Re-Engineering Fintech Firms in Port Harcourt: Adopting Enterprise Resource Planning Systems for Enhancing Operational Output

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Abstract
This study determined the relationship that existed between enterprise resource planning (ERP) systems and the operational output of fintech firms in Port Harcourt. The problem were based on the declining service output and increasing cost per unit of service in the sector studied. A cross-sectional survey design was used, for 20 fintech firms and a sample of 80 respondents that was selected using simple random sampling technique. Data used were derived with the use of structured questionnaire patterned after modified four-point Likert scale, which was validated by expert opinion and reliability was established using Cronbach's alpha of 0.70. Pearson Product Moment Correlation Coefficient was used to analyze the relationship between variables. Findings revealed a positive and significant correlation existed between ERP system adoption and operational output. The study concludes that ERP systems is capable to re-engineer fintech operations by improving efficiency and sustainability. It recommended continuous investment in ERP as a solution for enhancing service output through automation and streamlined workflows.

Keywords: *Cost-Related Output, Enterprise Resource Planning, Fintech Firms, Odoo ERP, Operational Output, Service Output, Small Business ERP, System.*

Background to the Study

Financial technology (FinTech) firms have become a major driver of digital financial services in Port Harcourt, providing payment solutions, micro-lending, mobile transactions, and digital investment services. However, as these organizations has grown their customers strength and transactional activities, these organizations often face operational difficulties such as delayed service, high operating costs, and distorted data systems. These problems often lows their capacity to render fast and reliable services as an important criteria in the compete favorably in the fintech market (Okoh & Ebi, 2021). in turn, most fintech firms are on the look for hitech digital tools to improve operations, reduce defects, and enhance general operations (Nwankwo & Kalu, 2022).

Enterprise Resource Planning (ERP) systems is seen as a very critical re-engineering tool ready for organizations whose aim is to enhance operational activities and data unification. ERP systems relies heavily on multiple business approaches such as finance, customer management, operations, inventory, and reporting, to have an integrated media that improves timely decision-making and minimizes operational bottlenecks (Davenport, 2000). With reference to fintech, adopting ERP would cause firms to manage increase operational activities, automate workflows, and maximize quick service rendering most importantly when conventional methods are not adequate. (Jacobs & Weston, 2007).

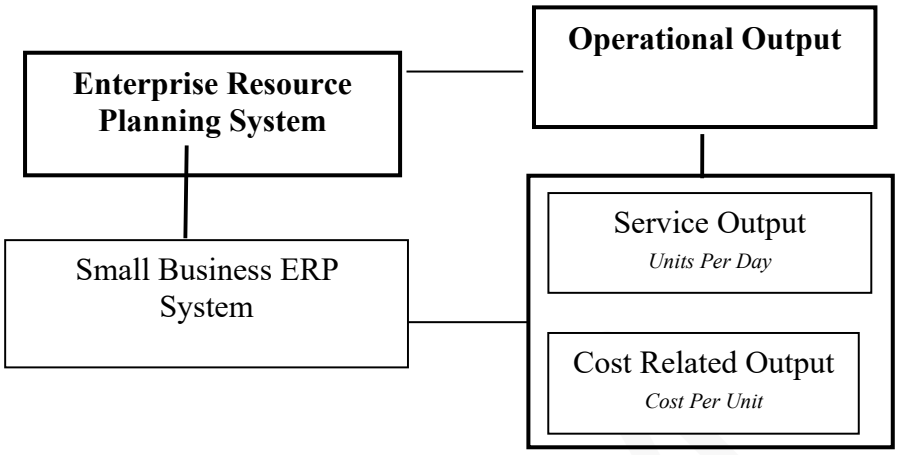
Operational output is one of the major key performance indices for fintech firms, most importantly as it relates to operational output (units of service delivered per day) and cost output (cost per unit of service). Excellent service output depicts that the firm have the capacity to improve customer need very fast and accurately. On the other hand, cost-related output reflectsoptimal utilization of resources (Adeleye & Oni, 2021).

In a digital finance environment where competition is very high, re-engineering fintech firms with the use of ERP is important for enabling operational capabilities. This is achieved by unifying small-business ERP tools such as Odaa, hence fintech firms improve per unit output, reducing cost inefficiencies, and enhance customer loyalty. Though, there are few empirical traces on ERP adoption and operational outcomes in fintech firms within Port Harcourt. This then increases the need for research to determine how ERP adoption brings out efficient service delivery and cost maximization in the fintech industry

Problem of the Study

The increasing level competition and the use of technology has made the Fintech firms to fiction at a high level of operational efficiency and in turn increasing the rate of customers patronage in the run. However, as in the Port Harcourt case, Fintech firms are under immerse pressure considering the low rate at with service rendering is delivered. This is seen at the low level of processing customers demand, inability of firms to assess loan, delays associated with digital service cycles and reduction in service rendering. Such inefficiencies reduce a firm's ability to meet increasing customer demands in real time, thereby undermining its capacity to compete effectively in the digital financial market (Al-Mashari, 2018). These operational delays often stem from fragmented systems, manual processes, and lack of integrated technological platforms are capable of supporting real-time service delivery (Davenport, 2000). This continual decrease in operational performance signifies the reason for a unified platform like Small Business ERP solutions, to enable increase service delivery and to reduce cost. Hence, ERP approaches would positively influence operational capacity of FinTech firms in Port Harcourt

Conceptual Review



Objective of the Study

The specific objectives of the study were identified as:

1. To ascertain how small business ERP system relates with service output of Fintech firms in Port Harcourt
2. To ascertain how small business ERP system relates with cost-related output Fintech firms in Port Harcourt

5. Research Questions

Three research questions were stated

1. What is the relationship between small business ERP system and service output of Fintech firms in Port Harcourt
2. What is the relationship between small business ERP system and cost-related output Fintech firms in Port Harcourt

Research Hypotheses

The hypotheses stated below were formulated in the null form

H_{O1}: There is no significant relationship between small business ERP system and service output of Fintech firms in Port Harcourt

H_{02}: There is no significant relationship between small business ERP system and cost-related output Fintech firms in Port Harcourt

Conceptual Review

Enterprise Resource Planning (ERP) approach has evolved to have become a very important technology use in our today work environment, by bring main business activities into a coordinated software with the main of enhancing efficiency and decision making. Davenport (1998), avowed that, ERP systems provides end-to-end business approaches by enhancing data consistency, real-time information sharing, and process standardization within the unit. This combination brings down information silos and increases operational accountability, making ERP adoption a strategic necessity for firms wishing to to enhance operational effectiveness and operational competitiveness within the industry. ERP systems have gained significantly attention from early material requirements planning (MRP) tools to comprehensive enterprise-wide solutions capable to accommodate finance, logistics, human resource management, supply chain coordination, and customer engagement (Davenport

2000). The major difference between small business ERP and cloud-based alternatives is ERP deployment models. Small business. The effect of ERP systems on fintech operational capability has been generally recorded. Olson (2004), ERP used enhances organization's efficiency by enhancing coordination, reducing cycle times, and enabling better planning and scheduling of production activities with a high level of accuracy in this our digital market space (Bueno & Salmeron 2008).

Small Business ERP Systems

The integrated of software solutions designed to provide the business processes of micro, small, and medium enterprises (SMEs) is what is known as Small Business Enterprise Resource Planning (ERP) systems. Small Business ERP systems enables simplified, modular, and affordable functionalities that help fintech firms to coordinate operations more effectively (Bradford, 2015). The features that makes Small Business ERP systems different is their modular structure, which makes firms to carryout only the components that are compactable with their operational needs. Such system includes Odoo, Zoho ERP, and SAP Business (Davenport, 2000). The capacity of small business ERP is uniquely important for small enterprises with limited resources, in order to avoid unnecessary investment.

It was evident to note that Small Business ERP systems significantly enhances operational performance by improving on process automation, lowering manual defects, and increasing workflow transparency. This is so simply by integrating information within units, ERP systems provides real-time data sharing, instant decision-making, and a high level of accuracy in operational forecasting (Al-Mashari, 2018). Most especially for small firms that are striving for improve efficiency based on manual documentation, duplicated tasks, and uncoordinated processes, using ERP approach would help to simplify operations, reduce waste, and boost organizational productivity. These enables the small business to translate their operational activities by lowering operational costs and increase service output, which are critical measures for sustaining small enterprises.

Odoo ERP System

The technology Odoo ERP is an open-source, modular enterprise system programmed to assist managerial and operational objectives of small and medium-sized enterprises. Given this solution, Odoo combines key business functions like customer relationship management, accounting, service operations, inventory, and sales within a unified platform (Bradford, 2015 & Davenport, 2000). The modularity of Odoo ERP is its major advantages, which makes it possible for organizations to to carry out specific features implement only the features that would increase operational growth. This sole feature defines Odoo suitable for use by small businesses and emerging organizations like FinTechs, that usually encounter technical and financial difficulties using full-scale ERP systems (Olson, 2004).

Service Output of FinTech Firms

FinTech firms operational service as output is the level or volume, speed, timeliness and reliability in the use of digital financial services delivered within accurately, like per day transactions delivered, loan approvals completed (Al-Mashari, 2018). FinTech services rely solely on technological effectiveness, service output per day becomes an index performance measurement index related to how efficiently a firm manages customer need as required (Davenport 2000). Performance in terms of operational service as been strongly influenced by the increasing use of technological integration among FinTech firms. Organizations that has adopted integrated digital systems, like ERP regularly experience enhanced service accuracy per customer, low processing time, and improved engagement (Bradford, 2015, Olson 2004 & Hustad et al., 2016).

Small Business ERP Systems Contribution to Service Output of Fintech Firms in Port Harcourt

Odoo as a small business ERP system provide fintech firms with combined digital tools that is capable of streamline key operational functions, as well as enhancing service performance. Kumar & Hillegersberg, (2000), asserted that systems consolidate processes like compliance monitoring, customer onboarding, transaction management, and service reporting into a coordinated platform that is capable of filtering out stratified data sources and human based documentation processes.

Small Business ERP Systems Contribution to Cost Reduction of Fintech Firms in Port Harcourt

Odoo is one of Small business ERP systems whose adoption would significantly reduce overhead cost in combination with multiple operational functions into an integrated digital platform. The approach enables elimination the use of multiple standalone software tools and lowering licensing maintenance and other related IT cost (Bradford, 2015). Port Harcourt Fintech firms would ensure operational efficiency in order to stay competitive, reduce the use of software fragmentation that leads to reduction in general spending on a unit service delivered Odoo ERP also reduces labor costs by automating repetitive, manual, and time-consuming processes such as KYC verification, transaction processing, regulatory reporting, and customer notifications. Automation reduces the number of personnel required to handle daily operations and significantly cuts the time needed to complete essential tasks (Davenport, 1998). In fintech operations, where transaction volumes are high, then automation lowers the cost of handling each service unit because fewer human resources are required to process increasing levels of customer interactions and financial transactions. This efficiency directly lowers the per-unit cost of service.

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Theoretical Framework

Theory *of Constraints,* was published in his book *The Goal* Eliyahu M. Goldratt in 1984. Gokdratt avowed that firms are surrounded with some key militating variables that hinders their capability to do business at high level of operation.The theory posits that system performance is solely hinged on three key measures throughput, inventory, operational cost and systematic improvement geared towards achieving organizational objectives.

W. Edwards Deming in 1986 formulated Operations Management Theory. The theory was published in his book *Out of the Crisis*, is centered on the belief that quality and efficiency are the outcome of well-controlled and standardized process. The theory focused on flexibility or continuous improvement (kaizen), data-driven decision-making and reducing variables in production tin order to achieve stable and predictive performance.

In the city of Taiichi Ohno in 1988, *Lean Production or Just-in-Time (JIT*) was developed in, the book *Toyota Production System.* The theory was centered on reduction of waste and enhancing or improving work efficiency. It promotes on those products that are mainly customers goods, and at the same time eliminating just in case inventory. The theory enables firms to minimize waste, manage resources effectively, and to maintain real time delivery of goods.

Empirical Review

Ali & Mensah (2021), in their study titled *"Enterprise Resource Planning and Operational Output of Financial Technology Firms in Emerging Economies.* A cross-sectional survey design was adopted on a population of 120 employees and data were analyzed using Pearson correlation. Findings showed that ERP adoption positively improved productivity by

promoting transaction, accuracy, reducing manual workload, and streamlining service delivery processes. In the work titled *Effect of ERP Systems on Service Efficiency of Digital Payment Firms in Nigeria"*, by Ogbonda & Chukwu (2020), seek to determine the impact of ERP on efficiency and service reliability. Descriptive survey design was adopted using a population of 85 staff from notable fintech firms in Lagos. Spearman Rank Correlation was used Findings showed a significant positive relationship between ERP adoption and effective service rendering, demonstrating that ERP systems minimize process redundancy and support faster service resolution.

Methodology

A cross-sectional survey research design was used, and the population of he studies comprised of 20 fintech firms in Port Harcourt. A total number of 80 of structured questionnaires were administrated to a sample size of 80 respondents The simple random technique was used in selecting 4 respondents from each firm. From the 80 questionnaires distributed, only 68 were retrieved and analyzed. Structured questionnaire pattened asfter modified four-point Likert whose scale ranged from Strongly Disagree (1) to Strongly Agree (4) was adopted. Content validity was wass used to confirmed the instrument through expert review, while reliability was established using Cronbach's alpha, achieving the acceptable benchmark of 0.70. Pearson Product Moment Correlation Coefficient served as the analytical technique for testing the relationship between variables.

Bivariate Analyses of Paired Variables

A cross dimensional analyses of all variables, using predictor dimensions as against criteria dimensions

Table 1. Bivariate Analyses of Small Business ERP System and Service Output

			Small Business ERP System	Service Output
Pearson	Small Business ERP System	Correlation Coefficient	1	.321*
		Sig. (2-tailed)	.	0.005
		N	68	68
	Service Output	Correlation Coefficient	.321*	1
		Sig. (2-tailed)	0.005	.
		N	68	68

*. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS 25.00 Output. Field Survey, (2026)

Table 1 shows a Pearson correlation coefficient of 0.321 between small business ERP systems and performance outcome, indicating a moderate and positive significant relationship. This implied that level of improvement in the application of on-premise ERP systems are correlated with increases in service output among fintech firms studied. The significance value measured stood at ($p = 0.005$) which is below the 0.05 level, hence ascertaining that the relationship is statistically proved significant. In a real life situation, fintech firms in Port Harcourt using small business ERP systems record an increasing number of service units per day, which is related to enhanced workflow automation, which is far better data integration, and faster internal operations enabled by ERP usage.

Table 2. Bivariate Analyses of Small Business ERP System and Cost-related Output

			Small Business ERP System	Cost-Related Output
Pearson	Small Business ERP System	Correlation Coefficient	1	.536*
		Sig. (2-tailed)	.	0.005
		N	68	68
	Service Out-put	Correlation Coefficient	.536*	1
		Sig. (2-tailed)	0.005	.
		N	68	68

*. Correlation is significant at the 0.05 level (2-tailed).
Source: SPSS 25.00 Output. Field Survey, (2026)

Table 2 revealed that Pearson correlation coefficient was significant at 0.536 between small business ERP systems and cost-related output, which signified a moderate strong positive correlation. This is because cost-related output studied is associated to reduced cost per unit, while the positive coefficient posits that growing application of on-premise ERP systems is related with improvements in cost efficiency. This positive correlation is statistically proved significant with a p-value of 0.005, reiterating that the degree of correlation is not due to probability. Given the Port Harcourt situation of fintech firms, it implied that adoption of small business ERP systems enables reduction in operational costs per unit with the use of automation, error reduction, integrated data management, and elimination of redundant processes, hence enabling service delivery more cost-effective.

Discussion of Findings

From the findings of this study, it was seen that adoption of small business ERP systems significantly influenced operational output of fintech firms in Port Harcourt. The rate of its positive significance between on-premise ERP and service output stood at ($r = 0.321$, $p = 0.005$). This indicated that ERP integration improved the rate at which service units are processed per day. significantly. However, in spite of the fact that their relationship was moderate, it suggested that ERP-driven real-time data processing and workflow automation, and centralization of core operations enhance fintech firm's ability in terms of transaction, speed and service delivery. This advancement became very important for digital financial service firms in this highly competitive market space, where customers interest are based on fast, and hitch free service delivery.

Again, the study revealed a stronger positive correlationt hat existed between small business ERP systems and cost-related output at the measure of ($r = 0.536$, $p = 0.005$). This simply instruct that ERP application influences cost reduction per unit of service. To combine functions like customer onboarding, payment processing, fraud detection, and reporting within a unified platform, It enables fintech firms in terms of reducing duplication of tasks, reduces human error, and minimizes operation costs.

Generally, the findings revealed that small business ERP systems leads to operational capability and stability by enabling speedy turnaround times, promotes reliability, and more efficient and materials or resource utilization. These increasing developments in the fintech firms directly improves service performance and cost-related output, as a core importance of ERP technologies in reengineering fintech operations within Port Harcourt.

Conclusion

The study concludes that small business ERP systems have that strong improvement prospective ability to re-engineer fintech firms in Port Harcourt. By improving workflow and enhancing fast and timely service delivery. The application of ERP is positively related with enhanced service output and general performance responsiveness. Furthermore. Most importantly, ERP systems serve as a catalyst for operational renewal, strengthening the competitiveness and long-term sustainability of fintech firms in Port Harcourt.

Recommendations

1. Firms carting out Fintech services in Port Harcourt should increase investment in small business ERP systems in order to enhance service delivery and workflow efficiency
2. Fintech firms should train their operations staff and system users periodically.
3. Management of Fintech firms should integrate ERP systems with customer-facing platforms for speedy and reliable transaction.
4. Government and industry players should be ready to provide support for ERP application in order to enhance efficiency within the sector.

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