Vol. 9, No. 1, June (2026)
JOURNAL OF ENVIRONMENTAL AND TOURISM EDUCATION
ISSN: 2659-0794 (PRINT) ISSN:2659-0808(ONLINE)
Content Available at: **https://jeate.k-injo.com/index.php/Jete**

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

Agida, Janet Ibenne
janetagida@gmail.com
A
Department of Environmental Education, Faculty of Science Education, University of Calabar

Keywords
Participatory workshops, participatory trainings, community environmental education, perceived capacity building, rural environmental issues.

Correspondence Email:
janetagida@gmail.com

https://doi.org/10.60787/jete.vol9no1.519-532

Abstract

The study examined Participatory Workshops and Trainings 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 "Participatory Workshops and Trainings in Community Environmental Education and the Perceived Capacity Building in Rural Environmental Issues in Cross River State, Nigeria (PWTCEEPCBREI)." 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 participatory workshops/trainings and capacity building in rural environmental issues in Cross River State, Nigeria. It was recommended among others that 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.

INTRODUCTION

Community environmental education is a strategic tool for promoting sustainable environmental practices, particularly in rural areas where environmental degradation directly affects livelihoods. Participatory Workshops and Trainings 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 becoming 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.

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 workshops and trainings are often used in fields where complex, context-specific knowledge is required to address local issues. For example, in community development, these methods have been employed to engage local populations in planning and implementing development projects, ensuring that interventions are culturally relevant and meet the actual needs of the community (Wallerstein & Duran, 2010). In the environmental sector, participatory workshops have been instrumental in involving local communities

in conservation efforts, enabling them to contribute their indigenous knowledge to the management of natural resources (Rocha *et al.,* 2017).

One of the key benefits of participatory workshops and trainings is their potential to build capacity within communities and organizations. Capacity building refers to the process of developing the skills, knowledge, and abilities of individuals and groups to achieve their goals and sustain their activities over time (Honadle, 2018). Participatory Workshops and Trainings are particularly effective for capacity building because they encourage active learning and critical thinking, which are essential for developing problem-solving skills and fostering innovation (Tang, Vezzani & Eriksson, 2020). Additionally, these approaches help to strengthen social networks and build trust among participants, which are crucial for the success of collective action and community-based initiatives (Parkhill *et al.*, 2015).

However, the effectiveness of participatory workshops and trainings is not without challenges. Issues such as power dynamics, cultural differences, and varying levels of literacy and education among participants can influence the outcomes of these interventions (Cyril et al., 2015). Moreover, the success of Participatory Workshops and Trainings depends heavily on the skills and facilitation abilities of the trainers or facilitators, as well as the level of commitment and engagement of the participants (Kaner, 2014). Therefore, careful planning, skilled facilitation, and continuous evaluation are essential to maximize the benefits of participatory workshops and trainings.

The frequency and duration of participatory activities are critical factors that influence the effectiveness and outcomes of community engagement and capacity-building initiatives. Participatory activities, which include workshops, meetings, training sessions, and collaborative projects, are designed to involve stakeholders actively in decision-making processes, knowledge sharing, and problem-solving (Duea *et al.,* 2022). The frequency with which these activities are conducted, as well as their duration, can significantly affect the level of engagement, learning outcomes, and the sustainability of the initiatives.

Participatory Workshops and Trainings 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.

Frequency refers to how often participatory activities are organized within a given time frame. High-frequency activities can help maintain momentum, reinforce learning, and ensure continuous engagement among participants (Scott II, 2023). Regular interactions can also strengthen relationships and trust within the community, which are essential for effective collaboration and collective action (Bodin, 2017). However, if activities are too frequent, there is a risk of participant fatigue, which can lead to declining interest and reduced participation over time (Van Waart *et al.,* 2015).

This study seeks to contribute to the body of knowledge on environmental education and capacity building by evaluating the effectiveness of Participatory Workshops and Trainings 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

There is a growing recognition that Participatory Workshops and Trainings, 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 Workshops and Trainings 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 Workshops and Trainings 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 Workshops and Trainings, 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 Workshops and Trainings in Community Environmental Education and perceived capacity building in rural environmental issues in Cross River State, Nigeria. Specifically, the study seeks to:

1. Investigate whether Participatory Workshops and Trainings relate to perceived capacity building in rural environmental issues in Cross River State, Nigeria.

Research questions

The following question was raised to guide the study:

1. How do participatory workshops and trainings relate to 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:

There is no significant relationship between participatory workshops and trainings and capacity building in rural environmental issues in Cross River State, Nigeria.

LITERATURE REVIEW

Participatory Workshops and Training and perceived Capacity Building in rural environmental issues

Participatory workshops and training sessions are pivotal components of capacity-building efforts. These activities aim to equip community members with the knowledge, skills, and tools needed to tackle environmental challenges effectively. Unlike traditional, top-down training methods, participatory workshops

are designed to be interactive and engaging, encouraging participants to engage in hands-on learning and collaborative problem-solving activities (Tomlinson & Rhiney, 2018). In the context of Cross River State, the effectiveness of these workshops is closely tied to their relevance to the local environmental context and the degree to which they build upon existing knowledge and practices (McBride *et al*., 2017). For instance, workshops focusing on sustainable agricultural practices must be tailored to the specific conditions and challenges faced by the local farmers, such as soil fertility management or water conservation techniques. When these workshops are designed with a deep understanding of the local context and delivered in a culturally appropriate manner, they are more likely to resonate with participants, leading to higher retention of knowledge and better application of the skills learned (Sobania, 2023).

Furthermore, participatory workshops in Cross River State can enhance the efficacy of capacity building by fostering a collaborative learning environment. In such settings, community members can share their experiences and indigenous knowledge, which can be integrated with scientific knowledge to develop more robust and sustainable environmental management strategies. This co-learning process not only enriches the participants' understanding of environmental issues but also strengthens social bonds within the community, which is essential for collective action and long-term environmental sustainability.

An empirical work conducted by Li, Chen, Hsu, Lin, and Chrisman (2012) aimed at evaluating the impact of a 6-month educational workshop designed to enhance the confidence of community leaders in health promotion programs and to foster partnerships among participants. The authors emphasized the importance of public health nurses collaborating with community leaders to deliver community-oriented services. However, they noted that few studies have documented the content and outcomes of training programs designed to strengthen the capacities of community leaders.

The study employed a participatory action research design, incorporating pre- and post-test methods. Fifteen community leaders participated in the 6-month educational workshop, held in Tamsui, Taipei, and Taiwan, which aimed to boost their confidence in health program planning and partnership development. Data were collected from April to October 2009, and analyses included descriptive statistics and Wilcoxon signed-rank tests.

The results indicated that participants showed significant improvements in their self-efficacy related to health program planning, as measured by a structured questionnaire administered after the workshop ($Z = -2.90$, $p = 0.004$). Notable enhancements were observed in their confidence regarding data collection, needs assessment and diagnosis, program planning, and program evaluation ($Z = -3.1$, $p = 0.002$; $Z = -2.42$, $p = 0.016$; $Z = -2.84$, $p = 0.004$; and $Z = -2.68$, $p = 0.007$, respectively).

The study concluded that offering training workshops to community leaders is an effective approach to enhancing their capabilities and confidence in planning health programs. The authors suggested that nurses should advocate for and facilitate such training programs for community leaders.

Similarly, Ohnishi and Nakamura (2009) evaluated a community-based capacity-building programme aimed at improving environmental hygiene through collaboration between local governmental and non-governmental organizations in Lagos, Nigeria. The study addressed the problem of weak collaboration and

limited capacity among stakeholders responsible for environmental sanitation and malaria prevention. The objective was to assess the feasibility and effectiveness of a joint training workshop in enhancing knowledge and fostering partnerships.

The study adopted a mixed-methods design, combining qualitative and quantitative approaches. The population comprised environmental sanitation inspectors, community leaders, and representatives of governmental and non-governmental organizations. A purposive sample of 36 participants was selected from three local communities in Lagos. Data were collected using pre- and post-test questionnaires to measure knowledge acquisition, alongside qualitative assessments such as observations and participant feedback to evaluate collaboration and programme effectiveness.

The findings revealed a significant improvement in participants' knowledge, with mean scores increasing from 27.8 ± 13.9 (pre-test) to 57.1 ± 17.8 (post-test), representing a statistically significant gain ($p < .001$). The programme also enhanced collaboration between governmental and non-governmental organizations and promoted community participation in environmental hygiene initiatives. Qualitative results highlighted that strong partnerships and active community involvement were critical to the success of the intervention.

The study concluded that community-based training workshops are effective tools for building capacity and strengthening inter-organizational collaboration in environmental health programmes. It recommended institutionalizing such training initiatives and fostering sustained partnerships among stakeholders. Critically, while the study demonstrated measurable improvements in knowledge and collaboration, it focused primarily on immediate learning outcomes and did not explicitly assess participants' perceptions of capacity-building effectiveness, indicating a gap addressed by the present study.

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 Workshops and Trainings 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.

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
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 Workshops and Trainings in Community Environmental Education and the Perceived Capacity Building in Rural Environmental Issues in Cross River State, Nigeria (PWTCEEPCBREI)." 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 Workshops and Trainings in community environmental education. These items were grouped into a sub-scales, namely: participatory workshops and trainings The sub-scale contained 10 items designed to assess respondents' perceptions of the extent to which these Participatory Workshops and Trainings 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:

How do participatory workshops and trainings relate to the perception of capacity building in addressing rural environmental issues in Cross River State, Nigeria?

Findings show that participatory workshops and trainings have a moderate and statistically significant positive relationship with the perception of capacity building. This implies that increased participation in workshops and trainings is associated with improved perceptions of capacity-building effectiveness.

Hypothesis

There is no significant relationship between participatory workshops and trainings and the efficacy of capacity building in addressing rural environmental issues in Cross River State, Nigeria.

The result of the Pearson Product Moment Correlation analysis revealed a moderate positive and statistically significant relationship between participatory workshops and trainings and the efficacy of capacity building in addressing rural environmental issues in Cross River State, Nigeria, $r(248) = .608$, $p = .033$. This indicates that as the level of participation in workshops and trainings increases, the perceived efficacy of capacity-building initiatives in addressing rural environmental problems also improves. This is shown on table 3.

The mean score for participatory workshops and trainings ($M = 1.67$, $SD = 0.44$) suggests a relatively low to moderate level of engagement among respondents, while the mean score for the efficacy of capacity building ($M = 3.36$, $SD = 0.64$) indicates that participants generally perceived capacity-building efforts as effective. The significant correlation implies that participatory learning approaches—such as workshops and training sessions play a meaningful role in strengthening communities' ability to address environmental challenges effectively.

The Pearson Product Moment Correlation analysis revealed a moderate positive and statistically significant relationship between participatory workshops and trainings and the efficacy of capacity building in addressing rural environmental issues in Cross River State, Nigeria. This indicates that as the level of participation in workshops and trainings increases, the perceived efficacy of capacity-building initiatives also improves. In other words, when community members actively participate in learning-oriented activities such as workshops and training sessions, they are more likely to acquire the skills and confidence necessary to engage effectively in environmental management and problem-solving.

The mean score for participatory workshops and trainings reflects a relatively low to moderate level of engagement, suggesting that while such opportunities exist, participation may not be uniformly widespread among community members. Nonetheless, the mean score for the efficacy of capacity building suggests that respondents generally perceive existing capacity-building efforts as effective. The significant correlation between these two variables implies that even limited exposure to participatory training can yield meaningful improvements in the perceived success of capacity-building programs in rural settings.

These findings are consistent with previous research emphasizing the transformative potential of participatory learning and community-based training in fostering local empowerment and sustainability.

Tomlinson and Rhiney (2018) underscore that participatory workshops, by their interactive and hands-on nature, promote deeper learning, shared ownership of solutions, and collaborative action toward community development goals. Similarly, Zikargae, Woldearegay, and Skjerdal (2022) found that non-formal environmental education initiatives, such as community workshops and project-based learning, are vital for empowering rural populations with the knowledge and competencies required to sustain livelihoods and address environmental challenges. Li et al., (2012) also demonstrated that well-structured educational workshops enhance community leaders' confidence and strengthen their ability to implement and sustain local initiatives, highlighting the critical role of participatory training in long-term capacity development.

The alignment between the present findings and reviewed literature suggests that participatory workshops and training serve as effective vehicles for community empowerment and sustainable environmental management. The significant correlation could be attributed to the experiential and inclusive nature of participatory training, which allows participants to contextualize learning, share local knowledge, and co-create solutions that address their specific environmental realities. Furthermore, participatory trainings often foster social cohesion, build trust among stakeholders, and create a sense of shared responsibility factors that enhance the sustainability of capacity-building outcomes.

However, the relatively low mean score for participation highlights potential areas for improvement. Limited access to training opportunities, logistical challenges such as distance or cost, and insufficient institutional support might restrict participation rates. Expanding the reach and frequency of participatory workshops, and integrating locally relevant content, could further amplify their impact on environmental capacity building in rural communities.

In summary, the findings provide empirical support for the argument that participatory learning processes are central to effective capacity building, particularly in rural contexts where environmental challenges require both local knowledge and adaptive skills. This outcome underscores the need for development agencies, NGOs, and local governments to prioritize participatory training frameworks as core components of environmental and community development strategies.

TABLE 3
Pearson's Product Moment Correlation Analysis of the relationship between participatory workshops and trainings and capacity building in rural environmental issues in Cross River State, Nigeria. N=250

Variables	$\bar{x}$	**SD**	**r-cal**	**p=value**
participatory workshops and trainings	1.6744	.44023		
			.608	.033
efficacy of capacity building in addressing rural environmental issues	3.3644	.64451		

* Significant at .05 level, df=248.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study examined the relationship between Participatory Workshops and Trainings 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 through workshops and training 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 Workshops and Trainings 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.

The findings also imply that sustained collaboration among stakeholders such as governmental bodies, civil society organizations, and traditional institutions can strengthen community resilience and promote sustainable environmental practices. From a theoretical standpoint, the results reinforce participatory and empowerment models of community development, which argue that meaningful involvement enhances local capacity, ownership, and long-term sustainability.

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 workshops, 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

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

Bodin, Ö. (2017). Collaborative environmental governance: Achieving collective action in social-ecological systems. *Science*, *357*(6352), eaan1114.

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).

Honadle, B. W. (2018). A capacity-building framework: A search for concept and purpose. *Public Sector Performance*, 20-35.

Kaner, S. (2014). *Facilitator's guide to participatory decision-making*. John Wiley & Sons.

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.

Li, I.-C., Chen, Y.-C., Hsu, L.-L., Lin, C.-H., & Chrisman, N. J. (2012). The effects of an educational training workshop for community leaders on self-efficacy of program planning skills and partnerships. *Journal of Advanced Nursing, 68*(3), 600–613. https://doi.org/10.1111/j.1365-2648.2011.05767.x

McBride, M. F., Lambert, K. F., Huff, E. S., Theoharides, K. A., Field, P., & Thompson, J. R. (2017). Increasing the effectiveness of participatory scenario development through codesign. *Ecology and Society*, *22*(3).

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.

Ohnishi, M., & Nakamura, K. (2009). Capacity building of local governmental and non-governmental organizations on environmental hygiene through a community-based training workshop program. *Journal of Inter professional Care, 23*(1), 4–15. https://doi.org/10.1080/13561820802565437

Parkhill, K. A., Shirani, F., Butler, C., Henwood, K. L., Groves, C., & Pidgeon, N. F. (2015). 'We are a community [but] that takes a certain amount of energy': Exploring shared visions, social action, and resilience in place-based community-led energy initiatives. *Environmental science & policy*, *53*, 60-69.

Rocha, P., Niella, F., Keller, H., Montagnini, F., Metzel, R., Eibl, B., ... & Barquinero, J. (2017). Ecological Indigenous (EIK) and scientific (ESK) knowledge integration as a tool for sustainable development in Indigenous communities. Experience in Misiones, Argentina. *Integrating landscapes: agroforestry for biodiversity conservation and food sovereignty*, 235-260.

Scott II, H. D. (2023). *Filling the Void: Building and Sustaining Cohesive and Consistent Instructional Leadership*. East Carolina University.

Sobania, N. W. (Ed.). (2023). *Putting the local in global education: Models for transformative learning through domestic off-campus programs*. Taylor & Francis.

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.

Tang, T., Vezzani, V., & Eriksson, V. (2020). Developing critical thinking, collective creativity skills and problem solving through playful design jams. *Thinking Skills and Creativity*, *37*, 100696.

Tomlinson, J., & Rhiney, K. (2018). Experiential learning as a tool for farmer engagement and empowerment in a changing regional climate. *Caribbean Quarterly*, *64*(1), 114-135.

Van Waart, H., Stuiver, M. M., van Harten, W. H., Geleijn, E., Kieffer, J. M., Buffart, L. M., ... & Aaronson, N. K. (2015). Effect of low-intensity physical activity and moderate-to high-intensity physical exercise during adjuvant chemotherapy on physical fitness, fatigue, and chemotherapy completion rates: results of the PACES randomized clinical trial. *Journal of clinical oncology*, *33*(17), 1918-1927.

Wallerstein, N., & Duran, B. (2010). Community-based participatory research contributions to intervention research: the intersection of science and practice to improve health equity. *American journal of public health*, *100*(S1), S40-S46.