Telecommunication Networking and Warehouse Performance of Food and Beverage Firms in Nigeria

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ABSTRACT

This study was designed to investigate the relationship between Telecommunication Networking and warehouse performance of quoted food and beverages firms in Nigeria. The population of the study was 16 quoted food and beverages companies in Nigeria and a census approach was adopted due to the small number of the study population, hence, there was no need for sampling. However, four (4) management staff consisting of customer service managers; procurement managers; warehouse managers; and distribution managers was drawn from each of the firms to provide data for the study. Data were collected through the questionnaire method. Descriptive statistics were used to analyze the respondents 'demographics while the postulated study hypotheses were tested using the Pearson Product Moment Correlation to ascertain the relationship between Telecommunication Networking and warehouse performance of quoted food and beverages firms in Nigeria. Based on the empirical data analysis, it was found that telecommunication networking significantly relates with warehouse performance and the authors concluded that Telecommunication Networking affect warehouse performance and consequently recommended that, quoted food and beverages firms in Nigeria should adopt an eclectic and efficient telecommunication networking strategies in other to improve on their warehouse performance.

Keywords: *Telecommunication Networking, Speed and Accuracy, Security and Authentication, Improved Decentralized Management and Warehouse Performance.*

Introduction.

Information systems are essential parts of modern organizations. Firms need them to run business in an efficient way to achieve competitive advantage and earn more money. Information System, in turn, needs consistent and efficient Information Technology Infrastructure that is constituted of the best components that work together to give business the best outcomes (Yahya, 2016). Information Systems can be defined as any organized combination of people, hardware, software, communications networks, data resources, policies and procedures that stores, retrieves, transforms, and disseminates information in an organization (George & James, 2013). This definition helps imaging how complicated the Information Systems could be. As proposed in the definition, Information Systems consists of: people, hardware, software, communications networks, data resources, polices and roles that control the use of these components and their functions. All these components constitute Information Technology Infrastructure of Information

Systems for business. The definition also shows that Information Systems main function is to deal with information. Information Systems fulfills a lot of tasks on information: stores information in such organized manners that helps fulfilling, in an efficient way, the usual operations on information that are: retrieving, transforming, accessing and disseminating information in the organization.

Telecommunication Networking consists of the arrangement of computing and telecommunications resources for communication of information between different locations and individuals. MIS is a collection of client computers, servers and additional devices, such as printers, scanners, SAN, RAID, sensors and so on, all connected with network communications devices and cables. Network is the tool that brings all MIS components together.

The use of information systems for warehouse management is studied extensively in literature. Complexity of warehouse management is indicated among others by amount and heterogeneity of handled products, the extent of overlap between them, amount and type of technology as well as characteristics of associated processes. Warehouse Performance refers to the operational effectiveness and productivity of warehouse particularly in terms of speed and accuracy in meeting customers' demand, maintaining security of items, and improved management of inventory.

Several scholars had used various variables to predict warehouse performance and generally logistics performance such as Kellen and Namusonge (2014) that investigated the role of information technology on warehouse management in Kenya in the context of Jomo Kenyatta University of Agriculture and Technology. Amit (2010) investigated the influence of wireless technology on the performance of logistic industries in Cochin. Ionia *et al* (2019) investigated the impact of big data analytics on company performance in supply chain management in Romania. However, to the best of our knowledge, it appears that there is paucity of studies that investigated the relationship between telecommunication networking and warehouse performance in the context of quoted food and beverages firms in Nigeria. Against this backdrop, this study is designed to empirically evaluate the relationship between telecommunication networking and warehouse performance of quoted food and beverages firms in Nigeria.

Literature Review

Theoretical Framework - Dynamic Capabilities Theory

Dynamic capabilities theory examines how firms integrate, build, and reconfigure their internal and external firm-specific competencies into new competencies that match their turbulent environment (Teece, Pisano & Shuen,(2007). The theory assumes that firms with greater dynamic capabilities will outperform firms with smaller dynamic capabilities. The aim of the theory is to understand how firms use dynamic capabilities to create and sustain a competitive advantage over other firms by responding and creating environmental changes (Teece, 2007).

Capabilities are a collection of high-level, learned, patterned, repetitious behaviors that an organization can perform better relative to its competition (Winter, 2003).

A firm has a capability if it has some minimal ability to perform a task, regardless of whether or not that task is performed well or poorly (Jeffrey, 2012). A firm does not actually have to use a capability in order for it to have that capability. However, on average, firms have to use their capabilities in order to sustain their ability to use them. In other words, there is a "use it or lose it" assumption about a firm's capabilities over time (Helfat & Peteraf, 2009). A dynamic capability is "the capacity of an organization to purposefully create, extend, and modify its resource base.

The resource base of an organization includes its physical, human, and organizational assets. Dynamic capabilities are learned and stable patterns of behavior through which a firm systematically generates and modifies its way of doing things, so that it can become more effective. For example, operating routines develop from the accumulation of experience through the repeated execution of similar tasks over time (Argote, 1999).

Understanding Telecommunication Networking.

Telecommunication Networking consists of the arrangement of computing and telecommunications resources for communication of information between different locations and individuals. MIS is a collection of client computers, servers and additional devices, such as printers, scanners, SAN, RAID, sensors and so on, all connected with network communications devices and cables. Network is the tool that brings all MIS components together. Huawei Technologies Company Limited (2016) identifies five networks types with pros and cons of each type. Local Area Network (LAN) is a network that connects computers in a small area: building, floor, or even small office. Companies usually use LAN to connect departments within one building. It uses Ethernet technology to transmit data via cables with speed up to 1000 Mbps. Wide Area Network (WAN) is a network of networks that connects computers and even other LANs that are too far from each other which may exist across countries and continents. WAN uses many technologies to transmit data: DSL, the X.25 protocol, ISDN, Frame Relay and IP Protocol. DSL (Digital Subscriber Line) is a technology transmits data over ordinary copper telephone lines with speed of download up to 6.1 Mbps. The X.25 protocol – allows computers on different public networks to communicate through an intermediary computer at the network layer level. It is used to connect ATM networks and Credit Card Validation Network. The Internet Protocol (IP) is the protocol by which data is sent from one computer to another on the Internet.

Metropolitan Area Network (MAN) is a network which is larger than a LAN but smaller than a WAN, and incorporates elements of both. It uses mentioned earlier to connect LANs: ISDN, ATM, DSL, etc. Companies may use it to connect their branches within a town. Campus Area Network (CAN) is a network which is larger than a LAN, but smaller than MAN. This is typical in areas such as a university, large school or small business. Wireless Local Area Network (WLAN) is a LAN that works using wireless network technology such as Wi-Fi. WiFi – is a term for certain types of wireless local area networks (WLAN) that use specifications in the 802.11 family. It can connect devices in not far distances. With the term WiFi connected another term WiMAX. WiMAX – is a standardized (Standard 802.16) wireless version of Ethernet intended primarily as an alternative to wire technologies (such as Cable Modems, DSL, etc.) to provide broadband access to customer premises. It exists in many standards (3G (Third Generation), 4G and 5G) that define the speed and characteristics of Internet connection (Yahya, 2016).

Considering the following facts: more and more modern companies supply their employees with handheld devices (Tablets, Smartphones); the proliferation of Tablets in business and for personal use that gives more freedom to move from one place to another to do job; many companies still use old buildings and that makes it difficult to install cables for Ethernet LAN in many companies; also latency is an important factor for online games that is not what usual companies deal with; all these facts encourage to recommend using WLAN instead of Ethernet LAN to build Business IS. However, for parts of business with really sensitive information it must use only Ethernet LAN (Huawei Technologies Company Limited, 2016).

The development of computer and information technology in the end of 20th century has human society enter a brand-new information era. Companies in different industries made various plans to grasp high technology and acquire advantage on operational capacity in order to enhance competitive advantage. In the information society, the advance of network communication and information in every level of the organization allows employees interacting with one another through networks and computers for instantaneously and conveniently acquiring required information (Yahya, 2016). The development of technology has made human-computer communication become more easily that man-computer interface changes from keyboard, mouse, screen touch, to voice control. Information provided by computers is not simply restricted to texts, graphs, audio and video, but even 3D effect; the visual reality becomes more lifelike and popular.

In the last two decades years, we have witnessed unprecedented growth of the Internet. The tremendous size and complexity that is associated with any large-scale, distributed system is pushing the limits of our ability to manage the network, or even to fully understand its behavior. Moreover, the Internet continues to evolve at a rapid pace in order to utilize the latest technological advances and meet new usage demands. It has been a great research challenge to find an effective means to influence its future (Dovrolis, 2008), and to address a number of important issues facing the Internet today, such as overall system security, routing scalability, effective mobility support for large numbers of moving components, and the various demands put on the network by the ever-increasing number of new applications and devices. The next section discusses the criterion variable, warehouse performance.

Nature of Warehouse Performance

In a supply chain, warehousing function is very critical as it acts as a node in linking the material flows between the supplier and customer. In today's competitive market environment companies are continuously forced to improve their warehousing operations. Many companies have also customized their value proposition to increase their customer service levels, which has led to changes in the role of warehouses. A warehouse is a facility in the supply chain to consolidate products to reduce transportation cost, achieve economies of scale in manufacturing or in purchasing (Bartholdi & Hackman, 2006) or provide value-added processes and shorten response time. Warehousing has also been recognized as one of the main operations where companies can provide tailored services for their customers and gain competitive advantage. There are various types of warehouses: they can be classified into production warehouses and distribution centers and by their roles in the supply chain they can be classified as raw materials warehouses, work-in-process warehouses, finished good warehouses, distribution warehouses, fulfillment warehouses, local warehouses direct to customer demand, and value-added service warehouses.

As mentioned above the heterogeneous warehouses have different operations. However, most of them share some general pattern of material flow, and typical warehouse operations include: receiving, put-away, internal replenishment, order picking, accumulating and sorting, packing, cross docking, and shipping (Tompkins, White, Bozer, Frazelle & Tanchoco, 2003). Warehouses have been going through various challenges such as – supply chains are becoming more integrated and shorter, globalized operation, customers are more demanding and technology changes are

occurring rapidly. In order to cope with these challenges organizations are adopting innovative approaches such as warehouse management system.

A warehouse management system or WMS primarily aims to control the movement and storage of materials within a warehouse and process the associated transactions, including shipping, receiving, put-away and picking. A warehouse management system (WMS) is a database driven computer application, to improve the efficiency of the warehouse by directing cutaways and to maintain accurate inventory by recording warehouse transactions. The systems also direct and optimize stock based on real-time information about the status of bin utilization. It often utilizes Auto ID Data Capture (AIDC) technology, such as barcode scanners, mobile computers, wireless LANs (Local Area Network) and potentially Radio-frequency identification (RFID) to efficiently monitor the flow of products. Once data has been collected, there is either batch synchronization with, or a real-time wireless transmission to a central database. The database can then provide useful reports about the status of goods in the warehouse. In this paper, the measures of warehouse performance as posited by Ionica *et al* (2019). Noha, Walaa & Hisham (2019) were modified and adapted to suit the study in the Nigerian food and beverages firms. Specifically, the measures of warehouse performance used in paper comprise: Speed and Accuracy, Security and Authentication and Improved Decentralized Management. These three measures are discussed in the preceding section.

Speed and Accuracy

This is the expeditious performance of warehouse activities in a correct and precise manner. In a world of increasing market volatility, higher product complexity, shorter product life cycles, and global supply chains, companies are moving towards a more flexible and responsive business trend. The advancement in the logistics sector tends to increase its capability to meet rapid growing of business and vast developments. Warehouses and distribution centres act as important components of the supply chain (Goksoy, Vayvay & Ergeneli, 2013). Warehouses are always looking at moving up the value chain by adding value added services in the warehouses and not just focused on storage alone but integrate several functions to ultimately provide an efficient operation. Smart warehouse are essential facilities that allows many business processes to be interconnected across the cyber network.

System implemented in smart warehouses is able to adapt different business and it is intelligent enough to run business operations with minimal human intervention (Laursen & Thorlund, 2016). Smart warehouse is designed to operate with maximum efficiency by incorporating best practices, automation and other technologies to ensure that it can function at the highest level in an ever-changing marketplace. Warehouses tend to move from being manual to automated and positively progressing towards digitization. In the warehouse, automation is generally used to make gains upon existing processes by improving efficiency, speed, reliability, accuracy and eventually cost savings (Schwarz, Milan, Lenz, Munoz, Periyasamy, Schreiber & Behnke, 2017). Automation comes in various forms including physical material handling equipment and integrated information system.

Security and Authentication

Security and Authentication are concerned with providing unique identification of each container, pallet, case and item to be manufactured, shipped and sold, thus allowing an increased visibility throughout the supply chain. They also involve guarding warehouse to prevent unauthorized access and loss of items, as well as the identification of individuals and items through code, password and

username. There are benefits of having your data warehouse technology on-premises in your commercial operations. In general, this approach ensures full control over your Information Technology resources; also, you can choose customized and unique solutions for your business; and you will have stringent control over access and security of the data resources in your enterprise (Bill, 2019).

As markets become more global and competition intensifies, firms are beginning to realize that competition is not exclusively a firm versus firm domain, but a supply chain against supply chain phenomenon (Ioan, Cornel, Vasile & Valentin, 2015). Under these circumstances, an increasing strategic importance to any organization independent of size or of sector is to deliver information, goods and services in full, on time and error-free to customers. Radio Frequency Identification (RFID) technology represents one of a number of possible solutions to enhance supply chain. RFID technology permits the unique identification of each container, pallet, case and item to be manufactured, shipped and sold, thus allowing an increased visibility throughout the supply chain. Also, an RFID anti-counterfeiting mechanism could be implemented.

Improved Decentralized Management

Warehouse decentralization is a method of maintaining several smaller warehouses spread out to different areas in order to better serve different markets or stocking different products. One of the biggest advantages of decentralizing your shipping and receiving is a reduction in delay of material handling. Wherever your products are coming from, having a connected network of warehouses and supply facilities will allow you to receive products more quickly and get them out to your customers more quickly. Another reason managers' turn to decentralized warehouses is the increased ability to store products. This can come in handy a number of ways; you can store a higher volume of the same products to keep up with demand, or you can stock a wider range of products to better meet the needs of your customers, all while avoiding the concerns of taking up more space on your wire shelving or storage solutions with products that might not sell as fast as others. Of course, the biggest problem with decentralizing your warehousing is one of the most obvious issues: increased operating costs. Even with all the benefits in stocking and shipping that this approach brings, the fact of the matter is you're still faced with the costs of owning/renting, maintaining, and outfitting more than one warehouse, which can begin to add up after a while.
There is an increase in manufacturing activities of food and beverages in Nigeria as a result of globalized trade, consumer demand shifts, just-in-time production, containerization, as well as advances in information, logistics, and transportation technology, and the restructuring of the logistics industry. Logistics restructuring has led to a spatial shift of warehousing facilities, which, in turn, has influenced the geography of freight movement in urban areas (Hesse, 2007). It has been argued that, if facilities are located farther from the urban center, this change may contribute to increased freight vehicle miles traveled (VMT) and associated negative externalities on society such as GHG and criteria emissions, noise, congestion, increased fuel consumption, infrastructure damage, and environment justice (Harcourt, Kayii & Ikegwuru 2020; Wygonik *et al.*, 2015). Cost savings from relocating may accrue to logistics businesses, while any external costs from increased vehicle miles are incurred by society at large (Hesse, 2006).

Telecommunication Networking and Warehouse Performance

In the era of pervasive computerization, the need for rapid and uninterrupted transmission and receiving information handling systems is an essential component of business operations. The use of information technology to use the full capabilities of systems supporting the implementation of the basic processes in the logistics centers ensures proper implementation of tasks. Tomasz, Beata, Joanna, Anna (2017) investigated the application of computer systems used in logistics centers by courier companies. The article presents a class of information systems used in logistics centers and the number of systems used by courier companies. The study aimed to determine the impact of information systems to improve the operation of logistics centers and assess the extent to which the use of the information system of logistics centers affects the information flow in courier companies. The study showed that the use of Information Technology systems offered by the logistics centers streamlines the efficiency of information flow in the courier service. Research has shown which it systems logistics centers are use and how their use by courier companies affects the information flow in courier services.

More so, Amit (2010) investigated the influence of wireless technology on the performance of logistic industries in Cochin. Through literature review, the study found that in logistics environments, enterprises are turning to mobility to drive productivity and efficiency into the business to fight shrinking margins and competitive pressures. Yet the technology advanced data capture is rapidly evolving as RFID, GPS technology matures and becomes more pervasive. Wireless links improve logistics in logistics environments; enterprises are turning to mobility to drive productivity and efficiency maintenance efficiently. There are mainly four key solution types for logistics. Already it is used by UPS, FEDEX, WAL-MART, postal sector and in asylum. Mainly its objective is to provide reliable, efficient, inexpensive, secure, reliable service to customer. It provides real time solution for business value. Recently, interest in wireless technology for logistics has been rapidly increasing with a number of advantages over wired alternatives, including: wireless application bring forth exciting possibilities for new application in logistics industry. From the forgoing discussion thus far, it appears that Telecommunication Networking relates with warehouse performance of quoted food and beverages firms in Nigeria and on the basis of the above assertion we hypothesize as follows:

H_{O1}: Telecommunication Networking do not significantly relate with Speed and Accuracy.

H_{O2}: Telecommunication Networking do not significantly relate with Security and Authentication.

H_{O3}: Telecommunication Networking do not significantly relate with Improved Decentralized Management.

However, a conceptual framework of the relationship between Telecommunication Networking and warehouse performance is depicted in figure 1 as follows:

Conceptual Framework/Study Variables

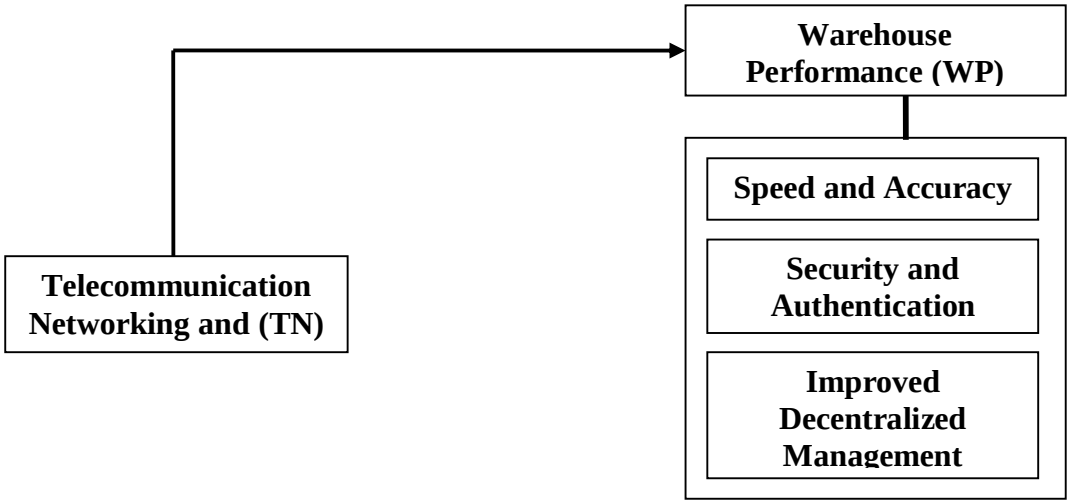

Figure 1.1: Conceptual framework of the relationship between Telecommunication Networking and Warehouse Performance

Methodology

The research approach adopted in this study is the non- experimental research type and it was designed based on the cross-sectional survey method which offers a wide coverage and permits generalizability of research findings. The population of the study consisted of sixteen (16) quoted food and beverages firms in Nigeria listed in Nigeria Stock Exchange (2019), and all elements in the population were studied. A census approach was adopted due to the small number of the study population hence; there was no need for sampling.

However, staff of the sixteen (16) food and beverages firms were drawn to constitute the respondents of the study. 51 management staff consisting of customer service managers; procurement managers; warehouse managers; and distribution managers were drawn from each firm to provide data for the study. Structured copies of Questionnaire was the instrument used in collecting primary data from the respondents which were designed in the Likert five-point scale of strongly agree to strongly disagree

The validity of the scales used in this study was assessed for content, construct and face validity. The content validity was ensured based on review of similar constructs from previous studies. The questionnaire used by Amit (2010), Ionica *et al* (2019) and especially Noha, Walaa & Hisham (2019) on assessing the effects of information technology (ICT) on the performance of warehouse and inventory operations was adapted, modified and refined to suit our study. Similarly, the researcher used the Cronbach's Alpha analysis to ascertain the reliability and internal consistency of the measurement instrument while the Pearson Product Moment Correlation (PPMC) was used in testing the relationship between Telecommunication Networking and Supply Chain Performance of food and beverage firms in Port Harcourt, Rivers State of Nigeria with the aid of

the Statistical Package for Social Sciences (SPSS) version 22.0, Table 1, shows the instrument reliability rate for the constructs of the study.

Table 1. Reliability Coefficients of Telecommunication Networking and Supply Chain Performance

S/N	Variables	Number of Items	Cronbach's Alpha Coefficients
1	Telecommunication Networking	5	0.969
2	Speed and Accuracy	5	0.960
3	Security and Authentication	5	0.935
4	Improved Decentralized Management	5	0.884

Source: SPSS Output form Survey Research

Table 1, showed different Cronbach's Alpha value for the 4 constructs of the scaled questionnaire which were all considered sufficiently adequate for the study. Over all, this indicated that there was internal consistency of the variables scaled and that the variables construct exhibited strong internal reliability. Notably, the results therefore confirmed that the instrument we used for this study had satisfactory construct reliability.

Test of hypotheses, results and discussions of findings.

Univarate Data Analyses

Univarate analysis is basically the process of describing individual variables in a study. According to Sullivan (2001), univariate statistics are used to describe the distribution of a single variable through the use of simple frequency tables. According to Saunders *et al* (2003), commencing initial analysis is best done by looking at individual variables and their respective components. Earlier in this study, we clearly delineated our study variables as – Telecommunication Networking - predictor variable; and supply chain performance as the criterion variable.

Table 2: Descriptive Statistics of Telecommunication Networking

	N	Sum	Mean	Std. Deviation	Variance
In our warehouse there are interconnected computers sharing resources.	51	202	3.96	1.280	1.638

In our organization employees interact with one another through networks and computers.	51	204	4.00	1.217	1.480
In our warehouse we acquire required information instantaneously and conveniently.	51	199	3.90	1.253	1.570
All information about products in our warehouses is loaded in our computers.	51	203	3.98	1.393	1.940
All our warehouses are interconnected through computers networks.	51	214	4.20	1.281	1.641
Valid N (listwise)	51				

Source: Field Survey, 2020.

Table 2, shows results of descriptive analysis using sum, mean, standard deviation and variance. As shown in the Table 2, the entire responses generated high mean scores greater than 3.00. This entail that most of the respondents agreed and strongly agreed to the questions in the instrument. In the result, question 5 has the highest sum of 214 and hence the highest mean score of 4.20. By having the highest mean score, question 5 has the strongest influence on telecommunication networking. However, question 4 has the highest standard deviation of 1.393 and variance of 1.940 respectively, which means question 4 has the most data variations.

Bivariate Analysis

In a bivariate analyses, two variables that are associated or correlated is been evaluated to ascertain the magnitude of relationship that exist between them. This section depicts the test of hypotheses and the Pearson Product Moment Correlation is considered appropriate and was used to test the hypothesized relationships in our study. The study hypotheses and analysis are presented as follow

Test of Hypothesis One

H_{O1}: There is no significant relationship between telecommunication networking and speed and accuracy

Table 3: Relationship between telecommunication networking and speed and accuracy

		Telecommunication Networking	Speed and Accuracy
Telecommunication Networking	Pearson Correlation	1	.697**
	Sig. (2-tailed)		.000
	N	51	51
telecommunication networking and speed and accuracy Speed and Accuracy	Pearson Correlation	.697**	1
	Sig. (2-tailed)	.000	
	N	51	51

**. Correlation is significant at the 0.01 level (2-tailed).

The result of correlation matrix obtained between telecommunication networking and speed and accuracy is shown in Table 3. Similarly displayed in the table is the statistical test of significance (p - value), which makes possible the generalization of our findings to the study population. Based on the result shown in Table 3. The correlation coefficient (rho) depicts that there is a significant relationship between telecommunication networking and speed and accuracy. The correlation coefficient of 0.697 confirms the degree and strength of this relationship and it is significant at p 0.000<0.01. The coefficient represents a strong correlation between the variables. Therefore, based on observed findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between telecommunication networking and speed and accuracy in food and beverage firms in Port Harcourt, Rivers State Nigeria

Test of Hypothesis Two

H_{O2}: There is no significant relationship between telecommunication networking and security and authentication

Table 4: Relationship between telecommunication networking and security and authentication

		Telecommunication Networking	Security and Authentication
Telecommunication Networking	Pearson Correlation	1	.807**
	Sig. (2-tailed)		.000
	N	51	51
Security and Authentication	Pearson Correlation	.807**	1
	Sig. (2-tailed)	.000	
	N	51	51

**. Correlation is significant at the 0.01 level (2-tailed).

The result of correlation matrix obtained between telecommunication networking and security and

Authentication is shown in Table 4. Similarly displayed in the table is the statistical test of significance (p - value), which makes possible the generalization of our findings to the study population. Based on the result shown in Table 3. The correlation coefficient (rho) depicts that there is a very significant relationship between telecommunication networking and speed and accuracy. The correlation coefficient of 0.807 confirms the degree and strength of this relationship and it is significant at p 0.000<0.01. The coefficient represents a very strong correlation between the variables. Therefore, based on observed findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between telecommunication networking and security and authentication in food and beverage firms in Port Harcourt, Rivers State Nigeria

Test of Hypothesis Three

H_{O3}: There is no significant relationship between telecommunication networking and improved decentralized management

Table 5. Relationship between telecommunication networking and improved decentralized management

		Telecommunication Networking	Improved Decentralized Management
Telecommunication Networking	Pearson Correlation	1	.663**
	Sig. (2-tailed)		.000
	N	51	51
Improved Decentralized Management	Pearson Correlation	.663**	1
	Sig. (2-tailed)	.000	
	N	51	51

**. Correlation is significant at the 0.01 level (2-tailed).

The result of correlation matrix obtained between telecommunication networking and
Improved decentralized management is shown in Table 4. Correspondingly displayed in the Table is the statistical test of significance (p - value), which makes possible the generalization of our findings to the study population. From the result shown in Table 4. The correlation coefficient (rho) depicts that there is a very significant relationship between telecommunication networking and Improved decentralized management. The correlation coefficient of 0.663 confirms the degree and strength of this relationship and it is significant at p 0.000<0.01. The coefficient represents a very strong correlation between the variables. Therefore, based on observed findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between telecommunication networking and Improved decentralized management in food and beverage firms in Port Harcourt, Rivers State Nigeria

Discussion of Findings

Telecommunication Networking and Warehouse Performance

Results of the analysis on the relationship between telecommunication networking and speed and accuracy indicated that there is a strong, positive and statistically significant relationship between the variables. The strength and direction of the relationship are indicated by the correlation coefficient and the probability value. As shown in the results, the correlation coefficient (*r*) is 0.697 and the probability value is 0.000 which is less than 0.05. Similarly, telecommunication networking has a very strong, positive and statistically significant relationship with security and authentication, and a strong and positive relationship with improved decentralized management as evidenced in the correlation coefficients of 0.807 and 0.663 respectively. In view of these findings, hypotheses 1, 2 and 3 (Ho_1, Ho_2 & Ho_3) were rejected, and the alternate hypotheses accepted.

Results of this study confirmed the findings of previous studies by scholars such as Tomasz *et al*. (2017) conducted a study to determine the impact of information systems to improve the operation of logistics centers and assess the extent to which the use of the information system of logistics centers affects the information flow in courier companies. The study showed that the use of Information Technology systems offered by the logistics centers streamlines the efficiency of information flow in the courier service. More so, our findings are consistent with the findings of Amit (2010) who investigated the influence of wireless technology on the performance of logistic industries in Cochin, and the study found that in logistics environments, enterprises are turning to mobility to drive productivity and efficiency into the business to fight shrinking margins and competitive pressures.

The development of computer and information technology in the end of 20th century has human society enter a brand-new information era. Companies in different industries made various plans to grasp high technology and acquire advantage on operational capacity in order to enhance competitive advantage. In the information society, the advance of network communication and information in every level of the organization allows employees interacting with one another through networks and computers for instantaneously and conveniently acquiring required information (Yahya, 2016). The development of technology has made human-computer communication become more easily that man-computer interface changes from keyboard, mouse, screen touch, to voice control. Information provided by computers is not simply restricted to texts, graphs, audio and video, but even 3D effect; the visual reality becomes more lifelike and popular. Based on the empirical and theoretical evidence discussed so far, the authors conclude that telecommunication networking affect warehouse performance of food and beverage firms on Port Harcourt, Rivers State Nigeria.

Conclusion and Recommendation

This paper has ornately discussed the underpinning concepts surrounding telecommunication networking and warehouse performance. The relevance of efficient and operational telecommunication network in influencing significant performance of warehouse cannot be over emphasized. Empirical evidence obtained from the analysis of data and the review of extant literature suggests that telecommunication networking relates positively with warehouse performance with its proxies as speed and accuracy, security and authentication, and improved decentralized management. In other words, networking and telecommunication systems are essential information technology infrastructure components that enable organization to maximize warehouse performance. Findings of the study depicts that for firms to run business activities in an efficient and effective way, achieve competitive advantage and stand out in the marketplace it

is important to for them to embrace and adopt telecommunication networking. Sequel to the findings of the study, the authors conclude that telecommunication networking affect warehouse performance and recommend that the panacea to improved warehouse performance in Nigeria food and beverage firms is anchored on the eclectic adoption of efficient telecommunication networking strategies.

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