



Effect of Technology Adoption on Service Delivery in the Telecommunication Industry in Nigeria

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Abstract: *This study investigated the effect of technology adoption on service delivery in telecommunication companies in Bauchi, Nigeria. The study examined technology advancement as the predictor variable, while service delivery was the dependent variable. The study adopted a cross-sectional survey in its investigation of the variables. The primary source of data was a structured questionnaire. The population of the study was sixty-nine (69) fully employed staff of the four major telecommunication industries in Bauchi. The census sample size determination method was employed, so the whole sixty-nine (69) was used. The sampling procedure used in this study was a simple random sampling technique. The research instrument was validated by the supervisor's vetting and approval, while the reliability of the instrument was achieved by the use of the Cronbach alpha coefficient, with all the items scoring above 0.70. The hypotheses were tested using linear regression statistics. The tests were carried out at a 0.05 significance level. Findings from the study revealed that there is a significant positive impact of technology advancement on service delivery. The study concludes that technology advancement has a positive and significant impact on service delivery in telecommunication companies in Bauchi State. The study recommends that the organization should enable the employees to have access to improved technology. This would make the telecom companies invest in more modern technology, capacity improvements, and innovations to be more competitive.*

Key Words: *Technology Adoption, Service Delivery, Telecommunication Companies*

INTRODUCTION

In today's competitive market, providing excellent customer service is rapidly becoming a crucial competitive edge across many industries. In a dynamic business environment, managing workers effectively requires a variety of strategic approaches. Employees have historically had little or no say in decisions influencing their working environment. Every organization's

performance should be regarded as reliant on employee participation in routine business operations. Such a practice promotes staff alignment with the organization's values and ethics, which is necessary for effective service delivery. Business leaders who adopt employee participation initiatives notice higher levels of employee engagement, customer satisfaction, and productivity as well as lower levels of employee turnover and mishaps. (Tortorella et al., 2021). (Ghlichlee & Bayat, 2021). Employee participation enhances management decision-making abilities, changes in attitude towards work, improved worker well-being, reduced costs through waste reduction, and improved worker output across companies, according to an empirical study (Naqshbandi, Tabche, and Choudhary, 2019). Additionally, it raises work happiness, motivation, commitment, creativity, and purpose to remain.

Employee involvement is all about fostering a positive environment where people can have a say in the decisions and actions that have an impact on their employment. Since the management team sees the personnel as the company's greatest asset, it's critical to anticipate their needs. Participation by the workforce boosts productivity and enhances freedom. If you perform to the best of your ability, your staff will appreciate working for you. Businesses use the SDT model to encourage workers to have a favorable opinion of their organization. (Hao, Farooq, & Zhang, 2018). Employee engagement will boost commitment, which will boost retention and cut down on turnover. Businesses are genuinely looking for ways to state their "going concerned" craving and gain a competitive advantage because the business world is rife with numerous uncertainties that organizations and people must face. The complexity of conducting business has grown due to the rapidly shifting business environment, and as a result, organizations face numerous constraints and challenges that affect their ability to provide the intended services. This study seeks to look into how service delivery in telecommunications companies in Nigeria's Bauchi State has changed as a result of technology usage.

The study was piloted by the research question:

- i. What is the impact of technology adoption on the service delivery in Telecommunication Industries in Nigeria?

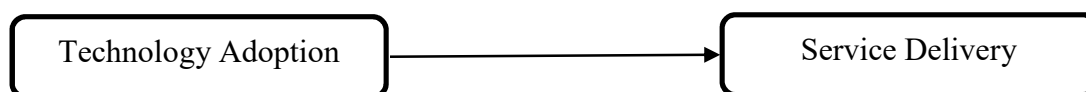


Figure 1: Conceptual framework for Technology Adoption and Service Delivery

Source: Desk Research, 2023

LITERATURE REVIEW

Theoretical Foundation

Quality Improvement Theory

The Quality Improvement Theory asserts that one feature of quality management is that it places the burden of building relationships firmly on top management. (Deming, 1986). The theory holds that frames, which are managed by the administration, are to blame for 80% of issues in companies. (Hill, 1995). No quality management system could be successful, according to Kumar, Lahiri, and Dogan (2018), without top-level executive accountability; the administration spends resources on the procedures, establishes corporate culture, chooses suppliers, and forges long-lasting relationships. Deming's Quality Improvement Theory provides organizations with a strategy for eradicating issues with inadequate quality control through effective managerial structures. The management's actions established the organization's culture and outlined what was required for it to succeed and endure.

Hubert (2000) has developed Deming's (1986) made-up methodology about the quality management structure. This strategy plans to build a hierarchy structure that encourages participation and figures out how to support process management practice sessions. This promotes worker happiness while also encouraging continuous modification of the procedures, goods, and services. These are necessary to cultivate a customer-focused mindset and, eventually, to support any association's continued survival.

Concept of Technology Adoption

Owusu & Duah (2018) carried out a study to better comprehend the relationship between total quality management and organizational longevity in Ghana's industrial sector. Through the use of a poll and a quantitative approach, data were collected for the study. The findings showed that TQM techniques greatly increased organizational effectiveness. Businesses in Ghana's industrial industry must adopt TQM practices in specific to succeed. According to Murenga and Njuguna (2020), TQM helps to raise product quality by establishing a consistent production process, which also reduces the need for buffer stock, rework, and waste. He asserted that TQM will reduce production time and cost. Continuous development, according to TQM, reduces the length of the product cycle, boosting production. (Huang & Lin, 2012). Other TQM practices, such as training, information system management, relationships with suppliers, etc., have a beneficial effect on operational performance.

The revenue generated by the business will surely be impacted by the efficient administration of these processes, which will improve effectiveness. Khan (2018) asserts that "sole sourcing" under TQM can lower production costs generally. In this case, using fewer vendors and providing them with the necessary technology and training helps the business cut expenses. The efficiency of an operation will then depend on the suppliers' ability to meet the

organization's standards. Rezaei et al. (2018) looked into how TQM affected the organizational performance of businesses in the Iranian telecommunications industry. The results of the research show that applying TQM principles significantly improves the quality performance (QP), innovation performance (IP), and organizational performance (OP) of the Iranian Telco industry.

Concept of Service Delivery

Customer service is now valued highly in both the product and service sectors, and because of the development of information technology, many companies are dealing with more wealthy and picky clients. The worldwide trend towards high-quality services was created when businesses realized that a high-quality product does not always guarantee the maintenance of an economic advantage (Bardakçi, 2020). Many experts agree that providing exceptional customer service can offer a company a long-lasting economic advantage. The caliber of their services determines whether a company succeeds or fails, whether it be a service or manufacturing one. Service quality, customer happiness, and customer value have become the top objectives for both manufacturing and service organizations in today's fierce competition for customers. (Marcos & Coelho, 2022). As a result, many organizations are putting more effort into improving the level of support. Service quality improvements will lead to improved service execution through improved customer satisfaction and cost control. (Nguyen, et. al., 2020).

Strong evidence suggests that many companies implement TQM in the hopes of making a fast, painless transition and establishing trust with investors. According to Scott (2019), the majority of leaders only speak about quality development while their deeds do not support it. This prevents TQM from being implemented effectively and from having the desired effects. According to Miltenberg (2005) and Mohanty (2008), TQM tactics must be taken into account by leaders because they have a significant effect on employees' perceptions of TQM implementation. The gap in developing and carrying out TQM policy is more pronounced when it comes to the implementation of TQM and ensuing organizational success in the service sector. (Ma & Cheok, 2022).

Effect of Technology Adoption on Service Delivery

Technology has transformed many sectors, including service delivery, and the way businesses function. (Bhatti, Vahlne, Glowik & Larimo, 2022). Technology usage has had a significant effect on service delivery, resulting in better precision, productivity gains, improved client experiences, and cost reductions. One of the most important advantages of technology usage in service delivery, according to Waris, Ali, Nayyar, Baz, Liu, and Hameed (2022), is the improved efficiency it provides. Many processes can be automated and streamlined by technology, which cuts down on the time and effort needed to accomplish duties. For instance, service delivery businesses can give tasks to workers using automatic scheduling systems, saving time

compared to manually arranging jobs. Technology use can also aid in monitoring, billing, and inventory administration, making service delivery more effective and efficient.

Technology use can also increase service supply precision. Human error can have a major effect on the standard of service, and technology can help eliminate it. (Akl & Urgan, 2022). For instance, the use of digital tools can ensure that service suppliers offer services by the proper protocols. This can help guarantee that services are provided to clients promptly and to a high standard. Adopting new technology can also improve the consumer experience. Delivering services quickly and effectively is what customers anticipate, and technology can assist. (Purohit, Arora, & Paul, 2022). Businesses can, for instance, use robots or virtual helpers to respond to customer questions, speeding up the process and enhancing the overall customer experience. Customers may find it simpler to obtain services, make reservations, and monitor the status of their purchases by using mobile applications. Additionally, technology can help service providers offer tailored services based on the preferences and requirements of specific clients, increasing client happiness.

Lastly, the use of technology can result in service offering expense reductions. (Tiwari & Mondal, 2022). Although technology may require a large upfront expenditure, the long-term advantages sometimes exceed the drawbacks. By eliminating the need for physical work, for instance, the use of digital tools can help to greatly lower labor costs. Additionally, technology can aid in the efficient use of assets like machinery and vehicles, resulting in lower running expenses.

These arguments gave rise to the following hypothesis:

Ho₁: Technology Adoption does not significantly affect service delivery in telecommunication companies in Bauchi State.

METHODOLOGY

The study adopted the cross-sectional survey in its investigation of the variables. Primary source of data was generated through structured questionnaire. The population of the study was sixty-nine (69) fully employed staff of the four major telecommunication companies in Bauchi. The census sample size determination method was employed, so the whole sixty-nine (69) was used. 27 of the staff were from MTN, 18 were from Airtel, 13 were from Glo while 11 were from Nine Mobile all in Bauchi. The sampling procedure used in this study was the simple random sampling technique. The research instrument was validated by supervisor's vetting and approval while the reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70. The hypotheses were tested using the linear regression Statistics. The tests were carried out at a 0.05 significance level.

DATA ANALYSIS AND RESULTS

The level of significance 0.05 was adopted as a criterion for the probability of accepting the null hypothesis in ($p > 0.05$) or rejecting the null hypothesis in ($p < 0.05$). The level of impact of technology adoption on service delivery is determined to determine the extent technology adoption can affect service delivery.

Effect of Technology Adoption on Service Delivery

Table 1: Model Summary for Technology adoption on Service Delivery

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.483 ^a	.233	.220	.99971

a. Predictors: (Constant), Technology Adoption

R square .233 which is approximated to $R^2 = .2$. This means the predictor has 20% variance with the dependent variable.

Table 2: ANOVA for Technology adoption on Service Delivery

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.595	1	17.595	17.606	.000 ^b
	Residual	57.966	58	.999		
	Total	75.561	59			

a. Dependent Variable: Service Delivery

b. Predictors: (Constant), Technology Adoption

F (17.606), P value = 0.000 which is < 0.05 hence shows a strong significant relationship

Table 3: Coefficients for Technology adoption on Service Delivery

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.157	.430		2.689	.009
	Technology Adoption	.521	.124	.483	4.196	.000

a. Dependent Variable: Service Delivery

Source: SPSS Output, 2023

Model Summary Table shows R value of .483; R square .233. Anova table (Test using Alpha 0.5) shows F = 17.606, P = 0.000, that is, < 0.05 , mean square of 17.595 and Coefficient Table (Predictor Test at Alpha 0.05); t value of 4.196 with std. error of 0.124.

Ho₁: Technology Adoption does not significantly affect service delivery in telecommunication companies in Bauchi State.

The result of the model showed R value of .483 which is the coefficient of determination are shown in Table 1, 2 and 3. This simply depict that about 20% of the service delivery is accounted for by technology adoption. Therefore, based on observed findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant effect of technology adoption on service delivery in the telecommunication companies in Bauchi State.

DISCUSSION OF FINDINGS

This study using descriptive and inferential statistical methods investigated the effect of technology adoption on service delivery in Telecommunication Industries in Bauchi State. The findings revealed that a significant effect of technology adoption on service delivery in Telecommunication Industries in Bauchi State. Using the Spearman's Rank Order Correlation tool and at a 95% confidence interval. The findings of this study confirmed that technology adoption has an effect on service delivery in Telecommunication Industries in Bauchi State. The finding reinforces previous work according to Ranjbari, et. al., (2021) in his study concluded that ICT adoption by business institutions improves the efficiency as it assists in the reduction of transaction costs, defeats the limitations of separation by cutting across geographical borders in this way serving to improve administration conveyance and coordination of exercises inside authoritative limits. He notes that there is improve of quality on financial reports, like cash flow statements, income statements, and statement of affairs. Importantly, computerized frameworks permit bookkeepers to process a lot of information and produce financial data faster, less expensive, and increasingly effective. In Ghana, Jameel, (2020) examined the impact of IT on the Ghanaian manufacturing and services Sectors. Researcher concluded that adopting technology results in accurate calculation of data, and faster communication of financial results through E-mails, internet, intranet, and websites, while accessing financial statements and relevant analysis for quick financial decisions.

CONCLUSION AND RECOMMENDATION

The adoption of technology has transformed service delivery in various ways, leading to increased efficiency, improved accuracy, enhanced customer experience, and cost savings. Technology has become a vital tool in the service delivery industry, and businesses that embrace technology can gain a competitive advantage and meet the changing needs of customers. This study concludes that there is a significant effect of technology adoption on service delivery in Telecommunication Industries in Bauchi state. Implying that a positive performance appraisal promotes employee performance.

The study recommends that the organization should enable the employees to have access to improved technology. This would make the telecommunication companies invest more modern

technology, capacity improvement and innovations to be more competitive. Additionally, businesses should prioritize data security and privacy when adopting technology to prevent data breaches and protect customer information.

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