

Electronic Commerce and Business Performance: An Empirical Investigation of Business Organizations in Nigeria

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Abstract

This research paper examined the impact of e-commerce on business performance with particular reference to the selected supermarkets in Ibadan metropolis. The study sample was made up of 8 Supermarkets. Structured questionnaire designed by the researchers were used to collect data from each operator and 5 staff respectively, totaling 48 respondents. Data analysis was conducted with simple regression analysis. The result showed that e-commerce adoption has significant impact on service operations, cost operation reductions and profit levels. It was concluded that adoption of e-commerce by Nigerian supermarkets will reduce transaction cost, improve service operations, expand business base, better understand the needs of foreign customers, and increase profit levels. The paper recommended that the operators and staff of supermarkets should embark on more effective Information Technology (IT) training in order to further enhance their performance. And also management of supermarkets should procure quality IT gadgets that will enhance efficiency and customers' retention.

Key words: E- Commerce, Customer Satisfaction, Business Performance, Organization

Introduction

Electronic commerce has facilitated the emergence of new strategies and business models in several industries in developing countries, Nigeria inclusive. Significant changes are happening in supermarket retailing with the introduction of online shopping, especially in terms of channel development and coordination, business scope redefinition, the development of fulfillment

centre model and core processes, new ways of customer value creation, and online partnerships. In fact the role of online supermarket itself has undergone some significant changes in the last few years (Irene Yousept, 2004). The electronic commerce segment of the retail market has witnessed tremendous growth in terms of participation in the Nigerian economy in the last one year. According to Johnson, (2012) over 100 firms both local and foreign have shown greater interest in the sector alleged to worth over \$50 billion annually. She said the industry has no doubt opened doors for the coming generation of young Nigerian entrepreneurs. Electronic commerce industry has no doubt increased the percentage of local content in products and services as well as increased utilization of local capacity.

Ayo et al, (2011) asserted that the adoption of e-commerce in Nigerian business organizations has increased since the users of internet in Nigeria has grown from 0.1% in 2000 to 29.5% of its population in June 2010 and still has the potential to grow higher. Although most of the retail in the ICT industry occurred in predominantly informal, fragmented market places like the Banex market in Abuja and the computer village in Lagos, the wholesale and retail trade sector accounted for 20 per cent of GDP in 2012; making it the second largest contributor to GDP (Johnson, 2012). Tunde (2014) also noted that online retail market in Nigeria has significantly impacted nation's economy. In the same vein, Mary-Anne (1998) affirmed that e-commerce offers a level playing ground for large businesses, as well as small and medium-scale enterprises (SMEs) to operate in the global market-place; and for regional businesses and communities to participate in social, economic and cultural networks seamlessly across international boundaries.

E-commerce refers to the use of communications technology particularly the internet to buy, sell and market goods and services to customers. The Internet has brought about a fundamental shift in national economies that are isolated from each other by barriers to cross-border trade and investment; isolated by distance, time zones and language; and isolated by national difference in government regulations, culture and business systems (Mohammad, 2004). E-Commerce has dramatically reduced locational importance. Retailers are now able to sell their products all over the world. This has the potential to increase their revenue and customer base dramatically. The need to adopt e-commerce for survival of business organizations in the global competitive environment is imperative. An awareness of the critical success factors of e-commerce implementation also becomes essential for business organizations to appropriately address the relevant issues and move forward, since failed implementation may have severe repercussions on businesses performance. Many studies have been carried out to investigate the factors that influencing the adoption of e-commerce in both small and large businesses organizations, but there is no or little empirical research that examined the influence of e-commerce on business organizational performance, especially in Nigerian supermarkets after the technology has been implemented.

Base on this fact, this research paper intends to examine the influence of e-commerce on business organization performance with particular reference to selected Supermarkets in Ibadan.

Literature Review

From the mid-1990s e-commerce began to grow rapidly and to reshape many industries. The marketplace and the way the business is conducted will never be the same (Chong 2008).

Morri, and Siegel (2003) posited that electronic commerce is simply defined as the commercial transaction of services in an electronic format. Electronic Commerce according to Clinton, (2000) is also defined as doing business electronically. It is based on the electronic text, sound and video. It encompasses many diverse activities including electronic trading of goods and services, online delivery of digital content, electronic fund transfers, electronic shares trading, electronic bills of lading, commercial auctions, collaborative design and engineering online sourcing, public procurement, direct consumer marketing and after sales services. It involves both products (consumer goods, specialized medical equipment) and services (information services, financial and legal services). Chong (2008) described e-commerce as a process of integration of all company's processes, activities and services toward buying and selling of products and exchange of information and funds with the company's partners via computer networks and electronic technologies. Rainer and Cegielski (2011) also defined e-commerce as a "process of buying, selling, transferring, or exchanging of products, services, and/or information via computer networks, including the Internet".

Schneider (2011) as cited in Diyan, (2012) divided the development of e-commerce into two stages: first wave and second wave. "First wave" of e-commerce was adopted by large enterprises in USA with easy access to capitals, primarily from external sources. Evans and Wurster (1999) refer to e-commerce in this early stage as a "land grab". At once, the whole new marketplace was created and companies who had sufficient resources and willingness could "grab from the land". These large companies firstly understood the possibilities that e-commerce can offer and started exploring and developing them. Since most companies were dependent on external investors, achieving the profit was relatively rare. The pressure to the smaller companies was far more intensive, and many of them suffered losses. He said that in the beginning, the technology was simple, inexpensive and internet connection slow, the websites were mainly English based, e-mails were used unstructured and the integration of e-commerce with other processes were not efficient. "Second wave" is characterized with the technological boom after 2001, mobile broadband development, and increased speed of Internet on low cost price. The land was already captured and the key players shifted their attention from capturing to defending the land. Companies started to focus more on competitive advantage and developing strategies to achieve it (Evans and Wurster, 1999). This was a prerequisite for development and adoption of e-commerce from smaller companies using their internal resources. At the same time, certain difficulties arising from using new technologies should be overcome. Stockdale and Standing (2004) stated that the benefits using e-commerce should be visible and substantial so that the companies are encouraged to climb to the ladder from a simple to a more complex stage of e-commerce.

Types of e-commerce

Sajuyigbe, (2012) identified eight (8) types of e-commerce as follows:

- **Business-to-business e-commerce (B2B)**, in this case, two or more businesses make transactions or collaborate electronically.
- **Collaborative commerce (c-commerce)**. In this type of e-commerce, business partners collaborate electronically. Such collaboration frequently occurs between and among business partners along the supply chain.

- **Business-to-consumers (B2C).** In this case the sellers are organizations, the buyers are individuals.
- **Consumers – to - businesses (C2B).** In this case consumers make known a particular need for a product or service, and organizations *compete* to provide the product or service to consumers.
- **Consumer-to-consumer (C2C).** In this case an individual sells products (or services) to other individuals.
- **Intra-business (intra-organizational) commerce.** In this case an organization uses EC internally to improve its operations. A special case of this is known as **B2E** (business to its employees) e-commerce.
- **Government-to-citizens (G2C) and to others.** In this case the government provides services to its citizens via e-commerce technologies. Governments can do business with other governments (G2G) as well as with businesses (G2B).
- **Mobile commerce (m-commerce).** When e-commerce is done in a wireless environment, such as using cell phones to access the Internet, we call it *m-commerce*.

E-Commerce Adoption And Its Influence on Business Performance

Several proactive drivers have been identified as rationale for business organizations to adopt the e-commerce (Gilmore et al, 2007). Proactive reasons include the expansion of a company's marketplace to national and international markets. With minimal capital outlay, a company can quickly locate more customers, the best suppliers, and the most suitable business partners worldwide (Sajuyigbe, 2012), enables companies to procure material and services from other companies, rapidly and at less cost and shortens or even eliminates marketing distribution channels, making products cheaper and vendors' profits higher (Molla and Licker, 2005), helps small businesses compete against large companies and enables a very specialized niche market (Jeffcoate et al, 2002). Gilmore et al. (2007) identify four major e-commerce drivers, both internal and external, in terms of their relevance to export marketing strategy. "Internal e-commerce drivers include product online transferability and e-commerce assets, and external drivers include e-commerce infrastructure and demand for e-commerce."

However, Papazoglou and Ribbers (2006) argued that several organizations are often at a dilemma on the need for adoption of any form of innovation, and e-commerce is still new hence they see the creation of a website as an onerous task. These factors include: firm size, organizational structure, and quality of human resources; technologies which are the internal and external factors significant to the business; others include: environment which expresses where the firm conducts its business such as industry, competitors, government, etc. Within the wider spectrum, issues such as Technology competence, firm size, firm scope, consumer readiness, and competitive pressure were significant factors in the adoption of e-commerce. In the same vein, Gbolagade et al (2013) affirmed that innovation culture, infrastructure, finance, knowledge and skills, compatibility and level of security were the significant factors in the adoption of e-commerce.

The importance of e-commerce in achieving business organizations' stated objectives in a global competitive environment cannot be overemphasized. Clearly, electronic commerce over the internet has offered important advantages including a more efficient way to conduct

business transactions for buyers and vendors alike (Buderi, 2005). Alrawi, (2007) affirmed that with e-commerce buyers can access information instantly, and even virtually test the product, which in traditional marketing concept would be time consuming. He said that e-commerce have changed the way of delivering the product, consumers can have more choices than they could easily locate otherwise and transaction can be made 24 hours a day, from almost any location. E-commerce provides better access and communication with customers, which can be used for a better understanding of customer needs and finally offering a product which fully satisfy those and enables individuals to work at home and to do less traveling, resulting in less road traffic and lower air pollution (Allen and Fjermestad, 2001). At the same time, companies can expand their product line, offering additional interactive or physical services around the core product (Chaffey et al. 2000). E-commerce gives new possibilities for distribution of the product and international expansion with relatively lower costs (Allen and Fjermestad, 2001) and allows lower inventories by facilitating pull-type supply chain management. This allows product customization and reduces inventory costs.

In line with the above mentioned literature, it can be deduced that the adoption of e-commerce by Nigerian business organizations may reduce transaction cost, improve service operations, expand business base, better understand the needs offoreign customers, increase profit levels, reduce communication barrier, and quickly transfer product. E-commerce can also help Nigerian business organizations to acquire information about particular customer needs and foreign competitors from foreign distributors through e-commerce all over the world 24/7.

Research Questions

The following questions will be answered in the course of this study

- ❖ Does e-commerce adoption improve service operations?
- ❖ Does e-commerce adoption reduces operations cost?
- ❖ Does e-commerce adoption increase profit level?

Hypotheses

The following hypotheses are formulated in null form.

H_{0I}: e-commerce adoption has no significant influence on service operations

H_{0II}: e-commerce adoption has no significant influence on operation cost reduction

H_{0III}; e-commerce adoption has no significant influence on profit level

Research Methodology

The study sample was made up of 8 Supermarkets (Shoprite, Honeywell, Zooma, Foodco, Feed well, Danax, Diadem and Gbolade Supermarket). Structured questionnaire designed by the researchers were used to collect data from each operator and 5 staff respectively, totaling 48 respondents. The response format was in Likert format with responses ranging from strongly agree (5) to strongly disagree (1). In order to establish the reliability of the research instrument, a test - retest method was used. In confirming the facts and contents validities of the instrument, it was given to experts for verification.

In respect to measuring the reliability of the scale, the reliability coefficients (Cronbach's) of the e-commerce adoption was 0.792. Businesses performance was measured through the

economic goals of the businesses such as return on investment and profitability (Hartenian and Gudmundson, 2000). The scale was subjected to item analysis in order to ensure it is valid and reliability and it yielded reliability alpha of .85. Data analysis was conducted with simple regression analysis.

Model specification

Mathematically the mode is expressed as follows;

MODEL 1: $E-CADOPT = \beta_0 + \beta_1SEOP + \epsilon$ Eq1

MODEL II: $E-CADOPT = \beta_0 + \beta_1COSR + \epsilon$ Eq2

MODEL III: $E-CADOPT = \beta_0 + \beta_1PROL + \epsilon$ Eq3

Where;

E-CADOPT = E –commerce adoption

SEOP = Service operation

COSR = Cost operations

PROL = Profit level

β_0 = intercept

β_1 = regression coefficient

ϵ = stochastic error term

Data Analysis and Interpretation

Table 1: Regression Analysis

| Variable | SEOP | t- value | P | COSP | t-value | P | PROL | t-value | P |
|----------------|-------|----------|-------|-------|---------|-------|-------|---------|-------|
| E-CADOPT | 0.775 | 8.119 | P<.05 | 0.350 | 2.572 | P<.05 | 0.537 | 4.382 | P<.05 |
| Coefficient | 0.783 | | | 0.348 | | | 0.535 | | |
| R ² | 0.583 | | | 0.121 | | | 0.286 | | |

Table 1 shows that e-commerce adoption by supermarkets has significant impact on the service operations with ($\beta = 0.783$; $t = 8.119$) at 5% level. This implies that e-commerce has positive impact on service operations. This result agrees with Alrawi, (2007) who asserted that that e-commerce have changed the way of delivering the product and consumers can have more choices than they could easily locate otherwise and transaction can be made 24 hours a day, from almost any location. Result also revealed that e-commerce adoption by supermarkets has significant impact on cost reduction with ($\beta = 0.348$; $t = 0.121$) at 5% level. This indicates that the adoption of e-commerce will reduce cost of operations. This result also conform to Allen and Fjermestad (2001) findings, that e-commerce has given new possibilities for distribution of the product and international expansion with relatively lower costs and allows lower inventories by facilitating pull-type supply chain management. Result indicated that e-commerce adoption by supermarkets has significant impact on the profit level with ($\beta = 0.535$; $t = 0.286$) at 5% level. This means that the adoption of e-commerce will improve profitability level tremendously.

Conclusion and Recommendations

This research paper examined the impact of e-commerce on business performance with particular reference to the selected supermarkets in Ibadan metropolis. The result showed that e-commerce adoption has significant impact on service operations, cost operation reductions and profit levels. It can be concluded that adoption of e-commerce by Nigerian supermarkets will reduce transaction cost, improve service operations, expand business base, better understand the needs of foreign customers, and increase profit levels. E-commerce has been identified as important tool that will assist Nigerian supermarkets to acquire information about particular customer needs and foreign competitors from foreign distributors all over the world 24/7.

It was then recommended that the operators and staff of supermarkets should embark on more effective Information Technology (IT) training in order to further enhance their performance. And also management of supermarkets should procure quality IT gadgets that will enhance efficiency and customers' retention.

References

Allen, E. & Fjermestad, J. (2001). E-commerce marketing strategies: an integrated framework and case analysis. *Logistics Information Management*, Volume 14. Number 1/2. 2001. pp. 14-23.

Alrawi, K. (2007). The internet and international marketing, *Competitiveness Review. An International Business Journal*, Vol. 17 No. 4, 2007, pp. 222-233

Ayo, C.K, Adewoye, J.O and Oni, A.A(2011). Business- to – consumer e-commerce in Nigeria: Prospects and challenges. *African Journal of Business Management*. 5 (13), 5109-5117.

Buderi R (2005). E-Commerce gets smarter. *TechnologyReview.com*. Available at http://www.technologyreview.com/articles/05/04/issue/features_ec.

Chaffey, D., Ellis-Chadwick, F., Johnston, K. & Mayer, R. (2000), *Internet Marketing: Strategy, Implementation and Practice*, Pearson Education Limited.

Chong, S. (2008). Success in electronic commerce Implementation, A cross-country study of small and medium-sized enterprises, *Journal of Enterprise Information Management*, Vol. 21 No. 5, 2008, pp. 468-492

Clinton, W.J (2000). A frame for Global Electronic Commerce. Retrieved from www.Whitehouse.gov/http://computer.org.

Diyan, I (2012).The impact of e-commerce on small-size companies in Sweden. Master Thesis of Karistand University, Sweden.

Evans, P. & Wurster, T.S. (1999), Getting real about virtual commerce, *Harvard Business Review*, November-December 1999, pp. 84-94.

Gbolagade. A, Ayo- Oyebiyi, G.T and Adebayo, S.A(2013). An Empirical Study of Factors that influence the Adoption of e-commerce in Nigerian Business Organizations. *International Journal of Business and Management Invention* 2 (9), 28-33.

Gilmore, A., Gallagher, D., & Henry, S. (2007). E-marketing and SMEs: Operational lessons for the future. *European Business Review*, 19, 234–247.

Irene Yousept, F (2004). Online supermarket: Emerging strategies and business models in the UK; 17th Bled e-commerce conference e-global. Bled, Slovenia, June, 21-23, 2004.

Jeffcoate, J., Chappell, C., & Feindt, S. (2002). Best practice in SME adoption of e-commerce. *Benchmarking: An International Journal*, 9, 122–132.

Johnson.O(2014) How e-commerce platform boosts SMEs.available at:
<http://dailyindependentnig.com/2013/08/how-e-commerce-platform-boosts-smes/>

Mary-Anne G (1998): "E-COMM-AWARE! E-Commerce awareness programme for regional communities", *Journal of Internet Banking and Commerce*, vol 3, no 2, [online], <http://www.arraydev.com/commerce>

Mohammad T (2004): "Roles of E-Commerce in 21st Century. *Journal of Internet Banking and Commerce*. 8(2), [online], <http://www.arraydev.com/commerce/JIBC/0311-06.htm>.

Molla, A., & Licker, P. S. (2005). E-Commerce adoption in developing countries: A model and instrument. *Information and Management*, 42, 877–899.

Morri, K and Siege, L. N (2003).E-commerce, *Journal of Nigerian Computer Society*.14 pp 60.

Rainer, K. & Cegielski, C.(2011). *Introduction to Information Systems: Enabling and Transforming Business*. Third Edition. John Wiley & Sons Inc.

Sajuyigbe, A.S (2012). Adoption of e-commerce to Business Operations: A key to Achieving Nigeria Vision 20:2020. A paper presented at 2012 National Conference on Nigeria's Transformation and the Vision 20:2020 Policy of the Federal Government. Organized by faculty of Business and Communication Studies.The polytechnic, Ibadan, Nigeria.

Schneider, G. (2011) in Diyan, I (2012).The impact of e-commerce on small-size companies in Sweden. Master Thesis of Karistand University, Sweden.

Stockdale, R. & Standing, C. (2004). Benefits and barriers of electronic marketplace participation: an SME perspective. *The Journal of Enterprise Information Management*, Volume 17, Number 4, pp. 301–311.

Tunde .K (2014). How e-commerce platform boosts SMEs. available at:

<http://dailyindependentnig.com/2013/08/how-e-commerce-platform-boosts-smes/>