (2010) carried out research on relationship between working capital management policies and financial performance of oil marketing firms in Kenya. The study focused on oil marketing firms who are members of Petroleum Institute of East Africa (PIEA by analyzing
their financial statements from 2006-2009. The study found out that identified independent variables affect performance.

Globally, the study by Salawati et al (2012) attempted to investigate the relationship between inventory management, firm performance and capital intensity. Data was collected from 82 construction firms in Malaysia from 2006-2010 which showed that there is positive correlation between inventory management and firm’s performance. Another study suggesting relationship between inventory management and performance was Eroglu et al (2011) which used Empirical Leanness Indicator (ELI) as a measurement for inventory. Their study on 80 US manufacturing firms covering the period of 2003 -2008 found that leanness positively affects financial performance.

In Nigeria, Olanrewaju et al (2011) assessed inventory management in selected small businesses in Kwara State, Nigeria. Using a regression model to explain the effect of inventory value on performance proxy by profit over a period of ten years. The result of the study indicated strong positive relationship between inventory and financial performance of small businesses in Nigeria. They thus concluded that small businesses are likely to generate higher profit if effective inventory management is in place.

According to Okwo et al (2012) in the study to establish factors that determine profitability of the Nigerian beer brewery firms. Multiple regressions were applied to annual data generated from annual reports of the sampled brewery firms covering a period of 2000-2011.
The results show that the ratio of inventory to cost of goods sold has significant impact on financial performance.

Lakshan (2010) in the study of working capital management and performance of small and medium enterprises (SMEs) in Sri Lanka between 2003-2006 on 76 firms in the manufacturing sector found positive relationship between inventory turnover and financial performance. Chowdhury (2008) in the study WCM policies practiced in pharmaceutical companies listed in Dhaka Stock Exchange used stratified random sampling to select eight firms. Both primary and secondary data was used. Positive correlation was found between current assets and financial performance of pharmaceutical firms.

On the other hand, Cannon (2008) introduced contrary finding in his study on inventory improvement and financial performance. The study on inventory management and financial performance found that inventory performance was negatively related to overall performance. Consistent with Cannon (2008), another study by Kolias et al (2011) found that inventory turnover ratio is negatively correlated with gross margin. It was based on econometric analysis conducted on a sample of financial data for Greek firms for the period of 2000-2005.

According to Lazaridis (2006) in the study to determine relationship between cash conversion cycle (CCC) and financial performance. The research was conducted on 131 listed companies listed in Athens Stock Exchange between 2001 to 2004. Pearson correlation and regression were used to analyze data in which results showed a negative relationship
between inventory turnover and financial performance which is in line with the study by Deloof (2003). In Malaysia, Noriza (2010) did their study by taking secondary data from Bloomerg 72 listed companies from 2003-2007 to derive relationship between working capital management and financial performance. Correlation and multiple regression results showed a significant negative working capital components and company performance. Ogloo (2008) did a research about WCM on corporate performance in Turkey for period between 1998-2007. They used regression method and some accounting variables for evaluating WCM. The results showed that inventory turnover has negative effect on corporate performance.

2.5 Summary of Literature Review

According to both theory and empirical studies there exist relationship between inventory turnover and financial performance. However, some studies both local and global suggest positive relationship while others suggest negative. In addition, some suggest significant relationship while others suggest insignificant relationship. Therefore, the study will seek to find the nature of the relationship between inventory turnover and financial performance of supermarkets in Kenya.
CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology and covers research design, population sampling techniques, data collection techniques and data analysis.

3.2 Research Design

The research design is the blueprint that enables the researcher to come up with solutions to problems and guides him in the various stages of the research (Nachmias et al, 1996). Research design refers to the way a study is planned and conducted, the procedures and techniques employed to answer the research problem (Mc Millan et al, 1984). The study adapted descriptive design. According to Kimani (2006) descriptive research explores the existing status of two or more variables at a given position in time and whether the relationship exists between them.

3.3 Population

The total population in this study is 762 supermarkets according to Kenya National Bureau of Statistics. According to Cooper and Schindler (2000) a population is the total collection of elements about which we wish to make some inferences. The collection of all possible observations of specified characteristic of interest is called population, while a collection of observations representing only a position of the population is called a sample.
3.4 Sampling Techniques

Convenient sampling was used since the population is homogenous, easy and cheaper. A sample of five supermarkets was selected for the study. The criteria for selection is that they must have ten or more branches. This is because the five supermarkets namely Nakumatt, Tuskys, Naivas, Ukwala and Uchumi account for over 70% of the market share. Convenient sampling is used to simplify data collection procedures and avoid the complications of simple random method since the researcher just picks those which happen to be available (Amin, 2005).

3.5 Data Collection Techniques

The researcher used secondary data only. The study was between 2008 to 2012. The data was collected from past financial statements of the supermarkets. The data collected included sales, cost of goods, total assets, profit before interest and tax, closing inventory balance and net profit for each year.

3.6 Data analysis techniques

Data collected was examined and checked for completeness and comprehensibility after which it was summarized, coded and tabulated. A single variate regression analysis was used to determine the relationship between the tested variables. The regression model is as shown below;

\[ \text{ROA} = a + \text{BIT} + e \]

Where:
ROA = Return on assets which is calculated by dividing net profit before tax and interest by total assets

A = Regression constant

Bo = Beta coefficients

IT = Inventory turnover which is calculated by dividing cost of goods sold by average inventory

E = Constant error

The t-test at 99% confidence level was be used to determine the statistical significance of the constant term and coefficient terms. The F-test was be used to determine whether the regression is of statistical importance at 95% confidence level.

The results of the analysis were presented using charts, graphs and tables give a clear picture of the research findings at a glance. Data was analyzed using Ms Excel program.
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents analysis and findings of the study on the data collected from financial statement. It gives summary of the findings. The researcher used Excel for data analysis and the results were presented in tables for easy understanding and interpretation of the results.

4.2 Research Findings

4.2.1 Descriptive statistics

Descriptive statistics presents the mean, standard deviation, maximum and minimum values of the different variables in the study. The maximum inventory turnover is 12.64 and minimum is 4.49. The mean and standard deviation for inventory turnover is 7.27 and 2.11 respectively. The maximum ROA is 0.22 and the lowest is 0.99. The mean and standard deviation is 0.174 and 0.046 respectively.

Table 4.1: Descriptive data of variables

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Max</th>
<th>Min</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>25</td>
<td>0.22</td>
<td>0.099</td>
<td>0.174</td>
<td>0.046</td>
</tr>
<tr>
<td>Inventory turnover</td>
<td>25</td>
<td>12.64</td>
<td>4.49</td>
<td>7.27</td>
<td>2.11</td>
</tr>
</tbody>
</table>

Source: Author
Table 4.2 shows the means for five years for different variables. The mean for inventory turnover in 2012 is 8 while for the rest 2011-2008 is 7. The year 2011 had the highest mean for ROA of 0.1936 while 2009 had the lowest of 0.1584. Total assets have been on increase from a low of 3,928,719 in 2008 to 4,720,908 in 2012. The sales also rose from 7,082,197 in 2008 to 10,193,463 in 2012. Profit before interest and tax (PBIT) also rose from 730,544 in 2008 to 12,699,097.

Table 4.2: Five Year Mean’s of the variables

<table>
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</thead>
<tbody>
<tr>
<td>Inventory turnover</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Total Assets</td>
<td>4,720,908</td>
<td>4,277,221</td>
<td>4,145,208</td>
<td>4,054,244</td>
<td>3,928,719</td>
</tr>
<tr>
<td>PBIT</td>
<td>1,269,097</td>
<td>1,098,376</td>
<td>895,289</td>
<td>804,212</td>
<td>730,544</td>
</tr>
<tr>
<td>ROA</td>
<td>0.18</td>
<td>0.1936</td>
<td>0.1736</td>
<td>0.1584</td>
<td>0.163</td>
</tr>
<tr>
<td>Sales</td>
<td>10,193,463</td>
<td>9,115,800</td>
<td>8,154,203</td>
<td>7,541,333</td>
<td>7082,197</td>
</tr>
</tbody>
</table>

Source: Author

Table 4.3 shows the standard deviation for the different variables in the study. The standard deviation for 2012 is 3 while for 2011-2008 is 2. Standard deviation for ROA is between 0.043 and 0.054 for the period.
Table 4.3: Five year standard deviation of the variables

<table>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inventory turnover</strong></td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>ROA</strong></td>
<td>0.050179677</td>
<td>0.054811495</td>
<td>0.043067389</td>
<td>0.045197345</td>
<td>0.050695167</td>
</tr>
</tbody>
</table>

*Source: Author*

Table 4.4 shows the mean for each supermarket. Uchumi has the highest turnover mean of 10.72 while Naivas has the lowest of 4.9. Tuskys, Nakumatt and Ukwala have a turnover mean of 6.92, 7.82 and 6 respectively. Nakumatt has the highest ROA mean of 0.2138 while the lowest was Tuskys with 0.0936. Uchumi, Naivas and Ukwala have 0.1952, 0.19 and 0.176 respectively.

Table 4.4: Mean of each supermarket

<table>
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<tr>
<th></th>
<th>Tuskys</th>
<th>Uchumi</th>
<th>Nakumatt</th>
<th>Naivas</th>
<th>Ukwala</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROA</strong></td>
<td>0.0936</td>
<td>0.1952</td>
<td>0.2138</td>
<td>0.19</td>
<td>0.176</td>
</tr>
<tr>
<td><strong>Inventory turnover</strong></td>
<td>6.92</td>
<td>10.72</td>
<td>7.82</td>
<td>4.90</td>
<td>6.00</td>
</tr>
</tbody>
</table>

*Source: Author*

Table 4.5 shows the standard deviation for each supermarket. Nakumatt has the lowest inventory turnover standard deviation of 0.2 while Uchumi has the highest inventory
turnover standard deviation of 1.15. Tuskys, Naivas and Ukwala have inventory turnover standard deviation of 0.63, 0.31 and 0.6 respectively. Nakumatt and Naivas have the highest ROA standard deviation of 0.021. Tuskys, Uchumi and Ukwala have standard deviation of ROA as 0.0085, 0.0175 and 0.018 respectively.

Table 4.5: Standard deviation of each supermarket

<table>
<thead>
<tr>
<th></th>
<th>Tuskys</th>
<th>Uchumi</th>
<th>Nakumatt</th>
<th>Naivas</th>
<th>Ukwala</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>0.0085</td>
<td>0.0175</td>
<td>0.021</td>
<td>0.021</td>
<td>0.018</td>
</tr>
<tr>
<td>Inventory turnover</td>
<td>0.63</td>
<td>1.15</td>
<td>0.20</td>
<td>0.31</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Source: Author

4.3 Regression Analysis

The argument for the relationship between inventory turnover and financial performance was tested.

ROA = a + BIT + e

Where:

ROA represents financial performance

A is regression constant

B is beta coefficient

IT is inventory turnover

E is constant error
The result shows ROA = 7.581 + 23.51IT.

To test the significance the study used T-test, F-test, standard error of estimate and R squared test. T-test found the relationship to be statistically significant of 9.26 at 99% confidence level. Standard error of estimate which is used to test the reliability of regression equation showed non-significance of 1.86 at 95% confidence level. F-test which is used to measure variation showed 3.225 at 99% confidence level. R squared which is also referred to as coefficient of determination which is used to assess the strength of linear relationship showed 0.879.

4.4 Correlation Analysis

To examine the relationship between the two variables, a Spearman correlation coefficient was used. The table indicates that there is strong positive correlation between inventory turnover and ROA at + 0.879 (p = 0.879 at 1% significance level).

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td>0.879</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Correlation is significant at 0.05 level

Source: Author
4.5 Discussion of Findings

The maximum inventory turnover was 12.64 and the minimum 4.49 with a mean of 7.27 and standard deviation of 2.11. The maximum ROA was 0.22 the minimum was 0.099 with a mean of 0.174 and standard deviation of 0.046. The year 2012 had the highest inventory turnover mean of 8 and standard deviation of 3. The regression equation is ROA = 7.581 + 23.51 IT. The correlation between inventory turnover and ROA is 0.879. This shows a strong positive relation between the variables. This is consistent with studies done by Lakshan (2010) and Olanrewaju et al (2011).
CHAPTER FIVE: SUMMARY, CONCLUSION AND
RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusion, limitation, recommendation of the study and suggestion for further studies.

5.2 Summary of the findings

The objective of the study was to determine the relationship between inventory turnover and financial performance of supermarkets in Kenya. Secondary data was collected from five supermarkets for the period 2008-2012. Regression and correlation analysis was used to analyze data.

The maximum inventory turnover was 12.64 and the minimum 4.49 with a mean of 7.27 and standard deviation of 2.11. The maximum ROA was 0.22 the minimum was 0.099 with a mean of 0.174 and standard deviation of 0.046. The year 2012 had the highest inventory turnover mean of 8 and standard deviation of 3. The regression equation is $\text{ROA} = 7.581 + 23.51\ IT$. The correlation between inventory turnover and ROA is +0.879.

This study found a strong positive relation between inventory turnover and financial performance at +0.879. This explains that explains 87.9% of ROA is due to inventory turnover while 12.1% is caused by other factors such as size and investment. It shows that an increase inventory turnover results in improvement in financial performance.
This is consistent with prior studies done by Lakshan (2010) and Olanrewaju et al (2011) which showed that there is strong positive relation between inventory turnover and firm performance. It is also in line with theoretical literature.

5.3 Conclusion

The objective of this research is to determine the relationship between inventory turnover and financial performance supermarkets in Kenya. Efficient inventory management system is prerequisite to growth and existence of supermarkets. Inventory turnover dictates the sales which in turn affects the firm’s overall profitability.

The correlation and regression results of the study suggest that inventory turnover are statistically significant on ROA. The positive relationship between the variables indicate that 87.9% of ROA is caused by inventory turnover. It is clear that an increase in inventory turnover results in improvement in financial performance.

Conclusively, inventory turnover is a significant determinant of financial performance of supermarkets in Kenya.

5.4 Limitations of the study

The study focused only on supermarkets only in Kenya. Therefore the results may be applicable only in retail chains since inventory management needs vary among the different sectors.
Secondly, the study also faced time and financial limitations. The study was conducted within a short period and hence exhaustive and comprehensive research could not be carried out. The researcher faced difficulties while obtaining data since the information required is sensitive and management was unwilling to give to outsiders.

Lastly, secondary data was used in the research. There is limitation on disclosure and the business providing honest information since only one firm is listed in the stock exchange.

5.5 Recommendations

According to the findings, there is strong positive relationship between inventory turnover and financial performance. An increase in inventory turnover results in increase in ROA. Therefore, the supermarkets should strive to increase inventory turnover. This can be explained by the fact that 87.9% of ROA is caused by inventory turnover. Only 12.1% of ROA can be attributed to other factors such as size and investment.

The supermarkets should focus their energy on how they manage their inventories. It is the backbone of their sustainability as well as growth. When they post high inventory turnover the profits go up which leaves enough funds for further growth.

Slow moving stocks should be noted to reduce investment in them since they pull down the financial performance of the supermarkets. In fact, the slow moving stocks should be eliminated from their shelves altogether since it is tying up funds which can be utilized elsewhere.
Fast moving stocks should be identified and more energy put to ensure there is enough stock to sustain sales. Management should ensure that there is no stock out at any given time. This would result in higher profits and therefore better financial performance.

5.6 Suggestions for the further study

The study focused on supermarkets only. Further studies should be carried out to determine the relationship between inventory turnover and financial performance in other sectors such as pharmaceutical, automotive and bookshops.

Secondly, the sample can be increased to cover even one store supermarkets. The study was carried out on five supermarkets only. This may give more accurate and reliable information. In addition, the duration of the study can be increased to ten years. The study was carried out for only five years. This would give clear picture of the variables.

Lastly, further research should be carried out to establish the relationship between inventory turnover and return on equity of supermarkets in Kenya. This would widen the existing knowledge and theories in the issue.
REFERENCES


APPENDIX 1

LIST OF SUPERMARKETS STUDIED

1. Nakumatt Supermarkets
2. Tuskys Supermarkets
3. Naivas Supermarkets
4. Ukwala Supermarkets
5. Uchumi Supermarkets