

AFRICA DEVELOPMENT AND RESOURCES RESEARCH INSTITUTE (ADRRRI) JOURNAL

ADRRRI JOURNALS (www.adrri.org)

E-ISSN: 2343-6662 VOL. 28, No. 12 (5), July 2020-September, 2020

Exploring Technology Acceptance in Stores Management in Selected Technical Universities in GhanaMorvey Mitchell Dodzi¹ and Harold Adjarko²^{1,2}Takoradi Technical University, Ghana²correspondence: haroldadjarko@gmail.com; (054) 371-9709Available Online: 30th September, 2020URL: <https://www.journals.adrri.org/>**Abstract**

Stores play a very important role in many institutions and Technical Universities are of no exception. Despite the huge benefits of information and communication technology (ICT), data on the relevant technology accepted, adopted and used in stores management in Technical Universities in Ghana is unclear. This research sort to explore the acceptance and usage of ICT in stores management in some selected Technical Universities in Ghana. The study was exploratory and employed questionnaires, interviews, observations and the use of secondary data for gathering information. The study targeted a sample size of 60 respondents of which 51 questionnaires were retrieved making a response rate of 85%. Data was analyzed and shown in tables and ranked in percentages. The findings revealed that all the stores use computers in their operations. While this means that ICT has been accepted, some of the computers are internet-connected and use some software in their operations while others are not. The study categorized the stores according to 'access to using a computer', 'access to the internet' and 'use of computer software'. It concluded that there is a general awareness of ICT usage, however, the computerization of stores management rest with the management of the Technical Universities.

Keywords: stores management, information and communication technology (ICT), Technical Universities**[Cite article as:** Dodzi, M. M. and Adjarko, H. (2020). **Exploring Technology Acceptance in Stores Management in Selected Technical Universities in Ghana** Africa Development and Resources Research Institute Journal, Ghana: Vol. 28, No. 12(5), Pp. 1-16, E-ISSN: 2343-6662, 30th September, 2020.]*Received: (May 18, 2020)**Accepted: (September 30, 2020)*

INTRODUCTION

The Technical Universities Act, 2016 (Act 922) came into force in 2016 to convert qualified polytechnics to Technical Universities to provide higher education in engineering, science and technology-based disciplines, technical and vocational education and training, applied arts and related disciplines. Polytechnics in Ghana were established in the colonial era in Accra, Takoradi and Kumasi to provide manpower for the country's development in the 1950s as technical institutes. The technical institutes were established to train middle-level skilled manpower in technical and vocational for the emerging industries. Nsiah-Gyaabah (2005) cited by Boakye-Agyemang (2006) stated that in the early 1960s Accra, Kumasi and Takoradi Technical Institutes were later changed to polytechnics to also provide middle-level manpower to fill the gap between the top-level manpower from the universities and the semi-skilled and unskilled labour. The Tamale and Ho technical institutes were later upgraded to polytechnic status in 1984 and 1986. Cape Coast polytechnic was established in 1986 as a fully-fledged polytechnic. To ensure regional balance, polytechnics were later established in Koforidua, Wa, Sunyani and Bolgatanga. Stores were created or established to receive, store and issue materials for the effective running of the polytechnics (Dei et al, 1997). The operations in the stores are done manually using the Stores Receipt Voucher (SRV), Stores Issue Voucher (SIV), Tally Cards (TC), Stores Ledgers to mention a few. Operations in the stores have been challenging with the upgrading of the polytechnics to Technical Universities with its corresponding annual increase in student intake. The change in the programs of the Technical Universities and the students' population means an increase in the materials requirements and the need for storage space and documentation. The documentation means a lot of paperwork. To ensure effective and efficient stores management, there is the need to automate the stores by using a technology which involves computers and its accessories together with computer software and the internet (Davis, 1989; Diop et al., 2019). The 2016 World Bank Report on Ghana stated that compared to some countries in Africa, Ghana is doing fairly well in ICT development nevertheless the report exposed the country as having not fully taken advantage of the digital revolution upon all the benefits that go with it. It, therefore, asked the government of Ghana (GOG) to increase access to the internet and make it affordable (Mohammed et al., 2018; Chopra and Miendl, 2007).

To enhance local creativity and resourcefulness, African professionals, managers and engineers are urged to be provided with on-the-job education and lack of this during the colonial and post-independence eras have contributed to Ghana's lack of technological capabilities (Dei et al., 1997). Some studies have revealed that improper records management; inadequate professionally trained records managers; inadequate resources

to facilitate proper records management practices in the institution; and lack of basic skills and competences as some of the key challenges in stores management (Mohammed et al., 2018). How are other Technical Universities positioning themselves to this new development? The study aimed to explore the acceptance and use of technology in the management of stores in the Technical Universities of Ghana.

LITERATURE REVIEW

Theoretical Framework

This research adopted the Technology Acceptance Model (TAM) which was used to design the questionnaire, predict and explain responses to the use of ICT in stores management in the selected Technical Universities. This was used because it is the most commonly used framework that explains user acceptance of information technology (Davis, 1989; Diop et al., 2019). TAM can show how a person's salient beliefs such as perceived usefulness (PU) and perceived ease of use (PEOU) influence users' behavioral intention to use a given technology. TAM has been applied in studies on the usage of word processors, e-mail, WWW, GSS, Hospital Information Systems etc. (Diop et al., 2019). The TAM has been applied under external variables such as individual differences, system characteristics, social influences, and facilitating conditions, thus establishing its heftiness. The resources and opportunities available to a person must to some extent dictate the likelihood of a person behavior, thus the Theory of Planned Behavior was also explored (Davis, 1989; Diop et al., 2019). It takes into account a person's attitude, perceived behavioral control, and the subjective norms of society and determines a person's intention and behavior. This theory has been used in all different sorts of fields including businesses and organizations (Diop et al., 2019).

Usage of Technology in Store Management

Until the 1980s, inventory was generally managed using rules of thumb such as holding three months of demand in the warehouse (Mohammed et al, 2018; Chopra and Miendl, 2007). These levels were often far from appropriate, resulting in too much of the wrong items and too little of right ones. The contribution of technology was to move inventory management from rules of thumb to setting inventories based on historical demand and desired service levels. Modern use of technology in stores management involves automation where devices such as bar codes, scanners, mobile computers, handheld radio, wireless LANs and Radio-frequency identification (RFID) are used to effectively monitor and track items in the warehouse. These devices help in preventing imitated or fake goods, identifying the manufacturing and expiry dates and the country of origin. Using technology help improve efficiency and increase effectiveness by reducing human errors

to the barest minimum if possible, eliminating the errors. It is no exaggeration to state that the use of technology to improve inventory management has contributed much to the cost savings achieved so far in supply chain management. Technology must be incorporated into stores operations to ensure value for money in the supply chain (Mohammed et al, 2018; Chopra and Miendl, 2007).

Stores Operations

Stores operation is about the physical aspects of stores management and it includes goods receipt, goods dispatch or issue, storage, stock control, stock taking etc. (Ganpat, 2014). Chopra and Miendl, (2007) said warehouse operations differ but the basic activities include pre-receipt, receiving, put away, storage, picking, replenishment, value-adding services and dispatch.

Goods Receipt

Goods receipt according to Ganpat (2014) is the way and manner goods and materials are inspected and delivered into stores by suppliers. The goods are to be accompanied by documents such as delivery notes, waybill, invoices etc. In conducting the inspection, the consignee will have to ensure that is the consignment at the right place, are the materials hazardous, are the materials handling equipment appropriate and so forth. Once the goods arrived and have been offloaded in the warehouse, they are checked to ensure the quantity, packaging, specification among others are correct before putting them away. The goods are then recorded in the documents or into the systems. Information such as product code, description and quantity are recorded (Chopra and Miendl, 2007). Receiving and issuing of materials in the stores is the responsibility of the storekeeper and the personnel working in the stores. Personnel in the stores are to receive and take charge of every material delivered into the stores. They are to scrutinize the accompanying delivery notes such as waybills and invoices. They are to inspect the goods for the quantity, quality, packaging and possibly damage before receiving them (Chopra and Miendl, 2007).

Issue / Dispatch of Goods

Issuing of goods or materials from the stores is one of the functions of stores management and this is usually in response to the demands from users or customers. The effectiveness and efficiency of issuing materials in the stores are always seen as the stores being efficient and responsive (Carter et al., 2005). The stock of goods in the stores is always seen as money and that the goods must be managed very well to avoid waste, pilfering or

misappropriation. From the above, materials in the stores cannot be issued anyhow without control. Any issue or dispatch from the stores is supposed to have authorization, approval and duly signed by management (Jessop and Morrison, 1994). According to Ganpat (2014), issues or dispatch of goods must follow certain steps to avoid improper use or wastage. The reason is that the goods in the stores represent money. The steps are: receiving requisitions or issue a voucher, check for authorization, control number to a voucher, picking of the materials to the issue or dispatch counter, enter transactions on the voucher, check goods in the presence of the recipient, stockholder signs the issue voucher, obtain recipient signature for goods received, submit a voucher to ledger clerk for processing, enter transaction details in the appropriate stock ledgers and lastly, filing of all the vouchers chronologically. After authorization and approval are given to an issue order or requisition, the goods are then picked and brought together and ready for dispatch to the user or recipient. Issuing goods that are large or bulky necessarily call for the use of pallet either manually or automatic and then onto the waiting vehicle at the loading bay (Rushton et al., 2014). Receiving and issuing of goods are some of the vital stores' activities and when receiving or issuing is done correctly, it comes with satisfaction especially where there is good quality service delivery. Stores and warehouse operations are nowadays being automated where receiving and issuing of goods are done mechanically with less human intervention. The automation is to ensure updating of records, location of goods in the stores, ensure the right quantity, the right type, right quality to mention a few (Saunders, 1997).

Storage of Goods

Storage is the principal function of stores management and shows where materials or goods are kept until they are requested for use. Materials kept in the stores or warehouses are many and of different shapes and sizes. The materials in the stores have different uses, have different storage space requirements and these tend to be difficult in managing (Wild, 2010). Storage according to Jessop and Morrison (1994) is about how the stores or stockyards are managed, specifically operations and handling of materials and the storage equipment. Also, storage is about ensuring the safe custody of materials in the stores. Storage of items or materials involves skills, knowledge of personnel in the stores and manufacturers and suppliers' instructions for a particular item and its location. Some materials require specific storage condition to safeguard the quality and shelf lives of the materials (Dobbler and Burt, 1996). Good layout and effective storage methods ensure easy access to materials in the stores, effective and efficient use of space and flexible arrangement of materials, effective use of material handling equipment. The storage

methods also ensure that pilfering is reduced and deterioration of materials is minimized. The materials in the warehouse have to be stored carefully and every effort needed to take proper custody of goods (Dobbler and Burt, 1996). Location of stock or materials in the stores is very important in the responsiveness of stores in meeting the needs of customers or users. To be responsive, effective order picking which is one of the activities that goes on in a warehouse. This implies the need for swift and easy access to materials in the warehouse. The ways materials are located in the storehouse ensure satisfaction in the stores' operations (Bailey et al, 2004). The primary function of many warehouses is to help the movement of goods or materials within the supply chain and finally to the end-user or consumer. The holding of inventory means locking up of money, therefore there are techniques to be employed to minimize the amount of inventory held at any given time. The techniques are flexible manufacturing systems, supply visibility, JIT, express delivery to mention a few. Meanwhile, it is very important to hold some amount of inventory in the warehouse or stores since the warehouse has some others functions such as inventory holding point, consolidation, cross-docking, sorting, assembling, trans-shipment, returned goods etc. (Rushton et al., 2014). Storage of hazardous materials (hazmat) or goods needs special or extra attention. Some hazardous materials are not compatible with other materials hence they have to be stored with extra care. The hazardous materials can react easily with other materials such as chemicals, dust, air or water. Also, some of these materials can be harmful to the personnel working in the stores. Hazardous materials can easily come into contact with materials that are not compatible through leakage or spillage and these materials can release poisonous gases which can cause explosion and fire. Specially designated structures must be provided to store hazardous materials with warning signs boldly written on the walls to warn people of possible dangers. Combustible materials should be stored separately from other substances that are not combustible (Ganpat, 2014).

Stocktaking

Stocktaking is the physical counting, measuring and weighing of all materials held in the stores against stock records. The objectives of carrying out stocktaking are to ensure the accuracy of the records of materials, the possibility of pilfering, fraud and loss, to expose any weaknesses in the management of the stores. Personnel in the stores assist in the stocktaking exercise by showing and identifying the locations of materials. The officer-in-charge is mandated to investigate any discrepancy detected during the stocktaking (Ganpat, 2014). According to Bailey et al., (2004) stocktaking is the physical counting of materials held in stock to verify the exact quantities and conditions of the materials. It is a

coordinated exercise of every stakeholder in the organization. Stocktaking is a very difficult and laborious exercise, therefore every support needed for the exercise should be provided by the management of the organization. Stocktaking is done with the prior approval of the management of the organization. The methods for conducting stocktaking are annual, periodic and continuous stocktaking. The annual stocktaking is done every year particularly the last month of the year. Periodic stocktaking is done quarterly or every six months of physical counting of stock held against stock records. The periodic stocktaking can be done in a day or two days. Continuous stocktaking is done throughout the year. Class-A items can be counted three times in a year, Class-B items may be counted two times in a year and Class-C items counted once in a year. Stores conduct regular and physical counting, measuring of materials in the stores to verify accuracy of what has been counted with the stock records. Stocktaking is a time-consuming activity which involves physical inspection, counting, recording and investigates discrepancies in the stores. The stocktaking if done very well will help the organization as a form of performance check on the management of the stores, the outcome of or results of the stocktaking is used in the preparation of balance sheet which is used by auditors and accountants, stocktaking also shows the stores efficiency and the management of stock held in the stores. Detection of a major discrepancy during the stocktaking will call for closer attention and observation of personnel in the stores and the systems used in the stores. Stocktaking shows that at every given point in time stocks are available to avoid stock out which when occurs is a cost to the organization (Carter et al., 2005).

Human Resource

Harmon, (1993) stated that managing stores is like playing a symphony with people, systems and processes. Managing stores include people, systems and processes for efficiency. Whenever these elements are balanced and go together, the workings of the stores go on smoothly without any hitch and the stores' operations are efficient. The people working in the organization can be seen as the strongest and the weakest link to stores operations performance. People are one of the major assets of every organization. In the highly automated and systems-controlled establishments, the operations of stores depend heavily on people for the use and operations of the machines. In warehouse or stores operations the attitudes of workers towards the organization, job and clients or customers play a major role in the operations of the organization. Studies have shown that there is a direct linkage between the attitude of people and a commitment to daily operations. Wrong shipment, short shipment or landings and defective supplies together with equipment damage and accidents are some of the results of problems that come up whenever human

resource in an organization is not managed very well (Harmon, 1993). Good and effective training of people is a way to improve the skills and knowledge of warehouse and stores personnel which goes to improve workings or operations of the warehouse or stores. There are different skill sets and attitudes that are required for different jobs. The skillset required for a particular job is linked with attitudes and links to the capability of people and it also depends less on the knowledge, experience or educational qualification (Gunasekaran, 1999). The strength of the workforce is an issue that is always seen to attract the operational efficiency of many third-party managed warehouse. At times some local management of some organizations tries to cut corners by employing few people or hands and making the few people work for more hours in a day to save costs in operations. Operations in a store require the optimum workforce and based on clearly spelt out tasks to be performed. Operations in stores are time-bound and have interrelations, work estimation and division of work are clarifying and very important to avoid overstaffing or understaffing. Over staffing can lead to slackness, malingering among others in individual employee performance level and also the chances of increasing costs (Christopher, 2005). Christopher, (2005) stated that human resource plays a very important role in the functioning of any organization as far as the efficiency of the organization is concerned. Therefore, it is the responsibility of management to ensure that whenever they are recruiting people to work in the organization, people who are knowledgeable, highly competent and well informed technologically must be employed. Such a decision will impact positively on the quality of service rendered using stores automation.

Challenges in The Use of ICT In Stores Management

Challenges in stores management in various institutions have been identified by researchers such as (Mohammed et al, 2018; Asogwa, 2012; Saunders et al., 2009). These include lack of manual for record-keeping; lack of guidelines for filing; record retrieval difficulties; inadequate manual classification; lack of security; weak legislative; inadequate funds; weak organizational infrastructures; corruption; absence of an archival institution; the problem of oral traditions; high staff turnover; absence of an archival law; poor transport and communication network (Mohammed et al., 2018; Asogwa, 2012; Saunders et al., 2009).

METHODOLOGY

Letters of introduction were obtained from the CILT office of Takoradi Technical University to the stores' departments of the six selected Technical Universities. The researchers selected the six Technical Universities out of the ten Technical Universities in

Ghana using a purposive sampling technique (Saunders, 2009). To carry out the study effectively, data was collected through primary and secondary sources. Questionnaire, interviews and visits were the primary sources while secondary sources included data from textbooks, articles, professional journals and related materials from the internet. Sixty (60) questions were designed for response and were administered. The questionnaire was framed based on the research questions and objectives. Both open and close-ended questions were asked to facilitate easy responses and allow for a considerable degree of expression from the respondents. The questionnaire was effective in obtaining first-hand information about practices and conditions and for enquiring into opinions and attitudes of subjects (Saunders, 2009). Personal interviews were employed alongside the questionnaire. The interviews helped in clarifying issues that seem not clearly understood by both the respondents and the researchers. Both the interview and questionnaire were used for the heads of both the procurement departments and the stores' departments. The reason was that these people usually do not have much time and it was seen as a burden on them when asked to answer self-administered questionnaires. The use of interview and questionnaire helped to obtain an accurate response and eliminated the issue of callbacks. The secondary data sources included textbooks, articles, professional journals and visiting relevant websites for related information. Tables and bar graphs were used to represent the data collected and grouped based on the objectives of the study. The closed-ended questions were coded for easily interpretations using the frequency of occurrence. Statistical Package for Social Sciences (SPSS) computer software was used in the analysis.

RESULTS AND DISCUSSIONS

Demographic and Respondents Profile

This section deals with the demographic backgrounds of the respondents used in the study. In all, there were 10 respondents each from three institutions (Ho, Kumasi and Takoradi Technical University) and this represented 19.6 per cent. There were also 7 respondents from the other three institutions namely; Accra, Cape Coast and Koforidua Technical universities representing 13.7 per cent each. The results indicate that the rate of response from the six Technical Universities was encouraging. The researchers worked with the procurement and stores departments of the Technical Universities. 3 respondents had academic qualifications equivalent to SSCE/WASSCE/O'Level, 22 respondents were with A-LEVEL/DIPLOMA/HND, 16 with B.A/BSc/B.Ed./B. Tech and 10 respondents were with MA/M.Ed./MBA/MSc/MTech/M. Phil with a percentage value of 5.9 per cent, 43.1 per cent, 31.4 per cent, and 19.6 per cent respectively. The working experience of the respondents was determined since the number of years the respondent has worked with the

organization can tell how far employees know what goes on in the organization concerning the topic under study. 43 respondents representing 84.3 per cent have worked with their organizations between the years of 0-10 years, seven (7) respondents representing 13.7 per cent had working experience between 11-20 years and one (1) respondent representing 2.0 per cent also had working experience between 21-30 years. 5 respondents represent 9.9 per cent were Chief Stores Assistant, 8 respondents representing 15.7 per cent were Senior Stores Assistants, 13 respondents representing 25.5 per cent were Stores Assistants, six (6) respondents representing 11.8 per cent were Junior Assistant Procurement Officers, five (5) respondents representing 9.8 per cent were Assistant Procurement Officers, two (2) respondents representing 3.9 per cent were Administrative Assistants, seven (7) respondents representing 13.7 per cent were Heads of Departments and five (5) respondents representing 9.8 per cent were Senior Procurement Assistants.

Usage of Computers and the Internet in Stores Management

Out of 51 respondents, 90.2% indicated that they use a computer in the operation of stores and 9.8% indicated that they do not use computers. It was deduced that the majority of the sampled population uses computers in the operation of stores. The number of computers used in the various departments was also determined. Out of the 51 respondents, 10 of the respondents representing 19.6 per cent indicated they use one computer, 27 respondents representing 52.9 per cent indicated they use two computers, 11 respondents representing 21.6 per cent indicated they use three computers and three (3) respondents representing 5.9 per cent also indicated that they use four computers. It was deduced that the entire respondent uses computers in their offices for managing the stores. Out of 51 respondents, 16 representing 31.4 indicated low usage 21 respondents representing 41.2 indicated moderate and 14 representing 27.5 indicated high usage of computers in the stores. Availability of internet in stores is important in data storage and management. Out of 51 respondents, 82.4 per cent indicated that they have internet in their stores whilst 17.6 per cent indicated they do not have access to the internet. It was deduced that the majority of the sampled population have access to the internet.

Types of Inventory Held

The type of inventory held in the various Technical Universities selected was ascertained. 13 respondents representing 25.5 per cent indicated they keep stationery materials, two (2) respondents representing 3.9 per cent indicate they keep Electricals/Electronic, drugs/chemicals and petroleum, oil and lubricant respectively, nine (9) respondents representing 17.6 per cent indicated they keep plumbing materials, six (6) respondents

representing 11.9 per cent indicated they keep Technical/Engineering items, and 17 respondents representing 33.3 per cent indicated they keep all of the items listed above.

Use of ICT Devices and Backup Devices

The type of ICT devices used in the control and monitoring of materials in the stores was found out. Out of 51 respondents, nine (9) respondents representing 17.6 per cent indicated barcoding and scanner, five (5) of the respondents representing 9.8 per cent indicated mobile computers, 13 of the respondents representing 25.5 per cent indicated wireless, four (4) of the respondents representing 7.8 per cent indicated "all of the above" and 20 of the respondents representing 39.2 per cent indicated "none of the above". This can be deduced that the majority of the respondents constituting 39.2 per cent do not use any of the ICT devices in monitoring and control of materials in the stores. It was realized that some of the respondents were using barcoding and scanner, mobile computers, wireless together with desktop computers as ICT devices in monitoring and controlling materials in the stores. Most of the monitoring and controlling were done manually. It was revealed that all the Technical Universities selected have back-up devices. Out of 51 respondents, 32 of them representing 62.7 per cent indicated external hard drive, 12 of the respondents representing 23.5 per cent indicated flash/pen drive and seven (7) respondents representing 13.7 indicated Network Attached Storage. It was deduced that all respondents have back-up devices for the storing and retrieval of information in the stores. Response on the question on the type of computer software revealed that 51 respondents, seven (7) respondents representing 13.7 per cent indicated Topaz, 10 respondents representing 19.6 per cent indicated Sage. 34 respondents representing 66.7 per cent did not respond. The non-responsiveness of the majority of the respondents is as a result of the stores not using computer software in managing the stores. 17 respondents representing 33.3 per cent indicated using Topaz and Sage computer software in managing the stores. How often is the computer software used in managing the stores? Out of 51 respondents, 12 of the respondents representing 23.5 per cent indicated every day, five (5) of the respondents representing 9.8 per cent indicated weekly and 34 respondents representing 66.7 per cent did not respond. The non-responsiveness of the majority of the respondents is as a result of the stores not using the computer software in managing the stores though 12 respondents representing 23.5 per cent agreed that the computer software is used every working day. Responses on the question on ease of learning computers, 17 respondents representing 33.3 per cent indicated excellently, 22 respondents representing 43.1 per cent indicated very good, nine (9) respondents representing 17.6 per cent and three (3) respondents representing 5.9 per cent indicated fair. This shows that 42 respondents

constituting 82.3 per cent indicated that learning computer is easy and this is in agreement with (Davis, 1989) who stated that perceived ease of use (PEOU) is one of the factors in influencing and accepting and use of new technology.

Benefits of the Use of Computers in Stores Operations

Computer usage has been helpful in stores operations as the research revealed. 18 respondents representing 35.3 per cent indicated that it makes records keeping easy, 19 respondents representing 37.3 per cent indicated that it helps in storing information and 14 respondents representing 27.5 per cent indicated that it helps in retrieving information. This shows that computer usage in the operation of stores has been helpful. Also, respondents agreed that computers give control over work done in the stores. Out of 51 respondents, 15 respondents representing 29.5 per cent indicated 'excellent' and are of the view that computers give control over work done in the stores, 28 respondents which represent 54.9 per cent indicated very good and are of the view that computers give control over work done in the stores and eight (8) respondents representing 15.7 per cent indicated that it is good using computers in the stores give control over the work. This finding is consistent with (Davis, 1989) who stated that perceived ease of use (PE) and perceived usefulness (PU) are factors influencing and accepting the use of a new technology where all the respondents indicated that ease of use and the usefulness of the computer has made the work in the stores effective and efficient. Majority of the respondents indicated that the use of computer has helped to improve the quality of work in the stores. The finding is in agreement with the work of Dobbler and Burt, (1996), who stated that automation creates many benefits to organizations and some of the benefits include "high-quality services, easiness in retrieving stock, easy and effective receiving and issuing procedures, better stock control systems among others".

Management Support and Training

The extent of management support for using a computer in the operations of the stores was determined. Out of 51 respondents eight (8) of them representing 15.7 per cent indicated strongly agree, five (5) respondents representing 9.8 per cent indicated agree. 12 of the respondents representing 23.5 per cent indicated neutral. 17 of the respondents representing 33.3 per cent indicated disagree and nine (9) respondents representing 17.6 per cent indicated strongly disagree. It can be deduced that the majority of the respondents constituting 50.9 per cent agreed that management was supportive of computerizing the stores and 25.5 per cent of the respondents disagreed that management was supportive in computerizing the stores. Therefore, this indicates that management was supportive in the

use of computers in the operations of the stores and this finding is in agreement with the work of Mohammed et al, (2018) which stated that there was enough support from management on the automation of stores to be more efficient and effective. Is computerization thought to be expensive? Out of 51 respondents, 15 of the respondents representing 29.4 per cent indicated strongly agree, 22 of the respondents representing 43.1 per cent indicated agree, eight (8) respondents representing 15.7 per cent indicated neutral, five (5) respondents representing 9.8 per cent indicated disagree and one (1) respondent representing 2 per cent indicated strongly disagree. It can be deduced that majority of the respondents representing 72.5 per cent agreed that computerization is an expensive venture, 11.8 per cent of the respondents disagreed that computerization is an expensive venture and 15.7 per cent of the respondents being neutral. It was also deduced that majority of the respondents representing 62.8 per cent agreed that the training for the use of computer in managing the stores was enough, 15.7 per cent of the respondents disagreed that the training in the use of computer in managing the stores was not enough with 21.6 being neutral.

Level of Satisfaction and Readiness to Welcome Computers

Out of 51 respondents eight (8) of the respondents representing 15.7 per cent indicated extremely satisfied, 22 of the respondents representing 43.1 per cent indicated satisfied, 11 respondents representing 21.6 per cent indicated neutral, six (6) respondents representing 11.8 per cent indicated dissatisfied and four (4) respondents representing 7.8 per cent indicated extremely dissatisfied. Therefore, it can be deduced that majority of the respondents representing 58.8 per cent indicated that they are satisfied using a computer in the stores and 19.6 per cent of the respondents indicated that they are dissatisfied using computers in the stores. On the question on how ready staff are to use computers, out of 51 respondents, 19 respondents representing 37.3 per cent indicated excellently, 22 respondents representing 43.1 per cent indicated very good, six (6) respondents representing 11.8 per cent and four (4) respondents representing 7.8 per cent indicated fair. This shows that 47 respondents constituting 92.1 per cent indicated that they are ready to use a computer in the operations of the stores.

Categorization of Technical Universities using Technology in Stores Operations

The researchers were able to categorize the selected institutions as part of the findings using the following criteria: (i) use of a computer (ii) access to the internet (iii) computer software for stores management (Diop et al., 2019; Mohammed et al., 2018; Davis, 1989).

Table 4: Categorization of Technical Universities Using Technology in Stores Operations

CATEGORY	CRITERIA	CANDIDATES
Category A	Stores that use a computer and having internet connectivity with Stores/warehouse management systems (WMS) or computer software applications for stores management.	Accra Technical University Kumasi Technical University Koforidua Technical University
Category B	Stores that use compute and having internet connectivity without computer software applications for stores management but use a spreadsheet (MS Excel) or MS word application or a combination of both for stores management.	Takoradi Technical University
Category C	Stores that have a computer but not having internet connectivity and not using computer software application for stores management.	Cape Coast Technical University Ho Technical University

The study revealed that three out of the six Technical Universities stores are using computers with internet connectivity and having computer software application for managing the stores. Accra Technical University stores are using Topaz accounting computer software, Kumasi Technical University stores are using Sage computer software and Koforidua Technical University stores is using Trustock application computer software. These three Technical universities stores have been categorized as A (Mohammed et al., 2018; Davis, 1989). Takoradi Technical University stores are categorized as B for using computers with internet connectivity but without any computer software application for managing stores and lastly, Cape Coast and Ho Technical University stores have been categorized as C for having computers without internet connectivity and not using any computer software application for stores operations or stores management (Diop et al., 2019; Mohammed et al., 2018; Davis, 1989). In-bound materials are received and the entries made on MS Excel spreadsheet with the necessary details about the vendor or supplier, date of receipt, unit price and the total amount of the materials received. The out-

bound materials are also entered on the same spreadsheet with details of the user department, quantity, purpose, dates and the names of the receiver and the final approval. The spreadsheet serves as a combined Stores receipt and issues voucher for materials. Entries for in-bound materials are made in red ink and that for the out-bound materials are made in black ink.

CONCLUSIONS

The study sort to explore the acceptance and use of technology in stores management in some selected Technical Universities of Ghana. It is the first study to use the TAM to explore the connections between perceived usefulness, ease of use, and intent to use ICT in stores management in the newly established Technical Universities in Ghana. The findings have shown that computers are used in the stores of the selected Technical Universities. The study supports the Technology Acceptance Model that technology is accepted and used because it is viewed as very useful and easy to use (Diop et al., 2019; Mohammed et al., 2018; Davis, 1989). This study supports the growing literature suggesting usefulness and ease of use are what people look out for before accepting and using technology (Diop et al., 2019; Mohammed et al., 2018; Davis, 1989). Where these are lacking, acceptance, adoption and let alone usage of technology become a problem. Information and communication technology (ICT) are very useful tools that have come to stay and every effort must be made to adopt it and utilized it fully for the benefit of the country. The essence of information and communication technology (ICT) is to make life easy. It would be good for the stores to be fully computerized for the stores to be responsive to the mission and vision of these institutions in this information age. The use of ICT in the operations of the stores would help to reduce cost and save time for the institutions.

REFERENCES

- Asogwa, B. E. (2012). "The challenge of managing electronic records in developing countries: Implications for records managers in sub-Saharan Africa". *Records Management Journal*, 22(3), 198-211.
- Bailey, P. et al, (2004). *Purchasing, Principles and Management*. 9th ed. Financial Times / Prentice Hall
- Boakye-Agyemang N. A. (2006), *Polytechnic education in Ghana. The case of the HND Estate Management programme*.
- Carter, R. J., Price, P. M. and Emmett, S., (2005), *Stores and Distribution Management*. 1st ed, Liverpool Business Publishing (LBP), Liverpool-England.

- Chopra S. and Miendl P. (2007). *Supply Chain Management: Strategy, Planning and Operations*. 3rd ed, Pearson Prentice Hall, USA.
- Christopher, M. (2005). *Logistics and Supply Chain management*. 3rd ed. Financial Times Prentice Hall, New York, USA.
- Davis, F. D. (1989) Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly report*, 13, 319-339
- Dei, George & Turay, Thomas & Lall, Sanjaya & Navaratti, Giorgio & Teitel, Simon & Wigganaraja, Ganeshan. (1997). *Technology and Enterprise Development: Ghana under Structural Adjustment*. *The International Journal of African Historical Studies*. 30. 159. 10.2307/221562.
- Diop EB, Zhao S, Duy TV (2019) An extension of the technology acceptance model for understanding travellers' adoption of variable message signs. *PLoS ONE* 14(4): e0216007. <https://doi.org/10.1371/journal.pone.0216007>
- Dobbler, D. W., Burt D. N., (1996), *Purchasing and Supply Management*, 6th edition, McGraw Hill
- Ganpat, B. Stores (2014), *Management in the Public Service*. 3rd ed. Lulu Printers, USA.
- Gunasekaran, H. F. (1999). *Improving the effectiveness of warehousing operations*. Caselle, USA
- Harmon, R. L. (1993). *Reinventing the Warehouse: World-class Distribution Logistics*. 1st ed. Free Press, London
- Jessop, D. and Morrison, A. (1994). *Storage and Supply of materials*. 6th ed. Prentice-Hall
- Mohammed, Safura and Tetteh, Rebecca and Ahmed Azumah, Ayisha (2018): *Challenges Associated with Records Management in Sunyani Technical University*, Munich Personal RePEc Archive
- Nsiah-Gyabaah, K. *Polytechnics Education in Ghana: The past, the present and the future*. (2005).
- Rushton, A., Croucher, P., and Baker P. (2014). *The Handbook of Logistics and Distribution Management*. 5th ed. Kogan Page Ltd.
- Saunders M. (1997). *Strategic Purchasing and Supply Chain Management*. 4th Edition. Minnesota, USA
- Saunders. M., Lewis, P. and Thornhill, A. (2009), *Research Methods for Business Students*. 5th ed. Pearson Education Limited, Essex- England.
- Wild, T., (2010), *Best Practice in Inventory Management''*. 2nd ed. Butterworth-Heinemann, Oxford-USA.