

INDUSTRIAL CLUSTER POLICY AND SOCIO-ECONOMIC DEVELOPMENT IN GOMBE STATE, NIGERIA

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Abstract

This study examines the impact of industrial cluster policy on socio-economic development in Gombe State, Nigeria. Despite the adoption of the industrial cluster policy to stimulate employment generation, poverty reduction, revenue growth, and improved living standards, Gombe State continues to experience socio-economic challenges, raising concerns about the effectiveness of the policy. A survey research design was adopted and the data was obtained through structured questionnaires administered to enterprises operating within the Nasarawa Industrial Cluster. The data was presented and analysed using descriptive statistics while multiple regression analysis was used in testing the hypothesis. The study was anchored on Cluster Theory. The findings revealed that the industrial cluster policy has a statistically significant positive effect on socio-economic development in Gombe State. The regression model showed a strong positive relationship between industrial cluster policy and socio-economic development ($R = 0.730$, $R^2 = 0.533$, $p < 0.001$). Conducive industrial site and stable electricity emerged as the strongest predictors of socio-economic development, followed by soft loans and physical security. The study concludes that the industrial cluster policy contributes positively to socio-economic development in Gombe State. The study recommends stronger institutional coordination, improved access to finance, enhanced monitoring mechanisms, and sustained infrastructural support.

Keywords: Industrial Cluster, Industrial Cluster Policy, Socio-Economic Development, Gombe State.

1.0 Introduction

Industrial cluster policy is increasingly becoming an important strategy for promoting socio-economic development. The policy is founded on the belief that concentrating similar and interconnected business enterprises, suppliers, and other supporting institutions within a particular geographical area enhances socio-economic development (Marshall, 1920; Porter, 1990). Through clustering, governments and partner institutions can more effectively provide infrastructure, finance, and other supporting services peculiar to the needs of the concentrated enterprises.

Globally, industrial cluster policies have contributed significantly to business growth, employment creation, revenue generation, poverty reduction and standard of living. Countries such as the United States, Germany, Malaysia, Bangladesh, and South Africa have successfully

utilised cluster policies to stimulate industrial growth and socio-economic development in their societies through the establishment of industrial clusters notable of which include the entertainment industrial cluster in Hollywood, USA; the textiles industrial cluster in Northern Italy; the shipbuilding industrial cluster in Glasgow, Scotland; the steel industrial cluster in Pittsburgh, USA; the car manufacturing industrial cluster in Detroit, USA; the furniture industrial cluster in Domiatta, Egypt; the Durban automobile industrial cluster in South Africa (Famise et al., 2017; Foghani et al., 2017).

For instance, it is estimated that the industrial cluster in Hollywood, that concentrated major entertainment companies such as Warner Bros (WB), Lionsgate, Walt Disney, Dolby, Netflix, among others, provided about 2.32 million direct and indirect jobs in USA and paid roughly \$229 billion in wages annually (Motion Picture Association, 2025), evidently portraying that industrial clustering in Hollywood has significant effects on socio-economic development in the country.

In Nigeria, industrial clustering has been promoted under the National Industrial Revolution Plan (NIRP), leading to the development and incorporation of notable clusters such as the Otigba Computer Village in Lagos, the Aba Shoe and Garment Cluster, and textile clusters in Kano (Federal Ministry of Industry, Trade and Investment, 2014; Ibeku & Nwagwu, 2024; Uzonwanne & Udedi, 2026; Uzor, 2014). These clusters have also contributed significantly to the socio-economic development of their respective societies. For instance, the Otigba Industrial Cluster (Ikeja Computer Village), where over 3,000 enterprises dealing in computer hardwares, softwares, mobile phones, and electronics, benefits from improved electricity supply, Information and Communication Technology (ICT) infrastructure, skills acquisition training, streamlined business registration and access to credit, generated about US\$2 billion (N300 billion) annually, making it one of the largest non-oil value incubation hubs in the country (Johnson, 2013; Ojikutu, 2018).

Prior to the adoption of the industrial cluster policy in 2014, Gombe State faced persistent socio-economic challenges characterised by widespread poverty and high unemployment. Available records indicate that the unemployment rate in the State stood at 38.7% in 2011 (National Bureau of Statistics, 2012) while 72.6% of the State's population was living in poverty in 2013 (Sule & Sambo, 2020), reflecting the fragile socio-economic conditions confronting the State.

In response to these challenges, Gombe State Government adopted the industrial cluster policy in 2014 and established the Nasarawo Industrial Cluster to stimulate enterprise development through the provision of a conducive industrial site, stable electricity, soft loans, and physical security in collaboration with the Bank of Industry (BOI), Jos Electricity Distribution Company (JEDCO), and Kings Guards (Yusuf & Ishiyaku, 2024). In other words, the policy is operationalised through four complementary components: the provision of a conducive industrial site, stable electricity supply, accessible soft loans, and adequate physical security. These components are expected to reduce operational constraints faced by the enterprises, and enhance their ability to stimulate local economic activities, generate employment opportunities, increase revenue, contribute to poverty reduction and improvements in living standards.

However, the extent to which the policy has translated into meaningful socio-economic development despite these complementary interventions remains uncertain as the National Bureau of Statistics (2023) reports that 74.6% of Gombe State residents still live below the poverty line, while 86.2% experience multidimensional poverty, suggesting that socio-economic deprivation remains widespread.

This study, therefore, examines the extent to which industrial cluster policy impacted socio-economic development in Gombe State.

Research Question

- i. To what extent has the industrial cluster policy impacted socio-economic development in Gombe State?

Research Hypotheses

To measure the relationship between industrial cluster policy and socio-economic development in Gombe State, the research was premised within the following research hypotheses:

- H⁰: There is no significant relationship between the industrial cluster policy and socio-economic development in Gombe State.
- H¹: There is significant relationship between the industrial cluster policy and socio-economic development in Gombe State.

2.0 Literature Review

Conceptual Review

The works of scholars on the concepts of industrial cluster policy and socio-economic development are examined under the conceptual literature review.

Industrial Cluster Policy

Industrial cluster policy refers to deliberate government interventions aimed at promoting the geographical concentration of interconnected firms, suppliers, service providers, and supporting institutions within a defined location in order to enhance productivity, competitiveness and socio-economic development (Porter, 2000). The concept originated from Marshall's (1920) notion of industrial districts and was subsequently expanded by Porter (1990), who argued that clusters generate competitive advantages through specialization, knowledge spillovers and collaboration among enterprises. Contemporary scholars such as Wilson et al (2022) and Parrilli (2023) view industrial cluster policy as a strategic tool for promoting industrialization, innovation, employment generation and poverty reduction.

The Nigerian industrial cluster policy framework is built around four key components: conducive industrial sites, industrial infrastructure, financial support, and physical security (Federal Ministry of Industry, Trade and Investment, 2014). Conducive industrial sites facilitate enterprise agglomeration and interaction (Delgado et al., 2014), while industrial infrastructure such as electricity, roads, water supply and communication networks improves business efficiency and productivity (Anas & Lee, 1989). Financial support enhances access to capital for enterprise expansion (Wilson et al., 2022), whereas physical security protects investments, workers and

productive assets (Li & Geng, 2012). Collectively, these interventions are intended to strengthen enterprises performance and stimulate wider socio-economic development.

Socio-Economic Development

Socio-economic development refers to improvements in the economic and social well-being of individuals and communities through enhanced employment opportunities, poverty reduction, income growth, and improved living standards (Sen, 1999). Unlike purely economic measures that focus on output growth, socio-economic development emphasizes the quality of life and the equitable distribution of development benefits. Consequently, improvements in employment generation, poverty alleviation, revenue generation, and standard of living are widely recognized as important indicators of socio-economic development (Sen, 1999).

In Nigeria, socio-economic development remains a major challenge despite the country's economic potential. According to the National Bureau of Statistics (2023), about 133 million Nigerians are multi-dimensionally poor. The situation is equally severe in Gombe State, where approximately 74.6% of residents live below the poverty line, while 86.2% experience multi-dimensional poverty (National Bureau of Statistics, 2023). These indicators suggest significant deficits in employment, income, education, healthcare, and living conditions, thereby highlighting the need for development interventions capable of stimulating inclusive growth.

Theoretical Review

Several theories have been advanced to explain the relationship between industrial public policy and socio-economic development. These theories provide different perspectives on how government policies influence enterprise growth, economic transformation and improvements in citizens' welfare.

Cluster Theory, developed by Porter (1990), argues that the geographical concentration of interconnected firms, specialised suppliers, service providers and supporting institutions enhances enterprise productivity, innovation and competitiveness. Firms located within industrial clusters benefit from shared infrastructure, specialised labour, knowledge spillovers, reduced transaction costs and economies of scale, thereby improving business performance and socio-economic development. The theory further recognises the role of government in providing an enabling environment through infrastructure, institutional support and policies that promote enterprise competitiveness (Porter, 1990; Porter, 2000).

Endogenous Growth Theory, proposed by Romer (1986), attributes long-term economic growth to internal factors such as innovation, human capital development, knowledge creation and technological progress rather than external forces alone. The theory argues that public investment in infrastructure, education, research, technology and institutions enhances productivity and promotes sustainable economic growth. Industrial cluster policies are therefore expected to facilitate innovation and enterprise productivity by creating an enabling business environment.

From a broader human development perspective, Capability Approach by Sen (1999) argues that development should be assessed not merely by economic growth but by the expansion

of people's capabilities and freedoms. According to the theory, public policies should enhance individuals' opportunities to secure productive employment, earn sustainable incomes and improve their quality of life. Accordingly, industrial cluster policies contribute to development when they expand employment opportunities, reduce poverty and improve living standards.

Closely related is Human Development Theory, which emphasises that development should focus on expanding people's choices, capabilities and well-being rather than increasing national income alone. The theory underpins the Human Development Index (HDI), which measures development through health, education and income indicators (United Nations Development Programme, 1990). It therefore recognises that industrial cluster policies should ultimately improve people's welfare.

Although each of these theories provides useful insights into industrialisation and development, cluster theory provides the most appropriate explanation for the present study because it directly explains how government-supported industrial clusters improve enterprise competitiveness through the provision of infrastructure, institutional support and business services.

Empirical Review

Several empirical studies around the world discovered the socio-economic impacts of industrial cluster policies more especially regarding its contribution to enterprise competitiveness, employment generation, poverty alleviation, revenue generation, among others. For instance, Delgado et al. (2014), using longitudinal data from U.S. clusters, discovered that well-established clusters promote higher job creation, wage growth, and new business formation compared to isolated firms. The strength of this study lies in its robust datasets, which make the findings broadly generalizable. However, it is limited by its focus on advanced economy with stable institutions, making it uncertain whether similar benefits apply in fragile contexts such as Africa and Nigeria.

Studies in Africa also provide valuable insights but reveal contextual variations. Ackah and Vuvor (2019), using a mixed-method approach in Accra, Ghana, found that SMEs located in industrial zones had higher survival rates, generated more semi-skilled jobs, and contributed to household income stability, directly linking clusters to poverty alleviation. The strength of their study lies in triangulating quantitative and qualitative evidence, though the study is limited to a single urban context. Similarly, Oqubay (2020) conducted a comparative study of Ethiopia and Kenya and found that industrial parks significantly enhanced employment creation, foreign exchange earnings, and technology transfer. This cross-national study strengthens generalizability but, like Ackah and Vuvor (2019), it overlooked the micro-level experiences of the enterprises. When compared, both studies agree that conducive industrial environments foster employment and revenue generation, but they leave unanswered questions about how different settings can alter these impacts. This reinforces the importance of examining a less industrialized Nigerian state, such as Gombe, where institutional and infrastructural challenges are more pronounced.

In Nigeria, several scholars have also established a link between industrial clustering and socio-economic development. Raymond (2023), through a quantitative survey of 255 fabric store owners and employees, revealed that clustering enhanced enterprise expansion, improved security, and created economies of scale, thereby generating jobs and reducing poverty. Similarly,

Akinwale (2018) studied industrial estates in Ogun and Lagos States, using surveys of SMEs, and reported that firms in conducive sites contributed significantly to job creation, revenue generation through taxes, and improved household incomes. Complementing this, Mohammed (2022) used a nationwide survey and statistical analysis to show that cluster policies fostered innovation, competitiveness, and productivity, resulting in increased tax revenues and sustainable employment. Together, these studies confirm that conducive industrial sites facilitate job creation and revenue growth but highlight a micro study gap that this research seeks to bridge.

Within Gombe State, empirical evidence remains scarce but emerging. Usman et al. (2019) examined SMEs in Gombe metropolis using convenience sampling and discovered that firms located in industrial areas such as Gombe Commercial Area and BCGA enjoyed better access to infrastructure, which translated into higher employment and local tax revenues compared to isolated firms. In another study, Abubakar (2022) employed interviews with 10 cluster participants in Gombe metropolis, highlighting that informal clustering among welders fostered apprenticeship systems, reduced youth unemployment, and stabilized household incomes. While these studies are valuable, they suffer from methodological weakness by relying on a small convenience sample of SMEs. Though these studies provided richer qualitative insights, however, they lacked generalizability due to their small sample size and reliance on qualitative data alone. This highlights a methodological gap that this research seeks to bridge using quantitative approach.

Research Gap

Although empirical studies from developed countries, Africa, and Nigeria generally show that industrial cluster policies promote employment generation, enterprise growth, innovation, and revenue generation, there is the existence of gaps in terms of methodology, as many studies rely solely on qualitative approach, and in terms of context, as most are skewed towards industrially advanced states.

For instance, relatively few studies have examined the impact of the policy on socio-economic development at a less industrialised states in Nigeria. Existing Nigerian studies have focused largely on established industrial clusters in industrialised climes in Lagos, Abia, Kano, and Ogun, while limited attention has been given to emerging industrial clusters in states such as Gombe. Secondly, most studies rely on qualitative data which lacked generalizability due to their small sample size. This highlights a methodological gap that this research also seeks to bridge using quantitative approach.

Theoretical Framework

Cluster Theory

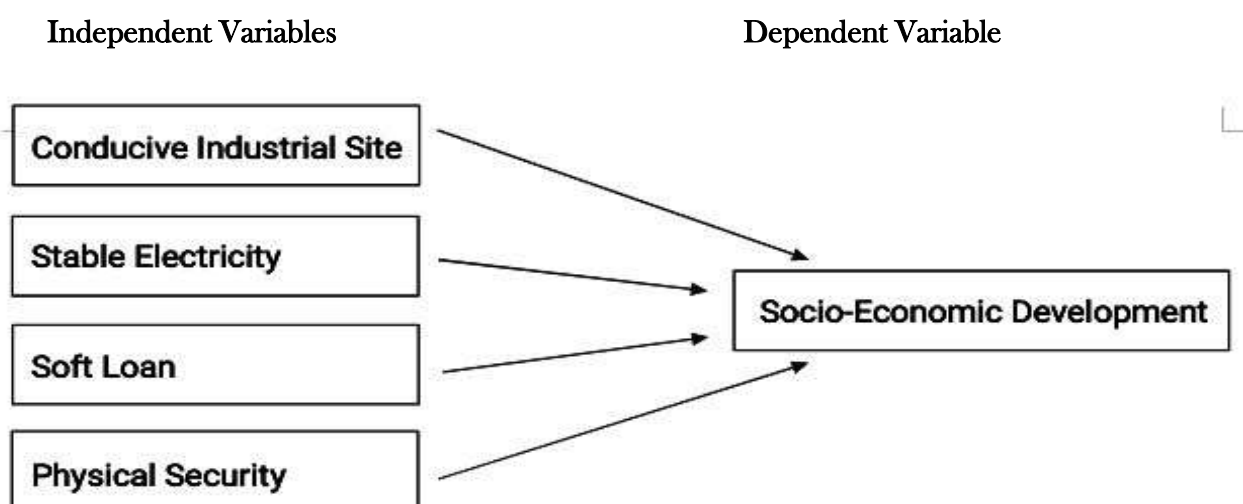
This study adopts cluster theory as its guiding framework. The theory provides a foundational framework for understanding how the geographical concentration of interconnected firms, suppliers, service providers, and supporting institutions can stimulate socio-economic development. Originating from Marshall's (1920) concept of industrial districts and later expanded by Porter (1990), the theory posits that clustering creates competitive advantages through specialization, collaboration, knowledge sharing, shared resources, infrastructure,

services, and institutional support. These advantages enhance business performance, increase revenue generation, create employment opportunities, reduce poverty, and improve living standards. The theory further argued that concentrating enterprises within a specific location also enables governments and development partners to provide critical infrastructural support more efficiently, including conducive industrial sites, infrastructure, financial assistance, and physical security (Raymond, 2023).

Cluster theory is relevant to this study because it explains how enterprises benefiting from the industrial cluster policy in Gombe State utilize shared resources, infrastructure, services, and institutional support to enhance their performance. Through access to a conducive industrial site, stable electricity supply, non-collateral soft loans, and improved physical security against theft, fire outbreaks, thuggery and vandalism; enterprises are expected to increase productivity, generate more revenue, create employment opportunities, reduce poverty, improve standard of living and ultimately contribute to the socio-economic development of Gombe State

Conceptual Framework

This research investigated the relationship between industrial cluster policy and socio-economic development in Gombe state through its components/strategies. The industrial cluster policy has four (4) components, which are conducive industrial site/estate, stable electricity, soft loan and physical security against theft, vandalization, fire outbreak, among others, provided by the policy. The components of the policy (conducive industrial site/estate, stable electricity, soft loan and physical security), therefore, constitute the Independent Variables (IVs) in this research while socio-economic development is the Dependent Variable (DV). The conceptual framework for the research is, therefore, illustrated below.



The four independent variables were tested and relationship established between each of them and socio-economic development.

3.0 Methodology

This study adopted a quantitative research design within the positivist research paradigm to examine the impact of industrial cluster policy on socio-economic development in Gombe State, Nigeria. The study focused on enterprises operating within the Nasarawo Industrial Cluster, which was established under the state's industrial cluster policy. This is because the cluster was specifically established from scratch, and have virtually all the rice and groundnut milling enterprises relocate to the cluster by the policy.

The target population comprised of 2,980 registered business enterprises across groundnut milling, rice milling, and other service-related enterprises (Provision Stores, Accessories and Phone Charging Kiosks, Restaurants, Poultry Feeds Making, Machine Service, Spare-Parts Business Enterprises, among numerous others). The number of the registered enterprises was obtained from Gombe State Ministry of Trade and Industry, the implementing agency of the policy.

Using the Yamane (1967) sample size determination formula, a minimum sample size of 352 was obtained. The formula is:

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

Where:

n = the sample size to be determined

N= total population

e = accepted error level limit

In our case:

n = Sample Size

N = 2,980

e = 0.05 (5% error level, that is, on the basis of 95% confidence level)

Therefore:

$$n = \frac{2,980}{1 + 2,980 (0.05)^2}$$

$$n = \frac{2,980}{1 + 2,980 (0.0025)}$$

$$n = \frac{2,980}{1 + 7.4500}$$

$$n = \frac{2,980}{8.4500}$$

$$n = 352$$

To mitigate the risk of non-response bias, the sample size was increased by 30%, resulting in a final sample of 458 respondents. Survey methodology literature recommends increasing the initial sample size when non-response is expected to ensure that the required number of valid responses is ultimately obtained (Brick & Williams, 2013; Willis et al., 2013). The exact

percentage was determined by the researchers based on anticipated field conditions and is consistent with the recommendation of Brick & Williams (2013) and Willis et al. (2013) on the sample size to be over-sampled in survey research when non-response is expected.

A multi-stage sampling procedure was employed, whereby stratified sampling was first used to categorize enterprises according to their sectoral specialization, followed by simple random sampling to select respondents proportionately from each stratum. The sample size obtained using Taro Yamane's (1967) formula was, first, proportionately allocated across the three business sectors (strata) using proportionate stratified sampling to ensure that each sector was represented according to its share of the total study population. Thereafter, a simple random sampling technique was employed to distribute the questionnaire to the respondents in each stratum (sector) of the business enterprises in the cluster.

Table 1: Distribution of the questionnaire to the sample size based on their proportion to the sectoral specialisation in the cluster

S/N	Specialisation	Population	Percent	Sample Size
1	Groundnut Milling Business Enterprises	1,298	43.6	200
2	Rice Milling Business Enterprises	995	33.4	153
3	Other Service-Providing Business Enterprises (Accessories and Phone Charging Kiosks, Restaurants, Poultry Feeds Making, Machine Service, Spare-Parts Business Enterprises, among others)	687	23.0	105
	Total	2,980	100	458

Source: Gombe State Ministry of Trade and Industry (2024), Authors' Computation.

The data was collected through structured questionnaires administered to business owners and managers, with each representing a particular business enterprise within the cluster. The questionnaire consisted of close-ended questions measured on a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." Of the 458 questionnaires distributed, 413 were validly completed and returned, representing a response rate of 90.2%.

Construct validity was assessed using Exploratory Factor Analysis (EFA) based on Principal Component Analysis with Varimax rotation. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.957, exceeding the recommended threshold of 0.70, while Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 7340.698$, $df = 300$, $p < 0.001$), confirming that the data were suitable for factor analysis. Following Hair et al. (2019), a KMO value of at least 0.70, a statistically significant Bartlett's Test ($p < .05$), eigenvalues greater than one, and factor loadings of 0.50 or above were adopted as the criteria for establishing construct validity.

The collected data were coded and analysed using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' characteristics and key study variables.

Multiple linear regression analysis was employed to test the study hypotheses and examine the effect of industrial cluster policy on socio-economic development. The dependent variable was Socio-economic Development, while the independent variables comprised Conducive Industrial Site, Stable Electricity, Soft Loan and Physical Security. Multiple regression was considered appropriate because it enables the simultaneous examination of the individual and combined effects of several independent variables on a single dependent variable while controlling for the influence of the other predictors (Hair et al., 2019; Field, 2018).

4.0 Results and Discussion

Descriptive statistics, specifically the mean and median calculated using SPSS software, were used to determine the respondents' perceptions of the contributions of industrial cluster policy to socio-economic development. The descriptive results are presented in table 2.

Table 2: Descriptive statistics on respondents' perceptions of the contributions of industrial cluster policy to socio-economic development

Perception Statements	Mean	Std. Deviation	Decision
The policy is perceived to promote local businesses.	3.56	.733	Accepted
The policy is perceived to create employment opportunities.	3.58	.777	Accepted
The policy is perceived to contribute to poverty reduction.	3.57	.778	Accepted
The policy is perceived to improve revenue generation.	3.53	.745	Accepted
The policy is perceived to improve standard of living.	3.57	.749	Accepted
Decision Mean: 3.0	Average Mean: 3.56		

Source: Field Survey, 2025 (SPSS Output)

Table 2 presents the descriptive statistics summarising respondents' ratings of perception statements relating to the contribution of the industrial cluster policy to socio-economic development in Gombe State. The mean scores for all five statements ranged from 3.53 to 3.58, exceeding the decision benchmark of 3.00, indicating that respondents generally agreed with each of the perception statements. Specifically, respondents expressed agreement that the industrial cluster policy is perceived to have promoted local businesses (Mean = 3.56, SD = 0.733); is perceived to have created employment opportunities (Mean = 3.58, SD = 0.777); is perceived to have contributed to poverty reduction (Mean = 3.57, SD = 0.778); is perceived to have improved revenue generation (Mean = 3.53, SD = 0.745); and is perceived to have improved standard of living (Mean = 3.57, SD = 0.749). The overall mean score of 3.56 indicates a generally favourable perception of the statements relating to the contribution of the industrial cluster policy to socio-economic development. Furthermore, the relatively low standard deviation values (0.733–0.778) suggest a reasonable degree of consistency in respondents' perception ratings.

The finding from the descriptive statistics show that respondents generally expressed favourable perceptions regarding the contribution of the industrial cluster policy to local business promotion, employment creation, poverty reduction, revenue generation, and improvements in the standard of living. However, these results merely summarise respondents' perceptions, while the actual effect of the policy is examined using inferential statistics below.

Hypothesis Testing

To statistically test the hypotheses, regression analysis was employed. This method determines whether the observed relationships within the sample are strong enough to be generalized to the wider population with statistical confidence. Given a significance threshold of $p < 0.05$, the decision rule is to reject the null hypothesis (H_0) if the p-value is less than 0.05, and fail to reject H_0 if the p-value is greater than 0.05. Tables 3 and 4 present the result of the hypotheses test.

Table 3: Model Summary of the Multiple Linear Regression Analysis of Industrial Cluster Policy and Socio-economic Development

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.730	.533	.529	.43854

Source: Field Survey, 2025 (SPSS Output)

Table 3 presents the model summary of the multiple linear regression analysis examining the relationship between industrial cluster policy and socio-economic development in Gombe State. The analysis was based on a composite measure of socio-economic development derived from respondents' ratings of five indicators: promotion of local businesses, employment creation, poverty reduction, revenue generation, and improvement in the standard of living. The independent variables comprised the four components of industrial cluster policy, namely conducive industrial site, stable electricity, soft loan, and physical security.

The model summary indicates a multiple correlation coefficient of $R = 0.730$, suggesting a strong positive relationship between the observed values of socio-economic development and the values predicted by the regression model. The coefficient of determination ($R^2 = 0.533$) shows that the four components of industrial cluster policy jointly account for 53.3% of the variation in socio-economic development among the sampled business enterprises. After adjusting for the number of predictors included in the model, the Adjusted R^2 of 0.529 indicates that approximately 52.9% of the variation in socio-economic development is explained by the independent variables, while the remaining 47.1% may be attributable to other factors not included in the model.

The Standard Error of the Estimate (0.43854) indicates the average deviation of the observed values from those predicted by the regression model. The relatively low value suggests that the model provides a reasonably good fit to the data. In essence, the model summary demonstrates that the selected components of industrial cluster policy collectively explain a substantial proportion of the variation in socio-economic development among enterprises operating within the Nasarawa industrial cluster, Gombe State.

Table 4: ANOVA Summary for Hypothesis Testing

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	89.695	4	22.424	116.598	.000
	Residual	78.465	408	.192		
	Total	168.161	412			

Source: Field Survey, 2025 (SPSS Output)

Table 4 presents the Analysis of Variance (ANOVA) results for the multiple linear regression model. The ANOVA test evaluates whether the regression model, taken as a whole, significantly predicts the dependent variable. The results show that the regression model is statistically significant ($F = 116.598$, $p < 0.001$), indicating that the set of independent variables jointly provides a significantly better prediction of socio-economic development than a model without predictors. The regression sum of squares (89.695) exceeds the residual sum of squares (78.465), indicating that the model explains a considerable proportion of the total variation in socio-economic development. Consequently, the overall regression model is considered statistically significant and appropriate for examining the relationship between industrial cluster policy and socio-economic development.

Therefore, the null hypothesis, which states that there is no significant relationship between the industrial cluster policy and socio-economic development, is rejected, while the alternative hypothesis, which states that there is significant relationship between the industrial cluster policy and socio-economic development, is accepted.

Discussion of Findings

The findings revealed that the industrial cluster policy has a statistically significant positive relationship with socio-economic development in Gombe State. The finding is principally supported by the multiple linear regression analysis. The inferential statistics from the regression model showed that the industrial cluster policy explained a substantial proportion of the variation in socio-economic development, thereby providing empirical support for the study's hypothesis that the industrial cluster policy is a significant predictor of socio-economic development in Gombe State.

The findings of this study strongly corroborate the arguments advanced by scholars in the reviewed literature regarding the positive contribution of industrial cluster policies to socio-economic development. For instance, the findings are in line with Porter's (1990) assertion that clustering creates opportunities for labour absorption and enterprise expansion, thereby contributing to economic development. The findings also corroborate with Delgado et al. (2014) conclusion that well-established clusters promote job creation, wage growth, and new business formation. The findings are equally consistent with the findings of Ketels and Memedovic (2023), who argued that countries and regions with strong cluster policies consistently record higher levels of employment generation, innovation, and poverty reduction. The findings also confirm Ahmed's (2022) argument that industrial cluster policies constitute an important strategy for diversifying Nigeria's economy and promoting sustainable socio-economic development. The findings also support the observations of Oyeyinka (2023), Chete et al. (2014), and Bello and Ojoko (2019), who emphasized that industrial clustering enhances competitiveness, strengthens local enterprises, and creates employment opportunities. This also validates the argument advanced by United Nations Industrial Development Organization (2022), Zeng (2023), and other scholars that industrial cluster policies foster socio-economic development by promoting enterprise growth, employment creation, and poverty reduction through coordinated support mechanisms.

Therefore, the findings of this study provide substantial empirical support for the consensus emerging from global, African, and Nigerian literature that industrial cluster policies are effective instruments for socio-economic development.

5.0 Conclusion

The study, therefore, concludes that industrial cluster policy has contributed positively to socio-economic development in Gombe State. The policy has supported promotion of local businesses, employment generation, revenue generation, poverty reduction, and improvements in standards of living. The findings validate the assumptions of Cluster Theory by demonstrating the benefits of enterprise concentration and shared support systems.

Recommendations

- i. The State Government should establish a dedicated Cluster Development Coordination Agency to strengthen coordination among ministries, financial institutions, and private sector partners.
- ii. Given the positive impact of the Nasarawo Industrial Cluster, the model should be replicated in other sectors and strategic locations across Gombe State.
- iii. The State Government should strengthen industrial infrastructure within the cluster by ensuring the continuous provision of reliable electricity, quality road networks, water supply and other essential facilities.

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