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

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Abstract: The Zimbabwean economy declined in the past decades. Many industries closed leading to mushrooming of the informal sector. Chikwanha has developed into a hub of many SMEs involved in different activities. No study has been carried out to ascertain how ICT has influenced the stock or inventory management of SMEs activities at Chikwanha. This research study was aimed at determining the extent of ICT influence in stock management. A qualitative approach was used. Interviews and questionnaires were used in data generation. The findings showed that Internet was not used despite the availability of iPads and smart phones in the market. The benefits of Internet usage in trade and inventory management were not experienced. Limited benefits such as accuracy, processing speed, theft and stock shortages reduction were realized through the use of computers. However a number of challenges were faced. The major challenge was that of lack and unreliability of electricity supply that affected usage of computers. Lack of computer skills also hampered usage of computerized inventory systems. It was recommended that the SMEs be staff-developed in the use of computers. The use of iPads and smart phones should be encouraged.

Keywords: SMEs, inventory management, ICT, informal sector.
BACKGROUND OF THE STUDY

In the theoretical model developed by Lewis in the mid-1950s, it was assumed that the unlimited supply of labour in developing countries would eventually be absorbed into the formal economy as the industrial sector expanded. Failure of the formal market to absorb this excess supply of labour has resulted in an informal sector that has continued to grow in both the urban and rural areas, with the excess labour force creating its own forms of livelihood.

In Zimbabwe most of the people who have been retrenched from the formal industry have been convinced by the government’s manifesto of black economic empowerment and economic freedom where Zimbabwe intends to indigenous most its economy. This has also contributed to the rise and growth of the informal sector at places like Chikwanha in Chitungwiza. Chitungwiza has many places where SMEs carried out their activities.

These areas include Jambanja, Makoni home industries, Huruyadzo, Chiguvanyika and Chikwanha area. Chikwanha area has become a hub of many SMEs in the area. The area is also an up market for motor spares business, hotel casino, peanut butter production, plastic recycling, garages, car breakers, liquor undertakers and wholesale businesses.

In this modern age the researchers assumed that the SMEs are using computers in managing their stock. The method used by the Chikwanha SMEs in stock management is not known as no research study has been carried out in this area.

STATEMENT OF THE PROBLEM

Most of the SMEs’ at Chikwanha business centre use different inventory management systems in their day-to-day running of the business.

The impact of ICT on their business is yet to be established.

PURPOSE OF THE STUDY

The objectives of this research were to:

- Find out whether any inventory management systems are being used by SMEs at Chikwanha business centre.
- Evaluate the benefits of inventory management systems in conducting business at the centre.
- Evaluate the challenges in the adoption of inventory management systems in SME’s at Chikwanha.
- Recommend solutions for the challenges in the adoption of inventory management systems in SMEs.

RESEARCH QUESTIONS

The research questions for his study were:

- What are the types of inventory management systems used at Chikwanha business Centre?
- What are the benefits of using ICT in inventory management systems in business operations at the Centre?
• What are the challenges faced in using computerized inventory management systems?
• What are strategies of minimizing the challenges of using computerized inventory management systems?

LITERATURE REVIEW

According to Cela1, ICT applications can improve information and knowledge management inside the firm, reduce transaction costs and increase the speed and reliability of transactions for both business-to-business (B2B) and business-to-consumer (B2C). The author went on to say that, ICT is an effective tool for improving external communications and quality of services for established and new customers. Brady et al.2 added that ICT enhances the productivity and effectiveness of business functions and promotes the adoption of new organizational, strategic and managerial models. They also said that, ICTs provide ready access to a vast array of global information resources and facilitate the gathering of valuable competitive knowledge and consumer-related information that simplifies marketing decision processes. It also enables the access to new environments as well as the generation of new markets and business models according to Corbitt3, Javalgi and Ramsey 4. Vilaseca5 argues that it improves the qualification and specialization of human resources, which increases efficiency and efficacy.

Prasad et al6 explained further and said that, ICTs provide the marketer with extraordinary capability to target specific groups of individuals precisely and enable them to practice mass-customization and one-to-one marketing strategies, by adapting communications and other elements of the marketing mix to consumer segments. Leenders and Wierenga7 agreed with the above by saying that ICTs can create new and strong linkages between internal activities and coordinate these actions more closely with their consumers and suppliers to facilitate integration within the company. Obiri-Yeboah and OdeiLartey8 studied the factors that drive internet usage among SMEs in Kumasi, Ghana. Their study showed that access to internet facilities was not a critical challenge. There were strong relationships between factors such as age, education, usage experience, and the pattern of internet usage in business operations as drivers ICT adoption.

On the other hand Tan et al.9 said that SMEs face numerous challenges to the adoption and use of ICTs. The most frequently cited challenges are poor telecommunications infrastructure, lack of skilled or limited ICT personnel, ineffective integration ICT into business processes, high costs of ICT equipment, and government regulations for e-commerce. Duan et al.10, Fulantelli and Allegra11, Hashim12, Jones et al. 13, Khatibi et al.14 and Kogilah et al.15 have determined that technology constraints as a result of unskilled technicians and ignorance on the worth of ICTs. Other challenges include non-governmental support, expensive initiative, risk, complex procedure, managerial leadership, costs and benefits, security, legal issues, business complexity, human capital deficiency, turnover of technical staff, and customer services. Chong et al.16, Tan and Teo18, Yeung et al.19 In a study by Debrick and Kraemer 20 they state that the major challenges to ICT adoption by SMEs include inadequate transportation and delivery, limited diffusion of computers, lack of online payment processes, limited availability of banking services and uncertain taxation rules.

This also applies to the Zimbabwean situation. Looi21 states that lack of external pressure from suppliers and customers inhibit e-commerce adoption. The study by Tan 22, find a lack of management willingness to utilize ICT to be a major inhibitor for SMEs. A study by Chau and Turner 23 argues that the owner’s lack of knowledge of ICT technology and perceived benefits is a major challenge to the
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adoption of ICT. According to a study by Mehrtens et al.\textsuperscript{24}, economic, political and cultural factors present challenges to ICT adoption by SMEs in Africa. Akomea-Bonsu and Sampong\textsuperscript{25} reported that lack of internal technical capabilities, financial constraints, poor or lack of infrastructure and personal factors were the main challenges to ICT adoption in the Kumasi Metropolis of Ghana. Many developing countries still have poor communications infrastructure. Poor communications infrastructure results in limited internet access and higher costs. Outdated equipment and state owned monopolies often result in expensive charges and limited coverage, especially in rural areas. All these factors discourage SMEs from adopting even the basic ICTs that use fixed lines or mobile phones. The results from the study by Irefin \textit{et al.}\textsuperscript{26} on the factors that affect the adoption of ICT in SMEs in Lagos, Nigeria, revealed that cost, availability of ICT infrastructure, government support, management support and business size were major barriers.

RESEARCH DESIGN AND METHODOLOGY

The study was premised on the descriptive survey research design. Participants answered questions administered through both interviews and open ended questionnaires. A qualitative research was used. The researchers were able to interact with the research respondents in their own language and on their own terms. The researchers targeted SMEs at Chikwanha business centre that included motor spare parts distributors, manufacturers and general dealers. The stratified sampling technique was used to obtain a sample of 50 from the targeted population.

DISCUSSION AND FINDINGS

Table \textbf{-1} below shows that 17 respondents used computers for dispatching goods. It also shows that 7 respondents used computers when receiving stock. Only 1 maintained stock using computer and 3 respondents do not use computers at any stage in inventory management. It was noted that the SMEs did not use computers in ordering goods.

To the researchers, it was a clear sign that they were not making use of the Internet and did not experience the benefits cited by Leenders&Wierenga\textsuperscript{7} and Cela\textsuperscript{1}.

\begin{table}[h]
\centering
\begin{tabular}{|l|l|}
\hline
\textbf{Usage} & \textbf{Frequency} \\
\hline
At receiving new stock & 7 \\
Maintaining stock records & 1 \\
Dispatching stock & 17 \\
Not using & 3 \\
\hline
\end{tabular}
\caption{Computer Usage in Inventory Management.}
\end{table}

The research findings showed that 55\% of respondents suggested that when computers are used in inventory management, shortages are reduced as shown in Table \textbf{-2} below. Twenty five percent of them agreed with Cela\textsuperscript{1} that using computerised inventory systems only increases processing speed and only five percent mentioned that it improves accuracy and reduce thefts. The findings are in support the idea that ICTs enhance the productivity and effectiveness of organizational functions as alluded to by Brady \textit{et al.}\textsuperscript{2}. Ten percent did not use computers and were facing challenges.
The findings from the study indicated that the SMEs are facing challenges in managing their inventories as shown in Table-3 below. They face challenges such as lack and unreliability of electricity. Fifty percent of the respondents faced electricity outrage and that was a major barrier in the use of computerized inventory management. Lack of computer skills is another key challenge as 30% of the SMEs workers do not have the requisite skills. This was in support of Tan et al.9, Hashimi12, Kogilahet al.15 and many other authors cited above who came up with similar findings. Twenty percent are not using computers due to high costs of ICT equipment and this was supported by above authors. The same authors above were in support of this finding.

**Table-3: Challenges Faced by SMEs in Using Computerized Inventory Systems.**

<table>
<thead>
<tr>
<th>Challenges faced</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity outrage</td>
<td>50</td>
</tr>
<tr>
<td>Lack of computer skills</td>
<td>30</td>
</tr>
<tr>
<td>None (Not using computers)</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

**CONCLUSION**

The researchers came up with conclusions discussed below.

The usage of computers in inventory management is limited to very few functions. The SMEs are aware of the importance of computers in inventory management but however lacks proper expertise and experience of implementing sound inventory policies and systems due to lack of financial resources and the effects of ICT. The major challenges for poor ICT adoption in inventory management were problems of electricity in the country and also lack of skills to use computers. This is a signal that the government should quickly address the issue of electricity shortages in the country.

**RECOMMENDATIONS**

There is need to train SMEs staff in promoting ICT systems usage. Awareness campaigns of importance of computers should be carried out. The government of Zimbabwe should develop plans to stimulate ICT usage in SMEs. It should also set up a legal framework and national body to promote ICT systems in SMEs as well as providing technical support.
To mitigate electricity shortages, it is recommended that SMEs can buy and use systems that are compatible with other portable ICT devices such as iPads and smartphones that do not require electricity all the time.

REFERENCES


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