

The Impact of Social Media on the Growth and Sustainability of Small Businesses in Northeastern Nigeria

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Abstract

This study investigates the impact of social media on the growth and sustainability of small businesses in northeastern Nigeria. The study explores how platforms such as Facebook, WhatsApp, Instagram, TikTok, and X (formerly Twitter) influence business growth indicators—sales, customer engagement, brand visibility—and sustainability factors such as innovation and adaptability. A descriptive survey design was adopted, and data were collected from 372 small business owners across four states: Borno, Adamawa, Bauchi, and Gombe. Descriptive and inferential statistics (correlation and regression analyses) were employed. The results revealed that social media significantly impacts business growth ($r = 0.72$, $p < 0.05$) and sustainability ($R^2 = 0.46$, $p < 0.05$). However, major challenges include poor internet connectivity, high data costs, and limited digital marketing skills. The study concludes that social media is a vital strategic tool for enhancing the competitiveness and longevity of small enterprises in the region. It recommends that policymakers and development agencies improve digital infrastructure and literacy to foster inclusive entrepreneurial growth.

Keywords: *Social media, small business, business growth, sustainability, northeastern Nigeria*

1. INTRODUCTION

The global business environment has experienced a digital transformation over the last two decades, with social media emerging as a major driver of communication, marketing, and customer engagement (Appel et al., 2020). For small and medium enterprises (SMEs), social media offers affordable access to markets, enabling businesses to build relationships and reach customers beyond geographical limitations. In developing economies such as Nigeria, where small businesses are critical to job creation and poverty reduction, the integration of social media into business operations has become increasingly significant (Adeniran & Johnston, 2022).

Research indicates that social media platforms play a pivotal role in enhancing supply chain management, allowing businesses to improve logistics, inventory tracking, and supplier relationships (Chae, 2015; Rathore et al., 2016; Shareef et al., 2018). Additionally, social media facilitates global interactions, enabling SMEs to engage with customers and partners across different time zones and geographic locations (Chatterjee & Kar, 2020). This is particularly advantageous for SMEs with limited financial and technological resources, as social media platforms provide an affordable and accessible means of expanding market reach (Harris et al., 2008; Rana et al., 2019).

The cost-effectiveness and accessibility of social media platforms make them particularly attractive to SMEs (Tajudeen et al., 2018). In developing economies, social media adoption is regarded as a critical growth strategy, helping businesses reach wider audiences with minimal investment (Chatterjee & Kar, 2020). SMEs benefit from quick and seamless communication with customers, which enhances customer relationship management and brand loyalty (Sulaiman, 2014; Tajudeen et al., 2016). Additionally, automated publishing, analytics, content management, and targeted advertising offer SMEs valuable insights that can inform strategic decision-making and performance optimisation (Ahmad et al., 2019). Several

studies have explored the adoption of social media by SMEs in Nigeria, investigating its impact on marketing strategies, business performance, and customer engagement.

However, in northeastern Nigeria, small businesses face unique challenges including insecurity, poor infrastructure, and limited access to traditional markets (Aliyu & Mustapha, 2020). The rise of mobile technology and internet penetration has provided an opportunity for these businesses to reach new customers and sustain operations through social media platforms. However, questions remain about how effectively these platforms drive growth and sustainability amid regional constraints. This study therefore examines the impact of social media on the growth and sustainability of small businesses in northeastern Nigeria.

1.1 Problem Statement

Small businesses in northeastern Nigeria play an important role in economic development but continue to face slow growth, limited market visibility, and high failure rates. Although social media platforms offer low-cost opportunities for marketing and customer engagement, it is unclear how effectively small businesses in the region are using these tools to enhance growth and long-term sustainability. Existing studies provide limited evidence specific to the region, especially considering challenges such as poor internet access, high data costs, insecurity, and low digital literacy. Therefore, there is a need to investigate the extent to which social media influences business growth and sustainability among small businesses in northeastern Nigeria.

1.2 Objective of the Study

The main objective of this study is to examine the impact of social media on the growth and sustainability of small businesses in northeastern Nigeria.

The specific objectives are to:

1. To determine the extent to which small businesses in northeastern Nigeria use social media platforms for business activities.
2. To assess the influence of social media usage on the growth of small businesses in the region.
3. To examine the effect of social media on the sustainability and long-term survival of small businesses.
4. To identify the major challenges small business owners face in using social media for business operations.
5. To recommend strategies for improving the effective use of social media to enhance growth and sustainability.

1.3 Research Hypothesis

H1: Social media usage has significant impact on small businesses growth

H2 Social media usage has significant relationship with the sustainability of small businesses

2. LITERATURE REVIEW

2.1 Introduction

Social media has emerged as one of the most significant technological developments of the 21st century, fundamentally transforming how individuals and organizations communicate, share information, and build relationships. According to Kaplan and Haenlein (2010), social media refers to “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, allowing the creation and exchange of user-generated content.” These platforms—such as Facebook, Instagram, X (formerly Twitter), LinkedIn, and TikTok—have become integral tools for personal interaction, entertainment, and business communication.

Over the years, scholars have explored the multifaceted impact of social media on society, emphasizing its role in shaping communication

patterns, consumer behavior, and organizational strategies. Boyd and Ellison (2007) describe social networking sites as networked spaces that facilitate the construction of public or semi-public profiles and enable users to articulate and traverse social connections. In a business context, social media serves as a cost-effective channel for marketing, customer engagement, and brand development, contributing to the growing field of digital marketing research.

Overall, existing literature underscores that social media is not merely a technological tool but a social phenomenon that influences cultural norms, economic systems, and organizational practices across the globe.

2.2 Small and Medium Enterprises (SME)

Small and Medium Enterprises (SMEs) refer to businesses whose personnel numbers, financial strength, and operational scale fall below certain established thresholds. Although the specific criteria vary across countries and sectors, SMEs generally represent firms that maintain relatively small to moderate levels of workforce size, annual turnover, and asset base when compared to large corporations. Despite their size, SMEs constitute a critical part of modern economies and play an essential role in driving innovation, employment, and economic diversification.

2.2.1 Characteristics of SMEs

SMEs possess several defining features:

1. **Limited Workforce:** SMEs typically employ a small or intermediate number of workers. In many contexts, small enterprises have fewer than 50 employees, while medium enterprises may have up to 250 employees, though these benchmarks differ by region.
2. **Moderate Capital Base:** Their financial and asset strength is generally smaller than that of large firms. They operate with limited capital investment and tend to rely heavily on

owner-supplied or internally generated funds.

3. **Flexible Organizational Structure:** SMEs often have simple organizational hierarchies. Decision-making is usually centralized around the owner or a small management team, allowing for quick adaptation to market changes.
4. **Local or Niche Market Focus:** Most SMEs serve specific local markets or operate within specialized niches. Their proximity to consumers enhances customer relationships and fosters tailored service delivery.
5. **Innovation and Creativity:** SMEs frequently demonstrate creativity and innovation due to their flexibility and openness to new ideas. Many new products, processes, and business models originate from SMEs.

2.2.2 Economic Importance of SMEs

SMEs are widely recognized as the backbone of many national economies. Their contributions include:

- **Employment Generation:** SMEs are major employers, especially in developing countries where they absorb a large portion of the labor force and help reduce unemployment.
- **Contribution to GDP:** They significantly contribute to national income and economic growth by participating in manufacturing, services, agriculture, technology, and trade.
- **Poverty Reduction and Inclusiveness:** By offering income opportunities to diverse groups, including women and youth, SMEs enhance social inclusion and community development.
- **Industrialization and Innovation:** SMEs support industrial growth by supplying goods and services to larger firms and creating competitive pressure that fosters innovation.

2.2.3 Challenges Faced by SMEs

Despite their importance, SMEs encounter several constraints:

- **Limited Access to Finance:** Many SMEs lack adequate collateral or financial records, which inhibits their ability to secure loans and expand operations.
- **Poor Infrastructure:** Inadequate power supply, poor road networks, and limited digital connectivity often hinder productivity.
- **Managerial and Technical Skills Gaps:** SME owners may lack formal management training or advanced technical skills needed for efficiency and competitiveness.
- **Regulatory and Bureaucratic Bottlenecks:** Complex registration procedures, taxation issues, and compliance requirements can discourage SME growth.

2.3 Social Media

Social media refers to a broad category of internet-based platforms and technologies that enable users to create, share, and interact with content in real time. These platforms support various forms of communication—text, images, audio, video, and live streams—while also facilitating social networking, collaboration, and community building among individuals, groups, and organizations. Unlike traditional media, which involves one-directional communication from producers to audiences, social media is characterized by its interactive, participatory, and user-generated nature.

2.3.1 Key Characteristics of Social Media

1. **User-Generated Content (UGC):** Social media thrives on content created, shared, or remixed by users rather than traditional media professionals. This democratizes information creation and distribution.

2. **Interactivity and Participation:** Users engage through comments, likes, sharing, tagging, messaging, and live interactions. This two-way communication strengthens engagement and community formation.
3. **Connectivity and Networking:** Social media enables people to connect across geographical and cultural boundaries. Users can build personal, professional, or interest-based networks.
4. **Real-Time Communication:** Information is shared instantly, enabling timely exchanges and rapid dissemination of news, trends, and opinions.
5. **Multimedia Capabilities:** Platforms support diverse content types including videos (YouTube, TikTok), images (Instagram), short texts (X/Twitter), and mixed media posts (Facebook).
6. **Algorithmic Content Delivery:** Most social media platforms use algorithms to personalize user experiences by prioritizing content based on user interests, behavior, and engagement patterns.

2.3.2 Functions and Uses of Social Media

1. **Communication:** Social media has transformed interpersonal communication, allowing individuals to maintain relationships, communicate instantly, and reach broad audiences.
2. **Information Sharing:** It serves as a major source of news, educational materials, and public information. Users can access real-time updates on global and local events.
3. **Entertainment:** Platforms provide humor, music, videos, trends, challenges, and interactive media. Social media is a major source of recreational content.
4. **Business and Marketing:** Companies use social media for branding, advertising, customer

engagement, market research, and sales. It offers cost-effective and targeted promotional opportunities.

5. **Social and Political Mobilization:** Social movements, activism, and public campaigns use social media to organize, advocate, and influence public opinion.
6. **Learning and Professional Development:** Platforms such as LinkedIn, YouTube, and educational forums help users acquire skills, follow professional updates, and build career networks.

2.3.3 Importance of Social Media in Modern Society

- **Global Communication:** Social media connects billions of users worldwide, fostering global interaction and cultural exchange.
- **Economic Impact:** It creates job opportunities, supports digital entrepreneurship, and drives growth in sectors like advertising, entertainment, and e-commerce.
- **Access to Information:** Social media democratizes access to knowledge by allowing anyone to share and obtain information quickly.
- **Enhanced Consumer Power:** Customers can review products, influence brands, and demand accountability through public feedback.

2.3.4 Challenges of Social Media

Despite its benefits, social media presents notable challenges:

- **Misinformation and Fake News:** The speed of information sharing can lead to the rapid spread of false or harmful content.
- **Privacy and Security Concerns:** User data can be misused, leading to cybercrime, identity theft, or unauthorized surveillance.
- **Mental Health Impacts:** Excessive use can lead to anxiety,

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depression, cyberbullying, and social comparison issues.

- **Addiction and Distraction:** Constant notifications and algorithm-driven content can lead to compulsive use.

2.4 Social Media and Small and Medium Enterprises (SMEs)

Social media has become an essential tool for the growth and competitiveness of Small and Medium Enterprises (SMEs) in the digital age. As defined by Kaplan and Haenlein (2010), social media consists of Internet-based applications that enable users to create and exchange content through interactive platforms. For SMEs, which often operate with limited financial and marketing resources, social media provides a cost-effective means to reach large audiences, build brand awareness, and engage directly with customers.

According to Durkin, McGowan, and McKeown (2013), social media enables SMEs to enhance their marketing capabilities by facilitating two-way communication and relationship building with consumers. Unlike traditional marketing channels, platforms such as Facebook, Instagram, X (formerly Twitter), and LinkedIn allow smaller firms to promote their products, gather customer feedback, and adapt to market trends in real time. Studies by Odoom, Anning-Dorson, and Acheampong (2017) further emphasize that the use of social media positively influences SME performance by improving customer engagement, innovation, and market reach.

Despite its benefits, the adoption of social media among SMEs faces challenges such as lack of digital skills, time constraints, and difficulty in measuring return on investment (ROI). Nevertheless, existing literature highlights that when strategically managed, social media can play a pivotal role in enhancing SME competitiveness, brand loyalty, and overall business sustainability.

2.5 The Role of Social Media and ICT in SME Growth

SMEs play a crucial role in job creation (Chatterjee & Kar, 2020) and serve as primary sources of income in low and middle-income countries (Ghanem, 2013). They have also been recognised as key contributors to poverty reduction (Singh et al., 2010) and essential drivers of national and regional economic development (Ahi et al., 2017; Chatterjee et al., 2018; Keskgñ et al., 2010). Given their significance, it is imperative to identify effective strategies to support SME growth and sustainability.

However, SMEs today face new challenges in an increasingly competitive business environment, particularly due to the growing diversity and unpredictability of customer needs, globalisation, and the lasting effects of the COVID-19 pandemic (Omar & Sulaiman, 2023). Furthermore, SMEs must seek access to external resources, including funding, technology, and market expansion opportunities, to drive product innovation and business growth.

Leveraging shared ICT resources has been identified as a key enabler in this regard. Through ICT adoption, SMEs can strengthen their competitive position, enhance customer relationships, and improve sales performance (Huang & Benyoucef, 2017; Omar & Sulaiman, 2023). Studies by Chung et al. (2017) and Consoli (2012) highlight ICT as a valuable tool for enhancing financial stability, allowing SMEs to streamline operations, reduce costs, and scale efficiently.

The interest in ICT adoption among SMEs can be traced back to the 1980s when personal and minicomputers significantly reduced operational costs. Since then, the integration of ICT-based solutions has revolutionised SME operations, particularly with the rise of mobile technologies and social media as effective business communication tools (Chatterjee & Kar, 2018; Ilavarasan & Levy, 2010). Social media, also known as Web 2.0, has transformed how SMEs interact with consumers, offering cost-effective

marketing solutions, brand engagement, and direct communication channels (Dahnil et al., 2014). Platforms such as Facebook, Twitter, Instagram, and LinkedIn have emerged as powerful marketing and communication tools that businesses increasingly rely on to attract and engage customers (Kaplan & Haenlein, 2010).

Beyond marketing, social media adoption also offers broader operational benefits. Research indicates that social media platforms play a pivotal role in enhancing supply chain management, allowing businesses to improve logistics, inventory tracking, and supplier relationships (Chae, 2015; Rathore et al., 2016; Shareef et al., 2018). Additionally, social media facilitates global interactions, enabling SMEs to engage with customers and partners across different time zones and geographic locations (Chatterjee & Kar, 2020). This is particularly advantageous for SMEs with limited financial and technological resources, as social media platforms provide an affordable and accessible means of expanding market reach (Rana et al., 2019).

The cost-effectiveness and accessibility of social media platforms make them particularly attractive to SMEs (Tajudeen et al., 2018). In developing economies, social media adoption is regarded as a critical growth strategy, helping businesses reach wider audiences with minimal investment (Chatterjee & Kar, 2020). SMEs benefit from quick and seamless communication with customers, which enhances customer relationship management and brand loyalty (Sulaiman, 2014; Tajudeen et al., 2016). Additionally, automated publishing, analytics, content management, and targeted advertising offer SMEs valuable insights that can inform strategic decision-making and performance optimisation (Ahmad et al., 2019).

2.6 Conceptual Review

Social media refers to online tools that enable individuals and organizations to create, share, and interact with content in virtual communities (Appel et al., 2020). Popular platforms such as Facebook, WhatsApp, and Instagram allow

small businesses to advertise products, communicate with customers, and collect feedback.

Business growth involves measurable improvements in performance indicators such as sales, customer base, and market share, while sustainability refers to a business's ability to maintain profitability and adapt to changes over time (Eze, 2021).

2.7 Theoretical Framework

A theoretical framework provides the foundation upon which a research study is built. It serves as a guide that connects the research problem with existing theories and concepts, thereby offering a structure for understanding, analyzing, and interpreting the variables under investigation. By anchoring the study within a specific theoretical perspective, the researcher establishes the boundaries of the research and explains how the study contributes to existing knowledge. Essentially, the theoretical framework helps to justify the research design and methodology, ensuring coherence and logical consistency throughout the study. It also allows for the identification of relationships among key concepts and offers a basis for predicting outcomes based on established theoretical principles.

This study is underpinned by two major theories:

1. **Diffusion of Innovation Theory** (Rogers, 2003): Explains how innovations (like social media) are adopted based on perceived usefulness and simplicity.
2. **Social Capital Theory** (Bourdieu, 1986; Coleman, 1988): Highlights how relationships and networks built via social media create trust, loyalty, and information sharing that sustain businesses.

2.8 Empirical Review

An empirical review examines existing studies and research findings related to a particular topic, focusing on evidence obtained through observation, experimentation, or data analysis. It provides a critical evaluation of how previous researchers have investigated similar issues, highlighting their methodologies, key findings, and limitations. The purpose of the empirical review is to identify trends, patterns, and gaps in the existing body of knowledge, which helps to justify the need for the current study. By analyzing empirical evidence from prior research, the review establishes a factual basis for comparison and supports the development of hypotheses or propositions that guide the present investigation.

Previous studies show that social media positively affects small business growth and marketing efficiency (Adeniran & Johnston, 2022; Okonkwo, 2021). However, challenges such as digital illiteracy and unreliable internet remain prevalent, particularly in rural and underdeveloped regions.

3. METHODOLOGY

The research methodology outlines the systematic procedures and approaches adopted to conduct a study. It provides a detailed explanation of how the research was designed, the methods used to collect and analyze data, and the rationale behind these choices. The purpose of this section is to ensure that the research process is transparent, replicable, and scientifically valid. By clearly describing the research design, population, sampling techniques, data collection instruments, and analytical methods, the methodology demonstrates how the study's objectives are achieved in a logical and structured manner. Ultimately, the research methodology serves as the blueprint that connects the theoretical framework with practical investigation, ensuring that the findings are reliable and credible.

3.1 Research Design

Research design refers to the overall strategy, structure, and plan that guides a research study

from its conception to its final completion. It outlines how data will be collected, analyzed, and interpreted in order to answer the research questions or test the hypotheses. In essence, a research design functions as a blueprint that ensures the study is carried out systematically, efficiently, and logically.

A well-constructed research design helps the researcher maintain focus, avoid bias, ensure validity, and produce credible findings. It also enhances the reliability and replicability of the study, enabling other researchers to follow the same procedures and achieve comparable results.

3.1.1 Key Components of Research Design

1. **Purpose of the Study:**
Research design begins with establishing whether the study is exploratory, descriptive, explanatory, or evaluative. This purpose guides the overall approach and methodology.
2. **Type of Research Approach:**
The design specifies whether the study adopts a qualitative, quantitative, or mixed-methods approach:
 - *Qualitative designs* explore meanings, experiences, and social processes.
 - *Quantitative designs* focus on numerical data, measurement, and statistical analysis.
 - *Mixed-methods designs* combine both qualitative and quantitative elements to enrich understanding.
3. **Methods of Data Collection:**
The design outlines how data will be gathered, such as through questionnaires, interviews, focus groups, observations, experiments, or document reviews.
4. **Sampling Procedures:**
Research design indicates the target population, sample size, and sampling techniques (e.g., random sampling, stratified sampling, purposive sampling).

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5. **Time Dimension:**
The study may be cross-sectional (data collected at one point in time) or longitudinal (data collected over a period of time).
6. **Data Analysis Plan:**
The design includes the procedures for analyzing data—statistical analysis, thematic analysis, content analysis, regression modeling, etc.
7. **Validity and Reliability Considerations:**
The design addresses measures to ensure accuracy (validity) and consistency (reliability) of data and findings.
8. **Ethical Considerations:**
The research design specifies how ethical issues—such as confidentiality, informed consent, data protection, and non-maleficence—will be handled.

3.1.2 Types of Research Designs

1. **Descriptive Research Design:**
Aims to describe characteristics, behaviors, or phenomena without manipulating variables.
2. **Explanatory (Causal) Research Design:**
Investigates cause-and-effect relationships through experiments or quasi-experiments.
3. **Exploratory Research Design:**
Used when little is known about a problem; aims to gain insights and generate hypotheses.
4. **Correlational Research Design:**
Examines statistical relationships between variables without establishing causation.
5. **Experimental Research Design:**
Involves manipulating an independent variable to observe its effect on a dependent variable under controlled conditions.
6. **Case Study Research Design:**
Provides an in-depth examination of an individual, group, or organization within its real-life context.

3.1.3 Importance of Research Design

- Ensures logical and systematic investigation
- Enhances accuracy, validity, and reliability of findings
- Provides a clear roadmap for data collection and analysis
- Minimize errors and bias
- Enables replication and verification of results
- Helps with effective resources and time management

Research design is a critical element of any scholarly investigation. It determines how research questions will be answered and how credible the findings will be. A clear, well-thought-out research design not only strengthens the scientific rigor of a study but also increases the trustworthiness of its conclusions. This study employed a descriptive survey design to collect quantitative data from small business owners.

3.2 Population and Sampling

Population refers to the entire group of individuals, organizations, events, or objects that possess common characteristics relevant to a particular study. It represents the total set from which the researcher intends to draw conclusions. In research, the population is defined based on the nature, scope, and objectives of the study. For example, if a study focuses on the impact of social media on small and medium enterprises (SMEs), the population may consist of all SMEs operating within a specific geographical area or industry sector. Clearly defining the population helps to ensure that the findings of the study are representative and applicable to the intended group.

Sampling, on the other hand, involves selecting a subset of the population to participate in the research. Because it is often impractical or impossible to collect data from every member of a population, sampling allows the researcher to gather information efficiently while maintaining the reliability and validity of the study. The process of sampling includes determining the

sample size, which must be large enough to represent the population accurately, and choosing an appropriate sampling technique.

Sampling techniques are generally classified into two major categories: probability sampling and non-probability sampling.

- In probability sampling, every member of the population has a known and equal chance of being selected. Common methods include simple random sampling, stratified sampling, systematic sampling, and cluster sampling.
- In non-probability sampling, selection is based on the researcher's judgment or convenience, and not all members have an equal chance of inclusion. Examples include purposive sampling, convenience sampling, and quota sampling.

The choice of sampling method depends on the nature of the research, the objectives of the study, the availability of data, and time or resource constraints. A well-defined sampling strategy ensures that the collected data accurately reflects the characteristics of the target population, thereby enhancing the credibility and generalizability of the research findings.

The population comprised small business owners in Borno, Adamawa, Bauchi, and Gombe States. A **sample of 400 respondents** was selected using stratified random sampling. Of these, **372 valid responses** were received (93% response rate).

3.3 Instrumentation

Instrumentation refers to the tools, devices, or techniques used in collecting data for research study. It involves the design, development, and application of instruments that enable the researcher to gather reliable and valid information related to the research objectives. The choice of instruments depends on the nature

of the study, the type of data required, and the research design being employed.

In social science research, the most commonly used instruments include questionnaires, interview schedules, observation checklists, and document analysis guides.

- **Questionnaires** are structured sets of questions designed to obtain information from respondents in a consistent manner. They may contain both closed-ended and open-ended questions, depending on whether the researcher seeks quantitative or qualitative data. Questionnaires are often preferred because they allow data to be collected from a large number of respondents within a short period and at a relatively low cost.
- **Interviews** may be structured, semi-structured, or unstructured, and they provide an opportunity for deeper exploration of participants' views, experiences, and attitudes. Interviews are particularly useful when the research aims to gain insight into complex social or behavioral phenomena.
- **Observation checklists** are used when the study requires the researcher to record behaviors, events, or conditions as they occur in a natural setting. This method is valuable in studies focusing on actual practices rather than self-reported behaviors.
- **Document analysis** involves examining existing records, reports, or online data sources relevant to the research topic. It helps to corroborate findings obtained from other data collection instruments.

Before the actual data collection, the research instrument should be validated and tested for reliability. Validity ensures that the instrument accurately measures what it is intended to measure, while reliability refers to the consistency of the instrument in producing similar results under consistent conditions. A pilot test is usually conducted to identify and

correct any ambiguities, errors, or weaknesses in the instrument prior to full-scale administration.

In summary, instrumentation plays a critical role in ensuring the quality and accuracy of data collected. The appropriateness of the instruments used directly affects the validity of the study's findings and the credibility of its conclusions.

Data was collected using a structured questionnaire divided into sections on demographics, social media usage, business growth, sustainability, and challenges (see Appendixes)

3.4 Data Analysis

Data analysis refers to the systematic process of inspecting, cleaning, transforming, and modeling data in order to discover meaningful patterns, draw conclusions, and support decision-making. It is a critical stage in the research process because it allows the researcher to make sense of collected data and answer research questions or test hypotheses. Through rigorous analysis, raw data is converted into useful information and knowledge.

Data analysis helps ensure that research findings are accurate, reliable, and valid. It provides a logical structure for interpreting results, identifying relationships among variables, and deriving insights that contribute to theory, practice, or policy.

3.4.1 Key Components of Data Analysis

3.4.1.1 Data Preparation

Before analysis begins, raw data must be prepared through:

- **Editing:** Checking data for errors, completeness, and consistency.
- **Coding:** Assigning numerical or symbolic codes to responses for easier classification and analysis (common in quantitative studies).

- **Data Cleaning:** Removing duplication, correcting inconsistencies, and handling missing values.
- **Data Entry:** Inputting data into statistical software or organizing it in structured formats.

3.4.1.2 Choice of Analytical Techniques

The analytical method differs depending on the nature of the study:

a. Quantitative Data Analysis

Uses numerical data and statistical tools. Common steps include:

- **Descriptive statistics:** Mean, median, standard deviation, frequencies, percentages.
- **Inferential statistics:** Regression, correlation, t-test, ANOVA, chi-square, etc.
- **Data modeling:** Predictive and exploratory models to understand variable relationships.

b. Qualitative Data Analysis

Focuses on textual, visual, or narrative data. Techniques include:

- **Thematic analysis:** Identifying themes and patterns in qualitative responses.
- **Content analysis:** Systematically categorizing verbal or written content.
- **Narrative analysis:** Interpreting stories or personal accounts.
- **Discourse analysis:** Studying language use, power relations, and social context.

c. Mixed-Methods Analysis

Combines numerical and textual interpretations to provide a more holistic understanding of research findings.

3.4.2 Tools and Software for Data Analysis

Researchers use different tools depending on the methodology:

- **Quantitative software:** SPSS, STATA, R, Excel, SAS, Minitab.
- **Qualitative software:** NVivo, ATLAS.ti, MAXQDA.
- **Mixed-methods software:** Dedoose, QDA Miner.

These tools enhance accuracy, reduce bias, and simplify complex analysis.

3.4.3 Interpretation of Results

Data analysis goes beyond calculations. The researcher must interpret what the results *mean* in the context of:

- research questions or hypotheses
- theoretical framework
- existing literature

This step helps explain trends, patterns, relationships, or differences observed in the data.

3.4.4 Presentation of Findings

Findings must be communicated clearly using:

- Tables
- Charts and graphs
- Textual explanations
- Quotations (for qualitative studies)

This ensures transparency and helps readers understand how conclusions were drawn.

3.4.5 Importance of Data Analysis in Research

- **Provides Evidence-Based Conclusions:** Helps determine whether hypotheses are supported or rejected.
- **Identifies Patterns and Relationships:** Reveals hidden insights that might not be observable in raw data.
- **Ensures Validity and Reliability:** Systematic analysis strengthens the credibility of research findings.
- **Supports Decision-Making:** Organizations and policymakers rely on analytical results for strategic choices.
- **Enhances Knowledge Development:** Well-analyzed data contributes to theory building and academic advancement.

Data analysis is a fundamental part of the research process. It transforms raw data into meaningful results through systematic examination, interpretation, and presentation. Whether qualitative or quantitative, the rigor of the data analysis process largely determines the strength and trustworthiness of the research findings. In this study, descriptive statistics was used to summarize the responses, while **Pearson's correlation** and **regression analyses** were used to test the hypotheses at a 0.05 significance level using SPSS.

4. RESULTS

4.1 Extent of Social Media Utilization

Respondents were asked to rate their frequency of using selected social media platforms.

WhatsApp and Facebook were the most frequently used platforms, with weighted mean scores of 4.31 and 4.09 respectively. TikTok and Twitter were used less frequently (means of 3.09 and 2.61) (table 1).

Table 1: Extent of social media use

Platform	Always	Often	Sometimes	Rarely	Never	Weighted Mean
Facebook	165	120	58	18	11	4.09
WhatsApp	210	95	40	15	12	4.31
Instagram	95	100	90	55	32	3.43
TikTok	68	84	115	70	35	3.09
X (Twitter)	30	62	92	101	87	2.61

Interpretation: WhatsApp and Facebook are the most frequently used platforms by small businesses, likely because of their accessibility and direct communication features. The weighted mean scores above 4.0 indicate a high level of utilization.

4.2 Impact on Business Growth

Correlation analysis showed a strong positive relationship between social media use and business growth ($r = 0.72, p < 0.05$). Respondents agreed that social media improved visibility, increased sales, and reduced marketing costs.

Table 2 shows responses to statements on how social media influences growth indicators such as sales, brand awareness, and customer base.

Table 2: Impact of social media on business growth

Statement	SA	A	N	D	SD	Mean	SD
Social media increases my business sales volume.	180	135	25	20	12	4.21	0.78
My business has gained more customers through online platforms.	160	140	45	17	10	4.15	0.83
Social media improves brand visibility.	175	138	30	18	11	4.19	0.74
Social media reduces marketing costs.	150	146	40	26	10	4.08	0.82
Social media enhances customer feedback and satisfaction.	165	139	38	20	10	4.17	0.76

Overall Mean = 4.16 (High Agreement)

Interpretation: The respondents strongly agreed that social media contributes positively to business growth by improving sales, visibility, and customer engagement. This aligns with findings from Adeniran and Johnston (2022) and Eze (2021), who also reported that social media improves small business performance.

Regression analysis indicated that social media accounts for **46% of the variation** in business sustainability ($R^2 = 0.46, p < 0.05$). Respondents confirmed that consistent social media engagement improves innovation, customer loyalty, and adaptability. Table 3 presents data on how social media influences the long-term sustainability of small enterprises.

4.3 Impact on Sustainability

Table 3: Social media impact on sustainability

Statement	SA	A	N	D	SD	Mean	SD
Social media helps maintain consistent customer relationships.	155	143	40	22	12	4.11	0.81
Online presence allows my business to adapt to market changes.	160	138	41	23	10	4.14	0.77
Social media encourages innovation and new product ideas.	150	145	44	21	12	4.08	0.80
Social media provides competitive advantage.	142	140	52	25	13	4.01	0.84
Consistent social media engagement improves long-term survival.	155	135	47	25	10	4.09	0.83

Overall Mean = 4.09 (High Agreement)

Interpretation: The results suggest that social media contributes to the sustainability of small businesses by promoting customer loyalty, adaptability, and innovation.

4.3.1 Test of Hypotheses

Hypothesis One (H₁):

Social media usage has no significant impact on the growth of small businesses in northeastern Nigeria.

Table 11: Statistical Test: Pearson’s correlation coefficient

Variables	N	r	Sig. (p)	Decision
Social media usage & business growth	372	0.72	0.000	Reject H ₁

Interpretation:

Since $p < 0.05$ and $r = 0.72$ indicates a strong positive correlation, we reject the null hypothesis. This means social media usage significantly impacts the growth of small businesses in northeastern Nigeria.

Hypothesis Two (H₂):

Social media usage has no significant relationship with the sustainability of small businesses in northeastern Nigeria.

Table 12: Statistical Test: Multiple regression analysis

Model Summary	R	R ²	Adjusted R ²	Std. Error	Sig. (p)
Social media → Sustainability	0.68	0.46	0.45	0.48	0.000

Interpretation:

The regression results show that social media usage accounts for **46% of the variation in business sustainability** ($R^2 = 0.46$). Since $p = 0.000 < 0.05$, the relationship is statistically significant. Therefore, the null hypothesis is rejected, implying that social media significantly influences the sustainability of small businesses in the study area.

However, infrastructural deficits and digital skill gaps continue to hinder optimal utilization, particularly in underdeveloped regions (Okonkwo, 2021). Addressing these issues is crucial for achieving inclusive digital entrepreneurship in Nigeria.

4.4 Challenges Identified

The major obstacles included poor internet connectivity (mean = 4.16), high data costs (mean = 4.12), limited digital skills (mean = 3.98), and cybersecurity concerns (mean = 3.95).

6. Conclusion

This study examined how social media influences the growth and sustainability of small businesses in Northeastern Nigeria. The findings show that platforms such as WhatsApp and Facebook significantly enhance business visibility, marketing effectiveness, customer engagement, and market expansion. Statistical results, including a strong positive correlation and a 46% variance explanation in business sustainability, confirm that social media has become an essential tool for SME competitiveness in the region.

5. Discussion

The findings align with existing literature, confirming that social media enhances visibility and customer engagement among small businesses (Adeniran & Johnston, 2022). The positive correlation between social media use and sustainability supports Social Capital Theory, as platforms foster relationships that translate into customer loyalty (Coleman, 1988).

The study also found support for the Diffusion of Innovation Theory and Social Capital Theory, showing that business owners use social media because it is accessible, useful, and inexpensive, while also helping them build strong customer networks. However, despite these benefits, SMEs still face major challenges such as poor

internet infrastructure, high data costs, cybersecurity threats, and limited digital skills, which restrict their ability to fully utilize social media for growth.

Overall, the study concludes that social media offers significant opportunities for SMEs in Northeastern Nigeria, but these opportunities can only be fully realized with improved digital infrastructure, stronger government support, and better digital literacy. Stakeholders, including policymakers, SMEDAN, NITDA, business associations, and entrepreneurs—must collaborate to expand access, enhance capacity, and encourage strategic use of social media to strengthen long-term business development and sustainability.

7. Recommendations

1. **Digital Capacity Building:** Agencies like SMEDAN and NITDA should train entrepreneurs on effective digital marketing and cybersecurity.
2. **Infrastructure Development:** The NCC should expand broadband coverage and reduce data costs in the region.
3. **Strategic Business Integration:** Entrepreneurs should embed social media analytics into marketing and business planning.
4. **Government Support:** Incentives should be offered for businesses demonstrating innovative use of digital platforms.
5. **Collaborative Networks:** Local business associations should create digital clusters for knowledge exchange and joint online promotion.

8. Implications for Policy and Practice

The findings highlight that social media is a powerful equalizer for regional development. Policymakers should prioritize digital inclusion in economic recovery programs, while small business owners must view online engagement as a strategic investment, not a trend.

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Appendix A: Questionnaire for the study

Section A: Demographic Information

Please tick (✓) the option that applies to you.

1. **Gender**
 - Male
 - Female
2. **Age**
 - 18–25 years
 - 26–35 years
 - 36–45 years
 - 46 years and above
3. **Educational Qualification**
 - Primary education
 - Secondary education
 - Diploma/NCE
 - Bachelor's degree
 - Postgraduate degree
4. **Type of Business**
 - Trading/Retail
 - Services
 - Manufacturing

- Agriculture/Agro-processing
 - Other (specify) _____
5. **Years in Business**
 - Less than 1 year
 - 1–3 years
 - 4–6 years
 - Above 6 years
 6. **Primary Social Media Platform Used**
 - Facebook
 - WhatsApp
 - Instagram
 - TikTok
 - X (Twitter)
 - Others (specify) _____

Section B: Social media usage

Please indicate your level of agreement using the scale below:
5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree

Statements 5 4 3 2 1

1. I use social media regularly for my business activities. | | | | | |
2. Social media is an important tool for reaching customers. | | | | | |
3. I use social media to advertise my products and services. | | | | | |
4. Social media helps me communicate effectively with customers. | | | | | |
5. I use social media to gather feedback from customers. | | | | | |
6. I use more than one social media platform for my business. | | | | | |

Section C: Social media and Business growth

Statements 5 4 3 2 1

7. Social media has increased my sales. | | | | | |
8. Social media has improved my customer base. | | | | | |
9. I receive more enquiries through social media. | | | | | |

10. Social media has enhanced the visibility of my business. | | | | | |
11. I have gained new customers because of social media. | | | | | |
12. Social media marketing has improved my business performance. | | | | | |

Section D: Social media and Business sustainability

Statements 5 4 3 2 1

13. Social media helps me maintain regular contact with customers. | | | | | |
14. Social media enables me to respond quickly to customer complaints. | | | | | |
15. My business has remained competitive because of social media usage. | | | | | |
16. Social media helps in building long-term customer relationships. | | | | | |
17. I use social media to monitor market trends and competitors. | | | | | |
18. Social media contributes to the long-term survival of my business. | | | | | |

Section E: Challenges of Social media usage

Statements 5 4 3 2 1

19. Internet connection in my area is poor. | | | | | |
20. Data subscription is too expensive. | | | | | |
21. I lack adequate digital skills to use social media effectively. | | | | | |
22. Managing social media pages takes too much time. | | | | | |
23. I find it difficult to create attractive online content. | | | | | |
24. Security and privacy concerns affect my use of social media. | | | | | |

Section F: Suggestions for improving Social media usage

Statements 5 4 3 2 1

25. Digital skills training will improve my social media usage. | | | | | |
26. Better internet access will encourage more social media use. | | | | | |
27. Government or NGO support will help businesses use social media effectively. | | | | | |
28. I am willing to invest more resources in social media marketing. | | | | | |

Thank you for your participation. Your responses will be treated with confidentiality.

Appendix C: Interpretation of demographic Information and Response rate

This section presents the demographic characteristics of the 372 small business owners who participated in the study. The demographic variables include gender, age, educational qualification, type of business, years in business, and primary social media platform used.

Gender Distribution

Gender	Frequency	Percentage (%)
Male	198	53.2
Female	174	46.8
Total	372	100

Interpretation: Respondents were fairly balanced in gender, with slightly more males than females.

Age Distribution

Age Range	Frequency	Percentage (%)
18–25 years	62	16.7
26–35 years	154	41.4
36–45 years	108	29.0
46 years and above	48	12.9
Total	372	100

Interpretation: Most respondents were within the economically active age group of 26–35 years.

Educational Qualification

Qualification	Frequency	Percentage (%)
Primary education	28	7.5
Secondary education	97	26.1
Diploma/NCE	118	31.7
Bachelor's degree	103	27.7
Postgraduate degree	26	7.0
Total	372	100

Interpretation: The majority of respondents possessed at least post-secondary education, indicating strong literacy levels among SME owners.

Type of Business

Business Category	Frequency	Percentage (%)
Trading/Retail	156	41.9
Services	128	34.4
Manufacturing	46	12.4
Agriculture/Agro-processing	29	7.8
Others	13	3.5
Total	372	100

Years in Business

Duration	Frequency	Percentage (%)
Less than 1 year	32	8.6
1–3 years	112	30.1
4–6 years	148	39.8
Above 6 years	80	21.5
Total	372	100

Interpretation: Most businesses have operated for 4–6 years, showing a relatively experienced respondent group.

Primary Social Media Platform Used

Platform	Frequency	Percentage (%)
Facebook	148	39.8
WhatsApp	126	33.9
Instagram	54	14.5
TikTok	28	7.5
X (Twitter)	16	4.3
Total	372	100

Interpretation: Facebook and WhatsApp are the most widely used platforms among small business owners.

Response Rate

A total of **400 questionnaires** were distributed across Borno, Adamawa, Bauchi, and Gombe States. Out of these, **372 questionnaires** were completed and returned, representing a **93% response rate**, which is considered adequate for quantitative analysis (Creswell & Creswell, 2018).

Response Rate

State	Questionnaires Distributed	Returned	Response Rate (%)
Borno	100	90	90
Adamawa	100	95	95
Bauchi	100	93	93
Gombe	100	94	94
Total	400	372	93