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THE EFFECT OF INFORMATION TECHNOLOGY ON INVENTORY MANAGEMENT FOR THE MANUFACTURING COMPANIES IN MOGADISHU

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ABSTRACT: *The researcher studied for this article the effect of information technology on inventory management for the manufacturing companies in Mogadishu. The objectives of this study were to determine the information technology systems uses for inventory management by the manufacturing companies in Mogadishu and to examine the effect information technology on inventory management in Mogadishu manufacturing companies. The data was collected by using questionnaire and analyzed by descriptive statistics in SPSS for 86 respondents. The study found out that EPOS and EDI is the information technology that mostly the manufacturing companies in Mogadishu uses for inventory management and also the study shows that information technology effects the inventory management of the company.*

KEYWORDS: Information Technology, Inventory Management

INTRODUCTION

The twenty first century want grasped itself for ICT Likewise a standout amongst those crashing constrains at the back of increased benefits of the enterprise boom inside the globe (Attom, 2013). Information Technology covers a huge range of hardware and software answers that permit companies to collect, organize, and analyze data that facilitates them gain their desires. It additionally info technology-primarily based workflow forms that stretch the limit for an enterprise to convey services that generate income. The four most important focuses of IT employees are business computer network and database management, facts security, business software development, and computer tech help (Kumar, 2014).

Inventory control is a pivotal in powerful and efficient an enterprise. It may be likewise key in the managing of substances and items that should be held (or stored) for later use inside the case of manufacturing or later exchange activities within the case of services. The first goal for inventory control includes Hosting on equalization those clashing economics for no more needing to preserve an unreasonable sum from claiming stock (Abdulraheem, Yahaya, & Isiaka, 2011). Stock manipulate is the supervision and garage of substances and will verify approachability of the objects so as to make sure an sufficient supply without difficult supply or stock outs (Onchoke & Wanyoike, 2016).

In today's benefits of the business environment, considerably little and mid-sized companies bring come to depend with respect to electronic/computerized stock management frameworks. Actually, there are a lot from claiming little retail outlets, Makers also exclusive corporations that continue to rely in advance manual approach for inventory tracking (Mongare & Nasidai, 2014). Once it goes should Dealing with inventory, associations' necessity to uphold enough stock on meet request without Contributing clinched alongside more than they oblige. Stock administration frameworks tune those amount of every component an business enterprise

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keeps, activating an request from claiming extra stock whilst the ones quantities fall the subsequent a pre-determined sum (Kumar, 2014).

Problem Statement

Organizations in transportation division and what's greater continuously on others that handle exceptional inventories want been confronting stock troubles in the past, that were carrying hundreds alternately considerably many separate parts for things were confronted for the unthinkable errand about physically following the stock levels from claiming each a feature. Same time each organization may be undoubtedly exceptional each with its own situated for purchasing, inventory, request fulfillment, following frameworks and pick-and-pack procedures, the power an integrated programming framework assumes to streamlining the custom-made statistics inside every warehouse can't a threat to be underestimated, utilizing IT solutions for mechanize an organization stock techniques optimizes efficiencies moreover enhances entry to majority of the data crosswise over every a part of a logistics companies (Mongare & Nasidai, 2014).

In Somalia, there are many difficulties for inventory because Inventory is the largest asset in current assets section for manufacturing companies. The main problem of inventory is to use more costs for producing the inventory of the business and it is difficult to reduce the heavy cost of inventory. Also, the other problem of inventory is fraud from the employees of the company or other parties that can be basis from the neglected or mismanagement of inventory. On the other hand, the most companies do not use the new technologies of the world for the control of inventory.

For the producing of the inventory with high cost may cause to reduce the sales of the inventory and that effects the income of the companies. On the other hand, the frauds of the inventory can cause losses or be deficient in financial of the company.

Objectives of the study

The objectives of this study were to:

- Determine the information technology systems uses for inventory management by the manufacturing companies in Mogadishu
- Examine the effect information technology on inventory management in Mogadishu manufacturing companies.

LITERATURE

Information Technology

Social science scholars' work of the term "technology" alludes to material development utilization and also the educated support what's more social contexts. It alludes all of the organization of information to those accomplishment about useful purposes and additionally whatever apparatus alternately procedure of completing alternately making, toward which ability is enlarged (Luppicini, 2005). In other words, engineering organization offers new competencies that prompt noteworthy transforms in the association. It indicates the new

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method for distributing majority of the data for those organizations (Afshari, Bakar, Luan, Samah, & Fooi, 2008).

Stands for "Information Technology," and is pronounced "I. T. " it alludes all the anything identified with registering technology, for example, such that networking, hardware, software, the internet, or the individuals that worth of effort for these technologies. Large number organizations presently have IT offices for Dealing with the computers, networks, and different specialized foul ranges of their organizations. IT employments incorporate PC programming, organize administration, PC engineering, Web development, specialized foul support, What's more large portions other related occupations. Since we live in those "information age," information technology has become a part of our everyday lives (Kumar, 2014).

Technology can be defined as machinery that enables recording, processing, retrieving and the transmission of information or data (Apulu & Latham, 2011).

This is that reality for engineering organization step by step new inventions and discoveries are making the new period from claiming organizations. It may be clear that the most recent decade about this century need been seeing those rise from claiming investment globalization, An wonder the place diverse economies are blending under An bound together worldwide business (Ansari, 2013). Majority of the data engineering organization need radically changed those best approach that numerous individuals employed, work and think. Through those years, innovation need touched another pinnacle and currently it will be not limited will created nations (Bakshi, 2013). Information Technology (IT) gives quality of the firm toward expanding internal and external facilitating efficiencies, and firms (Mathaba, Dlodlo, Smith, & Adigun, 2011).

Inventory Management

Inventory is a contemporary asset to a firm, but it is expensive will uphold as it sits tight will transformed into future revenue. At the same time as extra inventory does growth costs, a scarcity of Inventory can also bring about misplaced sales (Shin, Ennis, & Spurlin, 2015). Inventory is a totally essential thing in every organization and it requires severe managerial attention because it ties up a variety of companies' capital (Samuel & Ondiek, 2014).

Inventory represents an in depth listing of changeable objects inside the form of raw materials, in-manner or finished goods, which are wanted within the manufacture of products or to maintain the machinery and equipment in accurate working circumstance. It is miles an essential part of an enterprise (Singh & Singh, 2013). Inventory represents a vital choice variable at all tiers of goods production, distribution and income, similarly to being a prime part of total cutting-edge assets of many groups (Mukopi & Iravo, 2015).

An inventory management system is a device that encompasses all elements of managing a firm's inventories; buying, shipping, receiving, monitoring, warehousing and garage, turnover, and reordering (Kithinji, 2015). The primary activities are: inventory planning and order forecasting, inventory observing and stability reconciliation and inventory reporting. There is distinctive forms of costs that take part in inventory cost structures: ordering (or setup) cost, carrying (or holding) cost (cost of capital, cost of storage, cost of obsolescence, deterioration, and loss), stock out cost, object costs, transport costs and other cost matter to volume discounts (Šabanović, 2012).

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The one most important component of working capital is the inventory management. Effective Inventory management facilitates will contribute base trusts in stock looking after coherence clinched alongside benefits of the business activity, expands those span of the benefits of the business exercises by expanding aggregate offers Subsequently expanding reusing for stores Also generating higher profitability. As towards this, if control proves inefficient in stock control, it results into better inventory conversion duration, high fees of inventory, leading to reduced recycling of price range, in the long run effecting profitability and liquidity of the organizations (Madishetti & Kibona, 2013). When it comes to handling stock, organizations need to keep sufficient stock to satisfy demand without investing in extra they require. Inventory control systems pathway the amounts of each thing an organization maintains, triggering an order of extra inventory whilst the portions fall below a pre-decided amount (Kumar, 2014).

Information technology and Inventory Management

According to the Zengwa and Choga (2016) eximined the role of information and communication technology (ICT) in company' inventory management. Questionnaires, interviews and observations were used as research methods. The study exposed that the organizations' appropriation of ICT stock administration enhanced the stock capacity through constant preparing of exchanges, availability of data from a brought together database, profitability and productivity over every one of the offices. The device enabled tests and balances on all stock transactions. It additionally revealed that ICT helped in advancing standardized stock management actions, diminishing on work-load as nicely as on enhancing the nice for the inventory function. The investigation additionally demonstrated that however ICT has added to the powerful administration of inventories there were still ranges to be enhanced as they contrarily influenced the proficiency of the whole system.

According to the Mongare and Nasidai (2014) investigated the impact of information and communication technology on inventory control system in transport organization. Questionnaires were used as the main data collection Descriptive statistics analysis method was to analyze the gathered data. Stock manage is critical for every one of the partners. It has specific meanings to the quite a number stakeholders. Stock control has diverse results relying upon the planning, that is, whether the quick time period or long term affects are the ones in question. Inventory control system solutions do no longer continually require extra technology, dedicated personnel or staffing resources. Rather, current science infrastructure, together with equipment and computer systems with network connectivity can be used. Inventory manipulates and associated technologies guarantee real enhancements in the administration of acquirement, supplies administration chain. The association should be targeted in terms of their wants and using the proper technological know-how to reap goals, rather, than obtaining technology of stock manage due to the fact other organizations have it. Government interest in guaranteeing centered media transmission industry must be noticeable to decrease or expel avoidable expenses of actualizing stock control.

According to the Chitiga and Choga (2016) studied the role of information communication technology (ICT) in inventory management of small to medium enterprises (SMES). A qualitative approach was used. Interviews and questionnaires were used in data generation. The study discovered out that the utilization of computer systems in inventory administration is constrained to very few functions. The SMEs are conscious significance of computers in stock administration yet however needs appropriate mastery and experience of executing sound stock guidelines and structures because of loss of financial sources and the consequences of ICT. The

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main difficulties for terrible ICT adoption in stock control had been trouble the power in the nation and also loss of skills to use computer systems. There is want to teach SMEs body of workers in advancing ICT structures use. Recognition movements of significance of computer systems ought to be done. The authorities have to build up plans to encourage ICT utilization in SMEs. It must additionally installation a lawful structure and country wide body advance ICT structures in SMEs as properly as providing specialized help.

According to the Shah and Shin (2007) examined relationships among information technology, inventory, and profitability. The study empirically shows that stock degrees have modified non-consistently in the three areas (production, wholesale and retail sectors). Additionally, the outcomes verify the absence of an instantaneous hyperlink between IT funding and financial overall performance in all three sectors. But the outcomes show that stock execution assumes a huge intervening part in the assembling and retail segments, subsequently loaning help to the procedure model of IT venture at the area level of total. Together, these outcomes feature the distinctions among the producing, retail and wholesale sectors and have more extensive ramifications for sweeping statement than comes about got from single division ponders. These outcomes demonstrate that a tremendous influence (i.e. blessings) of IT funding on financial overall performance is found out not directly, and is interceded through a change in inventory overall performance. Investigating relationships which are set up at the firm stage at a better degree of aggregation assists to recognize consistent limits of connections and increase idea development.

METHODOLOGY

This research was utilized quantitative research design to measured information as a result of numerical and to get pertinent and precise information concerned the status of the researchers keeping in mind the end goal to make legitimate conclusions. For the use of quantitative research design, we can accomplish our research objective by successfully.

The population of the study was manufacturing companies in Mogadishu. The study can't get the exact number of the staffs of the manufacturing companies. For that reason, it is hard for the study to decide the exact number of the sample size. So, the research used population proportion method to determine the appropriate sample size of the study. The sample size was 86 respondents.

The study was used a questionnaire tool for a collecting data, the selecting of these tools have been guided by the nature of data to be collected. The questionnaire adopted from (Kithinji, 2015) who investigated the impact of information technology on inventory management in supermarkets in Nairobi city county.

In this research, data was analyzed through descriptive by using statistical package for social science (SPSS) to determine the objective of the study. Descriptive research gives description regarding the nature of the respondents and it shows the percentages, mean and standard deviation of different items in the study.

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No	Mean Range	Interpretation
1	1 up to 1.80	Very Great Extent/Strongly Agree
2	1.81 up to 2.60	Great Extent /Agree
3	2.61 up to 3.40	Moderate Extent /Neutral
4	3.41 up to 4.20	Little Extent/Disagree
5	4.21 up to 5.00	Not Adopted/Strongly Disagree

Findings

Background of the Respondents

There are different characteristics of the respondents for the gender, age, marital status, level of education, experience and position of the respondent. The table below shows the profiles of the respondents.

	Frequency	**Percent**
Gender		
Male	64	73.56
Female	23	26.44
Total	87	100
Age		
20-30	62	71.26
31-40	20	22.99
41 and Above	5	5.75
Total	87	100
Marital Status		
Single	48	55.17
Married	32	36.78
Divorced	7	8.05
Total	87	100
Level of education		
Secondary	9	10.34
Diploma	24	27.59
Bachelor	49	56.32
Master	5	5.75
PHD	0	0
Total	87	100
Experience		
1-5 Years	57	65.52
5-10 Years	25	28.74
10 Years and above	5	5.75
Total	87	100.0
Position of the respondent		
Manager	20	22.99
Staff	67	77.01
Total	87	100

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In the table above indicates that 73.56% in the gender were male while 26.44% was female. On the other hand, the age of respondents 71.26% were 20-30 years, 22.99% between the ages of 31-40 years old and 5.75% were 41 and above years old. In the marital status, the majority of the respondents were single for 55.17%, while others were 36.78% married and 8.05% divorced.

Also, the table mentioned that the level of education of respondents were 56.32% bachelor degree, 27.59% diploma, 10.34% secondary, 5.75% master degree and there is no PHD respondent. In addition, the findings show that the experience of the respondents were 65.52% were 1-5 years, 28.74% were 5-10 years and 5.75% were 10 Years and above. In the position of the respondent, the majority of the respondents were staffs 77.01% while 22.99% were managers for their companies.

The information technology systems uses for inventory management by the manufacturing companies in Mogadishu

Descriptive Statistics			
	Mean	Std. Deviation	Interpretation
Vendor Managed Inventory	4.25	0.84	Not Adopted
Materials Resources planning	3.93	1.02	Little Extent
Distribution resources planning	4.37	0.88	Not Adopted
Warehouse Management System	3.62	1.27	Little Extent
Customer relationship management	3.44	1.31	Little Extent
Electronic point of sale	2.14	1.13	Great Extent
Electronic Data Interchange	1.76	0.88	Very Great Extent
Overall Mean Index	**3.36**	**1.05**	**Moderate Extent**

This table illustrates that the companies don't adopt vendor managed inventory and Distribution resources planning because their mean scores were 4.25 and 4.37 respectively. The mean scores of materials resources planning, warehouse management system and customer relationship management show that the companies were little extent to use those IT in inventory management. The mean score are 3.93, 3.62 and 3.44 respectively. The mean score electronic point of sale was 2.14; it proves that the companies were great extent by the electronic point of sale. The manufacturing companies were implemented electronic data interchange to very great extent. Its mean score is 1.76.

The overall mean index of this objective is 3.36. It indicates that the manufacturing companies were moderate extent to adopt information technologies for using inventory management.

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The effect information technology on inventory management in manufacturing companies

Descriptive Statistics			
	Mean	Std. Deviation	Interpretation
Information Technology has enhanced information sharing with suppliers	1.78	0.96	Strongly Agree
Information Technology has provided greater data accuracy on inventories	1.78	0.91	Strongly Agree
Information Technology has improved coordination of inventory management decisions between departments involved in inventory management	1.71	0.82	Strongly Agree
Information Technology systems have reduced cost of ordering stock	1.98	1.12	Agree
Information Technology has improved order processing	2.10	1.21	Agree
Information Technology has improved speed of service to customers	2.25	1.28	Agree
Information Technology has enhanced stock availability to customers	2.32	1.33	Agree
Overall Mean Index	**2.32**	**1.33**	**Agree**

As shown in the table above, the mean scores 1.78, 1.78 and 1.71 indicate that is strongly agree for the respondent to the adoption of IT will strongly effect inventory management of the company through information sharing with suppliers, accuracy on inventories and coordination of inventory management decisions between departments involved in inventory management, respectively. While it is agree that information technology have reduced cost of ordering stock, improved order processing, improved speed of service to customers and enhanced stock availability to customers and that shows the effect of information technology on inventory management. The mean score are 1.98, 2.10, 2.25 and 2.32 respectively.

The overall mean index of this objective is 2.32 that point to agree the respondents that information technology effect inventory management of the manufacturing companies.

DISCUSSIONS

Kithinji (2015) confirm that IT adoption in supermarkets influenced the following activities of inventory management cycle: sharing of information, managing supplier relationship and enhancing procurement and ordering processes. As mentioned in the literature review, Chitiga and Choga (2016) found that the SMEs are conscious significance of computers in stock administration yet however needs appropriate mastery and experience of executing sound stock guidelines and structures because of loss of financial sources and the consequences of ICT. The main difficulties for terrible ICT adoption in stock control had been trouble the power in the nation and also loss of skills to use computer systems.

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CONCLUSION

The study found out that the manufacturing companies in Mogadishu uses mostly electronic point of sale (EPOS) and electronic data interchange (EDI) for inventory management. Still, the manufacturing companies are little extent in the materials resources planning, warehouse management system and customer relationship management while the companies don't adopt vendor managed inventory and Distribution resources planning.

Also, it show the information technology effects inventory management through information sharing with suppliers, accuracy on inventories, reducing cost of ordering stock, improving order processing, improving speed of service to customers and enhancing stock availability to customers.

Recommendations

The study recommends that

- Manufacturing companies should adopt the use of information technology for inventory management
- Manufacturing companies should train their employee to information technology for inventory management.

REFERENCES

Abdulraheem, A., Yahaya, K. A., & Isiaka, S. B. (2011). Inventory Management in Small Business Finance: Empirical Evidence From Kwara State, Nigeria. *British Journal of Economics, Finance and Management Sciences* , 49-57.

Afshari, M., Bakar, K. A., Luan, W. S., Samah, B. A., & Fooi, F. S. (2008). School Leadership and Information Communication Technology. *Turkish Online Journal of Educational Technology* , 82-91.

Ansari, S. (2013). Impact of Information Technology in Developing Organizational Strategies and Processes. *Interdisciplinary Journal Of Contemporary Research In Business* , 668-673.

Apulu, I., & Latham, A. (2011). An Evaluation of the Impact of Information and Communication Technologies: Two Case Study Examples. *International Business Research* , 3-9.

Attom, B. E. (2013). The impact of Information Communication Technology (ICT) on business Growth strategies of Small and Medium-scale Enterprises (SMEs) in the Awutu-Senya East Municipality of Central Region of Ghana. *Asian Journal of Business and Management Sciences* , 13-28.

Bakshi, S. M. (2013). Information Technology Managers Role and Responsibility: A Study at Select Hospitals. *Global Journal of Computer Science and Technology* , 29-32.

Chitiga, R., & Choga, F. (2016). Role of Information Communication Technology (ICT) in Inventory Management of Small to Medium Enterprises (SMEs): A Case Study of Chikwanha Business Centre in Chitungwiza, Zimbabwe. *Journal of Environmental Science, Computer Science and Engineering & Technology* , 207-213.

Kithinji, F. M. (2015). *Impact of Information Technology on Inventory Management in Supermarkets in Nairobi city county.* Nairobi: Nairobi Univercity.

ISSN 2054-0930 (Print), ISSN 2054-0949 (Online)

Kumar, M. (2014). Information Technology: Roles, Advantages and Disadvantages. *International Journal of Advanced Research in Computer Science and Software Engineering* , 1020-1024.

Luppicini, R. (2005). A Systems Definition of Educational Technology in Society. *Educational Technology & Society* , 103-109.

Madishetti, S., & Kibona, D. (2013). Impact of Inventory Management on the Profitability of SMEs in Tanzania . *International Journal Of Research In Commerce and Management* , 1-5.

Mathaba, S., Dlodlo, N., Smith, A., & Adigun, M. (2011). The use of RFID and Web 2.0 Technologies to Improve Inventory Management in South African Enterprises. *Electronic Journal Information Systems Evaluation* , 228-241.

Mongare, M. E., & Nasidai, S. E. (2014). The Impact Information Communication Technology on Inventory Control Systems in Transport Organization . *European Journal of Logistics Purchasing and Supply Chain Management* , 17-41.

Mukopi, C. M., & Iravo, A. M. (2015). An Analysis of the Effects of Inventory Management on the Performance of the Procurement Function of Sugar Manufacturing Companies in the Western Kenya Sugar Belt. *International Journal of Scientific and Research Publications* , 1-14.

Onchoke, B. N., & Wanyoike, D. M. (2016). Influence of Inventory Control Practices on Procurement Performance of Agrochemicals Distributors in Nakuru Central Sub-County, Kenya. *International Journal of Economics, Finance and Management Sciences* , 117-126.

Šabanović, Z. (2012). Automation of Pharmacy Inventory Management. *The Online Journal of Science and Technology* , 1-4.

Samuel, I. S., & Ondiek, G. O. (2014). Inventory Management Automation and The Performance of Supermarkets in Western Kenya. *International Journal of Research in Management & Business Studies* , 9-18.

Shah, R., & Shin, H. (2007). Relationships among information technology, inventory,and profitability: An investigation of level invariance using sector level data. *Journal of Operations Management* , 768-784.

Shin, S., Ennis, K. L., & Spurlin, W. P. (2015). Effect Inventory Management Efficiency On Profitability: Current Evidence From the U.S. Manufacturing Industry. *Journal of Economics and Economic Education Research* , 98-106.

Singh, D. K., & Singh, S. (2013). JIT: A Strategic Tool of Inventory Management. *International Journal of Engineering Research and Applications* , 133-136.

Zengwa, O., & Choga, F. (2016). The Role of Information & Communication Technology (ICT) In Company Inventory Management in Zimbabwe: 2011-2013. *IOSR Journal of Business and Management* , 56-60.

ISSN 2054-0930 (Print), ISSN 2054-0949 (Online)