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Community-driven Development Strategy for Sustainable Infrastructure

Onyekwere N. Ezirim¹, Chinwe U. Okpoechi^{2*} 

¹ Department of Urban and Regional Planning, Federal Polytechnic Nekede, Owerri, Nigeria

² Department of Architecture, Federal Polytechnic Nekede, Owerri, Nigeria

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Abstract

Many border communities are far from city centres and obscured from the mainstream of development. This can foster environments where insecurity, criminality, and certain anti-state activities thrive unabated, thereby posing a real danger to the sovereignty of the Nigerian State. Akamkpa Local Government Area in Cross River State is one such border territory. This research studied the border communities in the Akamkpa local government area to assess the contributions of government-driven infrastructure intervention projects in the development of the communities. The study is aimed at evolving an appropriate strategy for integrating border communities into the mainstream of development in Nigeria. Four border villages closest to the Cameroon border with Nigeria were chosen for the study through purposive sampling. The primary source of data collection was through a questionnaire survey, which was administered randomly to forty household heads in the communities studied. Analysis of the data was by a combination of simple descriptive statistics and inferential statistics. The findings of the study showed that the provision of basic infrastructure and services in the study area has remained grossly deficient, notwithstanding the government infrastructure intervention policy currently in place. The results of the survey further showed that residents would like to have a say in infrastructure planning and delivery in their communities, which is presently not the case. The study concludes by proposing a strategy of community participation in a sustained regime of infrastructure and service provision by relevant agencies. This is believed to have the potential to positively impact their livelihoods, improve the security and integrity of their borders, and create the right atmosphere for patriotism to thrive.

Keywords: Border Communities; Livelihood; Sustainable Development; Community-driven Development Strategy.

1. Introduction

Nigeria has over 4,000 kilometres of land borders with Benin, Niger, Chad, and Cameroon. Most of this length is unmanned and poorly demarcated, making the borders porous. Sovereign states, by law, should be capable of maintaining their boundaries, securing their territories, and protecting their citizens. Poor border management is therefore detrimental to the security of any country, because when borders do not function effectively, different forms of crime prevail, and the security of the region is put in serious jeopardy [1]. A country's involvement in the protection of its population against threats from illegal immigration, terrorism, trafficking in humans, drugs and other illegal

* Corresponding author: chinweokpoechi@yahoo.com

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materials coming in from the borders, is crucial in good border management [2]. This underscores the critical role of border communities in Nigeria. Their strategic value in national development cannot be overlooked, as safe and secure borders constitute the most visible signs of a country's sovereignty [1].

Notwithstanding the value of border communities in Nigerian national security, they are still beset by many challenges. Most of the time, these challenges are a consequence of their distance from city centers, which largely obscures them from the mainstream of national development. This also makes them prone to reduced economic development, high unemployment rates, high rates of school dropouts, low levels of investment in infrastructure, and insecurity [3]. These challenges are substantial and capable of creating an imbalance in the social cohesion within the communities, exposing them to activities that could pose a threat to the larger Nigerian state.

In recognition of the strategic importance of border communities, the Federal Government of Nigeria promulgated the Border Communities Development Agency Act in 2003. The purpose of the Border Communities Development Agency is to bring development closer to the people in border communities by addressing lapses in providing much needed basic infrastructure. The major functions of the Agency include the preparation of a comprehensive programme of action for the development of border communities; consultation with relevant border communities to identify infrastructure projects and related issues required for their overall development; and planning and development of strategies towards ensuring efficient and effective implementation of the projects [4]. Despite these efforts, socioeconomic conditions in many of the border communities have remained poor as the efforts have not delivered the desired results, neither have they curtailed nor lessened illegal activities along the borders [5]. These border communities are still largely characterised by a lack of access to roads, potable water, electricity, health care facilities, and other social amenities. Expectedly, border communities have remained fertile environments for thriving and unrelenting anti-state activities, which not only constantly threaten citizens' livelihoods but are also injurious to the sovereignty of the Nigerian State [6, 7]. Some of these anti-state activities along Nigeria's borders include but are not limited to small arms trafficking, recruitment of mercenaries and child soldiers, trafficking in under-aged children, narcotics trafficking, money laundering, and internet fraud [8].

A more inclusive strategy must be adopted to confront the challenges of infrastructure development in border communities if better results are to be achieved. This is important because the types of development provided in a community must be seen to match the needs of the beneficiaries. Inclusiveness in governance provides an opportunity for the voices of the most vulnerable to be heard at all levels of decision-making. This approach is participatory, consensus-oriented, accountable, transparent, responsive, effective, efficient, and equitable [9]. It is also recognised as a pro-poor approach that equally values and incorporates the contributions of all stakeholders, including marginalized groups, in addressing development issues [10]. Lack of stakeholder participation in decision making equates to an absence of inclusiveness. This has been identified by the United Nations (UN, 2018) [11] as a clear manifestation of poverty, which Sustainable Development Goal (SDG) 1 (one) addresses. Expectedly, in seeking to attain the Sustainable Development Goals, ending poverty and inequality must go hand-in-hand with strategies that promote inclusive development and participatory decision-making [12]. Future interventions in border communities must therefore explore inclusiveness as a sustainable infrastructure development strategy. This strategy, which is based on a thorough knowledge of the complex dynamics of development in border communities, has a high likelihood of restoring communities' confidence in the state.

1.1. Problem Statement

Nigeria is presently faced with challenges of international terrorism, human trafficking, and smuggling of contraband among others. All these are aided by cross-border challenges. These challenges are varied, and include porous borders which make it easier for transnational criminals to thrive. Also, the absence of any real structure of a vibrant, economically viable settlement in these border areas, help reinforce the ease with which border crimes are perpetrated. Border crimes in the long run, deprive the nation of much needed revenue, while also contributing to social and sometimes environmental problems. Nigeria's ranking among the countries with the longest land borders in the world, makes border management of prime importance in national planning.

To reduce challenges in border management, border communities should operate as regular mainstream communities, in terms of social, economic and infrastructural development. The peripheral location of border communities, is however a problem, as it puts them at a structural disadvantage in terms of infrastructure planning and social mobilisation efforts [8]. The resulting consequence is that these border communities are neglected in the mainstream of national development, and therefore remain hotbeds of unrest and insecurity in the country. The thrust of this research in approaching this problem is that adequate infrastructural development in border communities, can situate them as vibrant and functional settlements, where dwellers are free to undertake legitimate businesses in a conducive environment. By so doing, a society that would not need to thrive on illegality would emerge, with the residents themselves feeling obligated to the peace and security of the country. This could possibly reduce security breaches, as the social dynamics of the communities would change.

1.2. Aim and Objectives of the Study

The aim of this study is to evolve an appropriate framework for sustainable development of border communities in Nigeria. The major objectives are to establish the current household characteristics of the community, determine the types of social and economic infrastructure existing there, assess the extent of government infrastructure intervention, identify the priority areas of intervention for the community, determine the role infrastructure plays in the livelihoods of the people, and finally, identify the effect of involvement by different governmental and non-governmental bodies on successful delivery of infrastructure projects in the community.

1.3. Research Question

The research question that appropriately addresses the aim of the study is framed as follows: - *Is there any significant effect of sectorial involvement on the successful delivery of infrastructure projects in the community?*

1.4. Hypothesis

The hypothesis for the study is stated in the null as follows: - *There is no significant effect of sectorial involvement on the successful delivery of infrastructure projects in the community.*

2. Literature Review

A border is a geographically delineated entity adjacent to a neighbouring country or countries, with the primary function of maintaining state sovereignty. Such area in question is part of the Local government area, city or state that directly intersects with national boundaries or territory and that has a functional relationship with a strategic value for the state [13]. According to Hageman et al. (2004) [14], borders have been construed to serve as the functioning barrier between states, with the purpose of imposing control over flow of people and regulation of cross-border trade. Borders may be material or contextual. Material borders are marked by a natural feature such as a mountain range or a river, while conceptual borders appear as a geometric line [15]. Spatially, borders enclose nations, governments, ethnicities and peripheries. Border communities on the other hand are settlement areas, where borders are.

According to the Border Communities Development Agency [4], there are over 2,000 border communities in Nigeria, located in 105 local government areas in twenty one states of the federation. Many of these border communities share contextual boundaries with border communities in the neighbouring country. Contextual borders are largely artificial, and bring about issues of identity and ethnicity. Identity and ethnicity are two common aspects which characterise inter-relations between border communities and the state [13, 16-18]. Akinyemi (2013) [19] identifies artificial borders as one of the challenges to border management in Nigeria. He sees these artificial barriers created by colonialists, as not giving consideration to the culture of the people who are now forced to belong to separate sovereign entities. These are people who have historically shared cultural ties, religion, language, and other common practices including intermarriage. Akinyemi (2013) [19] further sees this as the reason why border communities tend to show more allegiance to their culturally compatible kinsmen across the border, than to their nation. In the same vein, Ishikawa (2010) [16] sees identities of border communities as usually associated with historical and kinship ties between the people separated by political boundary, which identity is rekindled and reinforced through regular border movements and economic exchanges across borders. These identities are not static nor rigid, but interchangeable based on situation and importance. This suggests that to redirect allegiance to the sovereign state, conscious efforts must be made through governance, to draw border communities into the mainstream of national development. The sense of national belonging has a tendency to be fluid, particularly when the center of power is distant from the border, and development programs and interventions for border communities are not forthcoming. This means that there must be dedicated efforts through governance to elicit patriotism towards the sovereign state, as such actions have implications for border security, transnational crimes, and accrued revenue to the government. Where this is the case, residents of border communities may see the greater gain in belonging to their nation state, than in engaging in activities likely to jeopardize the peace and security of the country. Of course, cultural affinity between communities across border lines can never really be obliterated, but cross-border relations can be fostered in a manner legally beneficial to all countries concerned.

The livelihoods of border communities are affected by the prevailing socioeconomic factors in their settlement areas. Livelihood as adapted from the definition by Chambers and Conway (1992) [20], comprises the capabilities, assets, material and social resources, and activities required for a means of living. These activities are carried out repeatedly, such that they become a way of life, and employ the use of one's human and material endowments to generate adequate resources for meeting the requirements of self and household [21, 22]. The concept of livelihood strategy has become central to development policies, programmes and practices in recent years throughout the world. Livelihood strategy as defined by Walker et al. (2001) [23] is an organized set of lifestyle choices, goals, values, and activities influenced by biophysical, political, legal, economic, social, cultural, and psychological components. The term livelihood strategies according to the UK Department for International Development [24], denotes the range and

combination of activities and choices that people make in order to achieve their livelihood goals. They believe that an intrinsic attribute of many livelihood strategies, is the exploitation of multiple assets and sources of revenue. The government of Nigeria is also involved in such livelihood promotion efforts to enhance the living conditions of its people. The Border Communities Development Agency (BDCA) was set up by the government in 2003 to implement various infrastructural development programmes in border communities, and by so doing, improve their livelihoods.

For development to make an impact on the people and foster the desired structural shift, it must not only be sustained over a long period, but also adequately address the critical needs of the benefiting communities. There must necessarily be that sense of ownership on the part of the natives, which can only happen if the projects are truly impactful. To achieve this, the livelihood strategies adopted must be sustainable. Sustainable livelihood as a strategy, puts people at the center of development and by so doing, increases the effectiveness of development assistance [24]. According to Rahut et al. (2014) [25], the success and security of livelihood projects is dependent upon a number of activities and strategies undertaken by implementing agencies to involve the community in the development process. In Nigeria, lack of involvement of the community in the development process has led to failed intervention programmes because they were non-participatory, non-demand driven, not well-targeted, and not originating from the people [26]. Cairncross (1961) [27] conceptualised development as socio-economic transformation. There are three important implications of the socio-economic transformation concept put forward by Mabogunje (1980, 1993) [28, 29]. First, it emphasizes that development is essentially, a human issue with a concern to develop the capacity of individuals to realize their inherent potentials to effectively cope with changing circumstances of their lives. Second, development involves the total and full mobilization of a society, in a comprehensive manner, with the task of changing the institution in which the thinking of the individuals finds expression. Third, development means development of man, which is the unfolding and realization of his creative potential, enabling him to improve his material conditions and living, through the use of resources available to him.

Development is for people and it is their involvement in the direction and execution of projects which is of concern [30, 31]. According to Streeton (2003) [32], involvement exists in a wide variety of forms, ranging from government involvement in community-based development activities to people's involvement in government-directed management functions. Four modes of involvement as identified by Oakley & Marsden (2007) [33] in order of intensity are information sharing, consultation, decision-making, and initiating action. Initiating action is when beneficiaries are able to take the initiative in terms of actions or decisions pertaining to a project. It is qualitatively different from beneficiaries' capacity to act or decide on issues or tasks proposed or assigned to them. Salmen (2006) [34] is of the opinion that whatever is the objective of involvement and the particular phase at which it is introduced, ultimately, it is the question of who is getting involved and the accessibility of project and services to the beneficiary population which determines the extent to which involvement is real. According to Woodhead (2006) [35], a project can be considered effective if it is able to integrate within the existing organizational system, structures and processes and respond to the changes in the environment in which the system will operate, in harmony with the changes in the beneficiary's requirements. Hence, involvement in the planning and execution of a project is a process that provides a dimension which goes beyond project execution, access, benefit sharing, smoother flows of project services, and minimized costs and delays to the issue of project sustainability. In the same manner, Bamberger (2007) [31], advanced that the involvement of beneficiary population in the planning and execution of infrastructure projects is a necessity which guarantees its effectiveness and sustainability.

Infrastructure development is a key component of human development. According to Egler & Frazao (2016) [36], infrastructure is critical to sustainable community development, both in terms of daily livelihoods and future well-being. Again, the long term impacts of infrastructure make it imperative that they are appropriate, as they will invariably shape tomorrow's communities [36]. Infrastructure services, such as the supply of drinking water and electricity, the disposal and treatment of waste water, the mobility of people and goods, and the provision of information and communication technologies, are the backbone for economic development, competitiveness and inclusive growth [37]. Investments in infrastructure are crucial to achieving sustainable development [11]. Infrastructure projects are sustainable, when they are planned, designed, constructed, operated, and decommissioned in a manner to ensure economic, financial, social, environmental, and institutional sustainability over the entire life cycle of the projects [38]. As opined by Gupta & Baud (2015) [39], infrastructure appears both as an explicit goal and an implicit means to implement and achieve other SDGs as it provides the services that enable society to function and the economy to thrive.

From the reviewed literature, border communities have been identified as hotbeds of transnational crimes and insecurity, largely as a result of neglect in sustainable socioeconomic and infrastructural development. This neglect is not unconnected to their peripheral locations near the nation's boundary line. To curb this phenomenon, concerted efforts must be made by government to bring development directly to the communities. This is considered crucial in fostering improved livelihoods for border community residents, and possibly eliciting their patriotism. This must however be sustained, if a structural shift in attitudes must occur.

3. Study Area

The study was conducted in Akamkpa local government area of Cross River State, Nigeria. The local government area has a land mass of 4,300 square kilometres. In 2006, the population of Akamkpa LGA was 200,100 persons with a density of 40 persons per square kilometre [40]. Akamkpa local government area is made up of seven autonomous communities, two of which are at the Nigerian border with Cameroon. The seven autonomous communities in Akamkpa local government area are Akpai, Mfamosing, Ndapbachot, Achan, Abung, Owom, and Nyeji. The study was conducted in Achan and Abung, being the two communities closest to the border. In Achan, two border villages namely Old Ndebiji and Ekang were studied. In Abung, two villages were also selected as a result of their location at the Nigeria-Cameroon border. The villages are Abung and Ojok.



Figure 1. Location of the study area

3.1. Research Design and Methods

This research analysed the structure and functioning of infrastructural development programmes put in place in the border communities of Akamkpa local government area, to assess how far they have enhanced the livelihoods of the communities. Descriptive research design was used in the study. This is an effective research strategy in establishing existing phenomena, which in this case, is the current status of development in the border communities of Akamkpa local government area.

Selection of communities to study was by purposive sampling. There are four border villages in Akamkpa local government area, located in two autonomous communities. These four villages were purposively chosen because of their location at the border. Selection of survey participants was by simple random sampling. Forty (40) household heads were randomly selected for the study. The main research instrument was a structured questionnaire administered face-face to the heads of households. The contents of the questionnaire were explained to the respondents, and their responses recorded devoid of researcher influence. This method of administration of research instrument was to ensure that the wordings of the question items were clearly understood by the respondents and also to achieve a high return rate of questionnaire. Only heads of households were required to respond to the question items. Where no head of household was seen at the time of administration of questionnaire, the house was skipped. All respondents were required to be permanently resident in the border communities at the time of the study. Analysis of data was done using simple percentages, cumulative mean and median.

4. Results and Discussion

General household characteristics- The survey instrument was completed by forty (40) households. A total of 138 persons live in the 40 households, making an average household size of 3.45 persons per household. Of this number, 55% are below 25 years of age. Cumulatively, 86.3% of the residents are under 45 years old, with 51% of the population actively involved in income yielding ventures, and the remaining 49% students. The randomly selected 40 heads of households were of different employment statuses such as government employment 7.5%, private

employment 12.5%, farming 35%, fishing 5% crafts 10%, and trading 30%. Housing type is predominantly owner-occupier single-dwelling bungalows, devoid of basic in-house facilities. The main toilet facility is pit latrine, located outside the house and commonly shared by 77% of the population. Main water source is the river or stream. Public power supply is non-existent and about 60% of the population depend on generators for electricity. Burning of refuse in front of buildings or any available space is a regular feature in the area. Apart from the sub-regional collector road leading to the LGA, all other roads such as the distributor roads are in disrepair while none of the access roads is tarred nor provided with drainage. As a result of these, there is impairment of access to residences and places of socioeconomic activities.

Table 1. General household characteristics

	Description	Frequency	Valid Percent	Cumulative Percent
Building type	Bungalow/owner occupier	17	42.5	42.5
	Room & parlour/rented	1	2.5	45.0
	Room & parlour/owner occupier	13	32.5	77.5
	Single room/rented	6	15.0	92.5
	Single room/owner occupier	3	7.5	100
Household size	One person	9	22.5	22.5
	Two persons	4	10.0	32.5
	Three persons	10	25.0	57.5
	Four persons	5	12.5	70.0
	Five persons	5	12.5	82.5
	More than five persons	7	17.5	100
Age distribution of household	0 - 4 yrs	10	7.0	7.0
	5 - 18 yrs	33	24.0	31.0
	19 - 24 yrs	33	24.0	55.0
	25 - 44 yrs	43	31.3	86.3
	45 - 60 yrs	18	13.0	99.3
	Above 60 yrs	1	0.7	100
Employment status of household heads	Employed by government	3	7.5	7.5
	Employed by private organization	5	12.5	20.0
	Farmer	14	35	55.0
	Fisherman	2	5	60.0
	Self-employed craftsman	4	10	70.0
	Trader	12	30	100
Electricity source	Public power supply	0	0	0
	Private generator	24	60.0	60.0
	None	16	40.0	100
Source of water	Pipe-borne water/public	0	0	0
	River/stream	25	62.0	62.0
	Hand dug well	5	13.0	75.0
	Borehole	10	25.0	100
Toilet facilities	WC/private/inside the house	1	2.5	2.5
	WC/shared/inside the house	2	5.0	7.5
	WC/shared/outside the house	1	2.5	10.0
	Pit laterine	31	77.0	87.0
	Bush	5	13.0	100

The level of social and economic infrastructure existing in the communities - Questions were asked about the availability and proximity of key facilities like road, health, shopping, educational and recreational facilities, including electricity and clean water. The results show that there are no government hospitals in the communities, no vocational institutions, and no institutions of higher learning also. The only available recreational facilities seen were open play grounds, and community center. No formal sporting arena was found in the study area. The communities were also not connected to the national electricity grid, neither do they have access to pipe-borne water inside their homes. Major source of water is from the stream and river.

Table 2. Social and Economic infrastructure available to residents

Facility	Description/location	Types available
Road	There are access roads within the community	Untarred with some parts inaccessible to vehicular traffic
Health facilities	Health facilities are located within the community, and are within 0-3 km of residents	Chemist shops, Community health centre, Private clinics, and Local health practitioners
Shopping facilities	Shopping facilities are located within the community, and are within 0-3 km of residents	Small kiosks, Open market
Educational facilities	Educational facilities are located within the community, and are within 0-3 km of residents	Nursery/primary school, Secondary school
Recreational facilities	Recreational facilities are located within the community, and are within 0-3 km of residents	Open playground, Community centre
Electricity	There is no public source of electricity supply in the community	Private generators
Drinking water	There is no pipe borne water supplied to individual buildings	River/stream, Hand dug well, Borehole

Extent of government intervention in infrastructure - The infrastructure considered were provision of clean water, good roads, electricity, educational facilities, mass housing, community centres and parks, primary healthcare facilities, articulated and coordinated refuse disposal, adequate security of lives and property, and the establishment of institutional presence within the communities. Respondents were required to rate government intervention in relation to these facilities on a five point Likert scale with the options of very good, good, fair, poor, and very poor. The five point Likert scale responses were further categorized into two for analysis. Responses for good and very good were categorized as adequate, while responses for fair, poor, and very poor were categorized as not adequate. Cumulative means of the responses were also calculated, and formed the basis for interpreting the data collected. To calculate cumulative mean scores, numerical values were assigned to the responses as follows: very good = 5, good =4, fair = 3, poor =2, and very poor = 1. Summary of the result is shown in Table 3.

Table 3. Extent of government intervention in infrastructure in the communities

Item	Adequate %	Not Adequate %	Cumulative mean
Provision of clean water either directly or through donor agencies	38.0	65.0	2.53
Provision of electricity	24.0	76.0	2.00
Construction of good roads	33.0	67.0	2.00
Provision of educational facilities	60.0	40.0	2.9
Presence of Government offices, agencies and parastatals	9.0	91.0	1.7
Mass housing provision	0	100	1.00
Presence of community centers and parks	9.0	91.0	2.15
Provision of primary health care facilities	55.0	45.0	2.9
Articulated and coordinated refuse disposal	0	100	1.00
Adequate security of lives and property	0	100	1.00

Subjecting the ratings on extent of government intervention in infrastructure to the upper median score of 3.05, the results showed that all the responses fell significantly below the upper median score, being in the range of 1.0 to 2.9. This means that government interventions in all the stated facilities were adjudged not adequate by the respondents.

Priority areas of intervention for the community—Respondents were asked about the priority areas of intervention for the community. Basic infrastructure considered were the provision of clean water, good roads, electricity, educational facilities, mass housing, community centres and parks, primary healthcare facilities, articulated and coordinated refuse disposal, adequate security of lives and property, and the establishment of institutional presence. Table 4 is a summary of the result.

Table 4. Priority areas of government intervention in the community

Item	High priority %	Low priority %	Cumulative mean
Provision of clean water either directly or through donor agencies	78.0	22.0	4.125
Provision of electricity	80.0	20.0	4.075
Construction of good roads	70.0	30.0	3.95
Provision of educational facilities	35.0	65.0	3.25
Presence of Government offices, agencies and parastatals	52.0	48.0	3.45
Mass housing provision	25.0	75.0	3.125
Presence of community centers and parks	27.0	73.0	3.125
Provision of primary health care facilities	27.0	73.0	3.075
Articulated and coordinated refuse disposal	55.0	45.0	3.45
Adequate security of lives and property	73.0	27.0	4.125

Respondents rating of priority areas of infrastructure development was measured on a five point Likert scale of very high, high, average, low, and very low. Responses for very high and high were categorized as high priority, while responses for average, low, and very low were categorized as low priority. To calculate cumulative mean scores, numerical values were assigned to the responses as follows: very high = 5, high =4, average = 3, low =2, and very low = 1. The ratings by the heads of households on the priority areas for government intervention with respect to infrastructural development in the study area were subjected to the upper median score of 3.05. The respective scores range from 3.1 to 4.1, significantly above the upper median score of 3.05. This shows that all stated infrastructure are priority areas for the community, for which they require government intervention. However, the results show that priority for the respondents is in the order of ; provision of clean water and adequate security of lives and property, followed by provision of electricity, construction of good roads, provision of health care facilities, articulated refuse disposal, government presence, provision of educational facilities, mass housing and community centers and parks.

The role of infrastructure on the livelihood of border communities – Questions were asked to ascertain the importance attached to infrastructure in maintaining a stable environment for people to go about their livelihoods in the community. The areas of interest were the role availability of infrastructure like road, water, and school can play in maintaining peace and stability in the community, the possibility that people would be more productive in their businesses and therefore better able to grow their communities if adequate infrastructure was available, and the likelihood of reduction of certain anti-social behaviors if employment opportunities existed in the communities. Also in consideration was the possible connection between employment opportunities through government presence, on patriotism. Rating of responses was measured on a five point Likert scale of strongly agree, agree, not sure, disagree, and strongly disagree. Responses for strongly agree and agree were categorized as agree, while responses for disagree, and strongly disagree were categorized as disagree. Table 5 is a summary of the results.

Table 5. The role of infrastructure on the livelihood of border communities

	Agree %	Not sure %	Disagree %	Cumulative mean
Availability of infrastructure (road, water, school etc.) is a key factor if peace and stability must be maintained in the community	72.5	0	27.5	3.58
People are more productive in their businesses and are therefore better able to grow their communities if infrastructure is available	90.0	7.5	2.5	4.25
People are less likely to engage in antisocial behaviours if employment opportunities exist in their communities	95.0	5.0	0	4.35
Development in the form of infrastructure, employment opportunities and government presence can help create a sense of patriotism in the community	92.5	7.5	0	4.55
It is of critical importance that government presence is felt in border communities	82.5	12.5	5.0	4.33

The responses to each of the statements were subjected to the upper median score of 3.05. The respective cumulative mean scores ranged from 3.58 to 4.55, significantly above the upper median score of 3.05. This suggests that all the statements are true, and that infrastructure development plays a significant role in creating the right environment for border communities to be integrated into the mainstream of development within their countries of origin.

Expected areas of sectorial involvement in community development – The respondents were required to answer questions about the stages of project delivery at which different stakeholders should be involved in infrastructure intervention projects in the community. These questions were asked to ascertain how the community views

involvement of different governmental and non-governmental bodies in project implementation, and how and if sectorial involvement can in any way affect eventual outcomes of infrastructure projects. A total of forty (40) respondents filled out the questionnaire. Observed values and contingency values were recorded. Responses from the different stakeholders showed that policy formulation, decision making, funding, implementation, and monitoring are all essential activities in the planning and execution of projects as shown in Table 6. Data collected were also used to test the research hypothesis which states that there is no significant effect of sectorial involvement on the successful delivery of infrastructure projects in the community. The hypothesis was tested at 5% level of significance.

Table 6. Expected sectorial involvement in infrastructure development in the community

	Policy formulation	Decision making	Funding	Implementation	Monitoring	Total responses
Federal Government	30 (20.25)	25 (30.84)	40 (32.19)	25 (31.31)	25 (28.03)	145
State Government	25 (20.81)	29 (31.69)	40 (35.53)	30 (32.17)	25 (28.81)	149
Local Government	20 (20.67)	34 (31.69)	32 (35.29)	32 (31.95)	30 (28.61)	148
Non – Governmental Organisations (Local and International)	10 (16.06)	20 (24.46)	40 (27.42)	25 (24.83)	20 (22.23)	115
Private Sector	10 (15.36)	20 (23.39)	30 (26.23)	25 (23.75)	25 (21.27)	110
Community	20 (20.11)	40 (30.63)	20 (34.34)	34 (31.09)	30 (27.84)	144
Individual	15 (16.76)	30 (25.52)	20 (28.61)	30 (25.91)	25 (23.20)	120
Total Responses	130	198	222	201	180	931

To test the hypothesis, the chi-square statistic was used and computed as follows:

$$\chi^2 = \sum_{r=1}^r \sum_{j=1}^c \left(\frac{n_{ij} - e_{ij}}{e_{ij}} \right)^2 \text{ with } (r-1)(c-1) \text{ degrees of freedom} \tag{1}$$

$$\begin{aligned} \chi^2 &= \frac{(30 - 20.25)^2}{20.25} + \frac{(25 - 30.84)^2}{30.84} + \frac{(40 - 32.19)^2}{32.19} + \dots + \frac{(25 - 23.20)^2}{23.20} \\ &= 38.506 \end{aligned}$$

Decision Rule: Reject H₀ if $\chi^2 > \chi^2_{(r-1)(c-1)}$, that is if $\chi^2 > \chi^2_{24}^{(0.05)}$.

Since the calculated value of 38.506 is greater than the table value of 13.85, the null hypothesis is rejected. The alternative is therefore accepted, which says that there is a significant effect of sectorial involvement on successful delivery of infrastructure projects in the community.

5. Conclusions

The border communities of Akamkpa LGA are deficient in basic infrastructure and services like good roads, adequate housing, clean water, and other facilities that can position them for improvement in their livelihoods. The impact of the Border Communities Development Agency is yet not felt in these communities. Absence of much-needed infrastructure can imply a lack of government and lead to weakened state controls, which can easily manifest as insecurity, lawlessness, and various criminal acts. A sustained regime of infrastructure development is a viable strategy for bringing governance to the people. However, as posited by Woodhead (2006), in bringing governance to the people, it is important that the existing organisational system, structures, and processes are integrated into whatever is proposed for the key stakeholders for the development to be effective.

The levels of participation by different stakeholders have to be properly managed and coordinated to achieve the desired results. The results of this study show the community’s openness to broad-based participation by governmental and nongovernmental sectors in infrastructure development, but with full consideration of community participation. Policy formulation, decision making, funding, implementation, and monitoring are essential activities in the planning and execution of projects. The involvement of various sectors in these activities, as confirmed by this study, is connected to enhanced socio-economic well-being and the delivery of sustainable projects, which should expectedly elicit full buy-in by the user community.

The strategy of inclusiveness will ensure, to a large extent, which the infrastructure provided will be used and ultimately safeguarded by the people who live in the community. A community-driven development strategy, in such cases, becomes an important tool in ensuring that the development is sustainable and ultimately meets the needs of the

intended users. Additionally, there is a higher likelihood of collective ownership of the projects, and through the use of local governance structures, the community will ensure that the facilities are preserved. The continuation of this strategy is expected to result in incremental changes that will positively transform the communities into vibrant and well-structured social settings. This strategy is recommended for application in border communities in Nigeria, as it is vital to effective border management and security, and the preservation of the nation's territorial integrity.

Reducing this to a mathematical model, the following algebraic equation is generated;

$$CDP (P + D + F + I + M) = SID \quad (2)$$

Where: CDP is Community Driven Participation; P is Policy formulation (*setting standards for stakeholders' participation in sustainable infrastructure delivery*); D is Decision making; F is Funding (*the task or activity undertaken in order to stabilise project implementation and eliminate all financial constraints on the path of successful delivery of the projects*); I is Implementation (*execution stage of the planned projects*); M is Monitoring (*systematic review of progress during project delivery, and performance of the facilities after completion and in use by the community*); SID is Sustainable Infrastructure Delivery (*infrastructure projects that are planned, designed, constructed, operated, and commissioned in a manner to ensure economic, financial, social, environmental, and institutional sustainability over the entire life cycle of the project*).

The conclusion of this study is that Community Driven Participation (CDP) is the constant variable that must affect every other element of the equation for there to be sustainable infrastructure delivery, which is critical to effective border community development in Nigeria.

6. Declarations

6.1. Author Contributions

Conceptualization, C.U.O.; methodology, O.N.E. and C.U.O.; writing—original draft preparation, O.N.E. and C.U.O.; writing—review and editing, O.N.E. and C.U.O. All authors have read and agreed to the published version of the manuscript.

6.2. Data Availability Statement

The data presented in this study are available in article.

6.3. Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

6.4. Institutional Review Board Statement

Not applicable.

6.5. Informed Consent Statement

Not applicable.

6.6. Declaration of Competing Interest

The authors declare that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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