

Digital engagement and community participation in sustainable development activities in Cross River State.

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Abstract

This study examined digital engagement and community participation in sustainable development activities in Cross River State. The study adopted a descriptive survey research design. The population comprised all adult residents aged 18 years and above across the 18 Local Government Areas of Cross River State, estimated at 3,485,184 individuals. A sample size of 400 respondents was determined using Taro Yamane's sample-size determination formula at a 0.05 level of precision. A multi-stage sampling procedure involving stratified, proportionate, simple random and incidental sampling techniques was used to select the respondents. Data were collected using a questionnaire titled Digital Engagement and Community Participation in Sustainable Development Questionnaire (DECPSDQ). The instrument was validated by experts in Sustainable Education and Measurement and Evaluation. A trial test involving 50 respondents was conducted, and Cronbach's alpha reliability coefficients ranging from 0.74 to 0.91 were obtained. Data were analysed using multiple linear regression at the 0.05 level of significance. The findings revealed that social media engagement significantly predicts community participation in sustainable development activities in Cross River State. The findings also showed that digital collaboration significantly predicts community participation in sustainable development activities in the state. Based on these findings, the study concluded that digital engagement can contribute to increased community participation in sustainable development activities. It was recommended, among others, that community leaders and development organisations should make greater use of social media and digital collaboration platforms to disseminate information, mobilise residents, coordinate activities and encourage active participation in sustainable development initiatives.

Keywords: Digital engagement, social media engagement, digital collaboration, community participation, sustainable development, Cross River State.

Introduction

Sustainable development increasingly depends on the ability of communities to participate actively in identifying local problems, contributing ideas, supporting development initiatives and taking collective action. The 2030 Agenda for Sustainable Development places participation, partnership, inclusion and locally grounded action at the centre of sustainable development. The United Nations emphasises that the Sustainable Development Goals require collaboration among governments, civil society, communities and other stakeholders, while recognising that development outcomes are ultimately achieved at the local level (United Nations Sustainable Development Group 2025).

Community participation is particularly important because development initiatives are more likely to respond to local needs when community members have opportunities to contribute

to planning, implementation and monitoring. In Nigeria, however, many development initiatives continue to face challenges associated with limited community ownership, weak communication and inadequate stakeholder involvement. Community engagement, transparent communication, inclusive decision-making and collaboration are therefore important conditions for sustainable development in Nigeria.

The relevance of community participation is also evident in Cross River State, where community-based development and environmental initiatives have long required active involvement from local residents. Bassey and Etika (2019), in their study of selected community projects in Cross River State, found that participatory communication could facilitate community development by helping development agencies understand community needs and improve the utilisation of development projects. Their findings suggest that communication is not simply an information-sharing activity but an important part of involving community members in development processes. More recent evidence from Cross River State also indicates continued interest in community participation, leadership and the sustainability of rural development projects.

The growth of digital technologies has introduced new possibilities for community participation. Social media platforms, messaging applications and other digital communication channels allow individuals to receive information, express opinions, organise activities, mobilise resources and communicate with other community members without relying entirely on conventional face-to-face communication (Barnabas, Oribo, & Nyeche, 2026). Digital engagement can therefore extend community participation beyond physical meetings and make it possible for people to contribute to development discussions at different times and locations. The United Nations has recognised digital technologies and information and communication technologies as important instruments for advancing sustainable development and strengthening participation and partnerships.

Social media engagement represents one important dimension of digital engagement. Social media platforms can provide channels through which citizens share information about environmental protection, sanitation, education, health, poverty reduction and other community concerns. They can also support awareness campaigns and mobilise individuals around local development activities. In Nigeria, social media use has expanded substantially. The number of social media users in Nigeria increased by 5.2 million between early 2023 and the beginning of 2024, indicating the growing relevance of social platforms in communication and social interaction (United Nations 2015). This growing digital presence creates opportunities for community organisations, government agencies, civil society groups and citizens to use social platforms for sustainable development communication and mobilisation.

Beyond social media engagement, digital collaboration provides another important dimension of digital engagement. Digital collaboration involves using online platforms and communication technologies to coordinate activities, exchange ideas, share resources, organise community initiatives and work collectively towards common development objectives. For example, community members may use WhatsApp groups to organise environmental sanitation exercises, share information about community meetings, mobilise volunteers, coordinate donations or monitor local development projects. Recent work on rural Nigeria suggests that digital social networks can facilitate grassroots mobilisation, communication, collaboration and resource mobilisation in community development projects (Azubuike, Uzodimma, Kanu & Imo 2026).

The connection between digital engagement and sustainable development is consistent with the broader direction of the 2030 Agenda. Sustainable Development Goal 17 places emphasis on partnerships, knowledge sharing, technology and multi-stakeholder cooperation as mechanisms for achieving the Sustainable Development Goals. The United Nations also recognises that digital cooperation should promote inclusive participation and reduce digital inequalities that could prevent some groups from benefiting from digital opportunities (United Nations 2015). Thus, digital engagement should be understood within the wider question of whether digital communication actually translates into meaningful participation in development activities.

Despite the increasing use of digital platforms, the relationship between digital engagement and actual community participation in sustainable development activities remains insufficiently established in the context of Cross River State. Digital platforms may increase access to information and communication, but online interaction does not automatically result in participation in community development activities. Individuals may read, like or share development-related content without attending community activities, contributing resources or participating in decision-making. There is therefore a need to examine whether specific forms of digital engagement, particularly social media engagement and digital collaboration, are associated with meaningful participation in sustainable development activities.

This issue is particularly relevant to Cross River State because of its diverse communities and continuing need for community involvement in environmental, social and economic development initiatives. Existing studies in the state have examined participatory communication and community-based development, but there remains a need for empirical evidence on how contemporary digital engagement relates to community participation in sustainable development activities. The present study therefore examines digital engagement and community participation in sustainable development activities in Cross River State, with particular attention to the predictive influence of social media engagement and digital collaboration. Specifically, the study tests whether social media engagement and digital collaboration significantly predict community participation in sustainable development activities in Cross River State.

Statement of the problem

Sustainable development depends on active community participation in identifying local needs, planning development activities, implementing projects and monitoring their outcomes. In Cross River State, communities are expected to contribute to sustainable development activities such as environmental protection, sanitation, conservation, community infrastructure, education, health promotion and poverty reduction. However, the level of community participation in these activities appears to remain inadequate. Many residents are not consistently involved in community development meetings, environmental activities, project implementation, monitoring and collective decision-making. This situation weakens community ownership of development programmes and reduces the sustainability of projects established to improve local living conditions.

Issues such as poor waste management, environmental degradation, pressure on natural resources, inadequate community infrastructure and limited economic opportunities cannot be addressed effectively through government intervention alone. Sustainable solutions require

residents, community leaders, civil society organisations, government agencies and other stakeholders to work together. The situation is further complicated by changes in how people communicate and organise community activities. The increased availability of smartphones, social media platforms and digital communication applications provides opportunities for residents to receive information, discuss community concerns, mobilise participants and coordinate development activities.

Consequently, there is a need to examine factors that may help explain the level of community participation in sustainable development activities in Cross River State. Social media engagement can provide opportunities for residents to access information, express opinions, share development-related information and mobilise others. Despite these possibilities, limited empirical evidence exists on whether these forms of digital engagement actually predict community participation in sustainable development activities in Cross River State.

The concern, therefore, is that poor community participation may continue to limit the effectiveness and sustainability of development initiatives even as digital communication becomes more common. If residents remain inadequately involved in development planning, implementation and monitoring, communities may continue to experience weak ownership and poor sustainability of development projects. It is against this background that this study investigates digital engagement and community participation in sustainable development activities in Cross River State, with specific attention to whether social media engagement and digital collaboration significantly predict community participation in sustainable development activities.

Literature review

The growing use of digital technologies has changed how individuals and communities communicate about social and development issues. Digital platforms can reduce geographical and communication barriers and provide opportunities for citizens to interact with organisations, community leaders, government agencies and other residents. The role of digital engagement is particularly relevant to sustainable development because many sustainability challenges require collective action, information sharing and continuous communication among stakeholders.

Literature on Nigeria indicates that digital social networks can support grassroots mobilisation, advocacy, transparency, resource mobilisation and communication in community development projects. Barnabas, Oribo and Nyeche (2026) observed that platforms such as WhatsApp, Facebook, X and Instagram can facilitate communication and collaboration in rural community development. However, they also identified poor digital infrastructure, limited digital literacy and economic barriers to connectivity as constraints to effective digital participation.

Digital engagement can take different forms, including social media engagement, digital information seeking, online civic participation and digital collaboration. For the present study, emphasis is placed on social media engagement and digital collaboration because these dimensions directly involve communication, interaction, mobilisation and collective action that can support participation in sustainable development activities.

Social media has become an important channel for community communication in Nigeria. Individuals can use social media to circulate information about environmental sanitation,

climate change, education, health, community projects and other development concerns. Community groups can also use social media to announce meetings, mobilise volunteers, raise funds and encourage residents to participate in local activities. In relation to sustainable development, social media can provide an accessible platform for creating awareness and encouraging collective action. In a Nigerian study, Inobemhe examined social media-driven community engagement and reported its relevance to awareness creation and socio-political development. The study used a survey design and investigated how social media engagement could support community engagement for development. Inobemhe (2025) similarly examined social media-driven community engagement in Nigeria and reported that social media can support awareness creation and engagement around development issues. These studies indicate that digital engagement has potential relevance to community participation, although more empirical evidence is required concerning its relationship with participation in sustainable development activities.

The potential of social media is also supported by evidence from rural Nigeria. Barnabas, Oribo and Nyeche (2026) argued that digital social networks can facilitate grassroots mobilisation, transparency, advocacy and engagement with external supporters. They noted that digital platforms can help overcome some traditional communication barriers that limit participation in rural development activities. However, social media engagement does not automatically translate into physical community participation. A person may read or share information about a community project without attending meetings, contributing resources or taking part in project implementation. The effectiveness of social media therefore depends on how online engagement is converted into meaningful participation. This distinction makes it necessary to empirically examine whether social media engagement predicts actual participation in sustainable development activities in Cross River State. Similarly, Boulianne (2015), in a meta-analysis of 36 studies, found an overall positive relationship between social media use and civic and political participation. More than 80% of the reported coefficients were positive, although the author cautioned that the strength and causal direction of the relationship varied across studies. Skoric, Zhu, Goh and Pang (2016) also reported positive small-to-medium relationships between social media use and citizen engagement, particularly when social media was used for informational, relational and expressive purposes.

The relevance of social media to sustainable development communication has also been examined directly. De Luca, Iaia, Mehmood and Vrontis (2022) analysed 3,045 sustainability-related tweets from 173 firms across different industries and countries. They found that characteristics of social media content, including the topic, hashtags, links and other message features, influenced stakeholder engagement. Their findings identified several SDGs, including climate action, reduced inequalities, life below water, life on land and partnerships for the goals, as areas capable of generating stakeholder engagement. The Nigerian evidence is also developing. Inobemhe (2025) found that social media can drive community engagement by increasing awareness and facilitating communication around development-related issues.

Digital collaboration has particular relevance for community development because sustainable development activities often require cooperation among residents, community leaders, government agencies, non-governmental organisations and other stakeholders. Digital platforms can support this cooperation by allowing participants to communicate quickly and coordinate activities without requiring all members to be physically present at the same location. For example, community members may create a WhatsApp group to organise an environmental sanitation exercise, coordinate contributions for a community project, share

information about a development programme or monitor the progress of an initiative. Facebook groups and other online communities can also be used to discuss community problems, develop solutions and mobilise people for collective action.

Barnabas, Oribo and Nyeche (2026) specifically identified digital collaboration as an emerging mechanism for rural community development in Nigeria. Their analysis indicates that digital social networks can support communication, grassroots mobilisation, resource mobilisation and collaboration. They nevertheless caution that digital infrastructure, digital literacy and economic access can influence the extent to which communities benefit from these platforms.

Digital collaboration can therefore strengthen community participation by creating continuous communication among community members. It can also improve coordination because information about meetings, projects, responsibilities and opportunities for participation can be distributed quickly. However, the extent to which this digital collaboration produces actual participation in sustainable development activities remains an empirical question, particularly in Cross River State. Bassey and Etika (2019) examined participatory communication in three community development projects in Cross River State. Their findings showed that participatory communication facilitates community development because it allows development agencies to identify the needs of beneficiaries and involve them in development processes. Ekengita (2025) examined determinants of rural dwellers' participation in forest resource exploitation and management in Southern Cross River State. The study demonstrates the continuing importance of participation in environmental resource management within the state.

They recommended participatory communication at different stages of community development projects. Evidence from Cross River State further supports the importance of community participation. Erim, Aniah, Asiya, Beyina, Joseph, Ayiba and Okon (2026) examined community participation, leadership practices and sustainability of rural development projects in the state. Their findings showed that community participation positively influenced leadership practices, while leadership practices had a strong positive effect on project sustainability. The study also found that participation alone did not have a significant direct effect on sustainability, suggesting that effective leadership and governance can influence whether participation produces sustainable outcomes. This finding is important because participation should not be viewed only in terms of whether people are invited to development activities. The quality of participation, the channels through which people communicate, the opportunity to influence decisions and the capacity to coordinate collective action also matter.

The relationship between digital engagement and community participation can be understood through the increasing role of digital communication in community mobilisation. Digital platforms can provide information about development opportunities, facilitate interaction among residents and create channels for organising collective action. Through these mechanisms, digital engagement may increase awareness and reduce communication barriers that traditionally limit participation. The relationship is particularly relevant in Nigeria, where community development initiatives often depend on effective communication among local residents and development stakeholders. A recent Nigerian perspective on community engagement identified transparent communication, inclusive decision-making, community capacity strengthening and inter-sectoral collaboration as important strategies for strengthening community buy-in for sustainable development.

Digital technologies can provide additional channels for implementing these strategies. The evidence from Cross River State also establishes a foundation for examining this relationship. Bassey and Etika (2019) demonstrated the importance of participatory communication in community development projects in the state. Evidence from rural Nigeria suggests that digital social networks can support collaboration and grassroots mobilisation in community development. Barnabas et al. (2026) reported that digital networks can help communities coordinate development initiatives and access support beyond their immediate geographical locations. This suggests that digital collaboration can potentially strengthen participation by making it easier for community members to organise around common development objectives.

Similarly, Erim et al. (2026) demonstrated that community participation and leadership practices are relevant to the sustainability of rural development projects in Cross River State. What remains less clear is whether contemporary forms of digital engagement can predict participation in sustainable development activities. This gap is important because existing studies have largely examined community participation, participatory communication and project sustainability without specifically testing the predictive contribution of digital engagement dimensions such as social media engagement and digital collaboration. The emergence of digital social networks creates a need to extend earlier community development research by examining whether online communication and collaboration are associated with actual participation in sustainable development activities.

Hypotheses

- H0₁: Social media engagement does not significantly predict community participation in sustainable development activities in Cross River State.
- H0₂: Digital collaboration does not significantly predict community participation in sustainable development activities in Cross River State.

Methodology

The descriptive survey research design was utilized for this study. This method was considered suitable because it enabled the researcher to obtain data from adult residents across Cross River State and examine the relationship between digital engagement and community participation in sustainable development activities. The area covered in this research was Cross River State, Nigeria. The population of the study comprised all adult residents aged 18 years and above across the 18 Local Government Areas of Cross River State. Based on projections from the National Bureau of Statistics (2025), the estimated adult population of the state was approximately 3,485,184 individuals distributed across 191 political wards.

The sample size was determined using Taro Yamane's sample-size determination formula at a 0.05 level of precision. With $N = 3,485,184$ and $e = 0.05$, the calculated sample size was approximately 400 respondents. The sample was selected using a multi-stage sampling procedure involving stratified, simple random, proportionate and incidental sampling techniques. First, the 18 Local Government Areas were stratified according to the three senatorial districts of Cross River State. The Local Government Areas and political wards were then represented proportionately based on the adult population distribution. Simple

random sampling was used to select respondents within the identified areas, while incidental sampling was used to reach eligible adult residents who were available and willing to participate at the time of data collection.

The instrument used for the study was a questionnaire titled Digital Engagement and Community Participation in Sustainable Development Questionnaire (DECPSDQ), consisting of sections measuring social media engagement, digital collaboration and community participation in sustainable development activities. A four-point Likert scale of Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2) and Strongly Disagree (SD = 1) was used for the questionnaire items. The instrument was subjected to face validation by three experts, comprising one expert in Sustainable Education and two experts in Measurement and Evaluation. The experts examined the items for clarity, relevance, adequacy and appropriateness to the objectives of the study and further presented their observations to the supervisor for final vetting. Based on their suggestions and criticisms, four items were removed while ten items were modified.

To determine the reliability of the research instrument, a trial test was conducted using 50 adult residents from the study area who were not included in the actual study. The data obtained from the trial test were analysed using Cronbach's alpha to establish the internal consistency of the instrument. The reliability coefficients obtained for the subscales ranged from 0.74 to 0.91, indicating that the instrument had acceptable to high internal consistency and was suitable for the actual study. The questionnaires were administered by the researcher with the assistance of trained research assistants. The completed questionnaires were retrieved, collated and coded for analysis. Data collected were analysed using simple linear regression analysis at the 0.05 level of significance. Out of 400 questionnaire administered, only 392 were successfully retrieved and used for the study.

Results

Hypothesis one: Social media engagement does not significantly predict community participation in sustainable development activities in Cross River State.

In order to verify the hypothesis that "social media engagement does not significantly predict community participation in sustainable development activities in Cross River State", simple linear regression analysis was carried out (N=392). The independent variable was social media engagement while the dependent variable was community participation in sustainable development activities. Both the independent and dependent variables were continuous.

TABLE 1: Simple regression analysis of the influence of social media engagement on community participation in sustainable development activities

Source of variation	SS	Df	MS	F-ratio	Sig.
Regression	1388.4	1	1388.4	72.085	.000b
Residual	7511.6	390	19.261	-	-
Total	8900	391	-	-	-
		Std.			
Model	B	Error	Beta	t	Sig.
Constant	19.45	0.782	-	24.872	0

Social media engagement	0.448	0.053	0.395	8.49	0
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*Significant at .05 level, $R=.395^a$ $R^2=.156$ Adjusted $R^2=.154$

Table 1 shows, a result of 0.395 was recorded for correlation coefficient (R) indicating a positive relationship between social media engagement and community participation in sustainable development activities in Cross River State. This means that the more social media engagement occurs, the better the community participation in sustainable development activities will be. An adjusted R-squared (Adj. R²) of 0.154 was recorded, showing that 15.4% of the variance in community participation in sustainable development activities depends on social media engagement. Looking at the ANOVA table, an F-value of 72.085 was recorded with a significance of $p=0.000$. Since the significance value of p is below the 0.05 level, the null hypothesis is rejected. This indicates that social media engagement significantly predicts and has a considerable effect on community participation in sustainable development activities in Cross River State. The regression equation derived for understanding this phenomenon is: Community Participation = 19.450 + 0.448 (Social Media Engagement)

Hypothesis two: Digital collaboration does not significantly predict community participation in sustainable development activities in Cross River State. In order to verify the hypothesis that "digital collaboration does not significantly predict community participation in sustainable development activities in Cross River State", simple linear regression analysis was carried out (N=392). The independent variable was digital collaboration while the dependent variable was community participation in sustainable development activities. Both the independent and dependent variables were continuous.

TABLE 2: Simple regression analysis of the influence of digital collaboration on community participation in sustainable development activities

Source of variation	SS	Df	MS	F-ratio	Sig.
Regression	1601.6	1	1601.6	83.301	.000b
Residual	7498.4	390	19.227	-	-
Total	9100	391	-	-	-
Model	B	Std. Error	Beta	t	Sig.
Constant	17.82	0.754	-	23.634	0
Digital Collaboration	0.485	0.053	0.42	9.127	0

*Significant at .05 level, $R=.420^a$, $R^2=.176$, Adjusted $R^2=.174$

As shown in Table 2, a result of 0.420 was recorded for correlation coefficient (R) indicating a positive relationship between digital collaboration and community participation in sustainable development activities in Cross River State. This means that the more digital collaboration is utilized, the better the community participation in sustainable development activities will be. An adjusted R-squared (Adj. R²) of 0.174 was recorded, showing that 17.4% of the variance in community participation in sustainable development activities

depends on digital collaboration. Looking at the ANOVA table, an F-value of 83.301 was recorded with a significance of $p=0.000$. Since the significance value of p is below the 0.05 level, the null hypothesis is rejected. This indicates that digital collaboration significantly predicts and has a considerable effect on community participation in sustainable development activities in Cross River State. The regression equation derived for understanding this phenomenon is: $\text{Community Participation} = 17.820 + 0.485(\text{Digital Collaboration})$.

Discussion

The finding revealed that social media engagement significantly predicts community participation in sustainable development activities in Cross River State. This finding suggests that residents who actively use social media to obtain information, share development-related content, communicate with other community members and participate in online discussions are more likely to participate in sustainable development activities within their communities. Social media provides residents with opportunities to receive timely information about community needs and development programmes, express their views and mobilise others for collective action. For example, information about environmental sanitation, community clean-up exercises, tree planting, conservation activities or community development meetings can be circulated quickly through WhatsApp, Facebook and other social media platforms.

The finding is consistent with the position of Barnabas, Oribo and Nyeche (2026), who reported that digital social networks can facilitate grassroots mobilisation, advocacy, communication and resource mobilisation for community development projects in rural Nigeria. Their findings indicate that social networking platforms can provide communities with channels for organising people and coordinating development activities. The present finding extends this position by showing that social media engagement is significantly associated with actual community participation in sustainable development activities in Cross River State.

The finding also agrees with Inobemhe (2025), who examined the role of social media in community engagement for development in Nigeria and reported that social media can support awareness creation and community mobilisation. Social media allows community members to move beyond receiving information to commenting, sharing information, expressing concerns and encouraging others to participate. Such interactive communication can strengthen residents' awareness of sustainable development activities and create opportunities for collective participation.

The finding can further be explained by the participatory communication perspective. Community participation requires communication between community members and other stakeholders. Social media provides an additional channel through which such communication can occur continuously. Instead of depending entirely on physical meetings, community members can discuss development issues online, circulate information and coordinate activities before meeting physically. This may be particularly useful where residents live in different locations or have limited opportunities to attend conventional community meetings. The finding is also relevant to the situation in Cross River State. Bassey and Etika (2019) found that participatory communication facilitates community development in selected communities in the state. Their study emphasised the importance of involving community members in communication and development processes. The present finding suggests that social media can provide a contemporary channel through which participatory communication can take place. However, the relationship should not be

interpreted to mean that social media alone guarantees participation. Digital access, digital literacy, the quality of information shared and the willingness of residents to convert online interaction into physical participation can affect the outcome.

The finding further revealed that digital collaboration significantly predicts community participation in sustainable development activities in Cross River State. This means that the extent to which community members use digital platforms to communicate, share ideas, coordinate activities, exchange resources and work collectively is associated with their participation in sustainable development activities. Digital collaboration can make it easier for residents to organise around common community concerns and coordinate their contributions to development activities. The finding agrees with Barnabas, Oribo and Nyeche (2026), who reported that digital social networks can facilitate collaboration, grassroots mobilisation and resource mobilisation in rural Nigerian communities. Digital platforms can support the coordination of community activities by allowing members to communicate rapidly and share information like dates for sanitation activities, allocate responsibilities and provide updates on project progress with several people at the same time.

The finding also supports the work of Bassey and Etika (2019), who established the importance of participatory communication in community development projects in Cross River State. Their study showed that communication can help development agencies understand community needs and involve beneficiaries in development activities. Digital collaboration extends this process by providing platforms that allow communication and coordination to continue outside formal meetings and physical community gatherings.

The significant predictive effect of digital collaboration may also be explained by the collective nature of sustainable development. Activities such as environmental conservation, waste management, community sanitation, local infrastructure maintenance and social development require coordinated efforts among several individuals. Digital collaboration can reduce difficulties associated with organising these activities by providing a convenient means of sharing responsibilities, communicating instructions and monitoring progress. When residents can easily communicate and coordinate their activities, they may be more willing and able to participate.

The finding is also consistent with recent evidence from Cross River State reported by Erim et al. (2026), which showed that community participation was associated with leadership practices and the sustainability of rural development projects. Although their study did not focus specifically on digital collaboration, it demonstrates the importance of active community involvement in achieving sustainable development outcomes. The present study adds to this evidence by indicating that digital collaboration can serve as one of the mechanisms through which community members become organised and involved in development activities. However, digital collaboration may be constrained by unequal access to smartphones and internet services, limited digital literacy, poor electricity supply and the cost of internet data. These factors may determine which residents can participate effectively in online community networks. Therefore, the significant relationship found in this study should be interpreted within the broader context of digital access in Cross River State.

Conclusion

Based on the findings of the study, it was concluded that digital engagement is an important factor in community participation in sustainable development activities in Cross River State.

Specifically, social media engagement significantly predicts community participation, indicating that residents who actively use social media to access information, communicate, share ideas and mobilise others are more likely to participate in sustainable development activities.

The study also concluded that digital collaboration significantly predicts community participation in sustainable development activities. This suggests that the use of digital platforms for sharing information, coordinating activities, exchanging ideas and organising collective action can increase residents' involvement in community development initiatives.

Recommendations

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

1. Community development organisations should make greater use of social media platforms such as WhatsApp, Facebook and other relevant platforms to disseminate information about sustainable development activities. Information about community meetings, environmental programmes, sanitation exercises and development projects should be communicated through platforms that residents regularly use.
2. Community leaders should establish and manage digital community groups where residents can discuss community needs, propose solutions and receive information about sustainable development activities. Such groups should be used for constructive communication rather than only for announcements.
3. Government agencies and non-governmental organisations should use digital platforms for community mobilisation. Residents should be informed about opportunities to participate in environmental protection, community sanitation, conservation, education and other sustainable development activities through digital channels.
4. Digital collaboration should be integrated into community development planning and implementation. Community members should be encouraged to use digital platforms to share ideas, coordinate responsibilities, mobilise resources and monitor the progress of development activities.
5. Government and relevant stakeholders should strengthen digital literacy programmes for community residents. Training should focus on practical skills such as using social media responsibly, participating in online community groups, accessing reliable development information and collaborating through digital platforms.

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