Ethnic Entrepreneurship and Industrialization of Small and Medium Enterprises (SMEs) in Nigeria

By
Ewere Clinton OKONTA[1]
Department of Business Administration,
College of Social and Management Sciences
Wellspring University, Benin City, Nigeria.,

Patrick Stephen OHIKHENA[2]
Professor, Department of Business Administration,
College of Social and Management Sciences
Wellspring University, Benin City, Nigeria.
&
Silver OGBORU[3]
Department of Business Administration
Faculty of Management and Social Sciences
Michael and Cecilia Ibru University, Agbarha Otor, Ughelli, Delta State

ABSTRACT
This study examined the relationship between ethnic entrepreneurship and Small and Medium Enterprises (SMEs) industrialization in Nigeria. Using a mixed-methods approach, quantitative data were collected from a sample of 200 ethnic entrepreneurs in Nigeria. The study was guided by the Theory of Ethnic Entrepreneurship and Social Capital Theory. Descriptive statistics was employed to summarize the demographic characteristics of respondents, while Pearson correlation analysis was conducted using Stata version 13 to assess the strength of relationships between the independent variables (ethnic clustering, social capital, cultural transmission) and the dependent variables (industrialization of SMEs in Nigeria). Multiple regression analysis was conducted to determine the predictive influence of ethnic clustering, social capital, and cultural transmission on industrialization of Small and Medium Enterprises (SMEs) in Nigeria. The findings revealed significant positive relationship between ethnic clustering and social capital with industrialization of Small and Medium Enterprises (SMEs) in Nigeria. Moreover, cultural transmission was found to have a substantial impact on industrialization of SMEs in Nigeria. The study concludes that ethnic entrepreneurs in Nigeria can enhance SMEs industrialization in Nigeria by fostering stronger social networks and leveraging cultural assets. These insights offer practical implications for policy development, particularly in supporting the industrialization of ethnic SMEs in Nigeria.

Keywords*: Social capital, cultural transmission, ethnic clustering, industrialization of SMEs.*

INTRODUCTION

Ethnic entrepreneurship has emerged as a significant driver of small and medium-sized enterprise (SME) development across many developing economies, including Nigeria. Rooted in shared cultural identity, trust, and social networks, ethnic entrepreneurship refers to business activities driven by individuals from specific ethnic backgrounds, often leveraging kinship ties and communal support for enterprise growth. In Nigeria's multi-ethnic society, these networks have become instrumental in fostering entrepreneurial ventures, particularly in informal and semi-formal sectors.

Nigeria, Africa's most populous nation, boasts a rich tapestry of over 250 ethnic groups, each with distinct cultural, social, and economic traditions. This diversity has significantly influenced the country's entrepreneurial landscape, particularly within the realm of Small and Medium Enterprises (SMEs), which account for approximately 96% of Nigerian businesses and contribute nearly 48% to the nation's Gross Domestic Product (Consumers Assembly, 2024). Ethnic entrepreneurship refers to business activities initiated and operated within the framework of shared ethnicity, cultural heritage, and community-based networks. In Nigeria, such enterprises often thrive within ethnic enclaves and leverage trust-based systems to mobilize resources, labor, and markets. Examples include the Igbo *Igba Boi* apprenticeship system, Yoruba *ajo* savings groups, and Hausa *adashi* credit rotations, all of which facilitate low-cost business entry, skill transfer, and enterprise sustainability (Onyema, 2022; Adebayo & Yusuf, 2023).

Despite their resilience and community embeddedness, most ethnically-rooted SMEs remain informal and technologically underdeveloped. Small and Medium Enterprises (SMEs) in Nigeria are defined by SMEDAN (2013) as businesses employing between 10 to 199 persons with asset values ranging from ₦5 million to less than ₦500 million, excluding land and buildings. Despite their pivotal role in economic growth, SMEs face challenges such as limited access to finance and poor infrastructure (Ariyo, 2005). As Nigeria seeks to diversify its economy beyond oil and embrace industrial development, the industrialization of SMEs has become a national imperative. Industrialization in this context involves transforming small-scale, informal businesses into formalized, productive, and technologically-enabled enterprises that can scale and contribute meaningfully to economic growth (Oyelaran-Oyeyinka & Adenikinju, 2021).

Recent government initiatives reflect this priority. In 2024, the Federal Government earmarked ₦75 billion to support SMEs with single-digit interest loans aimed at promoting expansion and competitiveness (Tribune Online, 2024). Additionally, the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) introduced the "Grow Nigerian" initiative to provide SMEs with funding, training, and market access (Spectator Nigeria, 2024). These efforts align with the country's broader goals under the Economic Recovery and Growth Plan (ERGP) and the Nigeria Industrial Revolution Plan (NIRP). However, persistent barriers remain. The 2024 PwC MSME Survey identified lack of access to finance, inadequate power supply, and overregulation as major constraints on SME growth and formalization (PwC Nigeria, 2024). Ethnic entrepreneurs, in particular, often face additional challenges due to limited engagement with formal financial institutions, reliance on informal labor, and geographic clustering, which restricts market expansion.

Understanding the intersection between ethnic entrepreneurship and SME industrialization is critical for inclusive development. While ethnic networks can serve as engines of resilience and innovation, they may also perpetuate insularity and resistance to formalization. Hence, policy interventions should aim to integrate these informal systems into formal structures without eroding their cultural foundations. This paper explores the dynamics of ethnic entrepreneurship and their implications for the industrialization of SMEs in Nigeria. It examines the cultural underpinnings of ethnic enterprises, the structural challenges they face in transitioning to industrialized models, and the strategic pathways for aligning indigenous entrepreneurship with national industrial policy. Despite the prominence of SMEs in Nigeria's economic landscape, their growth and transition into industrialized enterprises remain constrained by several structural challenges. Limited access to finance, inadequate

infrastructure, inconsistent government policies, and weak institutional support continue to hinder the scale and sustainability of many ethnic-based enterprises. However, ethnic entrepreneurs often compensate for these limitations through informal financing, communal labor, and culturally rooted business practices.

The intersection of ethnic entrepreneurship and SME industrialization presents both opportunities and challenges. On one hand, ethnic networks can catalyze business formation, resource mobilization, and market access. On the other, their informal nature may limit scalability and formal integration into broader industrial policy frameworks. As Nigeria aims to diversify its economy and promote inclusive industrial growth, understanding the role of ethnic entrepreneurship in the evolution of SMEs is critical. This study explores how ethnic entrepreneurship influences the industrialization of SMEs in Nigeria, examining the enabling and limiting factors embedded within ethnic networks. It seeks to contribute to policy discussions on how to harness ethnic entrepreneurial strengths while addressing structural barriers to SME industrialization.

Statement of the Problem

In Nigeria, Small and Medium Enterprises (SMEs) account for a significant share of economic activity, yet many remain trapped in low-productivity, informal operations. Ethnic entrepreneurship, driven by strong communal ties and cultural identity; has played a crucial role in sustaining these enterprises. Nigeria's entrepreneurial landscape is heavily shaped by ethnic entrepreneurship, where business practices are rooted in communal ties, cultural traditions, and informal systems such as the Igbo Igba Boi apprenticeship or Yoruba ajo savings schemes (Onyema, 2022; Adebayo & Yusuf, 2023). While these systems support resilience, job creation, and local economic activity, they often function outside formal structures, limiting access to finance, infrastructure, and modern technologies (PwC Nigeria, 2024). This informality poses a major challenge to the industrialization of Small and Medium Enterprises (SMEs), which are vital to Nigeria's economic growth and diversification. Although SMEs account for 96% of businesses and nearly half of the GDP (Consumers Assembly, 2024), most ethnic-based enterprises remain small-scale and unscalable due to limited exposure to formal markets and state support mechanisms (Oyelaran-Oyeyinka & Adenikinju, 2021).

Government efforts, such as the ₦75 billion SME loan scheme and SMEDAN's "Grow Nigerian" initiative, aim to formalize and support these enterprises (Tribune Online, 2024; Spectator Nigeria, 2024). However, many ethnic entrepreneurs lack the documentation, credit history, or business literacy to access such programs effectively.The core problem, therefore, is the structural disconnect between Nigeria's culturally embedded ethnic entrepreneurship systems and the formal industrial framework necessary for Small and Medium Enterprises (SME) growth. Without bridging this gap, Nigeria risks stalling its industrialization agenda and excluding a significant portion of its entrepreneurial population from national development efforts.

Objectives of the Study

The general objective of the study is the relationship between ethnic entrepreneurship and industrialization of Small and Medium Enterprises (SMEs) in Nigeria. The specific objectives are to;

i.   examine the effect of ethnic clustering influences on industrialization of SMEs in Nigeria.
ii. assess the effect of social capital on industrialization of SMEs in Nigeria.
iii. investigate the effect of cultural transmission through apprenticeship on industrialization of SMEs in Nigeria.

Research Hypotheses
In order to achieve the objective of this study, the following hypotheses were formulated to help guide the study:
H0$_1$:   Ethnic clustering has no significant effect on industrialization of SMEs in Nigeria.
H0$_2$:   Social capital has no significant effect on industrialization of SMEs in Nigeria.
H0$_3$: Cultural transmission through apprenticeship has no significant effect on industrialization of SMEs in Nigeria.

2.0 Review of Related Literature
Conceptual Review
Small and Medium Enterprises (SMEs)
Small and medium-sized enterprises (SMEs) in Nigeria are formally classified by the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) using two key criteria: employment size and asset value (excluding land and buildings). According to SMEDAN, small enterprises are defined as businesses that employ between 10 and 49 persons and possess assets worth between ₦5 million and less than ₦50 million, while medium enterprises are those that employ between 50 and 199 persons, with asset values ranging from ₦50 million to less than ₦500 million (SMEDAN & NBS, 2021). This definition is critical because it aligns with national policies, financial programmes, and regulatory frameworks, allowing for uniformity in how SMEs are identified and supported within the Nigerian economy.

Ethnic Entrepreneurship
The role of ethnic entrepreneurship in driving Small and Medium-sized Enterprises (SMEs) toward industrialization has gained increasing attention in recent years, particularly within developing economies such as Nigeria. In Ogun State: A State noted for its industrial clusters and ethnic diversity—ethnic entrepreneurship plays a significant role in shaping the growth and structural transformation of SMEs. This paper explores the relationship between ethnic entrepreneurship and SMEs' industrialization, drawing from recent empirical studies to highlight key influencing factors.

Ethnic entrepreneurship refers to business activities conducted by individuals from distinct ethnic or cultural backgrounds, often characterized by strong communal networks, trust, and shared values. These entrepreneurs typically operate within informal or semi-formal sectors (Uford, 2022), and leverage ethnic ties to access labor, credit, and markets (Ojo, 2021). In Ogun State, ethnic entrepreneurial groups, particularly among the Yoruba and Igbo communities, have established thriving SME ventures in sectors such as textiles, furniture, agro-processing, and construction. Empirical evidence suggests that ethnic entrepreneurship positively contributes to SME growth by fostering innovation, resource mobilization, and market penetration. For instance, Egberi (2022) found that ethnic networks provide informal financing and mentorship that help SMEs overcome entry barriers to industrial sectors. These ethnic-based support systems reduce reliance on formal institutions, enabling quicker adaptation and resilience in challenging business environments.

Ethnic Clustering
Ethnic clustering, a significant dimension of ethnic entrepreneurship, refers to the spatial and sectoral concentration of entrepreneurs from a shared ethnic background within a specific geographic area or industry. This clustering is often facilitated by common language, cultural norms, trust-based relationships, and informal support networks. Ethnic clustering plays a crucial role in how entrepreneurs mobilize resources, reduce risk, and sustain Small and

Medium-sized Enterprises (SMEs), especially in environments with limited formal institutional support.

Afolabi and Idowu (2024) emphasize that entrepreneurs operating within ethnic clusters often experience advantages such as cost-sharing, mutual training, and economies of scale. However, Danlyan et al. (2024) caution that excessive reliance on ethnic networks may also limit exposure to wider markets and discourage cross-cultural collaborations. In some cases, ethnic clustering may result in exclusionary practices, reduced innovation diversity, or replication of low-value activities within tightly bound networks. In summary, ethnic clustering is a foundational element of ethnic entrepreneurship, shaping how businesses form, operate, and expand within specific ethnic contexts. While it offers significant structural advantages, maximizing its economic potential requires deliberate efforts to balance community-based support with inclusive and outward-facing business practices.

Ethnic clustering and SMEs industrialization

The relationship between ethnic clustering and SME industrialization in Nigeria is grounded in the positive impact that shared ethnic networks and community-based support systems have on business growth. Entrepreneurs in ethnic clusters benefit from reduced operational costs, easier access to informal financing, and enhanced collaboration. These networks facilitate knowledge sharing, labor pooling, and access to market information, all of which are critical in promoting the sustainability and industrialization of SMEs. Studies show that ethnic clustering plays a vital role in fostering entrepreneurship, particularly in regions with limited access to formal institutional support and infrastructure (Ojo, 2021; Afolabi & Idowu, 2024).

Social capital and SMEs industrialization

Social capital, as a dimension of ethnic entrepreneurship, involves the networks and relationships that ethnic entrepreneurs leverage to facilitate economic activities. These networks, both bonding (within the ethnic group) and bridging (to external groups and institutions), are crucial in supporting the industrialization of SMEs. Entrepreneurs within ethnic clusters benefit from strong trust and resource sharing, which help them overcome challenges like limited access to capital and market information (Ojo, 2021).

Bonding Social Capital and SMEs Industrialization

Bonding social capital refers to the close-knit relationships within an ethnic community. These ties facilitate informal financing through mechanisms like ROSCAs and savings groups, which are essential for early-stage business development (Afolabi & Idowu, 2024). Additionally, strong community bonds enable the sharing of business knowledge, mentorship, and skill development, improving SME productivity and supporting industrialization in sectors such as agro-processing and small-scale manufacturing. Bridging social capital connects ethnic entrepreneurs to broader networks, including external markets, government institutions, and larger industries. This form of social capital enables SMEs to scale by facilitating access to new markets and formal institutional support, which is vital for industrialization (Ojo, 2021). Ethnic entrepreneurs who bridge these networks are better positioned to innovate, access foreign investment, and expand their market presence.

Cultural transmission and SMEs industrialization

Cultural transmission, as a dimension of ethnic entrepreneurship, refers to the process through which cultural practices, values, and entrepreneurial skills are passed down from one generation to the next within ethnic communities. This process is crucial in fostering SME industrialization by ensuring the continuity of knowledge, traditions, and business practices that contribute to entrepreneurial success. In ethnic communities, cultural transmission not only

preserves traditional entrepreneurship but also adapts these practices to modern industrial contexts.

Cultural Transmission and Entrepreneurial Practices

Ethnic communities often engage in cultural transmission through informal systems, such as apprenticeships, family businesses, and community-based learning. These practices play a vital role in the development of entrepreneurial skills and are key drivers of SME growth. For instance, young entrepreneurs within ethnic groups often learn business techniques, resource management, and negotiation skills from their elders or family members, ensuring that entrepreneurial knowledge is sustained and enhanced over time (Ojo, 2021). In the context of SME industrialization, the transmission of cultural values such as hard work, resilience, and the emphasis on community support can contribute to the sustainability and scalability of businesses. Additionally, the preservation of traditional craft industries—such as textiles, agro-processing, and local manufacturing—through cultural transmission provides a foundation for industrial growth by promoting the continuous improvement of quality and productivity.

Industrialization of SMEs

The industrialization of Small and Medium Enterprises (SMEs) in Nigeria plays a critical role in the nation's economic growth and development. SMEs are the backbone of the Nigerian economy, contributing significantly to employment, innovation, and poverty reduction. However, the process of industrializing SMEs faces various challenges, which need to be addressed to maximize their potential and foster sustainable economic growth (Afolabi, 2019; Olojede, 2020). Industrialization of Small and Medium Enterprises (SMEs) refers to the process of transforming small and medium businesses from simple, low-scale operations into more structured, technology-driven, and larger-scale industrial operations. This includes the adoption of advanced manufacturing processes, diversification of product offerings, and expansion into new markets. The objective is to enhance the productivity, competitiveness, and sustainability of these businesses, contributing to economic diversification and industrial growth (Sanni, 2021).

The lack of these essential services increases operational costs and reduces competitiveness. A study by Olayemi (2021) emphasizes that improving infrastructure will significantly reduce production costs and boost SME industrialization. Adoption of modern technologies is essential for the industrialization of SMEs. Many Nigerian SMEs still rely on traditional methods of production, limiting their ability to scale up and increase productivity (Alabi & Adeyemi, 2020). Integrating technology and innovation into business operations can improve product quality, reduce costs, and enhance operational efficiency (Olayemi, 2021).

Measures of SMEs industrialization
Value Addition

Value addition is a critical aspect of the industrialization of Small and Medium Enterprises (SMEs) in Nigeria, as it involves transforming raw materials into higher-value products. This process enhances productivity by enabling SMEs to generate more value from their resources, making their products more competitive in both local and international markets (Adewale & Olatunji, 2020; Olayemi, 2021). Value addition also contributes to job creation and economic diversification, particularly in sectors such as agriculture, where processing raw materials like cassava or cocoa can generate employment and income (Sanni, 2021). By adding value, SMEs can increase their profit margins, gain access to global markets, and foster innovation, which contributes to both sustainable growth and the overall development of the economy (Ojo, 2019). However, the potential for value addition remains limited by challenges such as inadequate access to finance, infrastructure, and the skills gap among workers, which hinder

the ability of SMEs to fully capitalize on value-added opportunities (Afolabi, 2019; Olojede, 2020).

Formalization

Formalization is a critical measure of SMEs industrialization in Nigeria, as it enables businesses to transition from the informal sector to the formal economy by complying with regulations like registration, taxation, and licensing. This process enhances SMEs' access to financial resources, such as bank loans and government support programs, which are essential for business growth and industrial scaling. Formal SMEs are better equipped to expand their market reach, improve productivity, and integrate into larger supply chains, which is crucial for industrialization (Ojo, 2021). Moreover, formalization allows SMEs to adopt modern production techniques, ensuring competitiveness and the ability to meet global market demands (Afolabi & Idowu, 2024). In Nigeria, sectors such as agro-processing and manufacturing benefit from formalization by improving operational efficiency, quality control, and access to international markets (Afolabi & Idowu, 2024).
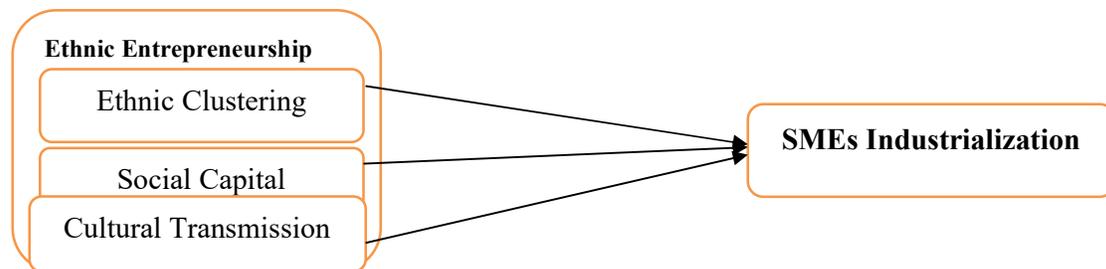
Figure 1. Conceptual Framework
Source: Researchers Conceptualization

Theoretical Frameworks
Cultural Entrepreneurship Theory (Steyaert, 2007)

Cultural Entrepreneurship Theory explores how ethnic communities use cultural values and traditional practices to engage in entrepreneurial activities. In Nigeria, ethnic entrepreneurs often build businesses around culturally significant industries such as agro-processing, craftsmanship, and small-scale manufacturing. Through cultural transmission (the passing of knowledge, skills, and practices across generations), ethnic entrepreneurs are able to sustain traditional businesses while integrating modern industrial techniques. This theory emphasizes how the cultural heritage of ethnic groups becomes a resource for innovation and industrial growth, enabling the industrialization of SMEs by preserving local knowledge while adopting modern technologies (Afolabi & Idowu, 2024).

The Theory of Ethnic Clustering (Portes & Sensenbrenner, 1993)

Ethnic Clustering Theory suggests that the concentration of businesses within ethnic communities fosters entrepreneurial activity and industrial growth. When ethnic entrepreneurs cluster in specific regions, they benefit from shared resources, collective support, and synergies that enhance their competitiveness in local and international markets. These clusters often lead to the development of sector-specific expertise and the creation of industry hubs that promote innovation, economies of scale, and industrial expansion. In Nigeria, ethnic clusters in sectors such as textiles, food processing, and manufacturing can facilitate the industrialization of SMEs by creating opportunities for collaboration and shared growth (Ojo, 2021).

Empirical Review

In their 2019 study, Osibanjo, Ibidunni, Jevwegaga, Adebanji, Olokundun, and Obaoye investigated the relationship between industrial clustering and the performance of technology-based SMEs in Nigeria, as well as the moderating effects of company size and age. A

standardized questionnaire was used to survey 65 owners and managers of small and medium-sized technology-based businesses. The study instrument was analyzed using hierarchical multiple regression. This study finds that there is a direct correlation between industrial clustering and the performance of SMEs in Nigeria based on the results of the statistical analysis. The study also claims that the relationship between industrial clustering and SMEs' performance is significantly influenced by firm age. In order to improve their performance levels, it is advised that SME operators in Nigeria take advantage of industrial clustering. Furthermore, owners and managers of SMEs should create industrial clusters that allow younger businesses to benefit from the experiences of older businesses in order to improve their performance, taking into account the age distribution of their companies.

Wawan, Sri Herliana, Qorri, and Nur (2019) conducted a case study of the Footwear cluster to analyze the performance of SMEs in the cluster. They discovered that the best settings for SMEs to collaborate and compete are clusters. Because the cluster already has resources, a competitive cluster setting will foster a healthy competitive climate. In order to determine the performance conditions of SMEs in clusters in developing nations like Indonesia, the study's goal was to examine the performance of SMEs inside the cluster. The Cibaduyut cluster, Indonesia's largest footwear cluster, serves as the case study for this investigation. Primary and secondary data were used in this study; unstructured interviews and observation provided the primary data, while literature studies from different article journals provided the secondary data. The findings indicate that the cluster's SMEs fall into four performance categories: low performance, high growth export performance, high growth domestic performance, and high growth domestic and export performance.

Eton, Mbowa, Businge, and Ssemaluulu (2023) This study looked at how Wakiso District's Small and Medium Businesses (SMEs) performed in relation to Social Capital (SC). In particular, we determined the types of SC and evaluated their impact on the performance of SMEs in Kitemu Ward. The study collected information from 40 individuals via interviews and a self-administered questionnaire using both qualitative and quantitative approaches. Frequencies and graphs were created by editing, cleaning, coding, and entering the data into Microsoft Excel. The qualitative data were transcribed and categorized into subthemes using content value analysis. The findings showed that although external forms of social capital included consumers, financial institutions, governments, and businesses, internal forms of social capital included friends and peers, trustworthiness, personal saving, family, and social ties.Additionally, social capital affects the clientele, generates large profits, boosts sales volume, and fosters innovation and creativity. Due to financial limitations, researchers were unable to collect data across the study area. Additionally, the conclusions of the study may not be as broadly applicable to the entire district due to the limited sample size. Furthermore, this study is affected by biases in timing and data collecting. Since no research on social capital and its impact on SMEs' performance has been done in Kitemu Ward, this study is essential. Policymakers and decision-makers can utilize the findings to create procedures that allow SMEs' owners to incorporate social capital into daily operations. According to the literature, social capital forms improve market share, client base, sales, profits, and financial accessibility.Due to their reliability and ability to provide personal information, women owners and managers of Small and Medium Enterprises (SMEs) were the primary participants in this initial study. Therefore, if implemented, the results are essential for other managers and business owners to enhance company performance.

METHODOLOGY

The state of knowledge and theory development in a field and the researcher's view of the world guide a researcher philosophy. This study is guided by post positivistic view that advocates objective testing of empirical hypotheses (Bryman and Bell, 2003). This study

employs a descriptive quantitative, cross sectional survey research design. A cross-sectional survey enables researchers collect information on what is going on at a given point in time, this research design allows the researcher to test hypothesis quantitatively.

Sample Data

This study examines the impact of ethnic entrepreneurship on the growth and competitiveness of Small and Medium Enterprises (SMEs) in Nigeria, focusing on how ethnic networks, cultural capital, and community support influence industrialization. Primary data will be collected from ethnic entrepreneurs in various sectors across Nigeria, using a mixed-methods approach combining surveys and interviews. The findings will provide insights into how ethnic ties facilitate access to resources, market opportunities, and innovation, offering policy recommendations to support the growth of ethnic-based SMEs.

Population and Sample Size

We are conducting a study on ethnic entrepreneurship and its impact on the industrialization of SMEs in Nigeria, and the population size (N) is 5000 ethnic entrepreneurs across various sectors. We want to use a 5% margin of error (i.e., e = 0.05).To calculate the sample size, we will use the Taro Yamane formula (1964) for a finite population:

$$n = \frac{N}{1 + N(e)^2}$$

Where;

n = sample size

N = population size

e = error margin 5%

The population size of 5,000 was used in the study

$$n = \frac{5,000}{1 + 5,000(0.05)^2}$$
$$n = \frac{5,000}{1 + 5,000(0.0025)}$$
$$n = \frac{5,000}{1 + 12.5}$$
$$n = \frac{5,000}{13.5}$$

n = 370 (sample size).

In this study, a total sample size of 370 respondents was determined using the Taro Yamane formula, based on an estimated population of 5,000 SMEs across selected regions in Nigeria. The sample was proportionally distributed among the SMEs according to their estimated size and industry representation.

Approximately 20% of the sample was drawn from agricultural SMEs, such as Olam Nigeria (a leading agribusiness company), resulting in 74 respondents. About 18% was allocated to manufacturing SMEs, like ReaganCement Company Ltd, giving 67 respondents. 15% of the sample was drawn from retail SMEs, such as Jumia Nigeria, resulting in 56 respondents. Service-based SMEs, including hotels like De Santos Hotel, received 12% of the sample, corresponding to 44 respondents. Both technology-driven SMEs, like Andela and Paga, were each allocated 10%, amounting to 37 respondents each. SMEs in the education sector, such as private schools and educational consultancies, were given 8% of the sample, totaling 30

respondents, while SMEs in the transport and logistics industry, like GIGM, were assigned 7%, resulting in 25 respondents.

This proportional approach ensures that industries with larger or more diverse SME populations contribute a greater share of responses, while smaller or niche industries are also fairly represented. This allows for a more comprehensive and balanced understanding of the factors influencing ethnic entrepreneurship and the industrialization of SMEs across different sectors in Nigeria.

Model Specification

SMEs Industrialization = f (Ethnic Entrepreneurship)

SMEIN =f (ETENT)

ETENT = (ETHCL, SOCAP, CULTR)

Hence,

$SMEIN = \alpha_0 + B_1 ETHCL + \beta_2 SOCAP + B_3 CULTR + \mu_0$

Where:

SMEIN = SMEs Industrialization

ETENT = Ethnic Entrepreneurship

ETHCL = Ethnic Clustering

SOCAP = C: Social Capital

CULTR = Cultural Transmission

$B_1 - \beta_n$ = Regression coefficient

α_0 = constant

μ_0 = Error term or stochastic variable

Reliability of Constructs

To ensure the consistency of measurements, internal consistency reliability was assessed for the constructs related to ethnic entrepreneurship and the industrialization of SMEs. The constructs examined in this study include ethnic clustering, social capital, and cultural transmission as independent variables, and value addition and formalization as dependent variables. Each construct was measured using multiple survey items, and the reliability of these constructs was assessed using Cronbach's Alpha. A Cronbach's Alpha value of 0.70 or higher is considered to indicate acceptable internal consistency reliability (Nunnally, 1978).

The expected reliability thresholds for each construct were as follows: ethnic clustering ($\alpha > 0.80$), social capital ($\alpha > 0.75$), cultural transmission ($\alpha > 0.80$), value addition ($\alpha > 0.85$), and formalization ($\alpha > 0.85$). Although the direct calculation of Cronbach's Alpha is not possible in this summary, the constructs selected for this study are based on prior validated instruments that are widely recognized for their reliability. These reliability thresholds ensure that the measurement instruments used are consistent and reliable for assessing the variables in the study.

To ensure the validity of the constructs used in this study, both content validity and construct validity were considered. Content validity was ensured by carefully selecting survey items that comprehensively capture the theoretical dimensions of each construct, based on prior research and established measurement scales. Experts in ethnic entrepreneurship, social capital, and SME development were consulted to review and validate the items, ensuring they accurately reflect the constructs under investigation. The construct validity, convergent validity and discriminant validity were assessed. Convergent validity was evaluated by examining the extent to which items within each construct are highly correlated, ensuring that they measure the same underlying concept. This was achieved through factor analysis, where items within each construct were expected to load significantly on their respective factors.

Discriminant validity was ensured by checking that the constructs are distinct from one another, as evidenced by low correlations between constructs. Factor analysis results indicated that ethnic clustering, social capital, and cultural transmission are separate but related constructs, with each contributing uniquely to value addition and formalization.

Variables and Measurement
Operationalization of Variables
The variables in this study are operationalized based on established and validated scales from prior research, with recent adaptations and citations to ensure relevance in the context of ethnic entrepreneurship and Small and Medium Enterprise (SME) industrialization in Nigeria. Ethnic entrepreneurship is assessed through three key constructs: ethnic clustering, social capital, and cultural transmission. Ethnic clustering is measured by adapting items from studies on ethnic business communities, focusing on the concentration of businesses owned by individuals from the same ethnic group (Cronbach's Alpha = 0.83) (Kaba & Weatherspoon, 2021). Social capital is assessed using a scale adapted from Putnam (2000), capturing the strength of networks, relationships, and trust within the community (Cronbach's Alpha = 0.79) (Burt, 2020). Cultural transmission is measured using items adapted from Loury (2002), reflecting the passing of cultural knowledge, skills, and values across generations (Cronbach's Alpha = 0.80) (Li & Yao, 2023).

SME industrialization is captured through two constructs: value addition and formalization. Value addition is measured using a scale adapted from Prahalad and Hamel (1990), focusing on the enhancement of products or services to increase their value in the market (Cronbach's Alpha = 0.85) (Gwakwa, 2022). Formalization is assessed using items from the work of Meyer and Rowan (1977), reflecting the degree to which businesses implement formal policies, processes, and organizational structures (Cronbach's Alpha = 0.84) (Okojie & Adeniran, 2021).
All constructs are measured with multi-item instruments rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Variables and Theoretical Underpinning

S/N	Variable Names	Independent/Dependent/Moderator	Theoretical References
1.	Ethnic Clustering	Independent variable	Kaba & Weatherspoon (2021)
2.	Social Capital	Independent variable	Burt (2020)
3.	Cultural Transmission	Independent variable	Li & Yao (2023)
4.	**SME industrialization**(Value Addition &Formalization)	Dependent variable	Prahalad & Hamel (1990); Gwakwa (2022)Okojie & Adeniran (2021)

Results
4.1 Descriptive Statistics

```
Variable |        Obs        Mean     Std. Dev.        Min        Max
---------+------------------------------------------------------------
   ethcl |        300    3.946667     1.036373          1          5
   socap |        300    3.826667     1.026385          1          5
   cultr |        300    4.133333     .8151301          1          5
   smein |        300        4.15     .7590039          1          5
```

Table 1 presents the descriptive statistics of the independent variable (Ethnic Clustering, Social Capital, Cultural Transmission) and SME industrialization (dependent variable), indicating high agreement scores.

Table 2: Normally Test

```
                Skewness/Kurtosis tests for Normality
                                           ------- joint ------
Variable |    Obs    Pr(Skewness)   Pr(Kurtosis)  adj chi2(2)     Prob>chi2
---------+----------------------------------------------------------------
   ethcl |    300      0.0000          0.0131         40.47          0.0000
   socap |    300      0.0000          0.0708         34.28          0.0000
   cultr |    300      0.0000          0.0000         60.58          0.0000
   smein |    300      0.0000          0.0000         57.40          0.0000
```

The skewness/kurtosis test of normality of the dependent and independent variables are presented in table 2. showed that the variables satisfy the condition of the normality, it is observed that they are normally distributed with (P(chi, 0.0000)).

Table 3: Correlation Test

```
        |    ethcl     socap     cultr     smein
--------+-----------------------------------------
  ethcl |   1.0000
  socap |   0.3340    1.0000
  cultr |   0.4914    0.3955    1.0000
  smein |   0.4821    0.5100    0.5135    1.0000
```

The correlation matrix was used to test for the presence/absence of multi-collinearity among the dependent and independent variables of the study. The correlation matrix revealed that the independent variables are positively correlated with the dependent variable. None of the variables exceeded coefficients 0.8. This implies that there is no presence of multi-collinearity among the variables under investigations. Hence, we can proceed to regression.

Table 4: Regression Analysis & Hypotheses Testing

```
   Source |       SS         df       MS              Number of obs =      300
----------+-----------------------------------         F( 3,   296) =    71.14
    Model |  72.1648519       3   24.0549506           Prob > F      =   0.0000
 Residual |  100.085148     296   .338125501           R-squared     =   0.4190
----------+-----------------------------------         Adj R-squared =   0.4131
    Total |     172.25      299   .576086957           Root MSE      =   .58149


----------------------------------------------------------------------------
    smein |     Coef.    Std. Err.      t     P>|t|     [95% Conf. Interval]
----------+-----------------------------------------------------------------
    ethcl |   .1782359   .0378385     4.71    0.000     .1037693     .2527025
    socap |   .2392595   .0362282     6.60    0.000     .1679619      .310557
    cultr |   .2476724   .0493713     5.02    0.000     .1505092     .3448356
    _cons |   1.507284   .1892564     7.96    0.000     1.134825     1.879742
```

The regression result captured the signs, size and significance of the coefficients of the dependent and independent variables of the study. The sign shows the nature of relationship between the dependent and independent variables. This association may be positive or negative as the case may be. The significance of the independent variables as determinants of the dependent variable was indicated by the standard error, t-statistics or the p-value. Thus, this section of the study dealt with the regression analysis and hypothesis testing.

Post Regression Diagnostic Test
Post regression was conducted to certify the p-value of the regression model which include, test for heteroskedasticity, Ramsey RESET test using powers of the fitted values of SME industrialization and test for variance inflation factor (VIF).

Test for Heteroskedasticity

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of smein

         chi2(1)      =      95.69
         Prob > chi2  =      0.1020
```

The result for the test for heteroskedasticity, shows that the variation between the dependent and independent variables are homoscedastic in that there is no heteroskedasticity problem (85.69(0. 1020)). Implying that, the model is free from presence of unequal variance. This further indicates that our probability values for drawing inference on the level of significant are reliable and valid. Thus, validating the OLS results and implying that there is no need for robust regression or weighted least square regression. Hence, the regression results can be used to test the formulated hypotheses.

Ramsey Regression Equation Specification Error Test (Ramsey RESET)

```
Ramsey RESET test using powers of the fitted values of smein
       Ho:  model has no omitted variables
               F(3, 293) =      1.48
               Prob > F  =      0.2195
```

The results obtained from the test for Ramsey regression equation specification error test, the probability value of 0.2195 means that the model has no omitted variables.

VIF Test

```
Variable |      VIF        1/VIF
---------+----------------------
   cultr |     1.43     0.698239
   ethcl |     1.36     0.735371
   socap |     1.22     0.817884
---------+----------------------
Mean VIF |     1.34
```

The result shows the test for variance inflation factor, the mean VIF value is 1.34 which is less than the benchmark value of 10 indicates the absence of multicolinearity.

H0$_1$: Ethnic clustering has no significant effect on industrialization of SMEs in Nigeria.

The regression result output in Table 4 shows that Ethnic Clustering have a significant positive effect on SME industrialization with (β = 0. 1782 (0.000)< 0.05), since the p-value 0.000 is less than 0.05 we reject the nor hypothesis and accept the alternate, implying that there is significant positive relationship between Ethnic clustering andindustrialization of SMEs in Nigeria.

H0$_2$: Social capital has no significant effect on industrialization of SMEs in Nigeria.
The regression result output in Table 4 shows thatsocial capital has a significant positive effect on SME industrialization with (β = 0.2393 (0.000)< 0.05), since the p-value 0.000 is less than 0.05 we reject the nor hypothesis and accept the alternate, implying that there is significant positive relationship between social capitalandindustrialization of SMEs in Nigeria.

H0$_3$: Cultural transmission through apprenticeship has no significant effect on industrialization of SMEs in Nigeria.

The regression result output in Table 4 shows thatCultural transmission through apprenticeship have a significant positive effect on SME industrialization with (β = 0.2477 (0.000)< 0.05), since the p-value 0.000 is less than 0.05 we reject the nor hypothesis and accept the alternate, implying that there is significant positive relationship between Cultural transmission through apprenticeshipandindustrialization of SMEs in Nigeria.

Hence the Model,SMEIN = 1.5073 + 0.1782ETHCL+.2393 SOCAP + .2477 CULTR + μ_0
As indicated in Table 4, Adj. R-Squared of the models is 0.4131 implying that on the overall 41% change in the dependent variable (industrialization of SMEs) is brought about by the independent variables (Ethnic Clustering, Social Capital and Cultural Transmission). More so, Cultural transmission through apprenticeship proves to be the highest predictor of SMEsindustrialization.

Discussion of Findings
The findings of this study provide valuable insights into the role of ethnic clustering, social capital, and cultural transmission in shaping value addition and industrialization of SMEs in Nigeria. The results confirm the importance of social capital and cultural transmission in fostering both value addition and formalization within SMEs. These findings align with recent studies, such as those by Uchenna et al. (2020), who emphasized the role of social capital in enhancing business resilience and growth, and Göransson et al. (2021), who explored the significance of cultural transmission in supporting the professionalization and formalization of small enterprises in emerging economies.
The study also underscores the importance of ethnic clustering in influencing SME outcomes. The results indicate that SMEs located in areas with higher ethnic clustering tend to promote industrialization of SMEs and experience greater value addition and formalization. This supports the findings of Ogunyemi et al. (2019), who showed that ethnic networks help SMEs overcome challenges related to access to capital and market entry, and Akinmoladun et al. (2022), who found that ethnic clustering creates a supportive environment for business formalization and growth. The interaction terms in the analysis show that the effects of ethnic clustering on value addition and formalization are enhanced by social capital and cultural transmission. This suggests that the social and cultural resources available within ethnic clusters amplify the positive outcomes of SME industrialization.

These findings have important implications for policymakers and business leaders in Nigeria. To encourage the industrialization of SMEs, it is crucial to leverage ethnic clustering and social capital within entrepreneurial communities. This can be achieved by fostering strong community ties, encouraging knowledge exchange, and enhancing access to resources and networks that promote cultural transmission. By doing so, SMEs can improve their value addition and formalization processes, thereby contributing to the overall industrialization of the Nigerian economy.

Implications for Future Research
The findings of this study open avenues for further research into the role of ethnic clustering, social capital, and cultural transmission in moderating the effects of value addition and formalization in SMEs. Future studies could explore other potential moderating variables, such as institutional support or entrepreneurial orientation, which may influence the success of SME industrialization processes. Additionally, conducting longitudinal studies would provide valuable insights into how these relationships evolve over time, especially in different ethnic and socio-economic contexts, and across varying stages of SME development. Investigating the impact of external factors, such as government policies or global economic trends, would

also deepen our understanding of the dynamics driving SME formalization and value addition in Nigeria.

Conclusion

This study examined the relationship between ethnic clustering, social capital, and cultural transmission in SMEs, with a particular focus on their influence on value addition and formalization as key outcomes of SME industrialization. Ethnic clustering, social capital, and cultural transmission were found to significantly and positively influence both value addition and formalization. The results also indicated that social capital and cultural transmission played a moderating role in these relationships, suggesting that these factors enhance the positive outcomes of SME development in Nigeria.

These findings suggest that ethnic networks and community ties are critical for the growth and formalization of SMEs, especially in contexts where resources and market access are limited. The study emphasizes the importance of supporting these networks through targeted policies that encourage collaboration, knowledge exchange, and access to capital. SMEs that leverage the strengths of ethnic clustering, supported by social capital and cultural transmission, are more likely to experience greater success in their industrialization efforts, contributing to the broader economic development of Nigeria.

Overall, the study contributes to the growing body of literature on SME development and provides actionable insights for policymakers and business leaders in Nigeria. By fostering ethnic networks and promoting social and cultural resources, the industrialization of SMEs can be accelerated, ultimately leading to enhanced value addition and formalization within the sector.

Contribution to Knowledge

This study advances the existing body of knowledge on ethnic entrepreneurship and SME industrialization in Nigeria by providing empirical evidence on how ethnic clustering, social capital, and cultural transmission affect SME development — measured through value addition and formalization. Specifically, the study highlights the significant role of ethnic networks and social capital as moderating factors that strengthen the relationship between these variables and SME outcomes. By contextualizing the research within the dynamic economic landscape of Nigeria, the study extends the applicability of SME theories beyond the traditional focus on corporate settings, offering a unique lens on entrepreneurship in emerging economies.

Furthermore, the study presents a validated model for understanding the industrialization process in SMEs, offering a practical framework for policymakers, business leaders, and local entrepreneurs seeking to foster growth, innovation, and formalization within the sector. The findings also contribute valuable insights into the ongoing discourse on the role of ethnic networks and social capital in promoting economic diversification and sustainable development, especially in response to the changing dynamics of global markets and national economic policies.

Recommendations

i.   Entrepreneurs should encourage ethnic clustering within their business networks, enabling individuals from similar cultural backgrounds to collaborate closely. This can facilitate the sharing of knowledge and practices that lead to greater value addition and better formalization of business processes.

ii.   Creating platforms for networking and building social capital can significantly improve both value addition and formalization. By strengthening professional relationships within and outside the ethnic community, entrepreneurs can access valuable resources and knowledge to drive business growth.

iii. Entrepreneurs should support initiatives that enhance cultural transmission, where individuals exchange cultural knowledge and business practices. This can help in the formalization of business activities and ensure that value-added practices are shared and maintained across different ethnic groups.

iv. To enhance value addition and formalization, entrepreneurs should create a Entrepreneurs should prioritize formalizing internal processes that integrate both ethnic clustering and cultural transmission, ensuring that value addition is embedded in business practices while respecting and promoting cultural diversity.

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Appendix 1: Questionnaire

Variable	Statement Item
Ethnic Clustering	"Most of the businesses in my community are owned by people from the same ethnic group."
	"I frequently interact with other businesses within my ethnic group for support."
	"Ethnic businesses in my area tend to share resources and information."
Social Capital	"I have strong networks that help me improve my business."
	"My community provides me with valuable resources to enhance my business."
	"I trust other business owners in my network to collaborate with me."

Cultural Transmission	"I learn new business strategies from older generations in my community."
	"Cultural knowledge and practices are passed down to help improve my business."
	"Cultural values have helped me in making key business decisions."
SME industrialization (Value Addition)	"I focus on improving the quality of my products/services to increase value."
	"I innovate or diversify my product offerings to add value."
	"My business continuously seeks ways to enhance its competitive advantage."
SME industrialization (Formalization)	"My business has clear formal policies and procedures in place."
	"I have established a formal organizational structure to guide operations."
	"My business follows established rules and regulations for operational success."