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THE SOCIO-ECONOMIC EFFECTS OF DANGOTE CEMENT COMPANY ON HOUSING DEVELOPMENT AND LIVELIHOODS IN MBAYION, GBOKO LOCAL GOVERNMENT AREA, BENUE STATE

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ABSTRACT
Industrial development profoundly shapes the socio-economic and environmental landscapes of host communities, influencing livelihoods, housing, and overall well-being. This study examines the socio-economic effects of Dangote Cement Company on housing development and livelihoods in Mbayion, Gboko Local Government Area, Benue State, Nigeria. Using Taro Yamane's formula, a sample size of 397 respondents was determined from a population of 61,276, and data were collected through a structured questionnaire. A multistage sampling technique was employed, ensuring representative selection across residential clusters and demographic groups. Results reveal significant impacts on housing supply, affordability, and quality, with a Chi-Square test showing a highly significant relationship between the industry's presence and increased housing units ($\chi 2=325.22$, df=2). Environmental challenges such as dust pollution (80.6%) and noise (73%) were prevalent, while corporate social responsibility initiatives were largely absent, with 55.4% rating them poorly. Employment impacts were limited, as 24.4% reported household employment in the company. The study underscores the need for holistic corporate strategies that address environmental concerns, enhance community livelihoods, and implement impactful CSR projects. Recommendations include improved environmental management, housing affordability policies, and inclusive economic development initiatives to balance industrial growth with community well-being

Keywords: *Dangote Cement Company, Environmental Impacts, Housing Development, Socio-Economic Effects*

1. INTRODUCTION
Industrial development has long been recognized as a critical driver of economic growth, especially since the Industrial Revolution of the 18th century (Souza et al., 2024). Industries, ranging from large-scale manufacturing to agriculture, transportation, and hospitality, play a significant role in shaping the socio-economic landscape of the host communities. Understanding the different categories of industries and their specific impacts provides a clearer framework for analyzing these dynamics (Orokpo & Ejeh, 2014).

The socio-economic contributions of cement industries have gained significant attention in recent years, particularly in developing economies. The Nigerian cement industry has experienced substantial growth over the years. From a market value of ₦26 million in 2004, the industry expanded to an estimated ₦135 million by 2008. Cement production grew at a steady rate, reaching 14.8 million tonnes in 2009, with an average annual growth rate of 12% since 2004 (Brown, Eyenghe & Wai, 2023). Despite this progress, Nigeria's per capita cement consumption remains low—at 98 kg in 2009—compared to countries like South Africa, where consumption stands at 280 kg. However, government initiatives like Vision 2020, which prioritizes housing and transportation, are expected to stimulate further demand for cement and expand the role of the cement industry in national development (Apken-Ageh, 2020).

Benue Cement Company (BCC), established in 1975 with the Federal Government of Nigeria as the primary investor, began cement production in 1980, with an installed capacity of 900,000 tonnes per annum. In 2000, Dangote Industries Limited acquired BCC, boosting its production capacity to 2.8 million tonnes per annum. Under Dangote Cement Company (DCP), the plant has grown significantly, contributing to the industrial development of Nigeria (Dangote Cement Plc, 2021). This expansion has not only increased cement production but also spurred infrastructure development, which in turn has impacted housing markets, local employment, and economic activities in the surrounding areas. Industrialisation, while a critical factor for economic development, brings with it a host of socio-economic and environmental challenges, particularly in rural or developing regions.

The presence of an industrial plant like Dangote Cement Company in Mbayion presents a complex dynamic. On one hand, industries contribute to economic growth by creating jobs, improving infrastructure, and facilitating access to socio-economic services. On the other hand, they often lead to environmental degradation, social inequality, and disruption of local cultures (Orokpo & Ejeh, 2014). For example, while industries such as Dangote Cement Company may provide vital infrastructure like schools and healthcare facilities, these benefits are often unevenly distributed, leading to imbalances in community development (Sampson, Mirilla, & Emerole, 2016). In Mbayion, the Dangote Cement Company has notably transformed the community, particularly through the provision of employment opportunities and infrastructural improvements. However, challenges such as environmental concerns, limited local labour participation, and social and cultural disruptions have also emerged (Gruptal, 2022). The cement plant has contributed to urban growth, increased demand for housing, and altered socio-economic conditions, yet these changes come with both positive and negative consequences.

Research has shown that cement companies, while often focused on the production of building materials, can have profound effects on both the economic and social well-being of their host communities (Gruptal, 2022). In the case of Mbayion, Gboko Local Government Area, the Dangote Cement Company has had adverse effects on the local community, notably in the areas of housing development, employment, and livelihoods (Dangote Cement Plc, 2021). Despite the visible socio-economic and infrastructural transformations, there is a lack of in-depth research documenting the specific effects of Dangote Cement Company on housing development, affordability, and quality in Mbayion, as well as its impact on livelihoods. This research seeks to address this gap by examining the socio-economic effects of the company's operations on housing development and the livelihoods of local residents in Mbayion, Gboko Local Government Area, Benue State.

The establishment and operations of Dangote Cement Company in Mbayion, Gboko Local Government Area, have significantly impacted the socio-economic dynamics of the surrounding community. While the cement company has contributed to local economic growth, infrastructure development, and employment generation, it has also raised concerns regarding its effects on housing development, livelihoods, and the overall well-being of residents. Despite the evident transformation in Mbayion, a comprehensive analysis of how the cement company's operations influence housing supply, affordability, quality, and the livelihoods of local people remains lacking. There is limited empirical research documenting the relationship between the cement industry's presence and housing development in the host community, especially in terms of changes in housing supply, rent prices, quality, and availability of essential services. Additionally, while the company has provided job opportunities, the extent of its impact on the income levels, local employment opportunities, and general livelihoods of the residents has not been systematically explored. The potential environmental impacts of cement production, such as dust pollution and degradation of living conditions, have raised concerns about the durability and quality of housing in the community. The interaction between industrial development and the socio-economic realities of local populations requires a deeper understanding, especially when considering the long-term effects on housing and livelihood patterns. This study seeks to fill the gap by examining the socio-economic effects of Dangote Cement Company on housing development and livelihoods in Mbayion.

2. MATERIALS AND METHOD

2.1 Study Area

The study was conducted in Mbayion in Gboko Local Government Area of Benue State, which is located in the Northern part of the State. It is situated between latitudes 07° 08' and 07° 31' N of the equator and longitudes 08° 37' and 09°10' E of the Greenwich Meridian (Figure 1) (Gboko LGA, 2014).

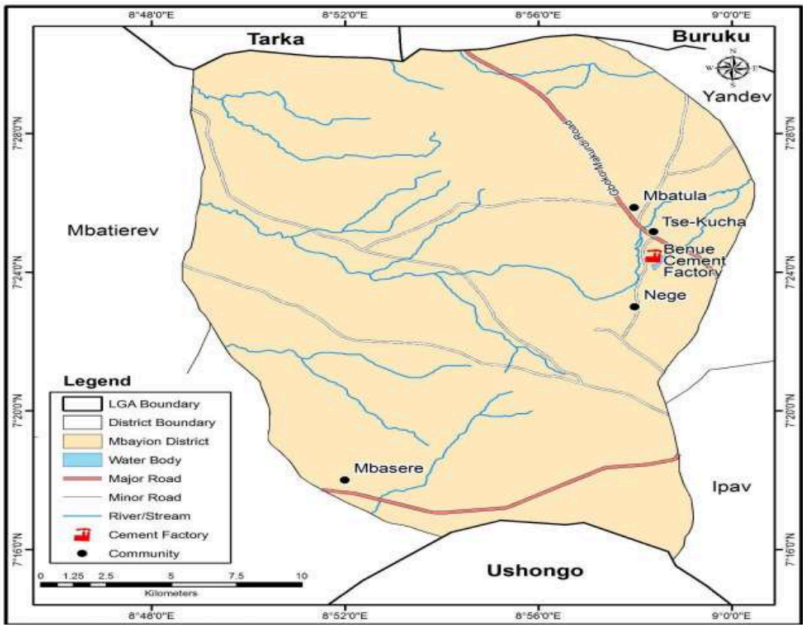

Figure 1: Mbayion District (Study Area)
Source: Modified from the Administrative Map of Gboko LGA/Google Maps, 2014.

It is made up of five (5) Districts namely: Mbatyiav, Mbayion, Mbatyerev, Yandev and Ipav. Mbayion, which is the study area, is situated between latitudes $7^0$16' and $7^0$28'N of the equator and longitudes $8^0$48' and $9^0$00'E of the Greenwich Meridian. It shares common boundaries with Takar Local Government in the North, Yandev in North-East, Ipav in South-East, Ushongo Local Government in the South, Mbatiav in South-West and Mbatierev District in the NorthWestern part of the Local Government.

2.2 Research Methodology

The study employed a survey research design to gather data on the socio-economic effects of Dangote Cement Company on housing development and livelihoods in Mbayion. This design was chosen to enable a comprehensive analysis of residents' perceptions, housing dynamics, and economic activities influenced by the company's operations. The target population included residents of Mbayion, particularly those directly or indirectly affected by Dangote Cement Company which is 61,276 according to the Census Board, 2024. A sample size of 397 respondents was determined using the Taro Yamane Formula, ensuring representation across different demographic groups, such as age, gender, occupation, and educational background.
Taro Yamane Formula;

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

Where:
n is the sample size,
N is the population size = 61276,
e is the desired margin of error = (0.05).

$$n = \frac{61276}{1+61276\,(0.05)^2}$$

$$n = 397$$

A multistage sampling technique was adopted: Stage 1: The study area was divided into residential clusters based on proximity to the cement factory. Stage 2: Households were randomly selected from each cluster. Stage 3: Respondents were purposively selected to include a mix of employed and unemployed individuals, homeowners, and tenants. A closed-ended questionnaire was used for data collection. The questionnaire was structured into 5 sections, covering: Section A: Demographic Information, Section B: Housing Supply, Affordability, and Quality; Section C: Livelihoods and Employment; Section D: Environmental Impacts on Housing and Living Conditions; Section E: Corporate Social Responsibility (CSR). Data analysis involved both descriptive (Frequencies and percentages) and inferential statistics (Chi-Square Test).

3. RESULTS AND DISCUSSION

Table 1: Demographic Information

Demographic Variable	Categories	Frequency (n)	Percentage (%)
Gender	Male	210	52.9
	Female	187	47.1
Age	Below 20 years	50	12.6
	20–30 years	120	30.2
	31–40 years	140	35.3
	41–50 years	60	15.1
	Above 50 years	27	6.8
Marital Status	Single	140	35.3
	Married	230	57.9
	Widowed	17	4.3
	Divorced	10	2.5
Educational Qualification	No formal education	50	12.6
	Primary education	80	20.2
	Secondary education	150	37.8
	Tertiary education	117	29.5

Source: Fieldwork 2024

The demographic distribution of respondents in Table 1 reveals a relatively balanced gender representation, with males (52.9%) slightly outnumbering females (47.1%). This balance ensures diverse perspectives on the research issues. Age-wise, the majority of the respondents (35.3%) fall within the 31–40 age group, indicative of a working-age population that might actively interact with housing and employment issues. Interestingly, marital status shows a predominance of married individuals (57.9%), aligning with societal norms that married individuals often seek stable housing and income. Educational qualification trends show a significant proportion having secondary (37.8%) and tertiary education (29.5%) (Table 1), reflecting a moderately educated population capable of nuanced responses. Studies by Prasetyo & Adianto, (2022) emphasized the influence of demographic factors on housing satisfaction and community development. This table provides a foundational understanding of the population, whose socio-economic and educational characteristics shape their interaction with the issues under investigation.

Table 2: Housing Supply, Affordability, and Quality

Question	Responses	Frequency (n)	Percentage (%)
Increase in number of housing units	Yes	300	75.6
	No	70	17.6
	Not sure	27	6.8
Change in cost of housing	More affordable	50	12.6
	Remained unchanged	80	20.2
	More expensive	267	67.2
Type of housing	Permanent	200	50.4
	Semi-permanent	130	32.7
	Temporary	67	16.9
	Response (Likert Scale)	**Frequency**	**Percentage**
How would you rate the structural integrity of your house?	Excellent	52	13.1%
	Good	26	6.6%
	Average	188	47.3%
	Poor	131	33.0%
How would you rate the air quality in your home?	Excellent	58	14.6%
	Good	174	43.8%
	Average	40	10.1%
	Poor	125	31.5%
How satisfied are you with the overall aesthetics of your house?	Very satisfied	61	15.4%
	Satisfied	33	8.3%
	Neutral	107	26.9%
	Dissatisfied	196	49.4%

Source: Fieldwork 2024

The results in Table 2 highlight challenges in housing affordability and quality. A significant majority (75.6%) acknowledged an increase in housing units, yet 67.2% reported rising costs, indicating a disconnect between supply and affordability. Permanent housing dominates (50.4%), reflecting a shift towards stability, but 16.9% still reside in temporary housing. Structural integrity ratings suggest a concerning scenario, with only 13.1% rating it as excellent, while 33% consider it poor. The findings align with Akande et al., (2024). who argue that housing policies often fail to balance affordability with quality. The dissatisfaction with aesthetics (49.4% dissatisfied) mirrors concerns of unmet housing expectations despite increased supply, necessitating more integrative housing policies that address both physical and socio-cultural needs.

Table 3: Livelihoods and Employment

Question	Responses	Frequency (n)	Percentage (%)
Household member employed by Dangote Cement	Yes	97	24.4
	No	300	75.6
Effect on household income	Income increased significantly	80	20.2
	Income increased slightly	130	32.7
	No change	150	37.8
	Income decreased	37	9.3
Job opportunities created (directly and indirectly)	Strongly agree	60	15.1
	Agree	140	35.3
	Neutral	120	30.2
	Disagree	57	14.4
	Strongly disagree	20	5.0

Source: Fieldwork 2024

In Table 3, employment insights reveal a low engagement of household members with Dangote Cement (24.4%), suggesting limited direct employment benefits. Regarding income, 37.8% observed no change, while 9.3% experienced a decline, raising concerns about the equitable distribution of economic benefits. While 50.4% of respondents agreed to some extent that job opportunities were created, 19.4% disagreed or strongly disagreed. Drawing from Todaro and Smith's (2020) perspectives on development economics, the findings underscore the necessity of creating broader, inclusive employment opportunities. The limited trickle-down of benefits demands a reassessment of corporate strategies to ensure equitable community economic empowerment.

Table 4: Environmental Impacts

Question	Responses	Frequency (n)	Percentage (%)
Increase in dust or pollution	Yes	300	75.6
	No	50	12.6
	Not sure	47	11.8
Types of environmental challenges	Dust pollution	320	80.6
	Noise pollution	290	73.0
	Water contamination	150	37.8
	Reduced air quality	270	68.0
Adequate environmental measures by Company	Strongly agree	47	11.8
	Agree	80	20.2
	Neutral	50	12.6
	Disagree	100	25.2
	Strongly disagree	120	30.2

Source: Fieldwork 2024

Table 4 shows that the Environmental concerns are pronounced, with 75.6% identifying increased pollution, particularly dust (80.6%) and noise (73%). Reduced air quality (68%) and water contamination (37.8%) underscore the multifaceted environmental challenges posed by industrial activities. Only 32% of respondents agreed that adequate environmental measures were taken, leaving the majority either neutral or dissatisfied. Research by World Bank (2020) on industrial impact corroborates these findings, emphasizing the critical need for stringent environmental management and community engagement in mitigating adverse effects. The low approval of mitigation measures signals gaps in corporate environmental stewardship.

Table 5: Corporate Social Responsibility (CSR)

Question	Responses	Frequency (n)	Percentage (%)
Awareness of CSR initiatives	Yes	280	70.5
	No	117	29.5
CSR projects implemented	Housing construction	0	0
	Roads and infrastructure	0	0
	Educational facilities	0	0
	Health facilities	0	0
	None of the above	397	100
Community satisfaction with CSR	Very poor	120	30.2
	Poor	100	25.2
	Average	47	11.8
	Good	80	20.2
	Excellent	50	12.6

Source: Fieldwork 2024

Table 5 shows that the Awareness of CSR initiatives is high (70.5%), but implementation is shockingly absent, with none of the respondents acknowledging CSR contributions in housing, roads, education, or health. Satisfaction ratings further amplify this issue, with 55.4% rating CSR efforts as poor or very poor. This aligns with Assefa, (2020); who critique superficial CSR strategies in African contexts. The lack of tangible benefits, despite high awareness, calls for a paradigm shift towards impactful and transparent CSR programmes that resonate with community needs.

Table 1 - 5 collectively paint a picture of significant gaps in housing quality, environmental management, and socio-economic impacts, necessitating a holistic and inclusive approach to address community challenges effectively.

Table 6: Chi-Square analysis on the impact of Dangote cement company on Housing development

Category	Observed (O)	Expected (E)	$(O - E)^2$	$(O - E)^2 / E$	Statistic	Value
Yes	300	132.33	28050.89	211.89	**Chi-Square (χ^2)**	325.22
No	70	132.33	3887.78	29.37	**Degrees of Freedom (df)**	2
Not Sure	27	132.33	11108.89	83.96	**Significance Level (α)**	0.05
Total	**397**		**43047.56**	**325.22**	**Critical Value (χ^2 critical)**	5.991

The Chi-Square test results in Table 6, indicate a highly significant difference between the observed and expected frequencies of responses across the categories. The calculated Chi-Square value of 325.22 is far greater than the critical value of 5.991 at a significance level of 0.05 and degrees of freedom (df) of 2. This suggests that the observed differences in responses are not due to random chance but rather reflect a real effect. Specifically, the industry's presence significantly influences the increase in housing units, as evidenced by the large Chi-Square statistic.

4. CONCLUSION

The study concludes that while Dangote Cement Company has contributed to increased housing supply and infrastructural development in Mbayion, these benefits are offset by rising housing costs, environmental degradation, and limited socio-economic benefits for residents. The absence of tangible corporate social responsibility initiatives exacerbates community dissatisfaction. Environmental impacts, particularly dust and noise pollution, significantly affect housing quality and overall living conditions, highlighting the need for stricter corporate environmental stewardship. Additionally, employment opportunities provided by the company are insufficient to significantly uplift household incomes or reduce local unemployment levels.

5. RECOMMENDATIONS

Dangote Cement Company should prioritize robust environmental management systems to mitigate the adverse effects of dust and noise pollution. Implementing strategies to improve air quality and reduce environmental degradation will promote sustainable living conditions for the host community. Collaborating with local and state governments to introduce affordable housing schemes can help bridge the gap between housing supply and affordability, alleviating the financial burden on residents and fostering improved livelihoods. To enhance community satisfaction, the company should develop comprehensive corporate social responsibility (CSR) initiatives. These projects should include constructing affordable housing, improving road infrastructure, and providing educational and healthcare facilities.

Additionally, fostering inclusive economic growth by expanding local employment opportunities and supporting small-scale businesses can significantly benefit the community, ensuring broader economic participation. Establishing transparent communication channels is crucial for maintaining trust and addressing residents' grievances. Regular community engagement will help the company identify and respond to pressing issues while fostering mutual understanding.

Together, these measures can create a more balanced and sustainable relationship between Dangote Cement Company and its host community.

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