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Participatory Approach in Community Environmental Education and Perceived Capacity Building in Rural Environmental Issues in Cross River State, Nigeria

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Abstract

The study examined Participatory Approach in Community Environmental Education and perceived capacity building in rural environmental issues in Cross River State, Nigeria. To achieve the purpose of this study, a null hypothesis was formulated to guide the study. Conceptual and empirical literatures were reviewed in accordance with the variables of the study. Correlational research design was utilized for the study. The population of this study comprised adult residents in some selected communities of Cross River State. Proportionate stratified random sampling, purposive and accidental sampling techniques were adopted in selecting the 250 respondents sampled for the study. A validated 20 item four-point modified Likert scale questionnaire titled "Community-Based Participatory Research in Community Environmental Education and the Perceived Capacity Building in Rural Environmental Issues in Cross River State, Nigeria (CPRCEEPCBREI)." was the instrument utilized for data collection. To test the hypotheses formulated for the study simple linear regression statistical tool was used at 0.05 level of significance. The findings revealed that there is a significant positive relationship between community-based participatory research (CBPR) and capacity building in rural environmental issues in Cross River State, Nigeria. It was recommended among others that NGOs and development partners should promote sustained participatory activities by organizing regular training sessions, and community dialogues. Continuous engagement will enhance learning, reinforce skills acquisition, and ensure long-term impact of capacity-building initiatives in rural communities.

INTRODUCTION

Environmental issues in rural areas often stem from a combination of socio-economic factors, lack of education, and inadequate infrastructure. In regions like Cross River State, Nigeria, these challenges are further compounded by the unique environmental diversity, which includes rainforests, mangroves, and savannahs that are under constant threat from deforestation, unsustainable agricultural practices, and other human activities (Ajake, 2015). The need for effective environmental

education that engages communities and builds their capacity to manage local environmental resources sustainably is therefore critical. This study examines the use of participatory approaches in community environmental education and evaluates the perceived efficacy of capacity-building initiatives in addressing rural environmental issues in Cross River State.

Community environmental education is a strategic tool for promoting sustainable environmental practices, particularly in rural areas where environmental degradation directly affects livelihoods. Participatory approaches in environmental education emphasize the involvement of local communities in the learning process, ensuring that education is contextually relevant and empowers communities to take action (Kopnina, 2018). Participatory methods have been used to varying degrees of success, with the involvement of local communities in environmental conservation efforts becomiang more common (Aldashev & Vallino, 2019).

Capacity building, on the other hand, is a critical component of environmental management that focuses on strengthening the skills, knowledge, and resources of individuals and communities to address environmental challenges. In rural areas like Cross River State, capacity-building initiatives often target local leaders, community-based organizations, and other key stakeholders to ensure that they have the tools and knowledge necessary to manage their natural resources sustainably (Bloomfield *et al*., 2018). However, the efficacy of these initiatives is frequently challenged by issues such as limited funding, inadequate training, and cultural barriers that may hinder the adoption of new practices (Odeyemi *et al.,* 2013).

Cross River State is a region of significant ecological importance, hosting some of Nigeria's most critical biodiversity hotspots, including the Cross River National Park, which is home to rare and endangered species such as the Cross-River gorilla (Gorilla gorilla diehli) (Krause *et al.,* 2019). The environmental challenges faced by rural communities in this region are therefore not just local concerns but have broader implications for biodiversity conservation at a national and even global level. Addressing these challenges requires a multifaceted approach that combines environmental education, participatory methods, and capacity-building initiatives tailored to the specific needs of the communities involved.

Addressing environmental challenges in rural areas requires approaches that are both inclusive and effective. In Cross River State, Nigeria, a region characterized by rich biodiversity and significant environmental pressures, Community-Based Participatory Research (CBPR) has emerged as a promising method for engaging local communities in the identification and resolution of environmental issues. CBPR is a collaborative approach to research that involves all stakeholders, researchers, community members, and policymakers in the research process, from problem identification to the implementation of solutions (Duea *et al.,* 2022). This method not only enhances

the relevance and impact of the research but also empowers communities by integrating their knowledge and experiences into the development of sustainable environmental practices. This study explores the use of CBPR and examines the efficacy of capacity-building initiatives in addressing rural environmental issues in Cross River State. Traditional top-down approaches to environmental management have often failed to address the specific needs and conditions of these communities, leading to ineffective interventions and further environmental degradation (Ogunkan, 2022).

Community-Based Participatory Research (CBPR) offers an alternative approach by actively involving community members in the research process. CBPR is grounded in the principles of participation, co-learning, and mutual benefit, where researchers and community members work together as equal partners (Huse, 2021). This approach is particularly well-suited to addressing complex environmental issues in rural areas, where local knowledge and community involvement are crucial for the success of any intervention. In Cross River State, CBPR has been used in various environmental projects, such as forest conservation and sustainable agriculture, with varying degrees of success (Odeyemi & Adewuyi, 2016).

Effective environmental management in this context requires approaches that are both participatory and capacity-building, ensuring that communities are fully engaged and equipped to manage their natural resources sustainably. Participatory workshops and trainings have emerged as vital tools in fostering collaboration, learning, and capacity building across various fields, including education, community development, and environmental management. Unlike traditional, top-down approaches, participatory methods engage participants actively in the learning process, ensuring that their experiences, knowledge, and perspectives are integral to the outcome (Chevalier, 2019). These methods are particularly effective in settings where the inclusion of diverse voices is crucial for developing sustainable solutions. By facilitating active engagement, participatory workshops and trainings aim to empower individuals and communities, enhance knowledge sharing, and promote the co-creation of solutions to complex problems. This study explores the role and efficacy of participatory workshops and trainings in various contexts, focusing on their impact on knowledge transfer, capacity building, and community empowerment.

The concept of participation in learning and development processes has gained traction over the past few decades, particularly in the context of community development and education. Participatory workshops and trainings are based on the principles of adult learning theory, which emphasizes the importance of experiential learning, reflection, and collaboration in adult education (Merriam & Bierema, 2013). These approaches are designed to move beyond passive learning models, fostering an environment where participants are not merely recipients of information but active contributors to the learning process.

Participatory approaches have been widely recognized as effective tools for promoting community involvement and empowerment in various fields, including environmental management, health, and development (Den Broeder et al., 2017). These approaches emphasize the importance of active engagement, where community members are not merely passive recipients of external interventions but are actively involved in the planning, implementation, and evaluation of projects (Sulemana, Musah & Simon, 2018). The success of participatory activities, however, is not solely determined by the methods used but also by how often these activities are conducted and how long they last.

Community engagement encompasses a range of activities that involve local people in identifying issues, developing solutions, and implementing actions that affect their lives (Hart, 2024). The level of engagement can vary widely, from passive involvement where community members are simply informed about decisions, to active participation where they have substantial influence and control over outcomes (Reed *et al.,* 2018). This study examines the factors that influence the level of community engagement and its impact on the success of various initiatives, with a focus on how higher levels of engagement contribute to more sustainable and effective outcomes.

The concept of community engagement has evolved over time, with increasing recognition of its importance in achieving sustainable development and social equity (Mensah, 2019). Historically, development projects were often implemented using top-down approaches, where decisions were made by external experts with little input from the communities affected by these decisions (Gaymer *et al.,* 2014). These approaches often led to ineffective or unsustainable outcomes, as they failed to account for local knowledge, needs, and priorities. In response, there has been a shift towards more participatory approaches, where community members are actively involved in the planning, implementation, and evaluation of projects (Gilmore *et al.,* 2014).

This study seeks to contribute to the body of knowledge on environmental education and capacity building by evaluating the effectiveness of participatory approaches in community environmental education within the context of rural Cross River State. It will examine how these approaches have been implemented, the extent to which they have engaged local communities, and their impact on addressing key environmental issues in the region.

Statement of the problem

Rural communities in Cross River State, Nigeria, face a multitude of environmental challenges, including deforestation, soil degradation, water pollution, and biodiversity loss. These environmental issues threaten the livelihoods of the rural population, which relies heavily on natural resources for agriculture, fishing, and other subsistence activities. Despite various government and non-governmental interventions aimed at mitigating these problems, many of these efforts have been

unsuccessful due to a lack of sustained community involvement and ownership. The traditional top-down approaches to environmental education and capacity building have often failed to address the specific needs and realities of rural communities in Cross River State. These approaches typically involve external experts who design and implement programs without adequate input from the local population, resulting in initiatives that are not fully embraced or sustained by the community. This has led to limited success in achieving long-term environmental conservation and sustainable development goals.

There is a growing recognition that participatory approaches, which actively involve community members in the design, implementation, and evaluation of environmental education and capacity-building initiatives, may offer a more effective solution. However, the extent to which these participatory approaches have been applied in Cross River State, and their perceived capacity in addressing the environmental challenges faced by rural communities, remains underexplored. The problem, therefore, is the insufficient understanding of how participatory approaches in community environmental education can enhance the perception of capacity-building efforts in addressing rural environmental issues in Cross River State. This gap in knowledge hinders the development of effective, community-driven strategies for environmental conservation and sustainable resource management. Without a clear understanding of the potential benefits and limitations of participatory approaches, efforts to empower rural communities in Cross River State to manage their environmental resources effectively may continue to fall short.

Purpose of the study

The main purpose of this study was to examine Participatory Approaches in Community Environmental Education and perceived capacity building in rural environmental issues in Cross River State, Nigeria. Specifically, the study seeks to:

1. Find out the relationship between Community-Based Participatory Research (CBPR) and perceived efficacy building in rural environmental issues in Cross River State, Nigeria.

Research questions

The following question was raised to guide the study:

1. What is the relationship between Community-Based Participatory Research (CBPR) and the perceived capacity building in rural environmental issues in Cross River State, Nigeria?

Statement of hypotheses

The following research hypothesis was formulated to guide the study:

1. There is no significant relationship between Community-Based Participatory Research (CBPR) and capacity building in rural environmental issues in Cross River State, Nigeria.

LITERATURE REVIEW

Community-Based Participatory Research (CBPR) and perceived Capacity Building in rural environmental issues

Community-Based Participatory Research (CBPR) stands as a cornerstone in this framework, representing a collaborative research approach that actively involves community members in the design, execution, and assessment of research projects. CBPR is underpinned by principles of participation, co-learning, and empowerment, ensuring that the research process is both inclusive and reflective of the community's specific needs and values (Taliep, Bulbulia, Lazarus *et al*., 2022). In the context of Cross River State, CBPR has the potential to significantly enhance the effectiveness of capacity-building initiatives. By involving community members in identifying and prioritizing environmental issues, co-developing viable solutions, and participating in the evaluation of outcomes, CBPR fosters a sense of ownership and commitment. This ownership is essential for the sustainability of environmental management practices. For instance, when community members actively participate in the research process, they are more likely to internalize the importance of the findings and apply them in their daily lives, thereby contributing to long-term environmental stewardship (Bratteteig & Wagner, 2016).

In Cross River State, where rural communities face numerous environmental challenges such as deforestation, soil erosion, and water pollution, the application of CBPR can lead to more context-specific and culturally relevant solutions. The inclusive nature of CBPR not only ensures that the research addresses the community's actual needs but also empowers the community by enhancing their capacity to manage and protect their environment. This empowerment is critical, as it transforms community members from passive recipients of external interventions into active agents of change who are invested in the success of environmental initiatives.

Phillip et al. (2025) conducted a mixed-methods study to explore household and ambient air pollution (HAAP) practices in a rural community in Malawi. The study addressed the problem of high exposure to air pollution in low-resource settings and the limited effectiveness of existing interventions due to cost, cultural perceptions, and lack of community involvement. The objective was to understand household practices, beliefs, and environmental conditions related to air pollution in order to inform context-specific and participatory interventions. The study employed a mixed-methods design combining quantitative and qualitative approaches. The population consisted of households in Nsungwi village, Chiradzulu District, Malawi (approximately 120 households). A sample of 91 households was selected using probability proportionate random sampling, while additional subsamples included 46 kitchens and four ambient sites for PM2.5 measurement, and 34–38 households engaged in participatory transect walks. Data were collected using a structured household survey questionnaire, PM2.5 monitoring devices, and participatory transect walks (PTWs)

supported by field observations and informal interviews. Data analysis involved descriptive statistics, regression analysis, and thematic analysis.

The findings revealed that PM2.5 levels in kitchens and the surrounding environment significantly exceeded World Health Organization recommended limits. Although participants were aware of smoke presence, there was limited understanding of its health implications. Household reliance on biomass fuels, open burning practices, and lack of access to affordable clean energy were identified as major contributors to pollution. Importantly, the use of participatory methods provided deeper insights into local behaviours, cultural practices, and contextual constraints influencing environmental outcomes. The study concluded that energy poverty and socio-cultural factors are key barriers to adopting cleaner technologies and reducing air pollution. It recommended the integration of community participation in the design and implementation of interventions, emphasizing that solutions must align with local economic realities, cultural practices, and user needs. Critically, while the study effectively demonstrated the value of participatory approaches in understanding environmental issues, it focused more on behavioural and environmental outcomes than on perceived capacity building, thereby highlighting a gap addressed by the present study.

Similarly, Salimi et al. (2012) conducted a systematic review to examine the effectiveness of Community-Based Participatory Research (CBPR) in improving community health outcomes and reducing health disparities. The study addressed the problem of limited synthesis of evidence on the effectiveness of CBPR despite its increasing application in research and practice. The objective was to identify key elements that contribute to successful or unsuccessful CBPR interventions and to evaluate their impact on community capacity and health outcomes.

The study adopted a systematic review design, drawing from multiple electronic databases, including PubMed, Scopus, EMBASE, CINAHL, and PsycINFO. The population comprised published CBPR studies between 2000 and 2009, from which 14,222 articles were initially identified. Through a rigorous screening process using predefined inclusion criteria, 70 studies were retained, and ultimately 8 interventional studies met the criteria for detailed analysis. The sampling technique involved systematic selection based on eligibility criteria, while the instruments included data extraction forms and quality appraisal tools to assess methodological rigor and the level of community participation.

The findings indicated that CBPR interventions were generally effective in promoting community-level action, improving health outcomes, and enhancing community capacity, particularly in terms of research skills, leadership, and participation. Collaboration among community members, researchers, and organizations was identified as a critical factor in achieving positive outcomes. However, the review also revealed limitations, including weak research designs,

insufficient attention to methodological rigor, and limited documentation of organizational capacity required for successful implementation. The study concluded that CBPR has the potential to improve community wellbeing and reduce disparities when properly implemented. It recommended strengthening methodological rigor, enhancing community participation across all research stages, and focusing future research on measuring community empowerment and sustainability outcomes. Critically, while the review demonstrated the effectiveness of CBPR in building capacity and improving outcomes, it highlighted gaps in systematically measuring the perceived effectiveness of capacity building, thereby reinforcing the relevance of the present study.

The reviewed studies consistently show that CBPR enhances community participation, leadership, skills acquisition, and empowerment, which are fundamental components of capacity building. Methodologically, the studies predominantly employed qualitative and mixed-methods approaches, utilizing participatory tools such as interviews, focus groups, and community-based techniques, with analysis grounded in thematic and comparative frameworks.

However, a critical gap is evident. While existing studies provide strong evidence of objective capacity-building outcomes, they largely neglect the perception dimension that is, how individuals interpret and evaluate their own capacity to address environmental issues. This is significant because perception influences motivation, participation, and sustainability of interventions.

Therefore, the present study contributes to the literature by examining the relationship between CBPR and the perception of capacity building, particularly within rural environmental contexts in Cross River State, Nigeria. It extends existing research by moving beyond structural outcomes to include subjective experiential understanding, thereby providing a more holistic assessment of capacity-building effectiveness.

RESEARCH METHODOLOGY

The study employed a correlational research design. This is a methodological approach used to examine the non-causal relationships between naturally occurring variables that cannot be manipulated by the researcher. This design is suitable when the researcher's goal is to explore the relationships between variables in order to predict future trends, using methods such as naturalistic observation, surveys, and archival research (Isangedighi, 2012). This research focuses on exploring participatory approaches in community environmental education and the effectiveness of capacity building in addressing rural environmental challenges in Cross River State, Nigeria.

The study was set up in Cross River State, Nigeria, located between latitudes 5.32^0 and 4.27^0 degrees North and longitudes 2.20^0 and 7.5^0 degrees East. According to the National Bureau of Statistics (2023), the state's population was projected at 3,866,300 people in 2022. Cross River State is a coastal region in Nigeria’s South-South geopolitical zone, bordering Cameroon to the east. It was

formed after the former Cross River State was divided into Akwa Ibom and Cross River States. The state consists of three senatorial zones Northern, Central, and Southern and comprises 18 local government areas, covering a total land area of approximately 23,074,425 square meters. It shares borders with Benue State to the north, the Atlantic Ocean to the south, Akwa Ibom and Abia States to the west, Ebonyi State to the northwest, and Cameroon to the east.

The target population of this study is the number of adult residents in some selected communities of Cross River State. The projected population of this study comprised individual that are drawn from various occupation including: local community member, community leader and elder, environmental educators and trainers, government officials and policy makers, NGOs and community based organization and academic researchers. The population of the study is 1,680,800.

Sampling Techniques

This study employed a combination of stratified, simple random, purposive, and accidental sampling techniques to ensure representativeness, inclusiveness, and feasibility. First, stratified sampling was used to group the state into its three senatorial districts, which are: Northern, Central, and Southern Cross River. This stratification ensured that all major geopolitical zones of the state were adequately represented in the study, thereby enhancing the external validity of the findings.

Within each stratum, simple random sampling (hat-and-draw method without replacement) was used to select the Local Government Areas (LGAs). The names of all 18 LGAs were written, folded, and grouped according to their respective senatorial districts. From each district, two LGAs were randomly selected, resulting in a total of six LGAs. The selection of six LGAs (i.e., one-third of the total LGAs in the state) was considered adequate to capture spatial diversity while maintaining manageability of fieldwork. This proportion is consistent with social science research practices where representative subsets are selected to reflect population characteristics.

The population of the selected six LGAs was 1,680,800. From this population, a sample size of 250 respondents was drawn. The sample size was considered appropriate based on its adequacy for correlational research designs and its ability to provide sufficient statistical power for analysis using Pearson Product Moment Correlation. Furthermore, the sample size aligns with commonly accepted standards in behavioural and social science research, where samples of 200–300 are deemed sufficient for reliable inference and generalization.

Following the selection of LGAs, purposive sampling was employed to identify relevant stakeholder categories central to the study. These included local community members, community leaders and elders, environmental educators and trainers, government officials and policymakers, non-governmental organizations (NGOs) and community-based organizations, and academic

researchers. This technique was necessary to ensure that respondents possessed the requisite knowledge, experience, and involvement in environmental education and capacity-building activities.

Finally, accidental (convenience) sampling was used for questionnaire administration. The researcher, assisted by trained research assistants familiar with the study areas, visited the selected communities and administered the instrument to available and willing participants within the identified stakeholder groups. This approach was adopted due to field realities, including accessibility constraints and the dispersed nature of rural populations, while still ensuring that only eligible respondents participated in the study. The combination of these sampling techniques as shown on Table 2 enhanced the representativeness, relevance, and practicality of the study, thereby ensuring that the data collected were both valid and reliable for addressing the research objectives.

The sample size for this study was 250 respondents as shown on table 2. Table 2 presents the distribution of respondents across selected LGAs and stakeholder categories. The sampling was done proportionately based on the sample size of each LGA, while ensuring adequate representation of key stakeholder groups relevant to participatory environmental education and capacity building.

TABLE 1
Population distribution by sampled LGAs in Cross River State

S/N	LGA	POPULATION	Sample
1	Calabar Municipal	279,800	38
2	Akpabuyo	369900	50
3	Yakurr	298,900	40
4	Ikom	249,300	33
5	Bekwarra	160,700	22
6	Yala	322,200	67
Total	6	1,680,800	250

Source: National Population Commission (NPC, 2025) & Field work (2025)

TABLE 2
Sample Distribution by LGA and Stakeholder Categories

LGA	Local Community Members	Community Leaders & Elders	Environmental Educators & Trainers	Government Officials & Policy Makers	NGOs & CBOs	Academic Researchers	Total
Calabar Municipal	20	5	4	3	3	3	38
Akpabuyo	27	7	5	4	4	3	50
Yakurr	22	6	4	3	3	2	40

LGA	Local Community Members	Community Leaders & Elders	Environmental Educators & Trainers	Government Officials & Policy Makers	NGOs & CBOs	Academic Researchers	Total
Ikom	18	5	3	3	2	2	33
Bekwarra	12	3	2	2	2	1	22
Yala	36	9	7	5	5	5	67
Total	135	35	25	20	19	16	250

Source: field work, 2025

Data for this study were collected using a structured questionnaire titled "Participatory Approaches in Community Environmental Education and the Perceived Capacity Building in Rural Environmental Issues in Cross River State, Nigeria (PACEEPCBREI)." The instrument consisted of 20 items designed to measure both the independent and dependent variables of the study.

The questionnaire was divided into two sections (A and B). Section A elicited information on the demographic characteristics of respondents, including Local Government Area (LGA) of residence, and organizational affiliation. This section was intended to provide background information necessary for contextualizing the responses.

Section B comprised 10 items measuring the independent variables related to participatory approaches in community environmental education. These items were grouped into five sub-scales, namely: Community-Based Participatory Research (CBPR), the sub-scale contained 10 items designed to assess respondents' perceptions of the extent to which these participatory approaches influence environmental capacity-building processes.

The last subscale consisted of 10 items measuring the dependent variable, which is the perception of capacity building in addressing rural environmental issues. These items assessed respondents' perceptions of improvements in knowledge, skills, self-reliance, environmental awareness, leadership, and overall environmental outcomes resulting from capacity-building initiatives. All items in Sections B were structured on a four-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). This scaling format was used to capture the intensity of respondents' opinions and to facilitate quantitative analysis. The instrument was designed to systematically capture stakeholders' perceptions of participatory environmental education approaches and their relationship with the effectiveness of capacity-building efforts in rural communities.

Data for this study were collected using the structured questionnaire, which was administered across the selected communities in the six sampled Local Government Areas. Prior to data collection,

permission was obtained from relevant community authorities and stakeholders to facilitate access and cooperation.

Respondents were adequately briefed on the purpose of the study and given clear instructions on how to complete the questionnaire. They were assured of anonymity and confidentiality, and informed that the information provided would be used strictly for academic purposes. Participation was voluntary, and respondents were encouraged to provide honest and objective responses.

The administration of the instrument was carried out with the assistance of three trained research assistants who were familiar with the study areas. The assistants underwent prior training conducted by the researcher, which focused on the objectives of the study, ethical considerations (including informed consent and confidentiality), proper administration of the questionnaire, and strategies for engaging respondents respectfully. They were also guided on how to clarify questionnaire items where necessary without influencing respondents' answers, as well as how to ensure accurate completion and retrieval of the instruments.

The questionnaires were administered and collected on-site to ensure a high return rate. The researcher and assistants monitored the process closely to minimize errors, incomplete responses, and non-response bias. This procedure ensured efficient data collection and enhanced the reliability of the data obtained.

A four-point Likert-type-scale questionnaire ranging from strongly agree to disagree was adopted for the responses of the questionnaire. All scoring was carried out with the use of the following keys.

SD - Representing strongly disagreed = 1 point.

D - Representing disagreed = 2 points

A - Representing agreed. = 3 points

SA - Representing strongly agreed. = 4 points

However, the coding was reversed for negatively worded items.

RESULTS AND DISCUSSION

Research Question 1:

What is the relationship between Community-Based Participatory Research (CBPR) and the perception of capacity building in addressing rural environmental issues in Cross River State, Nigeria?

The results from Table 5 indicate that there is a weak and non-significant relationship between Community-Based Participatory Research (CBPR) and the perception of capacity building. This suggests that CBPR alone does not significantly influence how respondents perceive the effectiveness of capacity-building efforts in addressing rural environmental issues.

Hypothesis one

There is no significant relationship between Community-Based Participatory Research (CBPR) and the efficacy of capacity building in addressing rural environmental issues in Cross River State, Nigeria. As shown on table 3, the Pearson Product Moment Correlation analysis revealed a positive but non-significant relationship between Community-Based Participatory Research (CBPR) and the efficacy of capacity building in addressing rural environmental issues in Cross River State, Nigeria, $r(248) = .119$, $p = .061$. Although the direction of the correlation suggests that higher levels of CBPR are associated with slightly greater perceived efficacy of capacity building, the relationship was not statistically significant at the .05 level.

The mean score for CBPR ($M = 3.44$, $SD = 0.47$) indicates a generally high level of engagement in participatory research activities among respondents, while the mean score for efficacy of capacity building ($M = 3.36$, $SD = 0.64$) suggests that respondents perceived capacity-building efforts as fairly effective. However, the weak and non-significant correlation implies that, within this study's sample, participation in CBPR processes did not have a strong or consistent association with how effective capacity-building initiatives were perceived to be in addressing rural environmental issues.

The result of the Pearson Product Moment Correlation analysis revealed a positive but non-significant relationship between Community-Based Participatory Research (CBPR) and the efficacy of capacity building in addressing rural environmental issues in Cross River State, Nigeria. This indicates that while higher levels of CBPR were associated with slightly greater perceived efficacy of capacity-building initiatives, the relationship was not strong enough to be statistically significant at the .05 level. The mean scores show a generally high level of engagement in CBPR activities and a moderate perception of capacity-building effectiveness, suggesting that both participatory research and capacity-building interventions are present but may not be deeply integrated or mutually reinforcing.

This finding does not fully align with much of the reviewed literature, which typically reports a significant positive relationship between community participation through CBPR and the success of local capacity-building initiatives. For instance, Bratteteig and Wagner (2016) emphasized that when community members actively engage in research processes, they are more likely to internalize research outcomes and apply them in their daily practices, thus enhancing the long-term sustainability of environmental interventions. Similarly, Balazs and Morello-Frosch (2013) found that CBPR creates synergistic relationships between communities and researchers, thereby improving both scientific outcomes and practical capacity for environmental management and justice.

The discrepancy between the current findings and prior research may stem from several contextual factors. First, the implementation depth of CBPR in the study area may be limited participation could be more consultative than collaborative, meaning that community members contribute data but have minimal influence over decision-making or project design. Second, capacity-building efforts in rural Cross River State might not be adequately aligned with local knowledge systems or priorities, reducing their perceived efficacy despite participatory inputs. Third, institutional and resource constraints such as limited funding, technical support, or follow-up mechanisms could weaken the practical link between participatory engagement and tangible environmental outcomes.

Overall, while the direction of the relationship observed in this study supports the theoretical expectation that participatory research enhances capacity-building effectiveness, the lack of statistical significance suggests that CBPR practices in this context may not yet be sufficiently institutionalized or impactful to produce measurable effects. Strengthening participatory mechanisms, ensuring equitable power-sharing, and fostering long-term partnerships between communities and researchers may help translate participatory research into more effective capacity-building outcomes in future initiatives.

TABLE 3
Pearson's Product Moment Correlation Analysis of the relationship between Community-Based Participatory Research (CBPR) and capacity building in rural environmental issues in Cross River State, Nigeria N=250

Variables	$\bar{x}$	**SD**	**r-cal**	**p=value**
Community-Based Participatory Research (CBPR)	3.4368	.46905		
			.119	.061
efficacy of capacity building in addressing rural environmental issues	3.3644	.64451		

Not Significant at .05 level, df=248.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study examined the relationship between participatory approaches and perceived capacity building in rural environmental issues in Cross River State, Nigeria. The results revealed varying levels of association among the dimensions of participation such as frequency of engagement, stakeholder collaboration, and community involvement and the perceived effectiveness of capacity-building programs.

The findings demonstrate that participatory engagement is a critical determinant of successful capacity-building outcomes in rural environmental management. Communities that are more actively involved in planning, implementation, and monitoring tend to experience greater success in environmental initiatives. The study concludes that fostering participatory mechanisms not only enhances the effectiveness of capacity-building programs but also contributes to sustainable rural development through knowledge sharing, collective problem-solving, and community empowerment.

Implications of the findings

The findings of this study have several important implications for policy, practice, and research in environmental management and rural development. The results indicate that participatory approaches particularly those emphasizing frequent, sustained engagement and community involvement play a significant role in enhancing the efficacy of capacity-building initiatives. This suggests that environmental interventions in rural areas should be designed around participatory frameworks that empower communities to take ownership of environmental projects.

Furthermore, the significant association between community engagement and the effectiveness of capacity building underscores the importance of involving local actors in decision-making processes. Development agencies, local governments, and non-governmental organizations (NGOs) should therefore prioritize inclusive and participatory models that recognize community members not merely as beneficiaries but as partners in environmental problem-solving.

Recommendations

Based on the findings and conclusions of the study, the following recommendations were made:

1. Government institutions at the state and local levels should strengthen and institutionalize participatory frameworks in environmental programmes. This will ensure that local communities are actively involved in planning, implementation, and evaluation processes, thereby improving the effectiveness and sustainability of environmental interventions.
2. NGOs and development partners should promote sustained participatory activities by organizing regular training sessions, and community dialogues. Continuous engagement will enhance learning, reinforce skills acquisition, and ensure long-term impact of capacity-building initiatives in rural communities.

REFERENCES

Ajake, A. O. (2015). Tourism development in Nigeria: A case of the Obudu Mountain Resort in Cross River State. *Mediterranean Journal of Social Sciences, 6(3), 436-445.*

Aldashev, G., & Vallino, E. (2019). The dilemma of NGOs and participatory conservation. *World Development*, *123*, 104615.

Bloomfield, G., Bucht, K., Martínez-Hernández, J. C., Ramírez-Soto, A. F., Sheseña-Hernández, I., Lucio-Palacio, C. R., & Ruelas Inzunza, E. (2018). Capacity building to advance the United Nations

sustainable development goals: An overview of tools and approaches related to sustainable land management. *Journal of sustainable forestry*, *37*(2), 157-177.

Bratteteig, T., & Wagner, I. (2016). Unpacking the notion of participation in participatory design. *Computer Supported Cooperative Work (CSCW)*, *25*, 425-475.

Chevalier, J. M. (2019). *Participatory action research: Theory and methods for engaged inquiry*. Routledge.

Den Broeder, L., Uiters, E., Ten Have, W., Wagemakers, A., & Schuit, A. J. (2017). Community participation in Health Impact Assessment. A scoping review of the literature. *Environmental Impact Assessment Review*, *66*, 33-42.

Duea, S. R., Zimmerman, E. B., Vaughn, L. M., Dias, S., & Harris, J. (2022). A guide to selecting participatory research methods based on project and partnership goals. *Journal of Participatory Research Methods*, *3*(1).

Gaymer, C. F., Stadel, A. V., Ban, N. C., Cárcamo, P. F., Ierna Jr, J., & Lieberknecht, L. M. (2014). Merging top-down and bottom-up approaches in marine protected areas planning: Experiences from around the globe. *Aquatic Conservation: Marine and Freshwater Ecosystems*, *24*(S2), 128-144.

Hart, A. O. (2024). Institutional framework for sustainable community engagement for development in Nigeria. *Journal of Humanities and Social Policy*, *10*(2).

Huse, L. K. G. (2021). *Bridging Communities and Scholars Through CBPR: A Systematic Review of Communication and Participation Practices Within Community-Based Participatory Research Teams*. The Florida State University.

Kopnina, H. (2018). Education for sustainable development (ESD): The turn away from 'environment in environmental education?. In *Environmental and sustainability education policy* (pp. 135-153). Routledge.

Krause, T., Nielsen, T., Guia-Diaz, L., Lehsten, V., Olsson, O., & Zelli, F. (2019). What future for primates? Conservation struggles in the forests of Cross River State, Nigeria. *Sustainability Science*, *14*, 1515-1529.

Mensah, J. (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. *Cogent social sciences*, *5*(1), 1653531.

Merriam, S. B., & Bierema, L. L. (2013). *Adult learning: Linking theory and practice*. John Wiley & Sons.

Odeyemi, A. S., & Adewuyi, T. O. (2016). The challenges of rural water supply in Nigeria: The way forward. *Journal of Sustainable Development, 9*(1), 15-25.

Ogunkan, D. V. (2022). Achieving sustainable environmental governance in Nigeria: A review for policy consideration. *Urban Governance*, *2*(1), 212-220.

Phillip, E., Conroy, R. M., Walsh, A., Jumbe, V., Jewitt, S., Lee, S., & Stanistreet, D. (2025). Using mixed methods and community participation to explore household and ambient air pollution practices in a rural community in Malawi. *Journal of Public Health, 33*, 401–416.

Reed, M. S., Vella, S., Challies, E., De Vente, J., Frewer, L., Hohenwallner-Ries, D., ... & Van Delden, H. (2018). A theory of participation: what makes stakeholder and public engagement in environmental management work?. *Restoration ecology*, *26*, S7-S17.

Salimi, Y., Shahandeh, K., Malekafzali, H., Loori, N., Kheiltash, A., Jamshidi, E., Frouzan, A. S., & Majdzadeh, R. (2012). Is community-based participatory research (CBPR) useful? A systematic review on papers in a decade. *International Journal of Preventive Medicine, 3*(6), 386–393.

Sulemana, M., Musah, A. B., & Simon, K. K. (2018). An assessment of stakeholder participation in monitoring and evaluation of district assembly projects and programmes in the Savelugu-Nanton Municipality Assembly, Ghana. *Ghana Journal of Development Studies*, *15*(1), 173-195.

Taliep, N., Bulbulia, S., Lazarus, S., Seedat, M., & Building Bridges Team. (2022). Community-Based Participatory Research (CBPR) as an Emancipatory Modality Promoting Social Transformation, Empowerment, Agency, and Activism. In *The Palgrave handbook of innovative community and clinical psychologies* (pp. 497-519). Cham: Springer International Publishing.