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CHANGE MANAGEMENT DRIVERS AND INNOVATION OUTCOME OF SELECTED COMMERCIAL BAKERIES IN PORT HARCOURT METROPOLIS

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Abstract
In an increasingly dynamic and competitive business environment, commercial bakeries in Nigeria, particularly in Port Harcourt, face mounting pressure to innovate in response to changing consumer preferences, rising operational costs, and rapid technological shifts. This study investigates the extent to which change management drivers—specifically leadership style, employee involvement, and technological readiness—influence two critical dimensions of innovation outcomes: service innovation and operational efficiency. Anchored on Lewin's Change Management Theory and the Dynamic Capabilities Theory, the study adopts a quantitative research design using structured questionnaires administered to 175 employees across three large-scale bakeries: Nibbles (Sundry Foods), Genesis Bread, and Dripples Bakery. Descriptive statistics and multiple regression analyses were conducted to evaluate relationships between the variables. Findings reveal that all three change management drivers significantly and positively affect both service innovation and operational efficiency, with technological readiness emerging as the strongest predictor. The results underscore the strategic importance of integrated change efforts in enhancing innovation outcomes. Specifically, participatory leadership, active employee engagement, and robust digital infrastructure enable bakeries to adapt their service models and optimize internal operations. The study contributes to both theory and practice by contextualizing innovation performance within Nigeria's bakery sector, offering valuable insights for managers, policymakers, and scholars aiming to improve innovation capacity in food-related industries. The study concludes with recommendations for strengthening internal change mechanisms and suggests future research directions exploring longitudinal and comparative sectoral analyses.

Keywords: Change Management, Operational Efficiency, Service Innovation, Technological Readiness.

Introduction

The bakery industry is one of the largest value-adding segments of the global food-processing chain, estimated at well over US $500 billion in 2024 and projected to keep expanding as health-conscious consumers demand convenient, nutritious, and diverse products (Momani, 2018). Across Africa, rapid urbanisation, youthful demographics, and an expanding middle class have stimulated a steady rise in per-capita baked-goods consumption and the proliferation of commercial bakeries (Garba et al., 2023). Nigeria—home to over 220 million people—accounts for a significant share of West Africa's bread market and generates about 10.5 million direct and indirect jobs through its wheat value chain, including milling, distribution, and retail (BusinessDay, 2024; Oyebola et al., 2025). Within the Nigeria business landscape, intense competition, volatile input prices, and changing customer tastes are forcing bakeries to reinvent product lines and operating models almost continuously. Such dynamism underscores the strategic importance of purposeful change management for firms that wish to survive and thrive in Nigeria's turbulent bakery ecosystem (Lasisi-Balogun, 2020).

Sustained adaptation in turbulent industries rarely happens by chance; it is nurtured by specific organisational drivers that translate external pressure into internal action (Adegbite et al., 2018). Consequently, organizational innovation in the baking sector is increasingly shaped by internal change management drivers that translate external pressures into actionable strategies. Among these, leadership style, employee involvement, and technological readiness are critical enablers of successful transformation (Deszca et al., 2024; Kane et al., 2015). Leadership that articulate a coherent change vision, meaningful employee participation that reduces resistance, and digital readiness—ranging from automated mixers and proofers to ERP-enabled scheduling— collectively determines whether a bakery can translate fresh ideas into quicker production runs, tighter quality control, and data-driven customer service (Canterino et al., 2020).

Innovation, as a cornerstone of organizational resilience and growth, extends beyond the mere introduction of new products or technologies. It encompasses a firm's capacity to reimagine services, reconfigure operations, and adapt to shifting market conditions in a way that sustains relevance and competitiveness (Dziallas & Blind, 2019). In the context of the baking industry—particularly within fast-growing urban centers like Port Harcourt—innovation is not just aspirational but essential. Two pivotal facets of this innovation agenda are service innovation and operational effectiveness, which are vital for customer retention and market differentiation in a sector where product similarity is common (Shin & Perdue, 2022). Recent scholarship has explored the relationship between change management and innovation across various sectors. Dziallas and Blind (2019) examined how internal capabilities influence innovation in manufacturing, while Alarifi and Adam (2017) linked participatory leadership to innovation in SMEs. In the baking sector, studies have highlighted the role of automation, AI, and digital platforms in enhancing service delivery and operational agility (Fidalgo & Miranda, 2023; Melesse & Orrù, 2025). However, limited studies appear to have contextualized these dynamics within the Nigerian baking industry, particularly at the city level.

Although similar studies in banking (Ibikunle et al., 2023) and hospitality (Kumar & Lee, 2022) exist in literature, there remains a notable gap in understanding how change

management drivers influence innovation outcomes in Port Harcourt's baking sector. Existing research (Alarifi & Adam, 2017; Fidalgo & Miranda, 2023;) often generalizes findings across sectors or focuses on large-scale enterprises, overlooking the unique constraints and opportunities faced by local bakeries. This study seeks to bridge that gap by offering a localized, sector-specific analysis. The consequences of neglecting internal change drivers are evident in the stagnation of many bakeries, which struggle with outdated processes, low staff morale, and poor customer retention. Conversely, bakeries that invest in leadership development, employee training, and digital infrastructure are more likely to achieve service differentiation and operational excellence (Melesse & Orrù, 2025; Nkosi, 2022). Understanding these dynamics is crucial for informing policy, guiding investment, and enhancing the competitiveness of Port Harcourt's baking sector.

Thus, the current study primarily aims to examine the influence of change management drivers on innovation outcomes of selected commercial bakery in Port Harcourt Metropolis. Specifically, the study seeks to:

i. Determine the influence of leadership style on service innovation in the baking industry.
ii. Evaluate the influence of leadership style on operational efficiency in the baking industry.
iii. Examine the influence of employee involvement on service innovation in the baking industry.
iv. Assess the influence of employee involvement on operational efficiency in the baking industry.
v. Investigate the influence of technological readiness on service innovation in the baking industry.
vi. Analyze the influence of technological readiness on operational efficiency in the baking industry.

THEORETICAL REVIEW

This study is anchored on two theoretical lenses: Change Management Theory (Lewin,1947) and the Dynamic Capabilities Theory (Teece et al., 1997). These theories provide complementary perspectives for understanding how internal organizational elements drive innovation outcomes, particularly within dynamic, small-to-medium-scale industries such as the baking sector in Port Harcourt. Lewin's model outlines change as a three-phase process—unfreezing, changing, and refreezing—emphasizing the importance of leadership in initiating transformation, employee involvement in the adoption of new behaviours, and organizational reinforcement mechanisms to institutionalize innovation practices (Lewin, 1947; Memon et al., 2021). Leadership style, therefore, plays a catalytic role in "unfreezing" old mindsets by communicating urgency and setting the tone for transformation, while employee involvement and technological readiness are critical during the "change" phase, where new processes are implemented. The "refreezing" phase ensures continuity, where innovation becomes embedded in the operational culture and performance routines of the organization (Errida & Lotfi, 2021; Humanikwa, 2022).

However, while Lewin's theory articulates the structured process of change, it does not fully account for the strategic adaptability that enables some firms to repeatedly respond to disruption. To address this limitation, the study draws on the Dynamic Capabilities Theory, which emphasizes an organization's ability to build, reconfigure, and deploy internal and external resources to navigate turbulent environments (Teece et al., 1997). Within this framework, leadership style facilitates the sensing of emerging trends and challenges, positioning the organization to act proactively (Ellström et al., 2021). Employee involvement is central to seizing innovation opportunities through ideation, feedback, and continuous learning, while technological readiness enables the reconfiguration of workflows and infrastructure to meet shifting market demands (Hassani & Mosconi, 2022; Muneeb et al., 2023). In this way, the DCT framework not only reinforces the strategic relevance of the variables under study but also situates them within the broader discourse of resilience and innovation in emerging-market enterprises.

Together, these theories form a robust theoretical foundation for this research. While Lewin's Change Management Theory provides a procedural map for how transformation occurs in stages, the Dynamic Capabilities Theory elaborates the institutional strengths and behaviours that allow firms to repeat this process and remain agile. In unison, they offer a multi-layered lens through which the influence of leadership style, employee involvement, and technological readiness on innovation outcomes—manifesting as both service innovation and operational efficiency—can be critically examined. This synthesis enriches the study's conceptual grounding and ensures a comprehensive analysis of change dynamics within the uniquely volatile and opportunity-rich context of Port Harcourt's baking industry.

CONCEPT OF CHANGE MANAGEMENT DRIVERS

Organisational change, broadly conceived, is the deliberate alteration of structures, processes, or behaviours to improve effectiveness in the face of shifting internal and external conditions. Within this stream of inquiry, change-management drivers refer to the constellation of organisational factors that instigate, shape, and sustain transformation (Hayes, 2022; Imran et al., 2021). Literature (Da Ros et al., 2023; Graham et al., 2022) consistently highlights three inter-related drivers—leadership style, employee involvement, and technological readiness—as pivotal levers that move firms from intention to successful implementation. Rather than discrete events, these drivers operate as mutually reinforcing capabilities that determine whether change programmes mature into enduring sources of competitive advantage.

The potency of these drivers is most evident when considered through the dynamic-capabilities lens, which views sensing, seizing, and reconfiguring as the engines of renewal. Leadership style governs the sensing of opportunities and threats; employee involvement enhances the seizing of those opportunities through rapid ideation and experimentation; and technological readiness enables the reconfiguration of assets to embed new routines (Adegbite et al., 2018; Deszca et al., 2024). Meta-analytic evidence confirms that organisations displaying coherent combinations of these drivers record superior gains in service innovation and operational effectiveness, even after controlling for size and industry effects (Da Ros et al., 2023).

Research (Garba et al., 2023; Melesse & Orrù, 2025) situated in food-processing and bakery contexts further substantiates these relationships. Additionally, Ahmed et al. (2021) found that innovative capabilities mediated by technological infrastructure significantly boosted firm performance in the food sector. In the wake of Industry 4.0, bakeries adopting cloud-linked ovens, predictive maintenance, and data-driven inventory systems have reported lower waste and faster product-development cycles (Melesse & Orrù, 2025). Case evidence from India and Africa likewise shows that owner-managers who promote inclusive decision-making and invest in digital tools outperform peers on flexibility and product variety. These findings confirm that change-management drivers are not merely abstract constructs; they translate into tangible economic and social benefits in real-world bakery operations (Iyaji, 2023; Mehdi et al., 2022).

For commercial bakeries, especially in the Nigeria context, the relevance of these drivers is amplified by volatile wheat prices, erratic power supply, and rapidly evolving consumer preferences for healthier and convenience-oriented baked goods (Oyebola et al., 2025). Consequently, the present study conceptualises change-management drivers as an integrated triad—leadership style, employee involvement, and technological readiness—whose combined effectiveness determines whether Port Harcourt bakeries can translate change initiatives into sustained innovation outcomes.

Leadership Style

Leadership has long been recognized as the fulcrum of organizational change, setting the tone for transformation by articulating strategic vision, signaling organizational priorities, and mobilizing critical resources (Canterino et al., 2020). Within dynamic and customer-sensitive sectors such as the baking industry, where innovation and adaptability are vital for sustaining competitive advantage, the role of leadership is particularly pronounced. Leadership style—defined as the habitual behaviors and approaches adopted by individuals in leadership positions to influence and manage teams—shapes how an organization initiates, embraces, and sustains change. Transformational and distributed leadership approaches are especially effective in this regard, as they are positively linked to employee commitment, knowledge sharing, and adaptive resilience (Errida & Lotfi, 2021).

In the context of change management, leadership style plays a pivotal role in shaping how the vision for transformation is communicated, how resistance is minimized, and how employees engage with reform processes. Visionary and transformational leaders foster environments of openness, learning, and psychological empowerment, enabling employees to embrace innovation without fear of failure or reprisal (Islam et al., 2021). Participative leadership further enhances this by actively involving employees in decision-making, building ownership of outcomes, and cultivating a collaborative culture that drives innovation from within (Alarifi & Adam, 2023). In bakery settings, where frontline staff often hold practical insights into operational bottlenecks and customer preferences, such engagement is crucial for achieving service-oriented innovation and operational refinement.

Moreover, leadership style significantly shapes the psychological climate of an organization, particularly in sectors like baking where the integration of new technologies and processes often challenges traditional methods. Participatory leaders promote psychological safety—a

condition where employees feel encouraged to voice new ideas and experiment without negative consequences—thereby creating fertile ground for innovation (Chang et al., 2023). In contrast, autocratic or disengaged leadership styles tend to suppress creativity, stall adaptation, and reinforce resistance to change. Hence, understanding leadership style in the context of Port Harcourt's baking industry is not only relevant but essential for unlocking the internal dynamics that underpin successful innovation outcomes such as improved service offerings and enhanced operational effectiveness.

Employee Involvement

Complementing leadership, employee involvement brings frontline knowledge into the change process, thereby reducing resistance and accelerating organisational learning (Islam et al., 2021). It involves the meaningful participation of employees in decision-making processes, change implementation, and innovation activities. By integrating frontline knowledge into strategic and operational efforts, employee involvement not only accelerates organizational learning but also reduces resistance to change (Ajani, 2021). Participatory mechanisms—such as cross-functional teams, continuous-improvement circles, and collaborative feedback loops—often serve as mediators between managerial intent and performance outcomes, ensuring that reforms resonate with operational realities and staff perspectives (Ahmed et al., 2021).

Employee engagement in change processes enhances both the psychological and functional dimensions of innovation. Workers who feel heard and valued are more inclined to embrace transformation, contribute creative solutions, and support the refinement of service delivery and operational practices. This is especially relevant in bakery settings, where frontline staff possess deep, often tacit, knowledge of customer expectations, production workflows, and quality constraints (Nkosi, 2022; Yusuf et al., 2022). Studies suggest that when organizations invite employees to co-create change—rather than treat them as passive recipients—trust and morale increase, which strengthens organizational commitment and accountability (Linzalone & Lerro, 2021).

Conversely, the absence of employee involvement has consistently been linked to low motivation, heightened resistance, and the failure of change initiatives. Employees who are excluded from planning or not adequately informed about the purpose and benefits of reforms may resist out of fear, uncertainty, or disengagement (Markos & Gossaye, 2021). This undermines innovation efforts and can erode operational effectiveness over time. In Port Harcourt's baking sector, where many businesses are small to medium enterprises with limited capacity for trial-and-error reform, harnessing employee insights and commitment is not just beneficial—it is essential for sustainable innovation and adaptive success.

Technological Readiness

Finally, technological readiness captures the extent to which a firm possesses the digital infrastructure, data literacy, and absorptive capacity needed to integrate new tools into its workflows (Wani et al., 2024). A robust technology base not only facilitates operational upgrades but also expands the portfolio of feasible innovations, thereby magnifying the impact of leadership and employee initiatives. Technological readiness refers to an

organization's preparedness to adopt, implement, and benefit from new technologies in response to internal goals or external environmental demands. It is a key driver of successful change management, especially in industries like baking where digital tools, automation, and advanced machinery are increasingly reshaping production and service processes (Melesse & Orrù, 2025; McClements et al., 2021).

Technological readiness encompasses both infrastructural capacity—such as the availability of up-to-date equipment, digital systems, and tools—and human capacity, including the skills, attitudes, and adaptability of employees towards technological change (Shahadat et al., 2023). In bakery operations, this readiness determines how smoothly innovations like automated kneading machines, digital inventory systems, and online ordering platforms can be integrated into day-to-day functions. Organizations with high technological readiness are more likely to respond effectively to change initiatives because they possess the capability to support innovation through available systems and a workforce that is both trained and receptive to adopting new tools (Khan et al., 2021; Wani et al., 2024). This is especially critical in the baking sector, where responsiveness to consumer demands—such as gluten-free or custom-order products—often relies on modern production technologies. A lack of technological readiness, on the other hand, can hinder innovation outcomes. Resistance from untrained staff, outdated infrastructure, and low digital maturity can delay or derail change efforts, resulting in poor operational efficiency and service delivery (McClements et al., 2021; Yusuf et al., 2022). Therefore, readiness is not only about possessing technology, but also about having the strategic mindset and operational framework to leverage it effectively.

Concept of Innovation Outcome

Innovation outcome refers to the measurable and perceptible results—both tangible and intangible—that emerge from an organization's successful implementation of new ideas, technologies, processes, or business models. These outcomes reflect how effectively an organization adapts to environmental shifts, responds to customer expectations, and translates internal transformation efforts into performance gains. In modern business contexts, innovation outcomes serve as crucial indicators of an enterprise's dynamism and strategic agility (Dziallas & Blind, 2019). Importantly, innovation outcomes are not restricted to new products or technologies. They also include process enhancements, service delivery improvements, organizational restructuring, and novel approaches to stakeholder interaction that collectively elevate performance and create competitive differentiation (McClements et al., 2021). In highly consumer-driven sectors such as the baking industry, innovation outcomes manifest in firms' responses to evolving trends such as digitalization, sustainability, and health-conscious consumption (Fidalgo & Miranda, 2023).

The realization of effective innovation outcomes depends significantly on enabling conditions within the firm—particularly a culture that supports creativity, leadership that promotes experimentation, and a workforce equipped with the skills and flexibility to implement change (Oyebola et al., 2025). When these conditions align with strategic direction, innovation can lead to superior responsiveness, greater market relevance, and long-term business sustainability. Moreover, innovation outcomes act as feedback mechanisms, guiding future strategic actions. They help determine whether past change efforts have successfully

enhanced quality, customer satisfaction, or operational performance—thus informing whether and where further innovation investment is warranted. Innovation outcomes, therefore, are not merely end goals but also strategic assets that drive continuous learning, adaptation, and transformation (Melesse & Orrù, 2025; Shin & Perdue, 2022).

Service Innovation

Service innovation refers to the creation and implementation of new or significantly enhanced service processes, delivery mechanisms, or customer engagement strategies designed to improve value for both the business and its clientele. In the bakery industry, where traditional craftsmanship meets rapidly shifting consumer expectations, service innovation plays a central role in maintaining competitive advantage and deepening customer loyalty (Shin & Perdue, 2022).

Unlike product innovation, which focuses on physical goods, service innovation is largely intangible. It includes enhancements in customer experience, personalization, real-time service responsiveness, digital service channels (such as mobile ordering), loyalty programs, and delivery logistics (Linzalone & Lerro, 2021). For example, a bakery that implements an online ordering system, paired with same-day delivery and customizable dietary options, illustrates how service innovation can meet modern consumer needs while streamlining operations. Service innovation is often enabled by a synergy of change management drivers. Leadership that fosters experimentation, employees that actively contribute to service design, and a technologically prepared infrastructure collectively determine whether service innovations succeed or stall (Ul-Hameed et al., 2022). In this sense, service innovation is not just a result of organizational change but also a means of sustaining it.

Furthermore, service innovation serves as a key differentiator in saturated markets. In the Port Harcourt baking sector, where products may be similar in appearance or taste, value-added services such as subscription-based delivery or allergen-sensitive customization can build customer loyalty and boost brand relevance. Hence, effective service innovation links strategic foresight with consumer insight to build long-term customer relationships (Moskowitz et al., 2006).

Operational Efficiency

Operational efficiency refers to an organization's ability to deliver products or services in a cost-effective manner while maintaining high standards of quality, speed, and customer satisfaction. It involves the optimization of processes, reduction of waste, and maximization of resources to improve organizational performance and competitiveness (Dziallas & Blind, 2019). For bakeries in particular—where input perishability, tight margins, and consumer demand for freshness and speed are non-negotiable—operational efficiency is critical. Efficiency improvements in the baking sector often stem from automation technologies, real-time inventory systems, streamlined supply chains, and optimized workforce allocation. For example, bakeries that utilize temperature-controlled logistics, digital order management, or automated dough mixers can reduce downtime and errors while increasing output quality (Melesse & Orrù, 2025).

This dimension of innovation outcome is strongly influenced by change management drivers such as technological readiness and employee involvement. Technological readiness determines whether a firm has the infrastructure and capability to adopt process innovations, while employee involvement ensures frontline workers contribute their practical insights for workflow improvements (Oyebola et al., 2025). Employees often detect inefficiencies earlier than management and can offer context-specific solutions when appropriately engaged. In summary, operational efficiency in the baking industry is not only about cost reduction but also about aligning people, processes, and technology to deliver consistent value. When well-executed, it enables bakeries to respond quickly to demand shifts, scale operations, and sustain profitability in competitive environments (Abdu & Galoji, 2022).

CHANGE MANAGEMENT DRIVERS AND INNOVATION OUTCOMES

This study by Alarifi and Adam (2023) was conducted in the context of the COVID-19 crisis, during which small and medium-sized enterprises (SMEs) faced significant disruptions and sustainability challenges. The researchers aimed to explore how participatory leadership and employee work innovative behavior (EWIB) influenced the survival of SMEs during this period. Rooted in social exchange theory, the study postulated that participatory leadership could mediate the relationship between employee innovation and organizational resilience. The study adopted a quantitative design using a structured questionnaire distributed to 390 managers across 114 randomly selected medium-sized enterprises in Saudi Arabia. The data was analyzed using Structural Equation Modeling (SEM) to test the proposed mediating relationships. The findings revealed a significant and positive association between employee innovative behavior and participatory leadership. The study is particularly relevant to the present research, as it establishes a clear linkage between leadership style and innovation-related outcomes in SMEs.

In another study, Katsaros et al. (2020) investigated the influence of leadership on firm financial performance, with a specific focus on the mediating role of employees' readiness to change. Conducted within Greek shipping firms, the research sought to understand how leadership styles translate into improved organizational outcomes through employee adaptability—a key component of change management. A cross-sectional survey design was employed, with data collected from 213 employees who assessed their firm's leadership style, while supervisors appraised the employees' readiness to change. The study confirmed that leadership style significantly affected financial performance and that this relationship was mediated by employees' readiness to change. The findings demonstrate that leadership does not directly result in organizational performance gains unless employees are psychologically and behaviorally prepared to adapt. This aligns with the current study's argument that leadership alone is insufficient for innovation unless supported by employee involvement and readiness to integrate technological changes.

Collectively, these studies reinforce the notion that change management drivers—especially leadership style and employee involvement—are pivotal to enhancing organizational performance. The present study builds upon these foundations by incorporating technological readiness as an additional variable and focusing specifically on innovation outcomes (rather than financial or survival metrics) within Nigeria's bakery sector. By doing so, it extends the

existing literature into a new industrial and geographical context while maintaining theoretical consistency with prior research.

METHODOLOGY

This study employed a quantitative research design using a descriptive survey approach to investigate the relationship between change management drivers—namely leadership style, employee involvement, and technological readiness—and innovation outcomes such as service innovation and operational efficiency in large-scale commercial bakeries in Port Harcourt, Rivers State. This design was appropriate for the study as it enabled the collection of structured and measurable data from bakery employees and facilitated the use of statistical techniques to analyze patterns and relationships among the study variables.

The population of this study comprised employees of selected large-scale commercial bakeries operating within the Port Harcourt metropolis. Specifically, the study focused on employees from Sundry Foods Limited (Nibbles Bakery), Genesis Bread (a division of Genesis Group Nigeria), and Dripples Bakery, with the total number of staff across these bakeries estimated at 310. These establishments were selected based on their prominence, size, and geographical proximity to the researcher, making them representative of the formal commercial bakery sector within the study area. Using a stratified random sampling technique, respondents were proportionately drawn from various functional units such as production, quality control, logistics, sales, and customer service departments. A sample size of 175 respondents was determined as adequate for the study, determined using Yamane's formula (1967).

Data were collected using a structured questionnaire comprising five sections. Section A gathered demographic data, while Sections B to E focused on the core constructs of the study. The instrument was developed based on established measures from previous research (Alarifi & Adam, 2023; Iyaji, 2023; Katsaros et al., 2020) and tailored to suit the context of the Nigerian bakery industry. A 5-point Likert scale was used to capture respondent perceptions. To establish the validity of the instrument, the draft questionnaire was reviewed by experts in organizational behavior and change management, and their feedback informed its refinement. For reliability, the Cronbach's alpha coefficients for the major constructs all exceeded the acceptable threshold of 0.70, indicating good internal consistency: leadership style ($\alpha = 0.84$), employee involvement ($\alpha = 0.88$), technological readiness ($\alpha = 0.81$), service innovation ($\alpha = 0.85$), and operational efficiency ($\alpha = 0.87$).

The collected data were analyzed using the Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistics such as means, standard deviations, and frequencies were used to summarize the responses, while multiple regression analysis was employed to examine the predictive influence of the independent variables on the innovation outcomes. Hypotheses were tested at a 5% level of significance ($p < 0.05$).

Ethical procedures were strictly adhered to throughout the research. Participants were provided with informed consent forms, assured of the confidentiality of their responses, and notified of their right to withdraw at any point. Data collection and handling procedures were carried out in accordance with ethical standards for research involving human participants.

RESULTS

Demographic Profile of Respondents

The demographic analysis of the 175 respondents revealed a fairly diverse workforce across the selected bakeries in Port Harcourt. Approximately 58% of the participants were female, while 42% were male. In terms of age distribution, the majority (46%) fell within the 26–35 years range, followed by 34% aged between 18–25, and 20% above 36 years. Regarding educational background, 64% of the respondents held a diploma or higher national diploma, 22% possessed bachelor's degrees, while 14% had only secondary education. Most employees (63%) had between 2–5 years of experience in the bakery industry, indicating a moderately experienced workforce, while 25% had more than 5 years of experience. This profile reflects a youthful and technically grounded employee base, capable of adapting to change and innovation initiatives in the industry.

Descriptive Statistics of Study Variables

Descriptive statistics were used to understand employees' perceptions of the key constructs: leadership style, employee involvement, technological readiness, service innovation, and operational efficiency. The items were measured on a 5-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5).

The mean scores for all constructs were above 3.85, indicating generally positive perceptions. Leadership style had a mean of 4.03 (SD = 0.83), reflecting that managers were perceived as fairly transformational and communicative. Employee involvement recorded a mean of 3.90 (SD = 0.86), suggesting moderate but consistent inclusion in decision-making. Technological readiness had a slightly higher mean of 3.93 (SD = 0.81), indicating that bakeries are fairly equipped and adaptive with technology. Service innovation averaged 3.99 (SD = 0.84), while operational efficiency scored a mean of 3.95 (SD = 0.80), both reflecting a relatively innovative and performance-focused environment within the sampled bakeries.

Inferential Statistics: Hypotheses Testing

To test the hypothesized relationships between change management drivers (leadership style, employee involvement, and technological readiness) and innovation outcomes (service innovation and operational efficiency), multiple regression analysis was employed. The results are summarized in Table 1.

Table 1: Summary of Regression Analysis (N = 175)

Hypothesis	Predictor	Outcome Variable	β	t	p-value	Decision
H1	Leadership Style	Service Innovation	0.318	4.25	0.000**	Supported
H2	Employee Involvement	Service Innovation	0.284	3.91	0.000**	Supported
H3	Technological Readiness	Service Innovation	0.365	4.88	0.000**	Supported
H4	Leadership Style	Operational Efficiency	0.295	3.76	0.000**	Supported
H5	Employee Involvement	Operational Efficiency	0.252	3.10	0.002**	Supported
H6	Technological Readiness	Operational Efficiency	0.402	5.33	0.000**	Supported

Source: *IBM SPSS version 25.0 Output, 2025.*

the All hypotheses were statistically supported, with each predictor showing a significant positive influence on the respective innovation outcomes. Among the predictors, technological readiness had the strongest effect on both service innovation and operational efficiency, followed by leadership style and employee involvement. These findings underscore the vital role of digital infrastructure and inclusive leadership in driving innovation within the bakery sector.

DISCUSSION OF FINDINGS

The results of this study show unequivocally that leadership style, employee involvement and technological readiness each exerted a significant, positive influence on service innovation and operational efficiency in Port Harcourt's commercial bakery sector. Technological readiness emerged as the strongest predictor of both dimensions of innovation outcome, a pattern that accords with the argument that digital capacity has become the decisive enabler of process agility and customer-centric service design in food-production settings (McClements et al., 2021; Melesse & Orrù, 2025). Leadership style ranked next in explanatory power, confirming earlier evidence that participatory or transformational leadership galvanises employee creativity and facilitates the translation of ideas into commercially viable improvements (Alarifi & Adam, 2023; Katsaros et al., 2020). Employee involvement also proved significant, supporting the contention that frontline participation unlocks tacit knowledge essential for fine-grained operational refinements (Iyaji, 2023). Collectively, these findings validate the dual-theory framework employed—Lewin's Change Model explains the sequential management of change, whereas Dynamic Capabilities Theory clarifies why firms with superior sensing, seizing and reconfiguring capacities reap greater innovation benefits.

IMPLICATIONS OF THE STUDY

Theoretically, the study deepens change-management scholarship by demonstrating that technological readiness should be treated as a distinct, co-equal driver alongside leadership and employee factors when explaining innovation performance in digitally transitioning industries. Practically, the results highlight that investments in modern equipment, digital ordering platforms and staff technology training generate returns not only in efficiency but also in novel service configurations valued by customers. For bakery managers, the evidence suggests that visionary leadership and inclusive decision-making accelerate the pay-off from technology spending by fostering an organisational climate in which employees willingly experiment with new tools and workflows. Policymakers and trade associations can draw on these insights to frame support programmes—such as subsidised technology-training schemes or leadership-development workshops—that strengthen the competitiveness of Nigeria's bakery value chain.

CONCLUSION

This research set out to assess how leadership style, employee involvement and technological readiness shape two critical innovation outcomes—service innovation and operational efficiency—in large-scale commercial bakeries in Port Harcourt. Using survey data from 175

employees across three major bakeries and applying multiple-regression analysis, study found that all three change-management drivers significantly and positively predicted both innovation outcomes, with technological readiness exerting the greatest influence. These results underscore the centrality of digital capability, participatory leadership and employee engagement in driving sustainable competitive advantage in an increasingly demanding bakery market.

RECOMMENDATIONS

1. Prioritise digital investment and literacy. Bakery owners should allocate capital to modern production and information systems and institute continuous digital-skills training to maximise technology uptake and utilisation.
2. Adopt participatory leadership practices. Managers should routinely involve employees in change discussions, set up cross-functional innovation teams and reward idea generation to strengthen psychological ownership of change initiatives.
3. Formalise employee-driven process improvement. Establish suggestion schemes and rapid-feedback loops that allow frontline staff to identify bottlenecks and propose efficiency tweaks, thereby institutionalising involvement.
4. Integrate change management with strategic planning. Leadership should embed change-readiness metrics—such as technology adoption rates or participation scores—into annual performance reviews to ensure ongoing alignment between change drivers and innovation goals.

SUGGESTIONS FOR FUTURE STUDIES

Future research could adopt a longitudinal design to capture how change-management drivers and innovation outcomes co-evolve over time, especially as bakeries deepen their digital transformation. Comparative studies across different Nigerian cities—or between emerging and developed markets—would clarify the extent to which contextual factors moderate the strength of these relationships. Qualitative approaches, such as in-depth case studies, could uncover nuanced behavioural mechanisms that quantitative surveys may overlook, particularly regarding resistance to technological change. Finally, scholars might incorporate additional variables—such as organisational culture, external collaboration or customer co-creation—to build more comprehensive models of innovation in the food-processing sector.

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