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# E-PAYMENT AND DELIVERY PERFORMANCE OF SHIPPING FIRMS IN EASTERN ZONE OF NIGERIA

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### Abstract

This study examined the correlation between e-payment and delivery performance of shipping firms in Nigeria's eastern zone. The study was premised on transaction cost theory. E-payment was the predictor variable of the study, while delivery performance, measured as order lead time and delivery reliability was the criterion variable. The study, whose population comprised 60 shipping firms, adopted a correlational research design. Questionnaires was used to collect primary data from branch, operations, administrative and procurement managers of each firm. This brought the number of respondents in the study to 240. However, responses generated from 221 responses was used for the analysis. The hypotheses formulated for the study were analyzed using Pearson Product Moment Correlation; and was aided by the Statistics Package for Social Sciences (SPSS) version 21. The results showed that e-payment positively and significantly relates to delivery performance of shipping firms in Nigeria; and recommends that shipping firms in Nigeria's eastern zone should adopt e-payment in their transactions with vendors. **Keyword:** delivery performance, delivery reliability, e-payment, order lead time

# Introduction

The emergence of the Internet and its application in business provided a channel for radical changes in the way organizations receive and make payment for transactions. Gardenal (2019) argued that the Information Technologies have totally altered organizations' and governments' way of running their businesses. Most organizations and government parastatals also spend a good proportion of their money in purchasing various products and offering services.

Advances in information and telecommunication technology (ICT) has enabled the conduct of commercial activities over the Internet (Ateke & Ogbuji, 2017). E-procurement is one area of business that has seen remarkable adoption of ICT. Supply chain management activities are traditionally supported by ICT to enhance operational efficiency and sustain supply chains. E-payment uses a web interface or other networked systems that connect suppliers and customers.

Internet technologies in procurement are aimed at realizing faster and more efficient procurement processes which mostly detour the bottlenecks in the procurement department and enable the firm concentrate on more sustainable responsibilities (Gunasekaran & Ngai, 2018). Emerging trends in supply chain management like; globalization, customer sophistication and fierce competition among supply chains have also prompted e-payment (Saeed & Kersten, 2019).

Delali (2010) defined electronic payment (e-payment) as a form of financial exchange that takes place between transactants, and facilitated by electronic communication. It is evident that the use of the Internet in e-payments provide advantages compared to the traditional methods of payment. For instance, Electronic data Interchange (EDI), which was launched in the 1960s, provides automated transactions between the supplier and the buyer.

In 1970s the Enterprise Resource Planning (ERP) was introduced followed by the commercial use of the internet in 1980s. Finally, in the 1990s, the World Wide Web followed these developments (Malela, 2018). According to the report from the Epiq Technologies (2010), the adoption of e-payment technologies enables firms to strategize their interactions with suppliers, assure maximum performance of suppliers, and maintain open communication with potential suppliers during the business process (Bromberg & Manoharan, 2015).

The shipping industry in Nigeria represent a complex structure in the country's transportation system in many ways. It provides a number of inter related and inter connected activities such as ship-harbor that is pilotage, dredging, provision of berth, maintenance of navigable channels, stevedoring etc., there is also ship port interface loading and unloading of cargoes, freight and services and port land interface delivering cargo to and from the connected hinterland.

These different functions require different strategies, approaches and organizations. Furthermore, directly and indirectly, the shipping industry is a large employer of labour both skilled and unskilled. However, if indirect employment generated through the maritime sector such as insurance, customs, haulage, clearance and logistics, storage, free zones activities, sorting out the incoming and outgoing cargo, industrial and other value-added activities are considered.

In view of the above, Nigeria has a great potential for a buoyant shipping industry and to enjoy these benefits, it is vital that the Nigerian shipping industry operate efficiently and resourcefully, identify potentials and hence expediting the whole procurement process as timely as possible. Shipping firms can use e-payment as a tool and channel for communication (Kennedy, 2017). It also helps in establishing a central repository of information (Ledeboer, 2016).

This study examined the relationship between e-payment and delivery performance of shipping firms in eastern zone of Nigeria. The justification for the study is founded in the contribution it has made to literature. The study is important to management of shipping firms in Nigeria, procurement practitioners and future scholars and academics; as it has shed more light on how management of shipping firms can strengthen and improve on their e-payment systems in place. The conceptual framework in fig. 1 provides bird's eye-view of the focus of the study.



# Fig. 1: Conceptual Framework of E-Payment and Delivery Performance LITERATURE REVIEW

# **Theoretical Review**

This study was anchored on transaction cost theory (TCT). TCT was advanced by Coase (1937) to explain why firms undertake certain activities internally, while outsourcing others. It explains

why firms exist and why they expand by sourcing activities from their external environment (De-Schepper et al., 2015). TCT is premised on the fact that firms strive to reduce costs incurred in exchange of resources in the environment, while also minimizing bureaucratic expenses (Schermann et al., 2016). Thus, firms are always striving for a balance between costs incurred ton exchange resources with the surrounding and the bureaucratic costs involved when the activity is carried out in-house (Guo et al., 2016).

Transaction costs simply refer to the costs incurred while offering goods and services through market mechanisms as compared to when they are provided within the entity itself (Ping-Ho et al., 2015). They cover decision as well as bargaining activities, costs involved in searching for information and enforcing compliance (Thomassen et al., 2016). The basis of these transaction costs include the complexities and uncertainties that characterize any economic system.

According to Toyama (2007), most firms have significantly lowered their transaction costs by adopting technological systems. This is because through information technology, information is readily available to people to make timely and informed decisions. Through information and communication systems, the rate of information flow is increased, there is increased linkage and flow of information between buyers and sellers; and the efficiency of contracting is improved (Meinlschmidt et al., 2018). TCT is therefore relevant to the study because it explains the role played by e-sourcing activities in reduction of the transaction costs and thus improving on overall delivery performance of the firm.

# **Concept of E-Payment**

E-payment has been designed to help firms eliminate or reduce problems inherent in settlements and payments. Buyers can pay bills without having to go to the bank (Wahab, 2012). They can also have access to their account information and even transfer money to other accounts in the comfort of their homes. When it comes to making electronic payments, there are a handful of options available: checks, Electronic Funds Transfer (EFT), Automated Teller Machine (ATM), cards (debit, credit and smart), Electronic Purses/Wallets, mobile money (Mobile Banking and Money Transfer), Telephone Banking, Personal Computer Banking (Home Banking), Digitized 'E-Cash' Systems, Electronic Cheque, Online/Internet Payments and Digital Person to Person (P2P) Payments (Wahab, 2012).

According to Pariwat and Hataiseere (2004), convenience, reliability and security of payment method, and service quality are required for effective and efficient retail payment systems. Nedozi and Omoroge (2019) described e-payment "is a payment option that completely exclude the use of cash and cheque. It is a non cash system which uses electronic media such as credit card, debit card and the automated clearing house (ACH) networks". They further explained that e-payment system would require customer's action, payment authentication and payment to accounts.

Scholars agree that e-payment is fast and time saving, as it also allows the control of expenses, it is user friendly. But, several challenges have been identified with the use of e-payment system they include: "restrictions in terms of the number of transactions per day, in some cases but generally with limited amount per day, the risk of hacking, lack of anonymity and the need for internet access among others" (Nedozi et al., 2019)

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Barkhordari et al., 2017 described e-payment system as "financial services delivered through mobile phones, personal computers, the internet or cards linked to a reliable digital payment system. Similarly, a McKinsey report identified digital finance as "financial services delivered via mobile phones, the internet or cards" Asaolu et al. (2011) stated that "e-payment is effecting payments from one end to another end through the medium of the computer without manual intervention beyond inputting the payment data. It is the ability to pay the suppliers, vendors and staff salaries electronically at the touch of a computer button (Efanga et al., 2020).

Benefits of e-payments include overcoming barriers to accessing financial services; reduced costs of transactions; incentive to save and speed of delivery. Efanga et al (2020) noted that e-payment systems are pivotal to the digitalization of financial system in Nigeria. They further argued that "with the numerous advantages ranging from financial inclusion, convenience in carrying out financial transactions to security of these transactions in a digital platform which would culminate to economic development of the economy.

# **Delivery Performance**

Assessing how companies achieve delivery performance and how to measure delivery performance has been a challenge for managers. When companies measure delivery performance, different service elements can be used. An important factor is to identify the different elements to measure and check if they will be suited to the present relationship with the customer. According to Tangen (2005), performance can be described as an umbrella term for all concepts that consider the success of a firm and its activities.

However, delivery performance involves multiple dimensions and each dimension may create value for different customers for different reasons. Despite anecdotal success stories from the press and the conceptual literature stressing the importance of delivery performance, there is a surprising lack of detailed empirical research on the impacts of delivery performance in the B2B context. It remains unclear which delivery performance dimensions managers should prioritize given specific market goals and customer characteristics.

Performance refer to actual results/outputs of certain activities, how an activity is carried out, or ability to achieve results. Atkinson (2012) defined performance as the achievement of results ensuring the delivery of desirable outcomes for a firm's stakeholders. Awino (2011) asserts that for an organization to be successful it has to record high returns and identify performance drivers from the top to the bottom of the organization. Njihia et al. (2013) highlight performance measurement as one of the tools which help firms in monitoring performance, identifying the areas that need attention, enhancing motivation, improving communication and strengthening accountability. Performance is equivalent to the famous 3Es, that is, economy, efficiency, and effectiveness of a certain program or activity (Javier, 2007).

In general, performance can be seen in two ways: financial performance and non-financial performance (Jarad, 2010). Kiragu (2009) highlights performance in terms of four perspectives: financial, customer, internal processes and innovativeness. The financial perspective identifies the key financial drivers of enhancing performance which are profit margin, asset turnover, leverage, cash flow, and working capital (Odhuno & Wadongo, 2010). The customer focus describes performance in terms of brand image, customer satisfaction; customer retention and customer profitability.

Njihia et al. (2013) assert that the only worthy performance measure is financial performance because of its value to shareholders, executives and the market. This measure is an indicator of organizational success and sustainability because it is the reason for the existence of firms. On the contrary, Ittner and Larcker (2009), claim that a firm's performance should not be measured by financial indices alone, but also operational and market indicators. Non-financial measures have been deemed to be more effective in motivating managerial performance because they are more reflective of the overall corporate strategy (Banker et al., 2012).

Delivery performance includes two high-level dimensions, reliability and speed, which can be further broken down into four more-detailed dimensions: order lead time, delivery inaccuracy, and delivery speed. Each dimension may affect customers' operations differently. For example, fast delivery allows buying firms to speed up operations, while order lead time enables them to plan and coordinate their manufacturing activities accurately. In this study, we adopt order lead time and delivery reliability as measures of delivery performance.

# Order lead time

Lead time is the time from the moment a customer places an order to the moment it is received by the customer. In the absence of finished goods or intermediate inventory, it is the time it takes to actually manufacture the order without any inventory other than raw materials. In the manufacturing environment, lead time has the same definition as that of supply chain management, but it includes the time required to ship the parts from the supplier (PMI, 2008).

Marlin (1986) defined lead time as the amount of time it takes to place an order, and the receipt of the ordered product. Extant studies note that lead time serve as a performance measure and a competitive advantage for manufacturing companies as they optimize the time spent along the supply chain in attending to supplier and customer orders, processing these orders, maximizing the time required for production, loading, distribution and reducing backlogs of inventory as this would assist in cost reduction and capacity utilization (Cottleer & Bendoly, 2006; Mourtzis et al., 2014).

# **Delivery reliability**

According to the supply chain operations reference model (SCOR-model), delivery reliability is "the performance of the supply chain in delivering the correct product, to the correct place, at the correct time, in the correct condition and packaging, in the correct quantity, with the correct documentation, to the correct customer" (Cirtita & Glaser-Segura, 2012). Reliability is the capacity to achieve the promised service constantly and precisely. This implies that reliability is the quality of being reliable to customers.

Reliability issue is very important for customers because it is a measurement of effect level of components on the system reliability. Customer need to work with business area or companies that stay faithful to their obligations, especially their guarantees about the administration results and centre help properties. It will be clear by any business place that customer prefer and want the unwavering quality. According to Wilson et al. (2008) cited in Gobena, (2019) states that reliability means that the organization delivers on its promises about service delivery, service provision and problem resolution.

Even though unreliable service providers are extremely frustrating for customers, a disturbing number of organizations still fail to keep their promises regarding service delivery. In many instances, the customer is ready to spend money if only the service provider will show up and conduct the transaction as promised (Bateson & Hoffman, 2011).

# **E-Payment and Delivery Performance**

E-payment has gained relevance in many firms across the globe seek to minimize procurement cost. This, coupled with increased competition have forced organizations to adopt e-payment to ease their operations and increase efficiency. The present study reviewed various global, regional, and local studies on effects of e-payments on delivery performance.

Okifo and Igbunu, (2015) investigated e-payment system in Nigeria: its economic benefits and challenges qualitatively. The challenges as discussed in the study can be categorized into four main groups that is security, infrastructure, legal and regulatory issues as well as socio-cultural issues. The study concluded that technology has unarguably made our lives easier. It has cut across distance, space and even time. One of the technological innovations in banking, finance and commerce is e-payment. E-payment provide greater freedom to individual in paying their taxes, licenses, fees, bills, fines and purchase at unconventional locations and at whichever time of the day.

Ademola, (2021) studied the e-payment system adoption in Nigerian ministries, departments and agencies (MDAs): gains and challenges. A survey was conducted in the federal government of Nigeria's Ministries, Departments and Agencies (MDAs) to examine the gains and challenges of the e-Payment system commenced on January 1st, 2009. Non-parametric tests were used to establish the rank orders of gains from e-Payment and the challenges, based on median values for each variable, as well as the number of valid answers. The result revealed the most appreciated gains and most encountered challenges of the new system.

Okonkwo and Ekwueme (2022) conducted a study on effect of e-payment on financial performance of Nigerian deposit money banks. Ex post facto research design was adopted for the study. A sample size of 13 deposit money banks in Nigeria was used from the population of 22 banks. Descriptive statistics and the hypotheses regression analysis were used to analyze the data with the aid of E-Views 9.0 statistical software. The result revealed that ATM payment method has a positive effect on return on assets of quoted deposit money banks in Nigeria, but not statistically significant at 5% level of significance. While POS payment method has a negative effect on return on assets of quoted deposit money banks in Nigeria, and this effect was not statistically significant at 5% level of significance. The study concluded that Nigerian banks should raise knowledge about ATM usage through.

Based on the foregoing, we hypothesize as follows: Ho<sub>1</sub>: E-payment has no significant relationship with order lead time. Ho<sub>2</sub>: E-payment has no significant relationship with delivery reliability.

### Methodology

This research adopted a correlational research design. The population of the study comprised sixty shipping firms in eastern zone of Nigeria, listed in the Nigerian Maritime Administration and Safety Agency 2022/2023 fact book. The study took a census. However four senior

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managers: branch manager, operations manager, administrative manager and procurement manager were drawn from each of these firms to serve as respondents. Thus, a total of 240 copies of questionnaire was administered. 221 copies of questionnaire were duly completed and retrieved and used for the analysis. The hypotheses for this study were analyzed using Pearson Product Moment Correlation Coefficient statistical tool and aided using Statistics Package for Social Sciences (SPSS) version 21.

Analysis and Results	
Table 1: Correlation between e-payment and measures of delivery per	formance

			Order Le	der Lead Delivery	
		E-Payment	Time	Reliability	
E-Payment	Pearson Correlation	1	.952**	$.780^{**}$	
	Sig. (2-tailed)		.000	.000	
	N	221	221	221	
Order Lead Time	Pearson Correlation	.952**	1	.865**	
	Sig. (2-tailed)	.000		.000	
	Ν	221	221	221	
Delivery Reliability	Pearson Correlation	$.780^{**}$	.865**	1	
	Sig. (2-tailed)	.000	.000		
	Ν	221	221	221	

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

The outcome of the assessment of relationship between e-payment and measures of delivery performance as presented on Table 1 reveals that e-payment significantly and positively relates to order lead time (R = 0.952; p = 0.000) and delivery reliability (R = 0.780; p = 0.000). The result from the analysis shows that e-payment informs delivery performance of shipping companies. This facts show that e-payment contributes meaningfully to activities and operations of shipping firms in the Eastern zone of Nigeria, hence, the null hypotheses of no significant relationships are all rejected.

### **Discussion of Findings**

The role of e-payment in the actualisation or outcome of delivery performance of shipping companies in the Eastern zone of Nigeria, was revealed in this research to be significant. The findings from this research echoes the views and assertions of previous research (Siddiqui et al, 2022; Makhamara 2022) on the emergence of e-payment systems, and the significance of such, not only to the competitiveness of the organisation, but also to its wellbeing. The facts generated further advance a supportive position on the role of e-payment in creating a more harmonic business network where transactions are more flexible and businesses or companies are able to collaborate, procure and drive their economic goals despite time, geographical region or currency barriers or constraints (Makhamara 2022).

# **Conclusion and Recommendation**

From the results of test of hypotheses, e-payment positively and significantly relates to delivery performance of shipping firms in eastern zone of Nigeria. The adoption of e-payment has made operations and work easier at various shipping firms. Shipping firms have even been able to cut on costs, increase client outreach, improved security and simpler and effective financial system.

Based on the findings and conclusion of the study, we recommend that shipping firms operating in the eastern zone of Nigeria should effectively play its role as far as e-payment practices among shipping firms in eastern zone of Nigeria are concerned. E-payment should be incorporated by all shipping firms as it enhances cost maximization.

### REFERENCES

- Alonso, D. A., & Bressan, A. (2016). Micro and small business innovation in a traditional industry, *International Journal of Innovation Science*, 8(4), 311-330.
- Asaolu, T. O., Ayoola, T. J., & Akinkoye, E. Y. (2011). Electronic payment system in Nigeria: Implementation constraints and solutions. *Journal of Management and Society*, 1(2), 16-21
- Ateke, B. W., & Ogbuji, C. N. (2017). An exploratory study of online consumer protection concerns: The Nigerian case. *FUO Journal of Business and Finance*, 7(2), 92-100.
- Awino, Z. C. (2011). Strategic management: An empirical investigation of selected strategy variables on firm's performance: A study of supply chain management in large private manufacturing firms in Kenya. *Journal of Business Administration and Management*, 1(1), 9-18
- Ayodele, T. (2015). Nigeria payment systems through electronic banking: A review. International Journal of Transformations in Business Management, 5(11) 27-33.
- Barkhordari, M., Nourollah, Z., Mashayekhi, H., Mashayekhi, Y., & Ahangar, M. S. (2017). Factors influencing adoption of e-payment systems: An empirical study on Iranian customers. *Information Systems and E-Business Management*, 15(1), 89-116.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99-120.
- Delali, K. (2010). *The Challenges of Implementing Electronic Payment System*: The case of Ghana's E-zwich payment system MBA Thesis
- De Schepper, S., Dooms, M., & Haezendonck, E. (2014). Stakeholder dynamics and responsibilities in public-private partnerships: A mixed experience. *International Journal of Project Management*, *32*, 1210-1222.
- Efanga, U. O., Umoh, E. A., Esien, A. I, & Umoh, U. E. (2020). An Empirical Investigation of the Impact of Electronic Payment System on Economic Growth of Nigeria.
- Gardenal, F. (2019). *Public E-payment* Define, measure and optimize organizational benefits. 4th International Public Payment Conference. Seoul, South Korea.
- Govan, P. B., & Damnjanovic, I. (2016). The resource-based view on project risk management. Journal of Construction Engineering and Management 142(9).
- Gunasekaran, A., & Ngai, E. (2018). Adoption of e-procurement in Hong Kong: An empirical research. *International Journal of Production Economics*, 113(1), 159-175
- Hitt, M. A., Xu, K., & Carnes, C. M. (2016). Resource based theory in operations management research. *Journal of Operations Management*, *41*, 77-94.
- Hoskisson, R., Gambeta, E., Green, C., & Li, T. (2018). Is my firm-specific investment protected? Overcoming the stakeholder investment dilemma in the resource based view. *Academy of Management Review*, *43*(2), 284-306
- Ittner, C. D., & Larcker, D. F. (2009). Extending the boundaries: Non-financial performance measures. *Handbooks of Management Accounting Research*, *3*, 1235-1251

- Lioukas, C. S., Reuer, J. J., & Zollo, M. (2016). Effects of Information Technology Capabilities on strategic alliances: Implications for the resource-based view, *Journal of Management Studies*, 53(2), 161-183
- Malela, G. A. (2018). *E-payment Model for the Public Sector of Kenya*. Nairobi: University of Nairobi.
- Meinlschmidt, J., Schleper, M. C., & Foerstl, K. (2018). Tackling the sustainability iceberg: A transaction cost economics approach to lower tier sustainability management. *International Journal of Operations and Production Management*, 38(10), 1888-1914
- Mose, J. M., Njihia, J. M., & Magutu, O. (2013). The critical success factors and challenges in epayment adoption among large scale manufacturing firms in Nairobi, Kenya. *European Scientific Journal*, 9(13), 375-102.
- Nedozi, F. O., & Omoregie, C. I. (2019). An empirical evaluation of different electronic payment channel in Nigeria. *Journal of Finance and Accounting*, 7(5), 146-152
- Njihia, M., Obara, M., & Mauti, M. (2013). The critical success factors and challenges in eprocurement adoption among large scale manufacturing firms in Nairobi, Kenya. *European Scientific Journal*. 9 (13), 375-401.
- Obiekwe, C. J., & Mike, A. (2017). Electronic payment methods and profitability of banking firms in Nigeria: A panel data analysis. *International Journal of Finance and Accounting*, 6(3), 67-74
- Odhuno, L., Kambona, O., Othuno, E., & Wadongo, B. (2010). Key performance indicators in the Kenyan hospitality industry. A Managerial perspective benchmarking *An International Journal*, *17*(6), 858-875
- Okifo, J., & Igbunu, R. (2015). Electronic payment system in Nigeria: Its economic benefits and challenges. *Journal of Education and Practice*, 6(16), 56-62.
- Okonwko, A. A., & Ekwueme, C. M. (2022). Effect of electronic payment on financial performance of Nigeria deposit money banks. *International Journal of Advanced Research*, 8(3), 105-118
- Olaegbe, R. (2011). Road to cashless Lagos. *International Journal of Finance and Accounting*, 6(3), 67-74
- Pariwat, S., & Hataiseree, R. (2004). The use of cash, cheques and electronic payment services in Thailand; Changes and challenges for efficiency enhancement. *Payments Systems Group*, 73-87.
- Ping Ho, S., Levitt, R., Tsui, C., & Hsu, Y. (2015). Opportunism-focused transaction cost analysis of public-private partnerships *Journal of Management in Engineering*, 31(6), 1-11.
- Ruivo, P., Oliveira, T., & Neto, M. (2014) Examine ERP Post-Implementation Stages of Use and Value: Empirical Evidence from Portuguese SMEs. *International Journal of Accounting Information Systems*, 15, 166-184.
- Saeed, M. A., & Kersten, W. (2019). Drivers of sustainable supply chain management: Identification and classification. *Sustainability*, 11(4), 1137.
- Schermann, M., Dongus, K., Yetton, P., & Krcmar, H. (2016). The role of transaction cost economics in information technology: A meta-analysis of the choice of contract type. *Journal of Strategic Information Systems*, 25(1), 32-48.
- Tangen, S. (2005). Demystifying productivity and performance, *International Journal of Productivity and Performance Management*, 54(1), 34-46.

- Thomassen K., Vassbø S., Solheim-Kile E., & Lohne J. (2016). Public-private partnership: Transaction costs of tendering. *Procedia Computer Science*, 100(2), 818-825.
- Vassilliou, C. (2004) Electronic Payment Systems and Marketing: A literature review
- Wahab, Y. A. (2012). *The Adoption and Use of Electronic Payment Systems in Ghana*. A case of E-Zwich in the sunyani municipality. Unpublished Commonwealth Executive Masters in Business Administration Thesis. Kwame Nkrumah University of Science and Technology