



BUSINESS RE-ENGINEERING AND ENTREPRENEURIAL GROWTH OF SMALL AND MEDIUM-SIZED ENTERPRISES (SMES) IN IMO STATE, NIGERIA.

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ABSTRACT: *Small and medium-sized enterprises (SMEs) play a vital role in employment generation, innovation, and economic development. However, many SMEs in Nigeria continue to experience growth challenges due to inefficient business processes and inadequate technological integration. Despite growing interest in business re-engineering, empirical evidence on the combined influence of process re-engineering and technological re-engineering on entrepreneurial growth among SMEs remains limited, particularly in developing economies. This study addresses this gap by examining the effect of process re-engineering and technological re-engineering on entrepreneurial growth, measured by sales growth and employment growth, among SMEs in Imo State, Nigeria. The study adopted a cross-sectional survey design. The population comprised 1,886 registered SMEs in Imo State, from which a sample size of 330 was determined using the Taro Yamane formula. Stratified sampling, Bowley's proportional allocation technique, and simple random sampling were employed in selecting respondents. Data were collected through a structured questionnaire, of which 293 valid copies were returned and analyzed. Face and content validity were established through expert review, while reliability coefficients were above 0.70 threshold. Data were analyzed using descriptive statistics and multiple regression analysis. The findings revealed that process and technological re-engineering significantly influenced sales growth and employment growth, explaining 68% and 66% of the variance, respectively. The study contributes to business re-engineering and SME literature by integrating both dimensions of re-engineering within a single framework and providing evidence from a developing economy context. The study recommends greater investment in process redesign and digital capabilities to enhance SME growth and competitiveness.*

KEYWORDS: Business Re-engineering, Entrepreneurial Growth, SMEs, Process Re-engineering, Technological Re-engineering.



INTRODUCTION

Small and medium-sized enterprises (SMEs) are globally recognized as engines of economic growth, employment generation, and innovation. In both developed and developing economies, SMEs account for the majority of business establishments and play a vital role in income distribution, poverty reduction, and industrial diversification (Ayyagari et al., 2011; World Bank, 2020). In Nigeria, SMEs constitute a significant segment of the private sector and contribute meaningfully to national output and employment creation (Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), 2022). Their flexibility and adaptability position them as critical actors in regional economic development, particularly in states with vibrant entrepreneurial cultures, such as those in South-East Nigeria, of which Imo State is one. Despite their importance, Nigerian SMEs face persistent structural and operational challenges. These include inefficient business processes, weak managerial systems, limited adoption of digital technologies, infrastructural deficits, and constrained access to finance (Olayemi and Adebayo, 2023). Such constraints often limit their ability to scale operations, compete effectively, and achieve sustainable growth. In increasingly dynamic and technology-driven markets, SMEs must move beyond traditional operational practices toward more structured and strategic transformation initiatives. Business re-engineering offers a strategic pathway for improving firm performance through the fundamental redesign of organizational processes and the integration of modern technologies (Hammer and Champy, 1993). Process re-engineering involves critically reviewing and restructuring workflows to eliminate redundancies, reduce costs, and enhance efficiency. Technological re-engineering, on the other hand, focuses on the adoption and effective use of digital tools to improve communication, decision-making, service delivery, and customer engagement. Contemporary research suggests that digital transformation and organizational redesign significantly enhance firm productivity, innovation capacity, and competitive positioning (Verhoef et al., 2021; Kraus et al., 2022).

However, much of the existing literature examines technology adoption or organizational change independently, with limited integration of both process and technological re-engineering as complementary drivers of growth. Furthermore, prior studies often focus on general firm performance indicators rather than specific entrepreneurial growth outcomes such as sales expansion and employment growth (Okoye and Ezejiofor, 2022). Empirical evidence within sub-national Nigerian contexts, particularly in Imo State, remains scarce. Given the distinctive entrepreneurial ecosystem of the South-East, characterized by strong commercial networks and increasing digital penetration, there is a need for context-specific investigation into how structured re-engineering initiatives influence SME growth. Against this backdrop, this study examines the effect of process re-engineering and technological re-engineering on entrepreneurial growth, operationalized as sales growth and employment growth, among SMEs in Imo State, Nigeria. By adopting a quantitative cross-sectional design, the study contributes to the growing discourse on strategic transformation and SME development in emerging economies, providing evidence-based insights for managers and policymakers.

Statement of the Problem

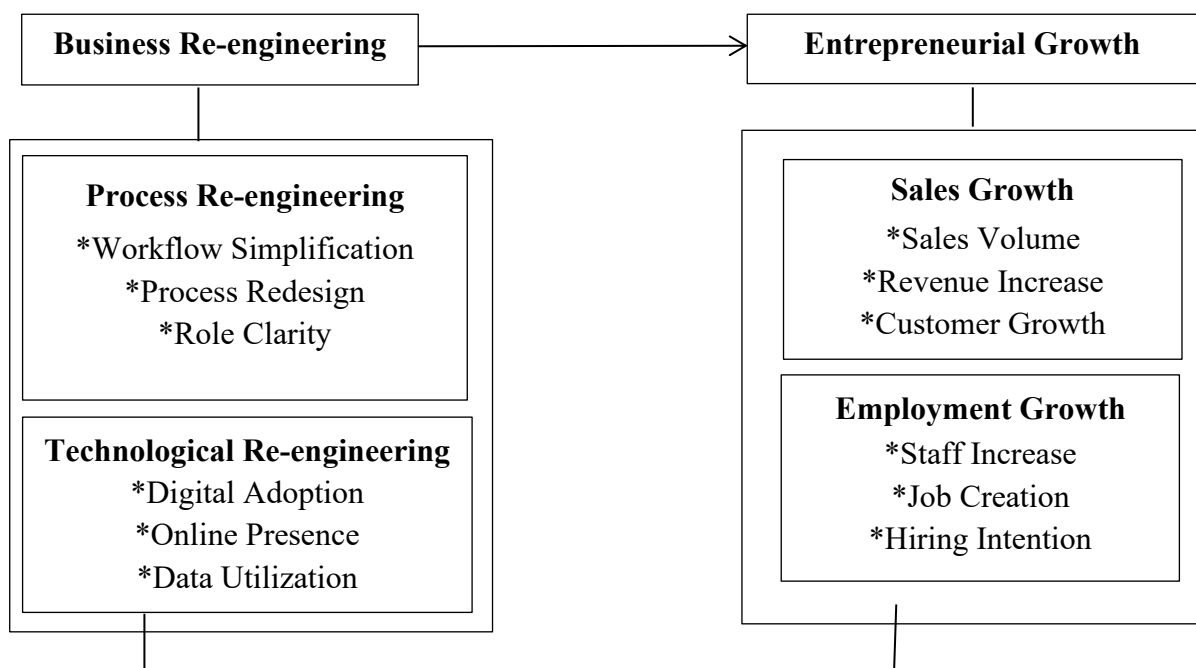
In Nigeria, SMEs contribute significantly to private sector employment and national output (SMEDAN, 2022). Despite this contribution, many SMEs continue to experience unstable sales performance, limited employment expansion, and slow business growth due to operational inefficiencies, weak process structures, and inadequate digital adoption. Business re-engineering, which emphasizes fundamental process redesign and technological integration,



has been identified as a strategic approach for improving organizational efficiency and performance (Hammer and Champy, 1993). Recent studies suggest that digital transformation and process optimization enhance firm's competitiveness and productivity (Verhoef et al., 2021; Kraus et al., 2022). However, empirical evidence linking process re-engineering and technological re-engineering to specific entrepreneurial growth outcomes such as sales and employment growth remains limited, particularly at the state-level in Nigeria. Specifically, there is insufficient empirical evidence on how structured business re-engineering practices influence entrepreneurial growth among SMEs in Imo State. This contextual gap creates uncertainty regarding the extent to which process and technological re-engineering can drive measurable growth outcomes within the state's SME sector. Addressing this gap is essential for informing managerial strategies and policy interventions aimed at strengthening SME competitiveness and sustainable development in Imo State.

CONCEPTUAL FRAMEWORK

Fig 1: Conceptual Framework of Business Re-engineering and Entrepreneurial Growth of Small and Medium-Sized (SMEs) in Imo State.



Source: Adapted from: *Business Re-engineering* (Hammer, 1990; Hammer and Champy, 1993); *Entrepreneurial Growth* (Davidsson, 1991; Wiklund, 1998; Acs and Audretsch, 1990).

Aim and Objectives of the Study

This study aims to examine the effect of business re-engineering strategies (process re-engineering and technological re-engineering) on SME growth (sales growth and employment growth) in Imo State, Nigeria. To achieve this purpose, the specific objectives are to:



1. Examine the effect of process re-engineering on sales growth of SMEs in Imo State.
2. Determine the effect of process re-engineering on employment growth of SMEs in Imo State.
3. Assess the effect of technological re-engineering on sales growth of SMEs in Imo State.
4. Evaluate the effect of technological re-engineering on employment growth of SMEs in Imo State.

Research Questions

1. What is the effect of process re-engineering on sales growth of SMEs in Imo State?
2. How does process re-engineering affect employment growth of SMEs in Imo State?
3. What is the effect of technological re-engineering on sales growth of SMEs in Imo State?
4. How does technological re-engineering affect employment growth of SMEs in Imo State?

Research Hypotheses

This study is guided by the under-listed hypotheses stated in the null form which is in line with an effect study:

H₀₁: Process re-engineering has no significant effect on sales growth of SMEs in Imo State.

H₀₂: Process re-engineering has no significant effect on employment growth of SMEs in Imo State.

H₀₃: Technological re-engineering has no significant effect on sales growth of SMEs in Imo State.

H₀₄: Technological re-engineering has no significant effect on employment growth of SMEs in Imo State.

REVIEW OF RELATED LITERATURE

Business Re-engineering

Business re-engineering refers to a strategic approach where organizations fundamentally rethink and redesign their structures and processes with the goal of achieving significant improvements in performance outcomes such as efficiency, productivity, and competitiveness (Hammer, 1990; Hammer and Champy, 1993). This concept emerged as a response to the limitations of incremental change, proposing that radical redesign rather than simple adjustment is necessary to meet the demands of dynamic and competitive environments (Hammer and Champy, 1993). In contemporary entrepreneurship, business re-engineering



allows firms to adapt rapidly to market changes, improve efficiency, and enhance service delivery. In the context of entrepreneurial ventures, business re-engineering is especially relevant as it enables small and medium-sized enterprises to restructure traditional ways of operating, realign resources, and reposition themselves more effectively in their markets. Empirical research by Grover et al. (1995) further illustrates how successful business process re-engineering (BPR) depends on effective implementation, organizational alignment, and change management. Scholars generally understand business re-engineering as a multidimensional construct consisting of both process re-engineering and technological re-engineering. Therefore, in this study, business re-engineering is conceptualized using the dimensions of process re-engineering and technological re-engineering.

Process Re-engineering

Process re-engineering involves redesigning core business processes to enhance efficiency, reduce redundancies, and eliminate non-value-adding activities. It emphasizes workflow optimization, simplification, and automation of tasks. Thus, it focuses on redesigning the core processes that define how tasks are executed within the business. It involves critically examining existing workflows to identify inefficiencies, eliminate redundant activities, and reconfigure procedures in ways that reduce cycle time, enhance quality, and eliminate non-value-adding tasks (Davenport, 1993). For example, a small enterprise may revise how orders are taken, processed, and delivered to customers to ensure fewer delays and lower operational costs. By restructuring workflows, process re-engineering helps firms streamline operations and deliver products or services more effectively. According to Hammer (1990), process re-engineering is critical in creating a competitive advantage, as firms can deliver faster, cheaper, and better-quality services. Some scholars (Grover et al., 1995) argue that excessive focus on processes without considering organizational culture and human factors can undermine re-engineering success.

Technological Re-engineering

Technological re-engineering emphasizes the role of information and communication technologies as enablers of transformation. Hence, it involves leveraging advanced technology to transform business operations, enhance productivity, and introduce innovative solutions. This includes adopting information systems, automation tools, digital platforms, and innovative software solutions. Thus, focuses on "what" tools, systems, and technologies support operations. It enhances decision-making, communication, and data management, and also, enables scalability and integration of processes across departments (Bingi et.al., 1999). Davenport (1993) emphasized the role of information technology as an enabler of re-engineering, highlighting how digital systems support major process transformation. For instance, implementing cloud-based inventory management or customer relationship management systems can enhance the ability of entrepreneurial firms to track performance, improve responsiveness to customer needs, and support data-driven decisions. Technological re-engineering is not merely about acquiring technology; it involves aligning technological solutions with redesigned processes so that each support and reinforces the other. Laudon and Laudon (2016) posit that technology-driven re-engineering is essential for modern entrepreneurial firms to remain competitive in dynamic markets. Critics, however, note that technology adoption without adequate process redesign may lead to underutilization or failure of re-engineering initiatives (Davenport and Short, 1990). Consequently, the combination of process and technological re-engineering constitutes a holistic approach to organizational



change. While process re-engineering redefines “how work is done,” technological re-engineering ensures that this work is supported by appropriate tools and digital systems. Without such alignment, technological investments alone may fail to yield expected gains if underlying processes remain inefficient, and vice versa.

Entrepreneurial Growth

Entrepreneurial growth refers to the expansion of new and existing entrepreneurial ventures over time, often measured by increases in market presence, sales revenue, business capacity, employment, and profitability (Davidsson, 1991; Wiklund, 1998). It reflects the ability of entrepreneurs to scale operations, create value, and generate economic impact. Growth theory suggests that firms develop by leveraging internal capabilities, innovation, and strategic adaptation to environmental changes (Penrose, 1959; Acs and Audretsch, 1990). Delmar et al. (2003) explores the characteristics of high-growth ventures, finding that growth is influenced by both firm-level attributes and external market conditions. Although early entrepreneurship literature focused on survival, more recent studies link growth to performance outcomes such as market expansion, job creation, and profitability. Thus, within entrepreneurship research, growth is viewed not simply as an increase in size, but as a multidimensional outcome reflecting economic performance, market penetration, and internal capacity building. This study conceptualizes entrepreneurial growth through two commonly used measures: sales growth and employment growth.

Sales Growth

Sales growth reflects the increase in revenue generated by entrepreneurial ventures over time. It is a key indicator of market acceptance, competitive positioning and operational effectiveness. It indicates the firm’s capacity to attract customers and increase market share. Sales growth is driven by innovative strategies, marketing, and operational efficiency. It is often measured as a percentage increase in annual sales revenue (Brush, 1992). A rising sales trajectory suggests that a firm is increasing its share of customer demand and strengthening its financial base (Penrose, 1959). In entrepreneurial settings, growth in sales often reflects how well the business is responding to customer needs, differentiating itself from competitors, and scaling its activities. According to Penrose (1959), sustained sales growth is central to firm expansion and long-term entrepreneurial success. However, scholars also argue that sales growth should be interpreted in context; rapid revenue increases without accompanying improvements in efficiency or profitability may not translate into sustainable success (Covin and Slevin, 1991). Therefore, focusing solely on sales may neglect other growth aspects such as operational efficiency and employee development (Covin and Slevin, 1991).

Employment Growth

Employment growth reflects the ability of entrepreneurial ventures to generate jobs and expand their workforce. It is a critical measure of the socio-economic impact of entrepreneurship. Employment growth indicates organizational capacity expansion and operational scaling. It is associated with increased production, market expansion, and profitability. Employment growth is measured by the percentage increase in the number of employees over a defined period (Davidsson, 1991). As entrepreneurial ventures grow, they often require additional labour to support expanded production, service delivery, and market operations. Shane and Venkataraman (2000) emphasize that entrepreneurial growth is not only about profits but also



about generating employment opportunities within communities, which contributes to economic development. Some critics note that employment growth can sometimes lag behind sales growth, especially in technology-driven firms that rely on automation (Acs and Audretsch, 1990). However, it is important to recognize that employment growth may not always keep pace with technology-led efficiency gains, particularly in firms that adopt automation or digital solutions that reduce the need for labour.

Business Re-engineering and Entrepreneurial Growth

Business re-engineering represents a strategic lever for entrepreneurial firms to achieve growth.

The theoretical link between business re-engineering and entrepreneurial growth lies in the capacity of re-engineered processes and technologies to enhance firm performance. Process re-engineering, by eliminating inefficiencies and optimizing workflows, can improve responsiveness to customer needs, reduce operational costs, and create conditions for increased sales (Davenport, 1993). When supported by technological re-engineering, which provides tools for better data management, communication, and task automation, these redesigned processes can be executed more effectively and scaled as the business grows. For example, an entrepreneurial venture that streamlines its sales and fulfillment processes while adopting digital tools for order tracking and customer management is likely to experience faster service delivery and higher customer satisfaction. Over time, this can translate into stronger sales growth as more customers are reached and retained.

Similarly, the integration of technology can enhance internal coordination and reduce manual workload, enabling the business to reallocate human resources toward strategic activities that support further expansion. Ultimately, this conceptual framework suggests that effective business re-engineering positively influences entrepreneurial growth by improving both external performance outcomes (such as sales revenue) and internal capacity outcomes (such as employment expansion). In a nutshell, process and technological redesign enhance operational efficiency, improve market competitiveness, and promote revenue and employment expansion. Scholars emphasize the importance of aligning re-engineering initiatives with organizational objectives to realize sustainable entrepreneurial growth. Business re-engineering, through process and technological re-engineering, is expected to drive entrepreneurial growth by optimizing operations and leveraging technology. Process re-engineering leads to cost reduction and higher sales, while technological re-engineering enables scalability and efficiency, thereby supporting both sales and employment growth. Empirical studies have lent credence to business re-engineering being a strategic lever for entrepreneurial firms to achieve growth (Edewhor and Okoh, 2024; Forsman, 2011; Ahmad et.al., 2007).

Theoretical Review

The theoretical foundation of this study is anchored on three complementary theories: the Resource-Based View (RBV), Business Process Re-Engineering (BPR) Theory, and Dynamic Capabilities Theory (DCT). Together, these theories provide a comprehensive lens for understanding how process and technological re-engineering influence entrepreneurial growth in SMEs.

The Resource-Based View (RBV) Theory: This theory was advanced by Barney (1991), and posits that a firm's sustainable competitive advantage arises from its possession of resources



that are valuable, rare, inimitable, and non-substitutable (VRIN). The theory assumes that firms are heterogeneous in their resources, that resources meeting VRIN criteria lead to competitive advantage and that performance depends on the strategic deployment of these resources rather than solely on external market conditions. Applied to SMEs, RBV suggests that resources such as skilled personnel, digital tools, and well-structured processes can be leveraged to achieve superior outcomes. In the context of this study, process and technological re-engineering represent strategic resources that SMEs can deploy to enhance sales growth and employment expansion (Kraus et al., 2022; Mladenova, 2024).

Business Process Re-Engineering (BPR) Theory: BPR theory was proposed by Hammer and Champy (1993), and emphasizes the fundamental redesign of business processes to achieve dramatic improvements in cost, quality, speed, and service delivery. The theory assumes that existing processes are often inefficient, that radical redesign can lead to substantial performance gains, and that technology can amplify the benefits of re-engineered processes. Within SMEs, process re-engineering involves workflow simplification, role clarity, and process optimization, which can directly improve operational efficiency. Moreover, BPR provides a framework for integrating digital tools, linking closely to technological re-engineering, and ultimately driving sales growth and employment creation.

The Dynamic Capabilities Theory (DCT): DCT theory, developed by Teece et. al. (1997), posits that a firm's long-term competitiveness depends on its ability to adapt, integrate, and reconfigure internal and external resources in response to changing environments. DCT assumes that environments are dynamic and uncertain, that firms must continuously adapt their resources and processes, and that competitive advantage arises from the ability to reconfigure capabilities rather than from static resources. For SMEs in Imo State, technological re-engineering and continuous process improvement are expressions of dynamic capabilities, enabling firms to sense market opportunities, seize them, and transform operational capabilities, thereby enhancing both sales and employment growth (Verhoef et al., 2021; Kraus et al., 2022).

The integration of these three theories, suggests that the strategic application of process and technological re-engineering allows SMEs to leverage valuable internal resources, optimize processes, and develop dynamic capabilities to sustain entrepreneurial growth. Therefore, RBV highlights the strategic importance of resources, BPR explains how process redesign translates resources into performance outcomes, and DCT underscores the firm's ability to adapt and reconfigure resources in response to environmental changes.

Empirical Review

Empirical evidence demonstrates that both process re-engineering and digital (technological) re-engineering significantly contribute to entrepreneurial growth outcomes.

Process Re-engineering and Entrepreneurial Growth

Empirical evidence generally supports the positive influence of process re-engineering on organizational growth and performance. Shahul Hameed, et al. (2021) investigated the impact of business process re-engineering on organizational performance in the Malaysian manufacturing sector and found that top management commitment, organizational readiness, information technology capability, and people management significantly enhanced organizational performance. The study concluded that process re-engineering contributes



positively to organizational effectiveness and competitiveness. Likewise, Tekka (2021) investigated the strategic process model of BPR among small and medium contractors using structural equation modeling. The results showed that process re-engineering significantly enhanced sustainable competitiveness and operational capacity. Enhanced competitiveness directly relates to increased market opportunities and revenue expansion, thereby linking process redesign to entrepreneurial growth.

Additionally, Ugwu and Njoku (2025) empirically examined BPR implementation in Nigerian firms and found that systematic process redesign significantly improved firm performance and operational effectiveness. Their results suggest that firms adopting BPR experienced strengthened competitive positioning and growth potential, reinforcing the importance of process re-engineering in entrepreneurial development.

In another study, Šanko, et al. (2022) investigated process optimization in a boutique production SME and reported that business process re-engineering improved labour effectiveness, work efficiency, competitiveness, and operational performance. The findings suggest that process redesign can significantly contribute to SME growth and productivity

Equally, Iherobiem and Sanusi (2023) found that process innovation significantly enhanced organizational performance among manufacturing firms in Nigeria. The study reported that process improvement initiatives strengthened productivity, competitiveness, and business outcomes.

However, empirical evidence suggests that the effect of process re-engineering is not always uniformly positive. Olajide and Okunbanjo (2020) found that organizational resources and process function exerted negative and insignificant effects on competitive advantage among firms in Nigeria's food and beverage industry, indicating that process redesign alone may not guarantee performance improvement. Similarly, Vishvakarma et al. (2021) reported that the success of business process re-engineering depends largely on organizational strategy, resistance to change, and information flow effectiveness. Likewise, Shahul Hameed et al. (2021) observed that while some dimensions of process re-engineering significantly enhanced organizational performance, organizational structure did not exert a significant effect. These findings suggest that the effectiveness of process re-engineering depends on implementation quality, organizational readiness, and supporting resources.

Digital Re-engineering and Entrepreneurial Growth

Recent empirical studies have increasingly demonstrated the importance of digital re-engineering in enhancing entrepreneurial growth and organizational performance. For instance, Kim and Jin (2024) examined the impact of digital capabilities on entrepreneurial performance among 313 SMEs using structural equation modeling. The study found that digital capability, defined as the ability to effectively deploy digital technologies and integrate IT systems into business processes, significantly improved firm performance indicators, including revenue growth and competitive expansion. The findings provide empirical support that technological re-engineering strengthens entrepreneurial growth through enhanced operational efficiency and strategic responsiveness.

Similarly, Zhu and Chen (2024) investigated the relationship between digital transformation and firm performance in innovative SMEs. Their findings revealed that digital transformation significantly improved firm performance, particularly sales growth and market share.



Importantly, business model innovation mediated this relationship, suggesting that technological re-engineering stimulates entrepreneurial growth both directly and indirectly through strategic redesign of value creation mechanisms.

Escozo Barragan and Becker (2024) further explored digital orientation in SMEs and found that firms with stronger digital strategies and IT integration exhibited superior financial and operational performance. Their empirical analysis demonstrated that digital orientation enhances competitiveness and sales performance, reinforcing the view that digital re-engineering is a key driver of entrepreneurial expansion. Masoud and Basahel (2023) also reported significant positive effects of digital transformation on firm performance, particularly through improvements in customer experience and IT-enabled innovation. Their results showed that firms adopting digital transformation practices experienced enhanced operational outcomes and market responsiveness factors strongly associated with entrepreneurial growth.

More recently, Salimi and Chandrasekar (2025) analyzed the effects of digital transformation on organizational success using PLS-SEM. Their findings confirmed that digital transformation significantly predicts organizational performance outcomes, including revenue growth and competitive positioning. The study underscores that technological re-engineering serves as a foundational mechanism for sustainable entrepreneurial growth.

However, empirical evidence also suggests that the impact of digital re-engineering may not always be straightforward. Bag et al. (2021) found that digital transformation did not exert a significant direct effect on firm performance; rather, its influence was realized through complementary organizational and technological mechanisms. Similarly, Zhang et al. (2022) observed that the success of digital transformation among SMEs depends on organizational readiness, strategic alignment, and resource availability. The study revealed that inadequate digital capabilities and resource constraints can limit the effectiveness of digital transformation initiatives.

Synthesis

The empirical literature reviewed indicates that both process re-engineering and digital re-engineering contribute to entrepreneurial growth by enhancing operational efficiency, innovation, competitiveness, and organizational performance. While most studies reported significant positive effects, contrasting evidence suggests that the effectiveness of re-engineering initiatives depends on factors such as organizational readiness, managerial support, resource availability, and implementation capability. Furthermore, previous studies have largely examined process and digital re-engineering separately, focused predominantly on organizational performance rather than entrepreneurial growth indicators such as sales growth and employment growth, and were conducted mostly outside the Nigerian SME context. These gaps justify the present study, which integrates process and digital re-engineering to examine their effect on entrepreneurial growth among SMEs in Imo State, Nigeria.

Research Gap

Despite growing empirical interest in business re-engineering, existing studies predominantly examine its relationship with general firm performance rather than explicitly conceptualizing and measuring entrepreneurial growth. In particular, growth is often proxied by broad financial or operational indicators, with limited attention to specific and measurable outcomes such as sales growth and employment growth. Furthermore, much of the literature treats business re-



engineering as a single construct, without simultaneously disaggregating and examining its key dimensions process re-engineering and digital (technological) re-engineering within an integrated analytical framework. Empirical modeling that concurrently tests the distinct and combined effects of process and digital re-engineering on multiple growth indicators remains relatively scarce.

Geographically and contextually, most available evidence is drawn from developed economies, with limited representation from Sub-Saharan Africa. The Nigerian entrepreneurial environment, characterized by infrastructural constraints, institutional instability, and evolving digital adoption, presents a distinct context in which the outcomes of re-engineering initiatives may differ significantly from those observed in advanced economies. Additionally, sector-specific analyses within developing economies remain underexplored. Accordingly, there is a clear need for empirical research that examines the multidimensional nature of business re-engineering and its specific influence on entrepreneurial growth measured through sales growth and employment growth within the Nigerian context. This study seeks to address these gaps and contribute context-sensitive evidence to the re-engineering and entrepreneurship literature.

METHODOLOGY

Research Design

This study adopted a cross-sectional survey research design. The design was considered appropriate because it enabled the collection of quantitative data from SME owners and managers at a single point in time and facilitated the examination of the effect of business re-engineering on entrepreneurial growth.

Study Area

The study was conducted in Imo State, Nigeria. The state has a high concentration of micro, small, and medium-sized enterprises operating across manufacturing, trade, services, and construction sectors, making it suitable for examining business re-engineering and entrepreneurial growth.

Population and Sampling Procedure

The population comprised 1,886 registered SMEs in Imo State. A sample size of 330 SMEs was determined using the Taro Yamane formula. A stratified sampling technique was used to categorize SMEs based on sectors. Bowley's proportional allocation technique was then employed to distribute the sample proportionately across the strata, while simple random sampling was used to select participating SMEs. Owners and managers of SMEs were selected as respondents due to their knowledge of organizational processes and growth outcomes.

Data Collection Method

Data were collected through a structured questionnaire administered to respondents who are SME owners and managers. The instrument measured the dimensions of business re-engineering (process re-engineering and technological re-engineering) and entrepreneurial growth (sales growth and employment growth) using a five-point Likert scale. The



questionnaire was administered by the researchers and two trained research assistants through both physical and electronic distribution methods. Out of 330 questionnaires distributed, 293 were correctly completed and returned, representing an 88.8% response rate.

Validity and Reliability of Instrument

Face and content validity were established through expert review by specialists in business management, entrepreneurship and research methodology to ensure clarity and relevance of items. A pilot study involving 30 SME owners and managers outside the study area was conducted. Data from the pilot study were analyzed using Cronbach's Alpha. The reliability coefficients were 0.851 for process re-engineering, 0.864 for technological re-engineering, 0.873 for Sales Growth, and 0.896 for Employment Growth, indicating strong internal consistency.

Data Analysis

Data were analyzed using descriptive and inferential statistics. Descriptive statistics included frequencies, percentages, means, and standard deviations, while multiple regression analysis was used to test hypotheses. All analyses were performed using SPSS Version 28.0 at a 5% level of significance.

Model Specification and Justification

The functional relationship is specified as:

$$SG = \beta_0 + \beta_1PRE + \beta_2TRE + \varepsilon$$

$$EG = \beta_0 + \beta_1PRE + \beta_2TRE + \varepsilon$$

Where SG represents Sales Growth, EG represents Employment Growth, PRE represents Process Re-engineering, and TRE represents Technological Re-engineering. Multiple regression analysis was adopted because it allows the simultaneous examination of the effect of multiple independent variables on dependent variables, as well as the determination of individual and combined predictive effects. It is appropriate for cross-sectional survey data and hypothesis testing in entrepreneurship research.

Assumptions of the Regression Model

The study assumes linearity between variables, independence of observations, homoscedasticity of residuals, normal distribution of errors, absence of multicollinearity among predictors, and adequacy of sample size ($n = 293$), ensuring the validity of regression estimates.

Ethical Considerations

Ethical approval was observed throughout the study. Informed consent was obtained from all respondents prior to participation. Participation was voluntary, and respondents were assured of confidentiality and anonymity. No identifying information was collected, and data were used strictly for academic purposes. The study adhered to ethical principles of honesty, respect, and data protection.



RESULTS AND DISCUSSION

The results of the SPSS of reliability, descriptive, demographic and regression analyses were presented in this section.

Table 1: Reliability Statistics for Study Variables

S/N	Variable	Number of Items	Cronbach's Alpha (α)
1	Process Re-engineering	3	0.851
2	Technological Re-engineering	3	0.864
3	Sales Growth	3	0.873
4	Employment Growth	3	0.896

Source: Field Survey, 2026 and SPSS Version 28.0

Table 1 shows the Cronbach's Alpha coefficients for all constructs which ranged from 0.851 to 0.896, exceeding the recommended threshold of 0.70. This indicates strong internal consistency among the items measuring each construct, confirming that the instrument was reliable and suitable for inferential statistical analysis

Table 2: Demographic Characteristics of Respondents (n=293)

Demographic Variable	Category	Frequency(f)	Percentage (%)
Position of Respondents	Owner	191	65.2
	Manager	102	34.8
Gender	Male	180	61.4
	Female	113	38.6
Age(Years)	20-29	45	15.4
	30-39	98	33.4
	40-49	91	31.1
	50 and above	59	20.1
Educational Qualification	Secondary School	50	17.1
	NCE/OND	70	23.9
	HND/Bachelor's Degree	128	43.7
	Postgraduate Degree	45	15.3
Years in Business	1-5 years	75	25.6
	6-10 years	98	33.4
	11-15 years	65	22.2
	Above 15 years	55	18.8
Number of Employees	Micro(1-9 employees)	108	36.9
	Small (10-49 employees)	122	41.6
	Medium(50-199 employees)	63	21.5
Sector of Business	Manufacturing	73	24.9
	Services	101	34.5
	Trade	84	28.7
	Construction	35	11.9

Source: Field Survey, 2026 and SPSS Version 28.0



As displayed in Table 2 above, the demographic analysis shows that a majority of respondents were owners (65.2%), with the remaining being managers (34.8%), confirming that the data were collected from individuals with decision-making authority. Most respondents were male (61.4%) and aged between 30 and 49 years (64.5%), indicating that the SME sector is dominated by relatively young to middle-aged entrepreneurs. In terms of educational background, the largest group held HND or Bachelor's degrees (43.7%), suggesting a moderate level of formal education among operators. Regarding business experience, most respondents had been operating their enterprises for 6-10 years (33.4%), and the majority of SMEs were in the services (34.5%) and trade (28.7%) sectors. Generally, these characteristics indicate that the sample was composed of knowledgeable SME operators with sufficient experience to provide reliable information on business re-engineering practices and entrepreneurial growth. Finally, based on SMEDAN classification, the majority of the sampled firms were micro (36.9%) and small enterprises (41.6%), while 21.5% were medium enterprises. This indicates that the study largely captured firms within the core SME spectrum, thereby making the findings relevant for SME development policy and growth strategies.

Table 3: Descriptive Statistics of Study Variables

Variable	N	Mean	Standard Deviation
Process Re-engineering(PRE)	293	4.31	0.61
Technological Re-engineering(TRE)	293	4.24	0.58
Sales Growth	293	4.22	0.60
Employment Growth	293	4.19	0.57

Source: Field Survey, 2026 and SPSS Version 28.0

Table 3 above shows that mean scores above 4, and this indicates that respondents reported high levels of process re-engineering (PRE) and technological re-engineering (TRE), which aligns with high perceived sales and employment growth in SMEs. Also, a standard deviation ranging from 0.57 to 0.61 indicates low dispersion in responses, suggesting a high level of agreement and consistency among respondents regarding business re-engineering practices and entrepreneurial growth.

Table 4: Multiple Regression Result of Business Re-engineering on Entrepreneurial Growth

Criterion Variable	Predictor Variable	β (Beta)	t-value	p-value	R ²	F-statistic
Sales Growth					0.68	154.22
	PRE	0.53	9.86	0.000		
	TRE	0.59	11.29	0.000		
Employment Growth					0.66	132.75
	PRE	0.51	8.75	0.000		
	TRE	0.54	10.13	0.000		

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

Source: Field Survey, 2026 and SPSS Version 28.0



The data analysed in Table 4 above indicated that for sales growth, both process re-engineering ($\beta = 0.53$, $t = 9.86$, $p < 0.01$) and technological re-engineering ($\beta = 0.59$, $t = 11.29$, $p < 0.01$) positively and significantly predict sales growth. Thus, as the independent variables (PRE and TRE) increase, the dependent variable (sales growth) also increases. The model explains 68% of the variance in sales growth ($R^2 = 0.68$) and is statistically significant ($F = 154.22$, $p < 0.01$). Also, for employment growth, process re-engineering ($\beta = 0.51$, $t = 8.75$, $p < 0.01$) and technological re-engineering ($\beta = 0.54$, $t = 10.13$, $p < 0.01$) also positively and significantly predict employment growth. This implies that, as the independent variables (PRE and TRE) increase, the dependent variable (employment growth) also increases. The model explains 66% of the variance ($R^2 = 0.66$) and is statistically significant ($F = 132.75$, $p < 0.05$).

Testing of Hypotheses H₀₁ to H₀₄

H₀₁: Rejected. Process re-engineering significantly and positively affects sales growth ($\beta = 0.53$, $p < 0.01$).

H₀₂: Rejected. Process re-engineering significantly and positively affects employment growth ($\beta = 0.51$, $p < 0.01$).

H₀₃: Rejected. Technological re-engineering significantly and positively affects sales growth ($\beta = 0.59$, $p < 0.01$).

H₀₄: Rejected. Technological re-engineering significantly and positively affects employment growth ($\beta = 0.54$, $p < 0.001$).

Therefore, from the results displayed in Table 4 above, all null hypotheses (H₀₁, H₀₂, H₀₃, and H₀₄) are rejected, indicating that both dimensions of business re-engineering significantly enhance entrepreneurial growth. By implication, SMEs that streamline processes and adopt technology are more likely to increase sales and create jobs, confirming the strategic importance of business re-engineering

The Regression Models

Model 1: Sales Growth

$$SG = \beta_0 + \beta_1 (PRE) + \beta_2 (TRE) + \varepsilon$$

Model 2: Employment Growth

$$EMG = \beta_0 + \beta_1 (PRE) + \beta_2 (TRE) + \varepsilon$$

Where:

SG = Sales Growth

EMG = Employment Growth

β_0 = Intercept (Constant term)

β_1 = Regression coefficient for Process Re-engineering (PRE)

β_2 = Regression coefficient for Technological Re-engineering (TRE)



PRE = Process Re-engineering

TRE = Technological Re-engineering

ε = Error term

Model Summary

The R^2 values of 68% and 66% explained the variance in sales growth and employment growth respectively, while the remaining 32% and 34% could be attributed to other variables such as market conditions, managerial competence, financial resources or external shocks. This indicates a very strong explanatory power, meaning that the model captures the majority of the factors influencing entrepreneurial growth of SMEs in Imo State.

DISCUSSION ON FINDINGS

The findings of this study revealed that both process re-engineering and technological re-engineering significantly influence entrepreneurial growth among SMEs in Imo State, with process re-engineering emerging as the stronger predictor of both sales growth and employment growth. This suggests that internal operational restructuring has a more immediate and direct impact on SME performance than digital adoption. The stronger effect of process re-engineering may be explained by the operational structure of SMEs in developing economies such as Nigeria, where many firms still operate with informal systems, manual workflows, and inefficiencies in production and service delivery. In such contexts, improvements in workflow design, task coordination, and operational efficiency tend to produce immediate cost reductions and productivity gains, which directly translate into increased sales and employment expansion. Technological re-engineering, although significant, may have a relatively weaker effect due to infrastructural constraints, limited digital skills, and uneven technology adoption among SMEs.

The coefficient of determination ($R^2 = 0.68$ for sales growth and $R^2 = 0.66$ for employment growth) indicates that business re-engineering explains a substantial proportion of variation in entrepreneurial growth. Contextually, this implies that about two-thirds of SME growth outcomes in the study area are driven by process and digital re-engineering practices, while the remaining variation is explained by other factors such as access to finance, managerial competence, market conditions, and government policy. This level of explanatory power is considered strong in behavioural and management studies, particularly in entrepreneurship research conducted in emerging economies. These results are consistent with recent empirical studies. Shahul Hameed et al. (2021) found that business process re-engineering significantly improves organizational performance through efficiency gains and strategic restructuring. Similarly, Tekka (2021) reported that process redesign strengthens firm competitiveness and performance outcomes.

In the Nigerian context, Ugwu and Njoku (2025) also observed that the implementation of business process re-engineering enhances firm productivity and performance. The significant influence of digital re-engineering on growth aligns with contemporary studies on digital transformation. Masoud and Basahel (2023) found that digital transformation positively affects firm performance through technological innovation. Likewise, Escobarragan and Becker (2024) demonstrated that SMEs with strong digital orientation achieve better operational and



financial outcomes. Salimi and Chandrasekar (2025) further confirmed that digital transformation contributes significantly to organizational success and growth. The findings are theoretically supported by the Resource-Based View (Barney, 1991), which posits that valuable internal capabilities enhance firm performance. Process and digital re-engineering represent strategic capabilities that improve efficiency and competitiveness. The results also align with Dynamic Capabilities Theory (Teece et al., 1997), which emphasizes the importance of reconfiguring internal resources to adapt to environmental changes. Additionally, the findings reflect Schumpeter's innovation perspective, which highlights innovation in processes and technology as drivers of firm expansion. Consequently, the study reinforces theoretical propositions that strategic internal restructuring and digital integration are key determinants of SME growth.

Limitations of the Study

This study has some limitations that should be noted. First, the cross-sectional design limits causal inferences, as data were collected at a single point in time. Second, the use of self-reported data from SME owners and managers may introduce response bias. Third, common method bias may exist since both independent and dependent variables were measured using the same questionnaire. Fourth, the study is limited to SMEs in Imo State, which may restrict generalization to other regions. Finally, sectoral differences among SMEs may influence the observed relationships.

CONCLUSION

This study examined the effect of business re-engineering operationalised through process re-engineering and technological re-engineering on entrepreneurial growth, measured by sales growth and employment growth. The multiple regression results revealed that both dimensions of business re-engineering have positive and statistically significant effects on sales growth and employment growth. Specifically, process re-engineering and technological re-engineering jointly explained 68% of the variance in sales growth and 66% of the variance in employment growth. The findings led to the rejection of all four null hypotheses, confirming that improvements in organizational processes and technological systems significantly enhance firm performance. The results confirm the theoretical relevance of Dynamic Capabilities Theory (DCT), Resource-Based View (RBV), and Business Process Re-engineering (BPR). SMEs that leverage internal resources, develop adaptive capabilities, and redesign processes are better positioned to achieve sustainable entrepreneurial growth. The study therefore concludes that business re-engineering is a critical strategic tool for stimulating revenue expansion and job creation among enterprises. Organizations that prioritize process optimization and technological innovation are more likely to achieve sustained entrepreneurial growth.

Recommendations

Given the significant positive effects of process and technological re-engineering on sales and employment growth, the following recommendations are made:

1. SME owners and managers should continuously invest in process optimization to improve efficiency and responsiveness.



2. SME owners and managers should integrate digital tools and technologies for better decision-making, customer engagement, and operational performance.
3. SME owners and Managers should ensure that staff capacity development is institutionalized to enhance productivity, increase sales, and support employment expansion.
4. Government should create enabling frameworks that support SME digital transformation and operational restructuring by providing tax incentives, access to low-interest technology financing, digital infrastructure development, and entrepreneurial support programmes.
5. Policymakers should strengthen capacity-building initiatives and technological support to enhance SME competitiveness and sustainable growth.
6. Future studies should explore moderating factors such as market turbulence, financial constraints, and policy support on the effectiveness of re-engineering initiatives, and conduct longitudinal and sector-specific research designs to establish causal relationships and improve generalizability across contexts.

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