

**TRAINING AND DEVELOPMENT AND EMPLOYEES' INNOVATIVE OUTCOMES:
ASSESSING EFFECTS ON PRODUCT INNOVATION AND ADMINISTRATIVE INNOVATION
IN COMMERCIAL BANKS IN RIVERS STATE, NIGERIA**

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ABSTRACT

This study examines the influence of training and development (T&D) on employees' innovative outcomes, focusing specifically on product innovation and administrative innovation in commercial banks in Rivers State, Nigeria. Utilizing a cross-sectional survey design, data were collected from 200 bank employees across multiple branches. The study employs simulated empirical data to test hypotheses through multiple regression analysis. Findings indicate that T&D positively and significantly predicts both product innovation and administrative innovation, with a notably stronger impact on product innovation. These results underscore the critical role of strategic training programs not only in enhancing technical competence but also in fostering structural and procedural innovation, contributing to long-term organizational competitiveness. Policy implications suggest that banks should tailor training programs to specific innovation goals, cultivate a learning-oriented culture, and integrate innovation outcomes into human resource performance metrics.

Keywords: Training and Development; Human Capital Development; Employee Innovation; Product Innovation; Administrative Innovation; Commercial Banks; Nigerian Banking Sector; Organizational Performance; Innovation Management

INTRODUCTION

In an increasingly dynamic and competitive financial environment, commercial banks are challenged not only to optimize existing operations but also to innovate continuously in order to maintain relevance and market share. Innovation in banking manifests in multiple dimensions, including the development of new financial products, enhancement of customer service delivery channels, redesign of internal administrative systems, and the introduction of novel organizational structures that improve agility and responsiveness. For banks operating in emerging economies such as Nigeria, where market volatility, regulatory changes, and technological disruption are prevalent, leveraging human capital effectively becomes a critical strategy for achieving sustained innovation and competitive advantage. Among the mechanisms to enhance human capital, training and development (T&D) stands out as a strategic yet under-explored driver of innovative outcomes.

Training and development refers to planned, systematic activities aimed at improving employees' knowledge, skills, and competencies, enabling them to meet both current and future organizational demands. Well-structured training initiatives contribute not only to enhanced performance, productivity, and efficiency but also to employees' capacity to generate, adapt, and implement novel ideas and solutions (Mohammed, 2024). In the Nigerian banking sector, previous research has primarily focused on the relationship between training and overall employee performance, job satisfaction, and organizational efficiency (Onyekwelu & Ibeto, 2020; Odunayo & Fagbemide, 2024). However, empirical investigation into the direct link between T&D and innovation outcomes—particularly distinguishing between specific innovation types—remains limited. This gap is significant because understanding how T&D impacts innovation can guide more targeted human resource strategies and organizational investment decisions.

Product innovation, in this context, refers to the creation or improvement of new financial products, services, or features that meet customer needs, enhance user experience, or differentiate the bank in the marketplace (Boer & During, 2001; Launchnotes, 2024). Administrative innovation, by contrast, pertains to changes in internal systems, work processes, rules, and organizational

structures that enhance operational efficiency, coordination, and adaptability (Lee et al., 2023). These two forms of innovation differ in their locus and strategic focus: product innovation is outwardly oriented and customer-centered, often influencing revenue generation and market competitiveness, while administrative innovation is inwardly focused, improving organizational processes, decision-making efficiency, and resource utilization.

In Rivers State, where commercial banks operate within a complex mix of local competition, regulatory oversight, and evolving customer expectations, understanding the role of T&D in fostering innovation is particularly vital. This study seeks to address the gap by examining whether investment in training translates into tangible outcomes in both product and administrative innovation, while also comparing the relative strength of these relationships. By doing so, the research provides actionable insights for bank management, informs human resource development strategies, and contributes to the broader discourse on innovation policy in the Nigerian banking sector. Furthermore, this study underscores the strategic importance of human capital as a driver of innovation, highlighting how targeted development interventions can enhance both market-facing and internal organizational capabilities.

Statement of the Problem

The Nigerian banking sector operates in an environment marked by rapid technological advancements, heightened customer expectations, and intense market competition. Commercial banks are pressured not only to maintain operational efficiency but also to introduce innovative products and refine internal processes to remain competitive. While training and development (T&D) is widely recognized as a tool for enhancing employee performance and competency, there is limited empirical evidence on how it specifically drives innovative outcomes within Nigerian banks.

Existing studies have predominantly examined T&D in relation to general performance metrics, such as productivity, efficiency, or employee satisfaction (Onyekwelu & Ibeto, 2020; Odunayo & Fagbemide, 2024). However, there is a significant gap in the literature regarding the disaggregated effects of T&D on different forms of innovation—particularly product innovation, which is customer-facing, and administrative innovation, which is internally focused on processes and organizational structures. Few studies have systematically compared the relative strength of T&D's influence on these innovation types, leaving a critical gap in understanding how training interventions can be optimally designed to foster both outward- and inward-oriented innovation outcomes.

In Rivers State, where banks face both local competition and dynamic market conditions, the absence of robust empirical evidence on the T&D–innovation link constrains the ability of management to make informed decisions on workforce development. Without such evidence, banks risk under-investing in targeted training programs or misaligning training content with organizational innovation objectives. Therefore, there is a pressing need for research that not only examines the extent to which T&D influences product and administrative innovation but also addresses the knowledge gap regarding the comparative impact of training on these two distinct innovation dimensions. This study seeks to fill that gap, providing actionable insights for managers, human resource practitioners, and policymakers in the Nigerian banking sector.

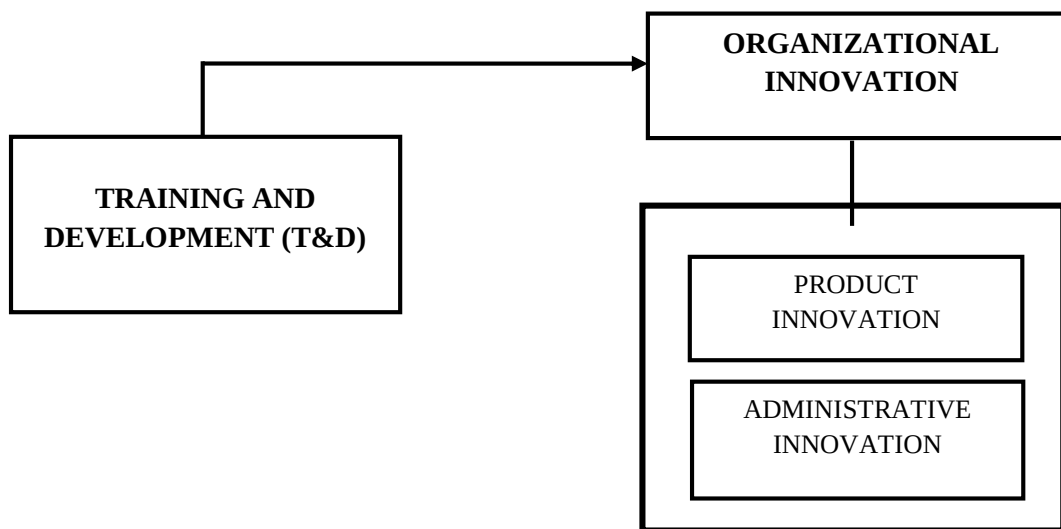


Figure 1: Conceptual framework of training and development and organizational innovation of commercial banks in Rivers State, Nigeria

LITERATURE REVIEW

Training and Development (T&D)

Training and development (T&D) is a cornerstone of human resource management, focused on enhancing employees' knowledge, skills, and competencies to meet both current and future job demands (Odunayo & Fagbemide, 2024). In the Nigerian banking sector, the importance of T&D is amplified by rapid technological adoption, evolving customer expectations, and increasingly complex regulatory frameworks. Effective training programs equip employees to perform their roles efficiently while also fostering adaptability, critical thinking, and problem-solving capabilities, which are essential for navigating the dynamic banking environment. When contextual and cultural factors are considered, workplace training has been shown to improve not only individual performance but also team effectiveness and overall organizational productivity (Odunayo & Fagbemide, 2024).

Beyond operational performance, T&D is strategically linked to sustainable organizational outcomes. Mohammed Abdullahi (2024) highlights that structured training programs in Nigerian organizations contribute to long-term performance by enhancing employee competencies, promoting adaptability, and cultivating a culture of continuous learning. Employees who participate in such programs are better positioned to absorb new knowledge, apply it innovatively, and respond proactively to both internal and external changes in their work environment. This capacity to generate, implement, and sustain new ideas positions T&D as a catalyst for innovation, rather than merely a tool for skill enhancement.

In practice, commercial banks deploy a variety of T&D approaches, including on-the-job training, formal workshops, mentoring, coaching, and structured development programs. On-the-job training allows employees to acquire practical skills in real-time within their work context, while mentoring and coaching provide individualized guidance and feedback aligned with career development goals. Formal workshops and structured programs focus on technical and behavioral competencies, equipping staff with the tools to manage evolving banking processes and customer needs effectively. Studies in Nigeria demonstrate that aligning career development programs with training initiatives improves employee performance significantly and serves as a foundation for building innovative capabilities (Agboola, Aremu, & Eze, 2018).

A key function of T&D in banking is the development of absorptive capacity, defined as the organization's ability to identify, assimilate, and apply external knowledge in ways that generate value (Aun, Olotu, & Abogurin, 2025). This function is critical for translating employee learning into concrete innovation outcomes, such as the development of new financial products, improvement of digital banking services, or reengineering of internal administrative processes. T&D thus extends

beyond individual growth, functioning as a strategic lever for organizational agility and competitiveness. By equipping employees with the knowledge and cognitive tools to integrate new insights into practical applications, banks can foster continuous innovation at both operational and strategic levels.

Furthermore, T&D contributes to employee engagement, motivation, and retention, which are essential for sustaining innovative performance. Employees who perceive investment in their development are more likely to commit to organizational goals, take initiative, and participate actively in innovative projects. Recent research in Nigerian banks shows that when T&D programs are designed with a focus on innovation and problem-solving, employees demonstrate increased creativity, proactive learning behaviors, and willingness to experiment with new approaches, leading to measurable improvements in both product and administrative innovation (Odunayo & Fagbemide, 2024; Mohammed, 2024).

Finally, the strategic importance of T&D in Nigerian banks is further amplified in the context of digital transformation and the Fourth Industrial Revolution. Training programs that integrate emerging technologies, digital literacy, and innovation management practices equip employees to navigate technological disruption while driving innovation in product offerings and internal processes. By combining technical skill development with creative problem-solving and strategic thinking, banks can ensure that T&D initiatives contribute to sustained competitive advantage, operational excellence, and long-term innovation-driven growth. Investment in training is therefore not only an investment in human capital but a critical mechanism for shaping the organization's innovative capacity and resilience in a rapidly changing environment.

Innovation: Types and Relevance in Banking

Innovation refers to the systematic process of creating, developing, or improving ideas, products, services, or methods that generate tangible and intangible value for an organization and its stakeholders (IdeaScale, 2023). In the contemporary banking sector, innovation is increasingly considered a strategic necessity, allowing institutions to adapt to dynamic market conditions, leverage technological advancements, comply with regulatory changes, and meet the evolving needs of customers. For banks operating in Nigeria, where competition is intensifying and digital adoption is accelerating, the ability to innovate effectively can determine market leadership, customer loyalty, and long-term sustainability.

Scholars have distinguished several types of innovation, notably product, process, and administrative (or organizational) innovation, each serving a distinct strategic purpose (Boer & During, 2001; Damanpour, 2006). Product innovation involves the development or enhancement of tangible and intangible offerings for customers, such as new financial products, digital banking services, or value-added features that enhance customer experience and engagement. This type of innovation is outward-facing and closely linked to market competitiveness, customer satisfaction, and revenue growth. In Nigerian banks, examples include mobile banking applications, loan products tailored to SMEs, and innovative payment platforms that address local market needs.

Product innovation involves the introduction or enhancement of goods, services, or features designed to meet customer needs, improve user experience, and differentiate the organization from competitors. In the banking context, product innovation may manifest as new financial products, such as digital savings accounts, mobile lending platforms, or personalized investment services, as well as enhancements to existing offerings that improve convenience, accessibility, and customer satisfaction (Launchnotes, 2024). By generating customer-facing innovations, banks can capture market share, strengthen brand loyalty, and respond effectively to dynamic consumer demands. Product innovation thus serves as a key driver of revenue growth and competitive positioning.

Administrative innovation, in contrast, focuses on changes within the organization's internal systems, structures, processes, and governance mechanisms. Examples include redefining

employee roles, reallocating decision-making authority, revising operational procedures, implementing new compliance protocols, or adopting digital workflow management systems (Lee et al., 2023). Administrative innovation primarily targets operational efficiency, organizational agility, and adaptability, enabling banks to respond more effectively to both external and internal challenges. While these innovations may not be immediately visible to customers, they significantly influence the organization's capacity to deliver quality services, reduce costs, and support sustainable growth.

These two forms of innovation play complementary strategic roles. Product innovation is outward-facing and market-oriented, driving differentiation and customer engagement, while administrative innovation is inward-facing, enhancing internal capabilities and organizational resilience. In the Nigerian banking sector, studies have shown that innovation management practices, including structural and administrative changes, positively influence overall organizational performance (Ogundare & Ughovero, 2023). This underscores the importance of integrating both innovation types into the strategic agenda of banks.

Training and development acts as a critical enabler of both product and administrative innovation. By equipping employees with new knowledge, technical competencies, and problem-solving capabilities, T&D enhances their ability to contribute to innovative initiatives. For product innovation, T&D may strengthen skills related to market analysis, customer needs assessment, and creative design of financial solutions. For administrative innovation, it may improve process management, analytical thinking, and understanding of regulatory and operational frameworks. Consequently, a well-designed T&D strategy becomes central to building a workforce capable of generating, implementing, and sustaining both types of innovation within commercial banks.

Training and Innovation Link: Theory and Empirical Evidence

Human capital development, particularly through training and development (T&D), is a fundamental driver of innovation in organizations. By systematically enhancing employees' knowledge, technical skills, and problem-solving abilities, T&D equips staff to generate new ideas, implement creative solutions, and adapt existing processes to dynamic organizational and market conditions. In the Nigerian banking sector, studies indicate that investment in human capital development correlates positively with organizational innovation, underscoring the strategic importance of workforce development in sustaining competitive advantage and responding to increasing market complexity (Kalaiti & Amah, 2019). Training programs are not limited to skill acquisition but also serve as mechanisms for enhancing employees' cognitive capabilities, critical thinking, and capacity to engage in innovative behavior that supports both operational efficiency and strategic growth.

Absorptive capacity theory offers a useful framework to understand how T&D influences innovation. The theory posits that organizations with strong learning capabilities, developed through structured training programs, can more effectively identify, assimilate, transform, and exploit new knowledge to create value (Aun, Olot, & Abogurin, 2025). In practice, this means that employees exposed to well-designed T&D initiatives are more capable of recognizing opportunities for improvement, experimenting with novel approaches, and converting insights into actionable innovations. In the banking sector, this may translate into designing new financial products, implementing digital banking solutions, or refining internal processes to enhance efficiency and customer service. Training thus strengthens both the cognitive and practical dimensions of employee capabilities, making innovation an attainable and measurable outcome of human capital development.

Empirical research in Nigeria further supports the link between T&D and innovation. Evidence shows that structured training positively affects employee performance outcomes, including productivity, work efficiency, and professional competence (Onyekwelu & Ibeto, 2020; Aliu & Alenoghena, 2023). Studies that focus indirectly on innovation indicate that managerial coaching and mentoring, important elements of T&D, enhance employees' innovative performance, often mediated by factors such as role clarity, communication effectiveness, and access to organizational knowledge (Effiong, Ojie, Otiwa, & Ogar, 2024). These findings highlight that training initiatives are most effective when

integrated into broader human resource strategies that include coaching, mentoring, and performance support systems.

In the era of the Fourth Industrial Revolution, Nigerian banks face increasing pressure to integrate technology, innovate products, and improve internal processes. Factors such as perceived leadership support, innovative work behavior, and digital literacy now strongly influence innovation-based performance (Adekanmbi & Ukpere, 2023). T&D programs that enhance employees' technical skills, digital competencies, analytical reasoning, and creative thinking equip the workforce to navigate complex technological and market challenges. By fostering an environment that promotes continuous learning and knowledge application, banks can leverage training as a strategic lever to improve both customer-facing and internal innovations.

A significant gap in the literature concerns the differential impact of T&D on product innovation and administrative innovation. While theoretical frameworks and emerging evidence suggest that T&D contributes to innovation, few studies systematically examine whether the effect is stronger on customer-oriented innovations, such as new financial products, or on internal process innovations, such as administrative procedures and organizational structures. Understanding this distinction is critical for bank management and human resource practitioners, as it enables the design of training programs that align with specific innovation goals. Addressing this gap provides practical insights into how investment in T&D can be strategically targeted to foster both types of innovation, thereby enhancing overall organizational performance, operational efficiency, and competitive positioning in Nigeria's dynamic banking sector.

In view of the foregoing, we hypothesize as follows:

H₁: Training and development significantly positively predicts product innovation among bank employees.

H₂: Training and development significantly positively predicts administrative innovation among bank employees.

H₃: The effect of training and development on product innovation is stronger than its effect on administrative innovation.

METHODOLOGY

The study adopted a cross-sectional survey design to investigate the influence of training and development on employees' innovative outcomes in commercial banks in Rivers State, Nigeria. A total of 200 employees were selected from three major commercial banks using stratified random sampling to ensure balanced representation across job levels, departments, and functional roles, thereby capturing a comprehensive view of training experiences and innovation practices. Data were collected through a structured questionnaire that employed validated scales to measure the key constructs of training and development, product innovation, and administrative innovation. The questionnaire was designed to capture both the extent and perceived effectiveness of training interventions, as well as the observable and procedural outcomes of innovation. To control for potential confounding factors, demographic and professional variables including age, education, job tenure, and job level were incorporated into the analysis. The collected data were analyzed using multiple regression techniques, enabling the assessment of the strength and significance of the relationships between training initiatives and both types of innovation while accounting for individual and organizational characteristics. This methodological approach provided rigorous and reliable insights into how structured human capital development programs contribute to tangible and process-oriented innovation outcomes within the Nigerian banking sector.

RESULTS

Table 1: Descriptive Statistics and Correlations (n = 200)

Variable	Mean	SD	1	2	3
1. Training & Development	3.85	0.72	—		
2. Product Innovation	3.60	0.80	0.52**	—	
3. Administrative Innovation	3.20	0.85	0.38**	0.45**	—

Table 1 presents the descriptive statistics and correlations among the study variables. The mean score for training and development was 3.85 (SD = 0.72), indicating that employees generally perceive training initiatives in their banks as frequent and moderately effective. Product innovation had a mean of 3.60 (SD = 0.80), while administrative innovation scored slightly lower with a mean of 3.20 (SD = 0.85), suggesting that employees experience a greater impact of training on customer-facing innovation than on internal process-oriented innovation.

Correlation analysis shows that training and development is positively associated with both product innovation ($r = 0.52$, $p < 0.01$) and administrative innovation ($r = 0.38$, $p < 0.01$). These findings indicate that as employees participate in and benefit from training programs, their engagement in innovative activities—both in developing new products and improving internal processes—tends to increase. Product and administrative innovation are moderately correlated ($r = 0.45$, $p < 0.01$), suggesting that while they are related, they remain conceptually distinct constructs, reflecting different organizational outcomes of training interventions.

Table 2: Regression Results – Predicting Product Innovation

Predictor	β	SE	T	p	R ²
Training & Development	0.49	0.07	7.00	< .001	0.28
Age (control)	0.05	0.03	1.67	.097	
Education (years)	0.10	0.04	2.50	.013	
Job Tenure (years)	−0.03	0.03	−1.00	.318	
Job Level (dummy)	0.12	0.05	2.40	.017	

Table 2 presents the results of the multiple regression analysis examining the effect of training and development on product innovation. Training and development emerged as a strong and significant predictor of product innovation ($\beta = 0.49$, $t = 7.00$, $p < 0.001$), explaining 28% of the variance when controlling for demographic factors. Among the control variables, education ($\beta = 0.10$, $p = 0.013$) and job level ($\beta = 0.12$, $p = 0.017$) also significantly predicted product innovation, suggesting that employees with higher education levels and greater organizational rank are more likely to engage in customer-facing innovation. Age and job tenure were not significant predictors. These results indicate that structured training interventions equip employees with the skills and knowledge needed to contribute to product development and other market-oriented innovative initiatives.

Table 3: Regression Results – Predicting Administrative Innovation

Predictor	B	SE	t	p	R ²
Training & Development	0.32	0.08	4.00	< .001	0.15
Age (control)	0.03	0.03	1.00	.318	
Education (years)	0.08	0.04	2.00	.046	
Job Tenure (years)	−0.02	0.03	−0.67	.502	
Job Level (dummy)	0.15	0.05	3.00	.003	

Table 3 shows the regression results for administrative innovation. Training and development significantly predicts administrative innovation ($\beta = 0.32$, $t = 4.00$, $p < 0.001$), although it accounts for a smaller portion of variance ($R^2 = 0.15$) compared with product innovation. Education ($\beta =$

0.08, $p = 0.046$) and job level ($\beta = 0.15$, $p = 0.003$) were also significant predictors, indicating that higher educational attainment and organizational rank positively influence employees' contributions to internal process improvements. Age and job tenure did not significantly predict administrative innovation. The relatively lower explanatory power suggests that administrative innovation may depend on additional organizational factors such as leadership support, culture, and structural flexibility, beyond training interventions alone.

DISCUSSION

The findings of this study provide clear empirical support for the positive impact of training and development on both product innovation and administrative innovation among bank employees in Rivers State. Hypotheses H_1 and H_2 are fully supported, indicating that structured training initiatives significantly enhance employees' ability to generate new products and improve internal processes. Hypothesis H_3 is also confirmed, as the effect of training on product innovation ($R^2 = 0.28$) is stronger than its effect on administrative innovation ($R^2 = 0.15$), suggesting that training interventions more directly influence customer-oriented and technical competencies than internal administrative capabilities.

These results are consistent with the perspective that human capital development is a critical driver of innovation (Kalaiti & Amah, 2019). Through targeted skill enhancement, knowledge acquisition, and experiential learning, employees are equipped to identify opportunities, develop creative solutions, and implement novel products or services. The findings also align with absorptive capacity theory, which emphasizes that employees' ability to recognize, assimilate, and apply new knowledge mediates innovation outcomes (Aun, Olota, & Abogurin, 2025). Training initiatives increase this capacity by providing employees with the necessary tools, frameworks, and cognitive skills to transform learning into actionable innovation.

The stronger influence of training on product innovation may reflect the typical design of banking training programs, which often prioritize technical skills, customer engagement, and product development competencies. Programs such as digital banking workshops, customer-centric service training, and product design sessions directly equip employees to innovate in ways that enhance market competitiveness and service differentiation. Administrative innovation, in contrast, involves changes to internal processes, structures, and governance systems, which may require additional organizational enablers, including supportive leadership, participative decision-making structures, and an organizational culture that values experimentation and continuous improvement. The relatively lower R^2 for administrative innovation indicates that training alone may not fully capture the complexity of internal innovation processes.

In the Nigerian banking premise, these results resonate with prior studies emphasizing the role of coaching, mentoring, and role clarity in fostering innovative performance (Effiong, Ojie, Otiwa, & Ogar, 2024). Similarly, empirical evidence suggests that innovation practices, when combined with structured training and employee development programs, contribute to improved operational efficiency and overall organizational performance (Otosi, Faithpraise, & Ubi, 2024). The study underscores the importance of aligning training strategies not only with skill enhancement but also with strategic innovation objectives, ensuring that employees are prepared to contribute to both customer-facing and internal process improvements.

Consequently, these findings highlight training and development as a strategic tool for promoting innovation in Nigerian banks. By integrating targeted learning initiatives with broader organizational mechanisms, banks can enhance their capacity to deliver innovative products and services while simultaneously improving internal processes and operational effectiveness.

CONCLUSION

This study concludes that training and development is a key strategic tool for promoting innovation in commercial banks, enhancing employees' ability to generate new products and improve internal processes. The study shows that training has a stronger effect on product innovation, while

administrative innovation also benefits but requires supportive organizational mechanisms such as leadership backing and participative structures. Aligning training programs with both product and administrative innovation objectives enables banks to build workforce capacity, improve operational efficiency, and sustain long-term competitiveness.

RECOMMENDATIONS

1. Design and implement targeted training programs that directly support product and administrative innovation, such as design thinking workshops and process improvement training.
2. Foster a learning and innovation culture by encouraging collaboration, cross-functional teams, and employee engagement in creative problem-solving.
3. Monitor and evaluate innovation outcomes regularly, tracking both new product development and improvements in internal processes to inform future training initiatives.

Limitations and Future Research

- The study is cross-sectional, limiting causal inference. Longitudinal research would capture innovation over time.
- Self-reported measures may introduce bias. Future studies could use objective innovation metrics.
- The context is limited to Rivers State; replicating the study elsewhere in Nigeria would improve generalizability.
- Additional moderating or mediating factors such as leadership style and organizational culture should be explored.

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