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TECHNOLOGICAL CHANGE AND WORKFORCE COMMITMENT IN NIGERIA'S MOBILE TELECOMMUNICATIONS SECTOR

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ABSTRACT

Technological change is transforming the mobile telecommunications sector, yet its effects on employee attitudes remain insufficiently understood, especially in emerging economies like Nigeria. The researchers investigated how digital service transformation and work process automation, two key dimensions of technological change influence workforce loyalty and workforce engagement as critical dimensions of commitment within MTN Nigeria and Airtel Nigeria. Grounded in the (Technology Acceptance Model) TAM, the researchers adopted a cross-sectional survey of 414 employees using the structured questionnaire, and analyzed data, using Partial Least Squares Structural Equation Modeling (PLS-SEM). Results show that both technological change dimensions significantly and positively affect loyalty and engagement, with digital service transformation exerting a stronger influence. These findings extend Technology Acceptance Model by linking perceptions of usefulness and ease of use to commitment-related outcomes and offer new evidence from a high-growth African telecom context. Based on these findings, it was recommended that managers prioritize employee training and participatory communication during digital initiatives to enhance perceptions of usefulness and ease of use, and frame automation as role-enhancing rather than role-replacing to maintain high levels of workforce commitment.

Keywords: Technological change; Digital service transformation; Work process automation; Workforce commitment; Technology Acceptance Model

1.0 INTRODUCTION

1.1 Background to the Study

Over the years, Nigerian mobile telecommunications industry has undergone rapid technological transformation driven by growing consumer demand, digital innovation, and competitive market pressures. Dominated by two leading firms, MTN Nigeria and Airtel Nigeria, the sector has embraced significant technological changes, including the deployment of 4G and 5G networks, automation of internal processes, and the digitization of customer service channels. These developments are redefining how telecom companies operate, deliver services, and engage their workforce.

Technological change, in this context, refers to the integration of new digital tools, systems, and processes that alter how work is performed and services are delivered. It encompasses two key dimensions explored in this study: Digital Service Transformation which involves the digitization of customer-facing platforms such as mobile applications, online self-service

portals, and digital payment systems (Kraus et al., 2021; Aslam et al., 2022); and Work Process Automation which relates to the automation of internal workflows including billing, troubleshooting, customer query handling, and network operations (Herm et al., 2023; Zayas-Cabán, 2021). These dimensions are particularly relevant in the mobile telecoms sector, where digital agility and operational efficiency are essential for survival and growth (Herbert et al., 2023; Çallı and Çallı, 2021; Abourokbah et al., 2023).

While the external impact of technological change on service delivery and customer experience is widely acknowledged (Kraus et al., 2021; Chen et al., 2021), relatively little is known about its internal consequences, particularly on workforce commitment, a construct that reflects the psychological and emotional attachment of employees to their organization (Orenuga et al., 2024; Inegbedion et al, 2023; Omotoso, 2024). Workforce commitment plays a central role in organizational stability and performance, especially in industries experiencing continuous transformation. For this study, workforce commitment is assessed through two measurable dimensions: Workforce Loyalty, which denotes an employee's intention to stay, organizational allegiance, and sense of belonging; and Workforce Engagement, referring to the level of enthusiasm, involvement, and dedication employees bring to their work roles (Orenuga et al., 2024; Okon et al., 2023). These constructs are essential indicators of employee well-being and organizational health, particularly in fast-paced, technology-driven environments.

Despite the centrality of the workforce to digital transformation efforts, the empirical literature in this area remains limited, especially within the Nigerian context. Prior studies have predominantly focused on the technological outcomes of innovation such as productivity, customer retention, and competitive advantage while neglecting the employee perspective (Herbert et al., 2023; Abourokbah et al., 2023). Moreover, much of the research on workforce behavior tends to treat organizational change as a background variable, rather than a core driver of employee attitudes (Demerouti et al., 2021). This creates a notable gap in understanding how employees in high-tech, fast-evolving sectors such as telecommunications interpret and respond to technological change.

To address this gap, the present study shifts the analytical focus inward toward the workforce within Nigeria's two biggest telecom operators. It draws on the Technology Acceptance Model (TAM) Davis, (1989), which explains how individuals adopt new technologies based on perceived usefulness and ease of use. Although TAM is typically applied in the context of consumer behavior or end-user adoption, it offers valuable insights for organizational research. In the workplace, employees' reactions to technological change whether positive or resistant depend largely on their perception of how such changes affect their job roles, efficiency, and autonomy. If technology enhances work processes and reduces complexity, it is more likely to foster loyalty and engagement. Conversely, if it is perceived as disruptive, threatening, or poorly implemented, it may erode commitment.

MTN Nigeria and Airtel Nigeria provide compelling case contexts for this investigation. Both firms have made substantial investments in digital infrastructure and process reengineering, yet operate in a broader ecosystem marked by regulatory shifts, intense competition, and variable workforce readiness. Understanding how their workforce responds to internal technological shifts is therefore both timely and essential—not only for enhancing employee retention and performance, but also for informing digital transformation strategies that are inclusive and

human-centered. The study contributes to a deeper understanding of how technology-related organizational changes influence employee commitment within an emerging market context. By focusing on these dynamics in the country's two largest telecoms firms, the research provides both theoretical and practical insights into managing workforce behavior during digital advancement.

The objective of this study is to examine the effects of technological change (digital service transformation and work process automation) on workforce commitment (workforce loyalty and workforce engagement) in Nigeria's mobile telecommunications sector. To achieve the objective of this study, the following research questions and hypotheses were considered:

1.2 Research Questions

i. How does digital service transformation affect workforce loyalty in Nigeria's mobile telecommunications sector?
ii. How does digital service transformation influence workforce engagement in the sector?
iii. What is the impact of work process automation on workforce loyalty among telecom employees?
iv. What effect does work process automation have on workforce engagement in Nigeria's mobile telecoms industry?

1.3 Research Hypotheses

H1: Digital Service Transformation has a positive and significant effect on Workforce Loyalty.

H2: Digital Service Transformation has a positive and significant effect on Workforce Engagement.

H3: Work Process Automation has a positive and significant effect on Workforce Loyalty.

H4: Work Process Automation has a positive and significant effect on Workforce Engagement.

Following this background, the rest of the paper is structured as follows: Section 2 presents a review of relevant literature on technological change and workforce commitment, with particular emphasis on their dimensions, theoretical underpinnings, and prior empirical findings. It also discusses the Technology Acceptance Model (TAM) as the guiding theoretical framework. Section 3 outlines the research methodology, including the study design, sampling procedure, measurement of constructs, data collection methods, and analytical approach. Section 4 provides the results of the data analysis, including the measurement model assessment (reliability and validity tests) and the structural model evaluation (path coefficients, hypothesis testing, and model fit indices). Section 5 offers a discussion of the findings in relation to existing literature and theory, while also highlighting the theoretical and practical implications for technology management and human resource practices in the telecoms sector. Section 6 concludes the paper with a summary of key insights, limitations of the study, and directions for future research.

2.0 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

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2.1 Overview of Technological Change in Organizations

Technological change in organizations refers to the process through which digital tools, systems, and innovations are introduced to alter work structures, operational processes, and service delivery mechanisms. In modern industries, particularly telecommunications, technological change is both a strategic necessity and an operational imperative (Kraus et al., 2021). The proliferation of digital platforms, the rise of artificial intelligence (AI), and the push toward service automation are compelling firms to rethink how they organize work and engage employees.

In Nigeria's mobile telecommunications sector, dominated by firms like MTN Nigeria, Airtel Nigeria, and Globacom, technological change has been instrumental in responding to increasing customer demand, competitive pressures, and regulatory changes. However, while the external implications of such change (e.g., customer satisfaction, service agility) are widely studied, the internal outcomes—particularly employee-related outcomes such as loyalty and engagement—remain underexplored, especially within the African context (Omodan et al., 2023; Ogbeibu et al., 2021).

This study focuses on two salient dimensions of technological change: Digital Service Transformation (DST) and Work Process Automation (WPA), and investigates their impact on Workforce Commitment, as expressed through Workforce Loyalty and Workforce Engagement.

2.2 Digital Service Transformation (DST)

Digital Service Transformation refers to the strategic and operational integration of digital technologies into the way services are delivered to customers. In the telecoms sector, this includes mobile self-service apps, AI-powered customer service, online billing platforms, digital KYC verification, and mobile money solutions (Ali and Anwar, 2021).

Recent studies emphasize DST as a driver of competitive advantage and improved customer experience (Kraus et al., 2021; Aslam et al., 2022), but few examine how employees respond to these external-facing innovations. Yet, DST often requires new skills, shifts in role expectations, and adaptation to digitally mediated work routines. Research by Ezenwoke and Olugbara (2024) suggests that when DST initiatives are implemented without sufficient training or support, they can lead to digital fatigue or disengagement among staff.

There is a paucity of research exploring how DST affects internal stakeholders, particularly employees. Most DST research focuses on customer outcomes or strategic performance (Ali and Anwar, 2021), leaving a critical gap in understanding how such initiatives influence workforce loyalty and engagement in the telecom context of emerging economies like Nigeria.

2.3 Work Process Automation (WPA)

Work Process Automation involves the use of technologies—such as robotic process automation (RPA), workflow engines, and intelligent systems—to streamline routine or complex tasks (Aslam et al., 2022). In telecoms, WPA manifests in automated billing, CRM workflows, AI-driven network diagnostics, and smart routing in call centers.

While automation is linked to efficiency and cost savings, its implications for employee morale and commitment are mixed. On one hand, automation can reduce cognitive load and improve job satisfaction by removing repetitive tasks. On the other hand, poorly managed automation may increase fear of job loss or reduce autonomy (Ghosh and Scott, 2021; Ng and Sze, 2023).

There is limited empirical research in the Nigerian context assessing how employees perceive and react to WPA, particularly in relation to emotional and attitudinal outcomes such as loyalty and engagement. This study addresses this by empirically linking WPA to workforce commitment in a sector undergoing rapid automation.

2.4 The Concept of Workforce Commitment

Workforce commitment represents the emotional and psychological bond that employees develop toward their organization. It is a critical driver of organizational performance, influencing retention, productivity, and innovation (Kim et al., 2021). Commitment is not unidimensional, it includes attitudinal dimensions such as loyalty and behavioral expressions such as engagement (Meyer and Allen, 1991). In high-change environments like telecoms, maintaining workforce commitment is vital, as employees are often required to adapt to evolving technologies, roles, and expectations.

2.5 Workforce Loyalty

Workforce Loyalty refers to employees' willingness to remain with the organization and their psychological attachment to its mission, vision, and leadership. Loyalty is typically associated with reduced turnover intention, advocacy behavior, and organizational alignment (Agyeman and Ponniah, 2022).

Recent studies show that technological change can enhance loyalty if it empowers employees and reinforces trust in management (Ogbeibu et al., 2021). However, if employees perceive technology as a threat or source of role uncertainty, loyalty may be undermined (Raza et al., 2021). There seem to be limited research linking technological change dimensions (DST and WPA) directly to workforce loyalty in emerging market telecom firms. Most loyalty research focuses on extrinsic factors such as compensation or leadership style, rather than technology-induced changes.

2.6 Workforce Engagement

Workforce Engagement captures the cognitive, emotional, and physical investment employees make in their work. It includes dimensions like vigor, dedication, and absorption (Schaufeli et al., 2002). Engagement is increasingly recognized as a key performance enabler in dynamic sectors. Sharma and Bhatnagar (2020) note that engaged employees are more likely to respond positively to organizational change. However, Ezenwoke and Olugbara (2024) caution that digital overload and inadequate support can suppress engagement, especially in fast-paced, technology-intensive environments. While engagement is widely studied, few works explicitly link it to DST and WPA. This study fills this gap by empirically examining how these technological dimensions affect engagement within Nigeria’s mobile telecoms sector.

2.7 Theoretical Foundation: Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) (Davis, 1989) posits that individuals are more likely to accept and use new technologies when they perceive them as useful and easy to use. Originally developed for end-user adoption, TAM has been successfully extended to organizational settings—including employee adoption of internal systems (Venkatesh and Davis, 2000).

In this study, TAM provides a useful lens for understanding how employees in Nigeria's telecom sector respond to technological changes introduced by DST and WPA. Specifically, it suggests that if employees view these innovations as improving their work processes and reducing effort, they are more likely to exhibit loyalty and engagement as key indicators of commitment.

Recent research has validated TAM in workforce contexts. For example, Ghosh et al. (2021) found that perceived ease of use and usefulness significantly predicted employee attitudes toward AI systems. Raza et al. (2021) similarly confirmed that TAM constructs mediate the link between digital readiness and workforce commitment.

By applying TAM, this study builds a theoretical bridge between organizational technology initiatives and employee behavioral outcomes, with specific focus on commitment-related responses in the context of Nigeria's top telecom firms.

2.8 Summary of Literature Gaps

Despite increasing scholarly interest in technological transformation and employee outcomes, several conceptual and contextual gaps remain unaddressed—particularly within emerging market telecom sectors. Table 1 below summarizes the key literature gaps identified across the study's core constructs, highlighting areas where further empirical investigation is warranted.

Table 1: Summary of Gaps in the Literature

Theme	Identified Gap	Key Literature Sources
Digital Service Transformation (DST)	Limited studies on how DST affects internal employee outcomes such as loyalty and engagement in telecoms.	Ali and Anwar (2021); Ezenwoke and Olugbara (2024); Kraus et al. (2021)
Work Process Automation (WPA)	Sparse empirical evidence on how WPA influences workforce commitment in emerging markets like Nigeria.	Aslam et al. (2022); Ghosh and Scott (2021); Ng and Sze (2023)
Workforce Loyalty	Loyalty often studied as a response to leadership or HR practices, not to tech-driven workplace changes.	Agyeman and Ponniah (2022); Ogbeibu et al. (2021); Raza et al. (2021)
Workforce Engagement	Few studies directly link engagement to technological change in African telecom firms.	Sharma and Bhatnagar (2020); Ezenwoke and Olugbara (2024); Kim et al. (2021)
Theoretical Application (TAM)	TAM rarely applied to understand employee attitudinal outcomes	Davis (1989); Venkatesh and Davis (2000); Ghosh

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	(loyalty/engagement) in response to tech.	et al. (2021); Raza et al. (2021)

3.0 METHODOLOGY

This study adopts a quantitative research design, employing a cross-sectional survey approach to investigate the effects of technological change on workforce commitment in Nigeria's mobile telecommunications sector. The objective is to empirically test hypothesized relationships between two key dimensions of technological change: Digital Service Transformation (DST) and Work Process Automation (WPA); and two indicators of workforce commitment: Workforce Loyalty and Workforce Engagement. The study is grounded in the Technology Acceptance Model (TAM), which posits that individuals' perceptions of technological usefulness and ease of use shape their attitudes and behaviors toward that technology. In the workplace, these perceptions can influence affective and behavioral outcomes, such as commitment, loyalty, and engagement.

The research population consists of employees from MTN Nigeria and Airtel Nigeria, the two dominant players in Nigeria's mobile telecommunications industry. These firms were purposively selected due to their substantial market share, nationwide operational footprint, and extensive implementation of digitalization and automation initiatives in recent years. Both organizations have demonstrated leadership in deploying innovative technologies—such as 4G/5G infrastructure, AI-powered customer interfaces, and process automation tools, making them ideal case contexts for examining workforce responses to technological change. Their strategic significance within the sector enhances the relevance and potential generalizability of findings (Aslam et al., 2022; Omodan et al., 2023). Furthermore, purposive sampling is justified as it allows researchers to capture rich, context-specific data from entities that exemplify the phenomenon under investigation (Creswell and Plano Clark, 2018).

Data were collected using a structured questionnaire adapted from validated instruments in prior studies. Items measuring Digital Service Transformation and Work Process Automation were adapted from Ali and Anwar (2021) and Aslam et al. (2022), respectively. Workforce Loyalty was measured using items developed by Agyeman and Ponniah (2022), while Workforce Engagement items were adapted from the Utrecht Work Engagement Scale by Schaufeli et al. (2002). All items were measured on a five-point Likert scale ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree"). The questionnaire was reviewed by academic experts for face and content validity and pilot-tested with 30 respondents to refine clarity and contextual relevance.

A purposive sampling approach targeted employees with direct experience of digital service transformation and process automation within their organizations. In line with recommended sample size guidelines for PLS-SEM, which suggest at least 10 cases per indicator variable, the final sample of 552 respondents exceeded minimum requirements and was deemed adequate for robust model estimation. Data collection was conducted electronically using Google Forms distributed through internal staff communication channels received through the assistance of an internal employee. Ethical protocols, including informed consent, voluntary participation, and assurance of anonymity were strictly adhered to throughout the study.

Data analysis was carried out using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4. This technique was selected due to its suitability for complex models involving multiple constructs and its ability to perform well with moderately sized samples. The analysis followed a two-step approach: assessment of the measurement model (to evaluate reliability and validity) and evaluation of the structural model (to test hypothesized relationships).

Measurement model assessment began with reliability testing. Internal consistency reliability was established using Cronbach's alpha (α) and Composite Reliability (CR), with all constructs exceeding the 0.70 threshold. Convergent validity was confirmed by Average Variance Extracted (AVE) values above 0.50, indicating that constructs explained more than half of the variance in their indicators. Indicator loadings mostly exceeded 0.70, with items between 0.60 and 0.70 retained if theoretically justified and if overall construct reliability remained acceptable. Discriminant validity was verified using the Fornell–Larcker criterion and cross-loadings, confirming that each construct was empirically distinct. Common method bias was minimized through procedural remedies, including proximal separation of constructs in the survey, and confirmed post hoc using Harman's single-factor test.

This rigorous methodological framework ensures that the latent constructs are measured with high reliability and validity, thereby strengthening the robustness of the subsequent structural model analysis. The approach provides a credible empirical foundation for understanding how digital service transformation and work process automation influence workforce loyalty and engagement in Nigeria's rapidly evolving telecommunications landscape.

4.0 DATA PRESENTATION, RESULTS AND FINDINGS

In this study, a total of 552 respondents were surveyed through questionnaire administration. Of the number of surveyed samples, only 414 returned correctly filled questionnaire, yielding a 75% valid response rate which was used for the data analysis as shown in Table 2.

Table 2. Demographic Characteristics of Respondents (N = 414)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	248	59.9
	Female	166	40.1
Age Group (Years)	21–30	110	26.6
	31–40	182	44.0
	41–50	90	21.7
	Above 50	32	7.7
Educational Level	Bachelor's Degree	206	49.8
	Master's Degree	158	38.2
	Others (e.g., HND, Diploma)	50	12.1
Years of Work Experience	Less than 5 years	120	29.0

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	5–10 years	180	43.5
	Above 10 years	114	27.5
Job Category	Technical (IT/Engineering)	168	40.6
	Non-Technical (Admin/Service)		

Table 2 summarizes the demographic characteristics of the 414 valid respondents, capturing gender, age, educational attainment, work experience, and job category. The workforce composition reflects the diversity typical of Nigeria's mobile telecommunications sector, with a majority of respondents in the 31–40 age bracket and a balanced mix of technical and non-technical roles.

4.1 Measurement Model Assessment

Reliability was assessed using Cronbach's alpha and Composite Reliability (CR). As shown in Table 3, all constructs exceeded the recommended threshold of 0.70 for both Cronbach's alpha and CR, indicating strong internal consistency (Hair et al., 2021). Convergent validity was established, as Average Variance Extracted (AVE) values were above 0.50 for all constructs, confirming that each construct explains more than 50% of the variance in its indicators.

Table 3. Reliability and Convergent Validity of Constructs

Construct	Cronbach's Alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Digital Service Transformation (DST)	0.89	0.92	0.68
Work Process Automation (WPA)	0.87	0.91	0.66
Workforce Loyalty (WL)	0.85	0.90	0.65
Workforce Engagement (WE)	0.88	0.91	0.67

4.2 Indicator Loadings

Indicator reliability was evaluated by examining standardized factor loadings (Table 4). All items loaded significantly on their respective constructs, with loadings above the recommended threshold of 0.70. Items slightly below 0.70 were retained due to theoretical significance and acceptable overall reliability.

Table 4. Factor Loadings of Measurement Items

Construct / Items	Loading
Digital Service Transformation (DST)	
DST1: Digital platforms enhance service speed	0.82
DST2: Mobile self-care apps improve my work	0.79
DST3: Digital tools simplify customer processes	0.85
DST4: Online service delivery increases efficiency	0.83

Work Process Automation (WPA)	
WPA1: Automation reduces repetitive tasks	0.80
WPA2: Automated workflows improve accuracy	0.81
WPA3: Automation speeds up internal processes	0.84
WPA4: AI tools enhance operational reliability	0.78
Workforce Loyalty (WL)	
WL1: I intend to remain with this organization	0.81
WL2: I feel emotionally attached to my employer	0.79
WL3: I recommend this company to others	0.83
Workforce Engagement (WE)	
WE1: I feel energetic at work	0.82
WE2: I am enthusiastic about my job	0.84
WE3: I am fully absorbed in my work tasks	0.79

4.3 Structural Model Assessment

The structural model was assessed to examine the hypothesized relationships between constructs. Collinearity diagnostics indicated no multicollinearity issues (VIF values < 3). Path coefficients, t-values, and significance levels were derived using a bootstrapping procedure with 5,000 resamples.

4.3.1 Hypotheses Testing

Table 5 presents the path coefficients and their significance. Results indicate that both Digital Service Transformation (DST) and Work Process Automation (WPA) have significant positive effects on Workforce Loyalty and Workforce Engagement.

Table 5. Structural Model Results (Hypotheses Testing)

Hypothesis	Path	β (Path Coefficient)	t-value	p-value	Decision
H1	DST → Workforce Loyalty	0.41	6.12	0.000	Supported
H2	DST → Workforce Engagement	0.47	7.05	0.000	Supported
H3	WPA → Workforce Loyalty	0.33	5.21	0.000	Supported
H4	WPA → Workforce Engagement	0.38	6.41	0.000	Supported

4.3.2 Model Fit and Predictive Power

The coefficient of determination (R^2) values indicate that the model explains 52% of the variance in Workforce Loyalty and 58% of the variance in Workforce Engagement, representing moderate to substantial explanatory power (Hair et al., 2021). Predictive relevance (Q^2) values for both constructs were above zero, confirming the model's predictive capability. The results demonstrate that both digital service transformation and work process automation significantly enhance workforce loyalty and engagement among employees of Nigeria's leading mobile telecom companies. Among the predictors, digital service transformation

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exhibited slightly stronger effects on both outcomes, suggesting that employees respond particularly positively to digitized service innovations that enhance their work efficiency and customer interactions.

5.0 DISCUSSION AND IMPLICATIONS

This section interprets by discussing the results of the study in relation to the research objectives, theoretical framework, and existing literature. The study examined how two dimensions of technological change, namely: Digital Service Transformation (DST) and Work Process Automation (WPA) affect workforce commitment, which is operationalized as Workforce Loyalty (WL) and Workforce Engagement (WE), in Nigeria's mobile telecommunications sector. The discussion below elaborates on these results and highlights their practical and theoretical relevance.

5.1 Discussion of Findings

The findings of this study reveal that both Digital Service Transformation (DST) and Work Process Automation (WPA) exert significant positive effects on the two dimensions of workforce commitment, Workforce Loyalty (WL) and Workforce Engagement (WE) within Nigeria's mobile telecommunications sector. This outcome provides nuanced insights into how technology-driven organizational changes influence employee attitudes in a high-velocity, service-oriented industry. DST emerged as the strongest predictor of both loyalty and engagement.

This indicates that when employees perceive customer-facing digital initiatives such as mobile self-service applications, digital billing platforms, and AI-enabled customer support tools as enhancing their ability to serve customers efficiently, they develop a deeper emotional connection to the organization and exhibit greater vigor in their work. This finding aligns with the core tenets of the Technology Acceptance Model (TAM), which posits that perceptions of usefulness and ease of use underpin positive attitudes toward technology (Davis, 1989). Employees are likely to feel valued and supported when DST reduces service bottlenecks, streamlines customer interactions, and provides them with digital tools that simplify their roles.

Empirical evidence supports this interpretation: Kraus et al. (2021) argue that digital transformation initiatives, when properly communicated, enhance employees' sense of organizational purpose and strengthen their psychological attachment to the firm. Similarly, Ali and Anwar (2021) found that digitalized service platforms improve not only customer satisfaction but also internal employee morale. The current findings extend these insights by demonstrating that DST's influence goes beyond operational improvements to shape deeper attitudinal constructs such as loyalty and engagement.

The study also confirms that WPA positively affects both workforce loyalty and engagement, though the effect sizes are slightly lower compared to DST. This result suggests that employees value automation of internal workflows such as billing, network diagnostics, and CRM processes when it reduces repetitive tasks and allows them to focus on higher-value activities. This resonates with the augmentation view of technology, which frames automation as a supportive tool rather than a replacement for human labor. When framed positively, automation

fosters a sense of efficiency and empowerment, thereby reinforcing commitment (Aslam et al., 2022).

However, existing literature cautions that poorly managed automation can create job insecurity or resistance among employees (Ng and Sze, 2023). The current findings imply that MTN and Airtel have likely implemented WPA in a manner that minimizes such negative perceptions, possibly through training, transparent communication, or phased rollouts. The significant positive associations between WPA and commitment dimensions highlight the importance of contextual and managerial factors in shaping employee responses to automation.

A notable finding is the stronger impact of DST compared to WPA on both loyalty and engagement. This suggests that employees respond more favorably to externally visible digital initiatives that directly enhance customer interactions than to back-end process changes that, while beneficial, may be less perceptible in their daily routines. This insight has implications for prioritizing digital investments: organizations aiming to boost workforce commitment may achieve quicker attitudinal gains by focusing first on digital service enhancements before expanding to deeper automation initiatives.

The positive associations between technological change and both loyalty and engagement underscore the evolving nature of workforce commitment in technology-intensive environments. Traditional drivers of commitment—such as compensation, leadership style, or organizational culture—are now complemented by employees' perceptions of technological progress within their firms. This finding aligns with Sharma and Bhatnagar's (2020) argument that engaged employees thrive in digitally mature workplaces that foster learning and adaptability.

The Nigerian context adds another layer of insight. Despite infrastructural and regulatory challenges common in emerging markets, employees appear receptive to technological innovations when these are framed as enablers rather than threats. This finding diverges from older narratives that associate technological change with workforce resistance, suggesting that younger, digitally literate employees in sectors like telecoms may view technological shifts as opportunities for professional growth and organizational competitiveness.

Finally, this study broadens the scope of TAM by demonstrating its applicability beyond predicting technology adoption to explaining broader attitudinal and commitment outcomes. The observed relationships suggest that perceived usefulness and ease of use do not merely affect employees' intentions to use new tools; they also influence deeper organizational behaviors such as loyalty (intention to remain) and engagement (emotional and cognitive investment). This supports calls by scholars (Ghosh and Scott, 2021) to extend TAM into new domains of organizational behavior research.

5.2 Managerial and Practical Implications

For managers at MTN Nigeria and Airtel Nigeria, the findings provide actionable insights into aligning digital strategies with human resource outcomes. First, digital service transformation should be viewed not only as a customer-facing initiative but also as a tool for enhancing employee experience. Regular training, hands-on demonstrations, and employee inclusion in

digital rollouts can heighten perceptions of usefulness and ease of use, thereby strengthening loyalty and engagement.

Second, work process automation should be implemented alongside clear communication strategies. Emphasizing how automation reduces drudgery and supports skill development can mitigate fears of redundancy and foster positive employee buy-in. Managers can also create up-Skilling programs that enable employees to transition into more analytical and supervisory roles as routine tasks become automated.

Third, these results underscore the need for integrated change management frameworks that bridge technological and human resource perspectives. By coordinating IT, HR, and operations teams during transformation initiatives, telecom companies can achieve both operational efficiency and workforce stability. This is particularly vital in Nigeria's competitive telecom market, where employee retention and engagement directly impact service quality and customer satisfaction.

5.3 Theoretical Implications

This study makes several contributions to theory. First, it extends the Technology Acceptance Model (TAM) beyond individual technology adoption to broader workforce attitudinal outcomes, demonstrating that perceived usefulness and ease of use can also influence commitment-related constructs like loyalty and engagement. This expands TAM's relevance to organizational change and human resource management domains, particularly in emerging markets.

Second, by focusing on Digital Service Transformation and Work Process Automation as separate but related dimensions of technological change, the study provides a nuanced understanding of how different forms of digital innovation affect employees differently. This multidimensional perspective enriches the literature on digital transformation, which often treats technology adoption as a monolithic construct.

Finally, the study addresses a notable contextual gap by situating its investigation in the Nigerian mobile telecom sector, an industry undergoing rapid innovation but underrepresented in global scholarship. By demonstrating that Technology Acceptance Model holds explanatory power in this context, the research supports its cross-cultural applicability and invites further comparative studies in similar emerging economies.

6.0 CONCLUSION

The researchers examined how Digital Service Transformation (DST) and Work Process Automation (WPA) influence Workforce Loyalty (WL) and Workforce Engagement (WE) in Nigeria's mobile telecommunications sector, using the Technology Acceptance Model (TAM) as a guiding framework. Findings show that both digital service transformation and work process automation positively predict loyalty and engagement, with digital service transformation exerting a stronger effect, indicating that customer-facing digital innovations may have greater influence on employee attitudes than internal process automation.

The study contributes by extending TAM to organizational attitudinal outcomes and offering a multidimensional perspective on technological change in an underexplored emerging market context. It highlights that employee in Nigeria's telecom sector can respond positively to technological shifts when implementation is transparent and supportive.

Managerially, the results emphasize the need to align digital initiatives with workforce strategies through training, participatory communication, and framing automation as augmentative rather than substitutive. Prioritizing visible digital innovations that directly impact employees' work may foster faster gains in loyalty and engagement.

7.0 LIMITATIONS AND AREAS FOR FURTHER STUDIES

Despite the contributions so far, this study has limitations that should be acknowledged. The cross-sectional design restricts causal inferences; longitudinal research could better capture how workforce commitment evolves over time as technology adoption matures. The use of self-reported data introduces the potential for common method bias, though procedural and statistical controls were applied to mitigate this issue. Additionally, focusing on two major telecom companies enhances relevance but limits generalizability; future studies could incorporate additional firms or cross-industry comparisons to broaden insights.

Building on these findings, future research could explore several avenues. Longitudinal studies could assess how sustained exposure to technological change influences work force commitment. Comparative studies across industries such as banking, manufacturing, or healthcare, could determine whether the observed relationships are unique to telecoms or generalizable across sectors. Moreover, integrating moderating or mediating variables such as organizational culture, leadership style, or employee digital literacy, could deepen understanding of the mechanisms through which technological change affects workforce attitudes. As a final Point, qualitative or mixed-methods approaches, could complement quantitative insights by exploring the lived experiences of employees navigating digital transformation.

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