INFORMATION TECHNOLOGY TOOLS AND SUPPLY CHAIN PERFORMANCE OF ONLINE RETAILERS IN CALABAR METROPOLIS, CROSS RIVER STATE, NIGERIA

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ABSTRACT

The work examined the impact of information technology (IT) tools on supply chain performance of online retailers in Calabar Metropolis, Cross River State. The study adopted the cross-sectional survey research design and the purposive sampling procedure. Data were analyzed using the multiple regression analysis. The study revealed that information technology (IT) tools have positive influence on supply chain performance of online retailers in Calabar Metropolis. It has been observed that the use of information technology improves supply chain performance as it assists the online retailers in building accumulative knowledge about various supply chain partners (customers, suppliers, distributors, and main channels). The study concluded that supply chain management begins and ends with the customers. And, the sole aim of the integration and collaborations of the supply chain is to effectively and efficiently satisfy customers' demands and needs, as well as add value to the supply chain activities which would enhance their performance. The study therefore, recommended that online retailers should build an effective supply chain, integrated with information technologies enabled logistic system that can improve supply chain performance and response quickly to unexpected needs of the consumers.

KEYWORDS: Information technology, IT tools, supply chain management and supply chain performance

INTRODUCTION

Information technology (IT) is widely recognised as the building block for organisations to survive and compete favourably with others. Hence, managers are motivated to adopt information technology in their operations in order to achieve efficient and effective organisational performance. Businesses especially those in the retail sector operate in complex and competitive environment, characterized by changing conditions and highly unpredictable economic climate and information technology trends. Information technology capabilities of managing information flow has an effect on dimensions of supply chain, such as cost, quality, flexibility and timely delivery of goods and services and ultimately profit of organization (Droodchy & NickMehr, 2008). Supply chain consists of a network of partners and various channels operating throughout the organization which affect the utility of supply chain headquarters, and its management entails integrating activities through improving chain relationship in order to access stable competitive advantage (Gilaninia, ShChirani & Ramezani, 2011).

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The importance of this study dwells on two important variables IT - information technology and supply chain performance. However, the essence of deploying information technologies (IT) is expected to improve the supply chain performance which can be measured qualitatively as customer satisfaction, quality customer service and on-time delivery; and quantitatively as lower cost, higher sales volume, higher profit, inventory investment and higher percentages in Return on Investment (ROI) (Beamon, 1998). Owing to the rapid adoption of internet in all the nocks and crannies of our society, it is pertinent for retailers to adopt information technologies in carrying out their supply chain activities in order to satisfy customers demand and needs. This study examined the functional role of IT in supply chain performance and reveals that the adoption of information technology tools by a service provider (online retailers) can lead to improved performance, customer satisfaction and in turn increase the profitability of the online retail outlets in Calabar metropolis. .

Problem statement

The retail industry globally has become more competitive and dynamic than ever before, due to the adoption of information technology in its operations. The rapid adoption and evolution of information technology across countries of the world has spurred many businesses around the globe to engage in online retailing which massively integrates activities of vendors, carriers, third party companies, and information systems providers. However, online retailers now develop strategies that allow effective use of information systems in order to improve their supply chain activities such as sourcing, procurement, conversion, and logistics management activities, coordination and collaboration with channel partners (suppliers, intermediaries, third-party service providers, and customers). Nigeria is not exempted of this growing phenomenon, as a good number of similar online retailers such as Jumia, Konga, Kaymu, Dealdey, 3Stiches, Taafoo, Buyright.bz; etc, have now emerged and some are still up coming.

Despite the associated benefits of information technology in the retail business globally, many Nigerian firms including large scale retailers do not appreciate IT devices in their operations in order to enhance supply chain performance. Often, they neglect the effectiveness of IT tools for transaction execution, collaboration and coordination of supply chain networks, order tracking and delivery coordination in their overall supply chain performance. Thus the problem statement for this work is "what is the relationship between information technology tools and supply chain performance? Consequently, this work was set out to examine the impact of information technology (IT) tools such as automatic identification platforms, communication & integrative platforms/systems on supply chain performance of online retailers in Calabar Metropolis, Cross River State

Research objective

The objective of this work is to examine the impact of information technology tools (automatic identification, communication and integrative platforms/systems) on supply chain performance of online retailers in Calabar Metropolis, Cross River State.

Research hypothesis

Ho: Information technology tool (automatic identification, communication and integrative platforms/systems) have no significant influence on supply chain performance of online retailers in Calabar Metropolis, Cross River State.

LITERATURE REVIEW

Task technology fit theory (TTF)

The task technology fit theory (TTF) was postulated by Goodhue and Thompson in 1995. The theory asserts that for an information system to have a positive impact on performance, the technology should be exploited and must be a good fit with the task that it supports. Task-technology fit (TTF) offers a robust theoretical basis for a number of issues associated with the impact of information technology on individual performance, including recognizing the impact of user involvement on performance (Halawi & McCarthy, 2006). TTF is an extension of two models that originated from social psychology: the theory of reasoned action (TRA), which hypothesizes that a person's behaviour is determined by behavioural intentions, where intentions are a function of a person's attitude toward the behaviour and containing the performance of the behaviour, and the technology acceptance model (TAM). Task technology fit (TTF) is the degree to which a

technology assists an individual in performing their tasks. Goodhue and Thompson (1998) assert that TTF has been employed to offer the foundation for a user evaluation instrument aimed at an organizational evaluation of information systems exploitation for managerial decision making. They developed a measure of TTF that consist of eight factors: quality, locatability, authorization to access data, compatibility, and ease of use/training, production timeliness, systems reliability, and relationships with users. TTF has been employed in the context of a varied array of information systems embracing ecommerce systems and joined with or applied as an expansion of other models. TTFis relevant to the study basically because it measures the ability of the information technology adopted by the supply chain partners to achieve performance and enhance management decisions.

Information technology (IT)

Recent technological developments have enabled organizations, customers and individuals to easily access information and have been helpful in coordinating the activities within the supply chain. The term "information technology (IT)" means" the use of inter organizational systems for information sharing and/or processing across organizational boundaries" (Fasanghari & Kamali, 2008). Also, Attaran (2003) defined (IT) as the capabilities offered to organizations by computers, software applications, and telecommunications to deliver data, information, and knowledge to individuals and processes". IT includes the application of hardware, software and networks to enhance information flow and facilitate the decision-making.

Information technology (IT) tools and their applications

The latest technologies used in logistics and supply chain management are segregated into:

Automatic identification technology (Auto ID)

Automatic identification (Auto ID): is the term used to describe the direct entry of data or information in the computer system, programmable logic controllers or any microprocessor-controlled device without operating a keyboard. Auto ID can be used for tracking the containers, packages, cartons or a truck carrying the goods on time bound dispatches to the customers. The benefits of Auto ID include accuracy, cost saving, speed and convenience of data storage and processing of information. Auto ID technologies include:

a. Bar coding: It is a sequence of parallel lines of different thickness with spaces in between, and are nothing but the items of information in the codified form, which can be read with the help of a scanner. Bar coding enhances ease in identification of inventory items during storage, retrieval, pickup, inspection and dispatch, reduce paper work and processing time leading, reduce human error, increase logistics system productivity through speed, accuracy and reliability. Bar code technology can be applied on operations of logistics and supply chain management in areas of procurement, processing**,** production and distribution operation.

b. Radio frequency identification (RFID): RFID is a type of automatic identification system. The purpose of a RFID system is to enable data to be transmitted by a portable device, called a tag, which is read by a RFID reader and processed according to the needs of a particular application. Data transmitted by the tag may provide identification or location information, or specifics about the product tagged, such as price, colour, date of purchase, etc. (EPIC, 2006). RFID is of great importance as it impacts significantly on logistics and supply chain in many sectors, get better and more visibility into movement of their goods within the supply chain.

c. Voice interactive system: This technology is used practically in fields like medical, manufacturing, warehousing etc. In warehouse application; it allows the worker or operator to communicate data to central computer without using the keyboard. It keeps the warehouse workers hand free to pick up, pack and inspect the goods.

Communication technology:

The following are a few emerging communications technologies, which ensure superior customer service resulting in competitiveness in the speed and accuracy of communication.

a. **Electronic data interchange(EDI):**
Electronic data interchange (EDI) technology s widely used by firms in supply chains to facilitate transactions and information exchanges. EDI is computer to computer exchange of structured data for automatic processing (Nair, Raju & Anbudayahankar, 2012). EDI main advantages are: enter informative needs on the computer system once, speed transaction, reduce cost and

error rates. Other benefits of EDI are quick process to information, better customer service, reduced paper work, increased productivity, improved tracing and expediting, cost efficiency and improved billing. Through the use of EDI supply chain partners can overcome the distortions and exaggeration in supply and demand information by improving technologies to facilitate real time sharing of actual demand and supply information.

b. Very small aperture terminals (VSAT) – These are satellite communication channels which play crucial roles in real time data collection and exchanges vital for customer service. To trace and track the goods carrier, a dish antenna is fixed on the vehicle. This allows the communication between driver, consignor and consignee. The real – time interaction helps in having the up-to-date information on the location of truck and the delivery position.

c. Geographical positioning system (GPS) – The GPS is a more authentic system used in developed countries wherein a vehicle could be traced accurately with the help of geo stationary satellites to the accuracy of one meter in terms of latitude and longitude. Once the position of the vehicle is known, it can be transmitted to consigner or consignee through the transmission network i.e. mobile phones or internet.

d. Geographical information system (GIS) – GIS is software tool for visualization of special location of any entity on earth which is stored in databases relating to geography .This could be in terms of physical maps of the surface, layout of inner surface of earth or a layout of streets or roads. GIS in integration with GPS is used in logistical operation for tracking and tracing of the consignment location to the extent of road or street in particular city.

e. Web based tracking – Logistics service providers extend web-based services for clients to track their consignments. This device allows clients to download reports by connecting through the internet. This information helps in planning the dispatch schedule as well as making follow up with clients for payment collections.

f. Automated guided vehicle system (AGVS) - The system uses magnetic or optical guidance system. The magnetic system uses energized wire laid on the warehouse floor for guiding the material handling equipment. AGVS can perform all the material handling operations without any human involvement. Robot coupled with AGVS is used to pick up exact material requirement for a customer order.

g. Information directed system (IDS) – This is a centralized computer system that controls the material handling equipment. The communication between the equipment and the computer is through radio frequency. The required movement are fed into computer and it assigns the jobs to the individual equipment considering its maximum loading capacity and handling speed. IDS can perform a variety of complex material handling jobs such as multiple order picking or multiple vehicles loading by the same material handling equipment leading to enhancement in warehouse productivity and flexibility in materials handling.

h. Customer relationships management (CRM) systems: CRM systems are computer-based applications used to improve the selling and revenue generation processes of an organization.

Integrative technology

Integrative technologies are information systems used to coordinate and integrate information flows and activities within and between company boundaries to allow the company to effectively manage procurement activities to rapidly meet customer needs. These tools provide excellent algorithmic and technological features to support management decisions, allowing customized planning procedures and optimization algorithms (Krmac, 2005).Some of the IT tools are:

a.   Enterprise resource planning (ERP) systems
Enterprise resource planning (ERP) systems are integrated enterprise-wide and transaction-based information systems used for automating all activities and functions across a whole business. Basically, they allow for data capture for the whole business into a single computer package which gives a single source for all the key business information activities, thereby reducing the manual activities and task associated with processing financial, inventory and customer order information.

a.   E- commerce applications:

E-commerce systems automate the process of moving documents electronically between suppliers and customers and provide access to customers all over the world and thus eliminates geographical limitations. Some of the e-commerce applications are in B2C (Business to Consumer) and B2B (Business to Consumer) space, which are changing the dynamics of supply chain management to include: e-tailing, e-procurement and e-auctions.

i.   e-tailing: selling of goods over the internet. For example, customers of Konga interact with its website and carry out a number of functions such as: ordering books, using credit cards or similar payment methods, tracking the progress of an order, reviewing price details, specifications, etc.

ii. e-procurement: the term procurement is used to describe the purchase of goods and services which are not directly used in the main business of a company. For example, a car manufacturer will procure stationery for its employees or procure training courses for them in order to improve their skills.

iii. e-auctions: these are sites on the web which run conventional auctions. There are two types of auction; those carried out in real time, where participants log in to an auction site using a browser at a specified time and bids for an article until the highest price is reached and no other bids are forth-coming. The other type of site – and the most common – is where an item is offered for sale and a date advertised after which no more bids are accepted.

Some other tools that can enhance the flow of activities in the supply chain are warehouse management systems that control all the traditional activities of warehouse operations with the use of highly sophisticated systems like automated storage and retrieval systems (AS/RS), and automated guided vehicles (AGVs).

Supply chain management (SCM)

A supply chain is a network consisting of suppliers, manufacturers, distributors, retailers and customers. It is the interplay or relationship between all the organisations involved in logistics. The supply chain or value chain spans all the functions concerned with researching customers need, obtaining a raw materials, turning them to useful products , transporting them to the market place, combining with service to form value package and communicating with customers to complete the exchange process (Nickels & Wood, 1997). According to Gbede (2005) supply chain management SCM basically is a partnership among members of a network aimed at optimising costs and improving channel efficiency towards better service delivery to the ultimate customers. It encompasses the planning and management of all activities involved in sourcing, procurement, conversion, logistics and other related activities. Importantly, it also includes coordination and collaboration with channel partners such as suppliers, intermediaries, third-party service providers, and customers.

Global Supply Chain Forum (Lambert, Cooper, and Pagh, 1998) has defined supply chain management SCM as the integration of key business processes from end users through original suppliers that provide products, services, and information that add value for customers and other stakeholders. This integrative approach to planning, controlling and monitoring of product flows, from suppliers to end users, aims at improving customer service at reduced overall costs, and leads to the development of important relationships with logistics providers, suppliers, and customers in order to strenghten information exchange and the coordination of business activities. Lyons (1998) opines that the key activities of supply chain can be broken down into eight (8) major perspectives: demand forecasting, suppliers' management, procurement, inventory management, storing, warehousing, channel selection and management, and physical distribution management.

Characteristics of effective supply chain

In order to achieve the objectives of the organisation and the rapid deployment of product offerings to customers, an effective supply chain system is needed and such a system must be a Triple- A (3As) supply chain as postulated by Lee (2004). The three A's of an effective supply chain are agility, adaptability and alignment.

1. Agility: Agility is the ability of a company to promote the flow of information with suppliers and customers; develop collaborative relationships with suppliers; build inventory buffers by maintaining a stock pile of inexpensive but key components; have a dependable logistic system and draw up contingency plans and develop crisis management.

2. Adaptability: this involves the continuous restructuring of the supply chain system to make it cope with changing environments. It is the capability to collect analyse and interpret data on real time basis so as to provide management with early warning signals to readapt the supply chain to cope with current realities.

3. Alignment: this means establishing of goal congruence among all firms (chain members) in the supply chain. All chain members working towards with the same goal while achieving their individual objectives and targets.

Supply chain performance

Supply chain performance refers to the extended activities in meeting end-customer requirements, including product availability, on time delivery and all the necessary innovations, and capacity to deliver that performance in the supply chain in a responsive manner (Hausman, 2004). Customers play an important role in the performance of supply chain, Lummus and Vokurka, (2001), so every action and activity in the supply chain is geared towards satisfying the customer effectively and efficiently. It is observed that organisation's concentration on customer expectations results into greater satisfaction and typical dimensions of customers' needs that may be targeted by a supply chain include timeliness, accessibility, availability, customizability, quality service and price. If customers are satisfied with the level of services offered by an online store, they will be loyal and consequently be retained by the outlet, which is positive for the organization because it could also mean higher profit and market share, as well as increasing customer base.

Functional roles of information technology and supply chain performance.

Information technology (IT) tools provide supportive functions for human resource activities to improve organizational (or personal) efficiency and effectiveness (Cohen, Salomon & Nijkamp, 2002). Prior to the inception of IT information flow between supply chain partners was paper based, but presently IT has added value to supply chain activities in related areas such as transaction execution, collaboration and coordination of supply chain partners and decision support system.
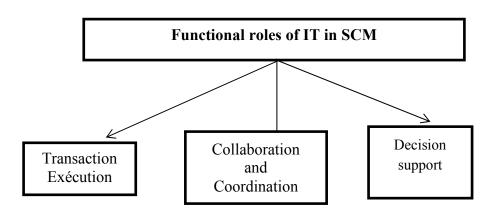

Fig: 1: The functional roles of IT in SCM
Source: Auramo, Kauremma & Tanskanen (2005)

Transaction execution: Transaction execution in supply chain management is especially in the area of electronic commerce. Electronic commerce technology provides the means for more efficient communication between buyer and supplier, and accurate transmission of orders by enabling computer-based business transactions via private, proprietary networks such as electronic data interchange (EDI) or the publicly accessible internet. It includes the use of e-mail

electronic data interchange, fund transfers and bulletin boards, publishing, image processing, shared databases and magnetic/optical data capture, etc.

Collaboration and coordination: Achieving collaboration and coordination of the supply chain partners (suppliers, customers, channel intermediaries and third parties) through initiatives like collaborative planning, forecasting and replenishment (CPFR); vendor managed inventory (VMI), efficient customer response (ECR) and quick response. Supply chain event management (SCEM) systems increasingly facilitate the new e-supply chain paradigm and these greatly improve information sharing among suppliers, manufacturers, distributors and retailers.

Decision support systems: Decision support systems (DSS) are specific classes of computerized information systems that support business and organizational decision-making activities. They help decision makers compile useful information from raw data, documents, personal knowledge, and/or business models to identify, solve problems and make decisions. Some of the technologies are customer relationships management (CRM), demand forecasting management (DFM), internet-based logistics, supply chain event management (SCEM), and supply chain planning (SCP) systems.

Information technology tools on supply chain performance
Using IT tools to manage supply chain increases efficiency and reduces waste in the value chain and have great impacts on all market players. IT tools are used for record keeping, monitoring of field agents activities, operations of procurement, tasks of credit and payment, distribution of inputs, forecasting and determining productivity of the organization (Leenders & Fearon, 2006). A research work conducted by Apiyo and Mburu (2012) reveals that IT tools support supply chain activities, proper planning and management strategic decisions by a holistic visibility on; inventory (demands patterns, carrying costs), transportation (customer location, shipment sizes), facility (location, capacity, smart grid), and use design for recycle and reuse, limit waste and defects. Therefore, IT tools help to execute activities faster, support autonomous decision-making processes, and enable distributive

operations (Huang and Nof, 1999) in order to achieve higher logistics efficiency (Jack & Samuel, 2006). ICT tools make the processes more transparent and could lead to adoption of better business practices to meet customer service levels (Bharadwaj, 2000). Moreso an empirical study conducted by Yacesan, Wassenhove and Vos (2006), reveals that the information technologies adoption has allowed different functions within the retail sector working together more effectively leading to improved customer services in terms of timely information, on-time order completion, and delivery.

Challenges in implementing information technology on supply chain performance
Online retail outlets implementing IT based integrated supply chain management strategies face challenges such as organisational structure and internal culture, integrating the applications with existing and legacy system; and the incompatibility of systems at buyer and vendor facilities; and lack of specific laws to govern information technologies as a major concern for both the organization and the supply chain members (Nair, Raju & Anbudayahankar 2012; Oladejo & Akanbi, 2012). Other challenges include unfair and deceptive trade practices by suppliers and unauthorized access by hackers. Nwaze (2009) as cited in Alabar, (2012) identified the basic constraints of information technology adoption in Nigeria and its effect on supply chain performance, include inadequate ICT infrastructure and funding, absence of appropriate legal and regulatory framework, high cost of bandwidth/telephone lines/internet access, service inter-exchange congestion and slow internet connectivity due to high international tariffs, unexpected system failure, complacence/illiteracy, cyber security, data integrity, protection of customer's confidential' information and identify procedure. In a study conducted by Kolageri and Nagaraj (2016), revealed that the most important constraints faced in adopting IT to online retailing include internet, power, and account security problems, lack of clear information, less choice on company website, delivering defaults, wrong product display and charge at delivery, delay in delivery, customer query and exchange services, mode of payments, security in providing sensitive information credit/debit card number and customer relationship management.

Empirical review

Several studies have been conducted to examine the effect of information technology on SCM. One of such is an empirical study by Auramo, Kauremaa and Tanskanen (2005), in which responses from 16 Finnish industrial and service companies were obtained. The study revealed that the primary drivers (reduction of cost operational expenses, speed, volume of transaction, unpredictable and logistically demanding environment, in-transit delivery consolidation, project – orientation of the business) that necessitated the use of IT in SCM were transaction processing, supply chain planning and collaboration and order tracking and delivery coordination. The study concluded by proposing a relationship between the drivers and the use of IT and its benefits in enhancing information sharing.

Another study conducted by Mishra (2012), highlights the contribution of IT in helping to restructure the entire distribution system to achieve higher service levels and lower inventory and supply chain costs. The broad strategic directions which need to be supported by the IT strategy are increasing of frequency of receipts/dispatch, holding materials further up the supply chain and crashing the various lead times.

METHODOLOGY

In this study we employed a cross-sectional survey research design. This design helps researchers to collect data to make inferences about a population of interest (universe) at one point in time and conducted in Calabar metropolis, the capital city of Cross River State. Calabar was chosen because its cosmopolitan nature and tourism potentials with a high rate of commercial activities as well as the availability of a number of pick up stations spread across the city with adequate customers' patronage.

The study population consists of sixty-four (64) customers of two online retail outlets (Jumia and Konga) that have operational offices within the metropolis. The purposive sampling technique and the Taro Yamene formula were used for sampling and the selection of a sample size of 56 respondents respectively.

A five point Likert scale questionnaire of strongly agree, agree, undecided, disagree and strongly disagree was used to collect data from 56customers of Jumia and Konga at their pick up stations in Calabar metropolis.

Data analysis and interpretation

Data were analyzed using the multiple regression, with the aid of Statistical Package for Social Sciences (SPSS) version 21.

Model specification: $Y = B_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 + E$

SCP = f{AIP, CPS,IPS}

Where:
SCP = Supply chain performance
B_0 = Y's intercept (constant)
B_1 = Coefficient
$B_1 X_1$ = Automatic identification platforms(AIP)
$B_2 X_2$ = Communication platforms/systems(CPS)
$B_3 X_3$ = Integrative platforms/systems (IPS)
E   = Error

Symbols for data analysis for tables 1 and 2.

Strongly disagree –SD; disagree – D; undecided – U; agree – A; and strongly agree –SA
The five point Likert scale descriptors range from:
SD – 1 point; D – 2 points; U – 3 points; A– 4 points;   to   SA– 5   points.

Table 1: Responses to questions on information technology tools

S/N	Statements	SD	D	U	A	SA
1.	My retail store uses web technologies that provide access to information about products and services.	2 (3.6%)	1 (1.8%)	1 (1.8%)	2 (3.6%)	50 (89.3%)
2.	I patronize online stores (Konga and Jumia) that have online applications where I can place, track and monitor orders.	2 (3.6%)	2 (3.6%)	3 (5.4%)	4 (7.1%)	45 (80.4%)
3.	My online store has customer relationship management systems that resolve customers' complaints promptly	2 (3.6%)	2 (3.6%)	1 (1.8%)	4 (7.1%)	47 (83.9%)

Source: Field survey, 2017.

Statement 1 in table 1 shows that 2 (3.6 percent) strongly disagreed that retail store use automatic identification technologies that provide access to information about products and services. I respondent (1.8 percent) disagreed and 1 respondent (1.8 percent) were neutral. On the other hand, 2 (3.6 percent) agreed and 50 (89.3 percent) strongly agreed. **Statement 2 in table 1** shows that 2(3.6 percent) strongly disagreed that they patronize online stores (Konga and Jumia) that use communication technologies that allows them to place, track and monitor order, 2 (3.6 percent) disagreed and 3 (5.4 percent) were neutral. On the other hand, 4(7.1 percent) agreed and 45 (80.4 percent) strongly agreed. **Statement 3 in table 1** shows that 2 (3.6 percent) strongly disagreed that online store has customer relationship management systems that resolve complaints of customers promptly 2 (3.6 percent) disagreed and 1 respondent (1.8 percent) were neutral. On the other hand, 4 (7.1percent) agreed and 47 (83.9 percent) strongly agreed.

Table 2: Responses to questions on supply chain performance of online retail stores in Calabar Metropolis, Cross River State

S/N	Statements	SD	D	U	A	SA
1.	I will visit online store (Konga and Jumia) when I am satisfied with the services they offer	1 (1.8%)	2 (3.6%)	3 (5.4%)	10 (17.8%)	40 (71.4%)
2.	The promptness in service delivery of Konga and Jumia influence my patronage decision	2 (3.6%)	2 (3.6%)	2 (3.6%)	14 (25%)	36 (64.2%)
3.	I would choose this online store because of their improved interactions between supply chain partners	4 (7.1%)	6 (10.7%)	5 (8.9%)	13 (23.2%)	28 (50%)

Source: Field survey, 2017.

Statement 1 in table 2 shows that 1 respondent (1.8 percent) strongly disagreed to visit online store (Konga and Jumia) again because of their services that increase customer satisfaction. 2 (3.6 percent) disagreed and 3respondents (5.4 percent) were neutral. While, 10 (17.8 percent) agreed and 40 (71.4 percent) strongly agreed. **Statement 2 in table 2** shows that 2 (3.6 percent) strongly disagreed that they prefer online store (Konga and Jumia) because of their prompt delivery mechanism. 2 (3.6 percent) disagreed and 2 (3.6 percent) were neutral. On the other hand, 14 (25 percent) agreed and 36 (64.2 percent) strongly agreed. **Statement 3 in table 2** shows that 4 (7.1 percent) strongly

disagreed to choosing the online store because of their improved interactions between 6(10.7 percent) disagreed and 5 (8.9 percent) were neutral. On the other hand, 13 (23.2 percent) agreed and 28 (50 percent) strongly agreed.

Test of hypothesis

Hypothesis
Ho: Information technology tools(automatic identification, communication and integrative platforms/systems) have no significant influence on supply chain performance of online retailers in Calabar Metropolis, Cross River State.

Table 3A: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.941[a]	.886	.879	1.334

a. Predictors: (Constant), automatic identification, integrative and communication platforms/systems

Table 3B: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	717.579	3	239.193	134.398	.000[b]
	Residual	92.546	52	1.780		
	Total	810.125	55			

a. Dependent Variable: SUPPLY_CHAIN_PERFORMANCE
b. Predictors: (Constant), automatic identification, integrative and communication platforms/systems

Table 3C: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.008	.621		-.013	.990
Automatic identification	.784	.281	.256	2.793	.007
Communication	1.196	.281	.399	4.255	.000
Integrative	1.022	.305	.342	3.349	.002

a. Dependent Variable: SUPPLY_CHAIN_PERFORMANCE
Source: SPSS Output, 2017

Interpretation of results of hypothesis

The regression tables (Table 3A, 3B and 3C) show information technology tools (automatic identification, communication and integrative platforms/systems) being evaluated for its ability to predict supply chain performance of online retailers in Calabar Metropolis, Cross River State. Table 3A which is the model summary reveals that the relationship between both variables is 94.1 percent (as seen in the R column). The adjusted R^2 value (0.879) signifies that up to 87.9 percent of supply chain performance is caused by information technology tools when other variables are held constant.

The F-test (134.398 p<0.05) of the relationship in Table 3B indicates that the overall prediction of the independent variable to the dependent variable is statistically significant, therefore, the regression model is a good fit for the data and provides sufficient evidence to conclude that information technology tools (automatic identification, communication and integrative platforms/systems) significantly affect supply chain performance of online retailers in Calabar Metropolis, Cross River State.

Table 3C is the coefficients table, which provides the necessary information on the capability of each information technology tool to predict supply chain performance. This will help us to know which tool contribute significantly to the model. From the table it can be seen that all the three variables (automatic identification, communication and integrative platforms/systems) significantly and positively affect supply chain performance of online retailers in Calabar Metropolis, Cross River State as they all have p-values less than 0.05 significance level as well as positive t-values.

Additionally, from the beta column it is seen that communication features made the strongest unique contribution to the model (Beta = 39.9 percent), followed by integrative features (Beta = 34.2 percent), and automatic identification (Beta = 25.6 percent) respectively. Therefore, we reject the null hypothesis and conclude that information technology tools (automatic identification, communication and integrative platforms/systems) significantly affect supply chain performance of online retailers in Calabar Metropolis, Cross River State.

Discussion of findings

The result from test of hypothesis (Ho) revealed that the IT tools (automatic identification, communication and integrative platforms/systems) have significant influence on supply chain performance of online retailers in Cross River State. This is in tandem with the findings of Krmac (2005) which reveals that the most important positive impact of information technology is on the performance of the entire supply chain, as online retailers adopt IT tools to improve efficiency, reduce operational cost, and enhance relationships with customers, suppliers and partners. Also, an empirical study by Yacesan, Wassenhove & Vos (2006), reveals that the information technologies adoption has allowed different functions in the retail sector to be more effective, leading to enhanced customer service interms of timely information, on-time order completion, and on-time order delivery. Hence, it can be deduced that information technology (IT) plays crucial role in supply chain performance of online retailers. The implementation of IT will enable firms to develop and accumulate knowledge about their customers, suppliers, and market demands, which in turn influence the overall supply chain performance (Tippins & Sohi, 2003).

CONCLUSION

Customers' expectations are increasing as online retailers grapple with uncertain environments amidst fierce competition in the market place. To be successful and/or survive in this market, online retailers need to expand beyond the boundaries of their conventional systems to integrate all partners in the supply chain. Therefore, an understanding of the role of IT and its applications is imperative for the enhancement of supply chain performance. However, the research result showed that IT tools have positive but weak significant effect on supply chain performance of online retailers. While it is important that online retailers prioritize customer satisfaction by measuring their perception and expectations of performance (on-time delivery, product availability, availability of tracking devices, quality information etc.). It is also important that they do not neglect the fact that the role IT in shaping the supply chain performance.

RECOMMENDATIONS

Based on the above analysis, it is recognised that the adoption of information technology (automatic identification,

communication and integrative platforms/systems) by online retailers will enhance the performance of supply chain activities. Consequently, the study recommends that online retailers in Calabar Metropolis should employ efficient and effective information technologies into their operations and formulate and implement strategies that would sustain good relationships with supply chain partners (customers, suppliers, third tiers partners, distributors, etc). Also, they should build effective supply chains that are flexible, with dependable logistic systems that can enable organisations re-group quickly in response to unexpected needs of their consumers. Furthermore, online retailers should ensure that IT tools used for dissemination of information (order tracking and delivery system) to customers are devoid of insecurity and fraud, and guarantee cyber security, data integrity, protection of customers' confidential information and identify procedure to boost customers' confidence and patronage.

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