

The role of ICT in facilitating lifelong learning and community empowerment in Khana and Gokana Local Government Areas

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Abstract

This study examined the role of ICT adoption, digital literacy, and e-governance in community development in Khana and Gokana Local Government Areas of Rivers State. The study adopted a descriptive survey research design. A total of 320 respondents were selected using stratified random sampling techniques. Data were collected through a structured questionnaire and analyzed using mean, standard deviation, and Z-test statistical tools. The findings revealed that the major challenges to ICT adoption in community development include lack of infrastructure, high cost of ICT devices, limited digital literacy, cultural resistance, and poor government policies. The study also found that digital literacy significantly enhances lifelong learning, employability, and community collaboration. Furthermore, e-governance was found to improve access to government information, promote transparency, and encourage citizen participation in community development projects. The Z-test analysis showed no significant difference in the impact of ICT adoption, digital literacy, and e-governance between Khana and Gokana LGAs. The study recommends the provision of ICT infrastructure, digital literacy training programs, and inclusive e-governance platforms to promote sustainable community development. The findings contribute to knowledge by providing empirical evidence on the role of ICT in enhancing community development in rural communities.

Keywords: Role, ICT, Facilitating, Lifelong, Learning, Community & Empowerment

Introduction

In today's rapidly evolving world, the role of Information and Communication Technology (ICT) in facilitating lifelong learning and community empowerment has become increasingly significant. The integration of ICT into educational frameworks offers a powerful avenue for promoting continuous learning, improving access to information, and enhancing community participation. In Khana and Gokana Local Government Area (LGA), the opportunities provided by ICT hold the potential to transform traditional methods of learning and development, creating an environment where individuals can access knowledge at any stage of their lives, fostering both personal growth and community development. The motivation for this study stems from the growing importance

of ICT in shaping educational practices and societal progress globally. While the promise of ICT in enhancing lifelong learning and community empowerment is clear, its application within the specific context of Khana and Gokana Local Government Area remains underexplored. The increase in digital platforms, online learning resources, and ICT infrastructure presents an opportunity to investigate the extent to which ICT can empower individuals in this region. This study is motivated by the need to understand how ICT can support continuous learning and empower communities to become more self-sufficient, informed, and engaged.

Despite the increasing proliferation of ICT tools and infrastructure, many individuals in Khana and Gokana Local Government Area still face challenges in fully utilizing ICT for lifelong learning and community empowerment. These challenges include limited access to technology, inadequate digital literacy skills, and a lack of awareness regarding the potential of ICT in education and community development. Furthermore, there are gaps in understanding how ICT can be leveraged to bridge socio-economic divides, enhance community engagement, and foster sustainable development. The absence of targeted interventions to address these issues means that many individuals and communities in Khana and Gokana Local Government Area are not fully benefiting from the opportunities offered by ICT. This study aims to investigate these challenges to propose solutions for improving access and usage of ICT for lifelong learning and community empowerment. Although there is a growing body of research on the role of ICT in education and community development, there is limited research specifically focusing on Khana and Gokana Local Government Area. Additionally, existing studies often overlook the local socio-cultural and economic context, which may affect the way ICT is adopted and utilized in this region. Furthermore, many studies focus on urban areas, while Khana and Gokana Local Government Area, with its unique challenges, is often neglected in terms of ICT-related interventions. This research will address these gaps by providing context-specific insights into the role of ICT in the region.

Statement of the Problem

The primary problem this study seeks to address is the underutilization of ICT in facilitating lifelong learning and community empowerment in Khana and Gokana Local Government Area. Despite the increasing availability of ICT infrastructure, there are several barriers to effective adoption and usage of these technologies, including limited access to devices, insufficient digital literacy, and a lack of community-driven initiatives. This results in missed opportunities for personal and collective growth within the community.

Aim of the study

The aim of the study is to investigate the role of ICT in facilitating lifelong learning and community empowerment in Khana and Gokana Local Government Area. The specific Objectives include to:

1. identify the challenges and barriers to ICT adoption in community development in Khana and Gokana Local Government Area

2. Determine the role of digital literacy in facilitating the use of ICT for lifelong learning and community development in Khana and Gokana Local Government Area
3. Investigates the potential impact of E-Governance on community engagement and sustainable development in in Khana and Gokana Local Government Area

Research Questions

1. To what extent are the challenges and barriers to ICT adoption in community development in Khana and Gokana Local Government Areas?
2. To what extent are role digital literacy play in facilitating the use of ICT for lifelong learning in community development in Khana and Gokana Local Government Areas?
3. To what are the potential impact of e-governance on community engagement and sustainable development in Khana and Gokana Local Government Areas?

Hypotheses

1. There is no significant difference between the challenges and barriers to ICT adoption in community development in Khana and Gokana Local Government Areas.
2. There is no significant difference between the impact of the Digital literacy for lifelong learning on community development in Khana and Gokana Local Government Areas.
3. There is no significant difference between the impact of E-governance on community engagement and sustainable development in Khana and Gokana Local Government Areas.

Significance of the Study

This study is significant as it will contribute valuable insights into how ICT can be utilized to promote lifelong learning and community empowerment in Khana and Gokana Local Government Area. The findings will inform policymakers, educators, and community leaders about the critical challenges that need to be addressed to fully harness the potential of ICT. Additionally, this research will provide recommendations for improving access to digital resources and enhancing digital literacy, which can contribute to the overall socio-economic development of the region. By addressing these issues, the study will help create an environment that supports continuous learning, enhances community engagement, and fosters sustainable development within Khana and Gokana Local Government Area

Methodology

The study adopted a descriptive survey research design to investigate the role of ICT in facilitating lifelong learning and community empowerment in Khana and Gokana Local Government Areas. This design was chosen because it allows for the collection of data from a large population in a systematic manner to describe and interpret the existing conditions regarding ICT adoption, digital literacy, and community empowerment. with a population of 3200 respondents from the 63 communities in Khana and 17 communities in Gokana local government areas of Rivers State. The 3,200 respondents consist of 2000 beneficiaries of ICT programmes organized in Khana L.G. A, and 1200 beneficiaries of ICT programmes organized in Gokana L.G. As, of Rivers State. These

respondents were accessed from the local government council about the number of participant of the ICT programmes organized in their communities (Local Government Council). The sample size for the study was 320 respondents determined by using Taro Yamen Model of sample size determination. To sample the 320 respondents, proportionate sampling technique was used to select 24 communities out of 63 in Khana and 8 communities out of 17 in Gokana local government areas which gave a total of 32 communities sampled. 10 respondents were chosen from each of the communities using simple random sampling technique and the totals of 320 respondents were sampled. This gives about 240 respondents from Khana and 80 respondents from Gokana. This technique ensures that different categories of community youth leaders are adequately represented in the study. The sample was drawn from community organizations, educational centers, and local ICT hubs. The primary instrument for data collection was a structured questionnaire. The questionnaire was divided into three sections: Section A: Challenges and Barriers to ICT Adoption, Section B: Role of Digital Literacy in Lifelong Learning and Section C: Impact of E-Governance on Community Development. The questionnaire items were developed using a five-point Likert scale, ranging from Very High Extent (5) to Very Low Extent (1) to measure respondents' perceptions on the subject matter. To ensure the validity of the instrument, the questionnaire was subjected to expert review by two ICT professionals and one community development expert. Their feedback was used to improve the clarity and relevance of the questionnaire items. The reliability of the instrument was tested through a pilot study conducted with 20 respondents from a neighboring community not included in the main study. The internal consistency of the instrument was measured using Cronbach's Alpha, which yielded a reliability coefficient of 0.82, indicating a high level of reliability. The data collection process involved the distribution of questionnaires to the selected respondents. The researcher, with the help of trained research assistants, administered the questionnaires through face-to-face interaction and follow-up visits to ensure a high response rate. Respondents were given ample time to fill out the questionnaires, and all completed forms were collected within two weeks. The collected data were analyzed using both descriptive and inferential statistics. Descriptive statistics such as mean and standard deviation scores were used to answer the research questions. Inferential statistics, specifically the Z-test were used to test the hypotheses and determine significant differences in respondents' perceptions across the two Local Government Areas. The Statistical Package for Social Sciences (SPSS) version 27.0 was employed to facilitate data analysis. Ethical approval was obtained from the relevant community authorities before the commencement of the study. Participants were informed of the purpose of the research, and their consent was sought before participating in the survey. Confidentiality of respondents' information was maintained, and participants were assured that the data collected would be used solely for academic purposes.

Results

Research Question one: To what extent are the challenges and barriers to ICT adoption in community development in Khana and Gokana Local Government Areas?

Table 4. 1: Mean ratings of respondent's responses on the challenges and barriers to ICT adoption in community development in Khana and Gokana Local Government Areas

S/N	Statement Items	Khana LGA n= 240		Remarks	Gokana LGA n= 80		Remarks
		Mean	Std.		Mean	Std.	
1	Lack of infrastructure (electricity and internet connectivity) is a major barrier to ICT adoption in community development.	2.82	0.77	HE	2.81	0.81	HE
2	High cost of ICT devices and services hinders the adoption of ICT in community development	2.93	0.75	HE	2.78	0.89	HE
3	Limited ICT skills among community members prevent the effective use of technology for development purposes.	2.84	0.77	HE	2.83	0.82	HE
4	Cultural beliefs and resistance to technology limit ICT adoption in Khana and Gokana LGAs	2.73	0.63	HE	2.76	0.89	HE
5	Poor government policies and lack of support affect the implementation of ICT projects in the community.	2.80	0.87	HE	2.81	0.87	HE
Grand Mean		2.82	0.76	HE	2.80	0.86	HE

Source: Research's Field Result, 2025

The result presented in Table 4.1 shows the mean ratings and standard deviation of respondents' responses on the challenges and barriers to ICT adoption in community development in Khana and Gokana Local Government Areas. Item-by-item interpretation is as follows show that for Lack of infrastructure (electricity and internet connectivity). The result reveals that respondents in Khana LGA (Mean = 2.82, Std. = 0.77) and Gokana LGA (Mean = 2.81, Std. = 0.81) agreed that poor infrastructure such as electricity and internet connectivity is a major barrier to ICT adoption. This implies that the absence of basic infrastructure poses a significant hindrance to the effective use of ICT for community development. Also, for High cost of ICT devices and services, the result indicates that both Khana LGA (Mean = 2.93, Std. = 0.75) and Gokana LGA (Mean = 2.78, Std. = 0.89) agreed that the high cost of ICT devices and services such as computers, mobile phones, and internet subscriptions discourages ICT adoption. This suggests that affordability is a critical challenge that affects ICT penetration in community development projects. Similarly, Limited ICT skills among community members. The result shows that respondents in Khana LGA (Mean = 2.84, Std. = 0.77) and Gokana LGA (Mean = 2.83, Std. = 0.82) indicated that lack of ICT knowledge and skills among community members remains a significant barrier to ICT adoption. This finding suggests that many community members lack the basic digital literacy skills required to leverage ICT for developmental purposes. On the issue of Cultural beliefs and resistance to technology, the result indicates that Khana LGA (Mean = 2.73, Std. = 0.63) and Gokana LGA (Mean = 2.76, Std. = 0.89) agreed that cultural beliefs and resistance to technology hinder the adoption of ICT in community development. This suggests that certain traditional mindsets and societal norms may create fear or skepticism towards adopting modern technology. Poor

government policies and lack of support, the result reveals that Khana LGA (Mean = 2.80, Std. = 0.87) and Gokana LGA (Mean = 2.81, Std. = 0.87) agreed that inadequate government policies and lack of government support affect the implementation of ICT-based community development projects. This implies that the absence of government intervention or funding contributes to the slow adoption of ICT in the communities. The grand mean score of 2.82 in Khana LGA and 2.80 in Gokana LGA shows that the respondents highly agreed (HE) that the aforementioned factors are the major challenges and barriers to ICT adoption in community development across both local government areas. The findings indicate that the extent of ICT adoption is significantly hampered by lack of infrastructure, high cost of ICT services, limited digital literacy, cultural resistance, and poor government support. This result aligns with the study conducted by Okwu and Ede (2020), who found that infrastructure deficits and lack of government policies are key barriers to ICT adoption in rural communities.

Research Question Two: To what extent is the role digital literacy plays in facilitating the use of ICT for lifelong learning in community development in Khana and Gokana Local Government Areas?

Table 4.2: Mean and Standard Deviation of Respondent’s Responses on the role digital literacy play in facilitating the use of ICT for lifelong learning in community development in Khana and Gokana Local Government Areas?

S/ N	Item instrument	Khana (N= 240)			Gokana (N=80)		
		\bar{X}_1	SD ₁	RK	\bar{X}_3	SD ₃	RK
6.	Digital literacy helps community members access educational materials online for lifelong learning	3.52	0.72	VHE	3.57	0.71	VHE
7.	Digital literacy improves community members' ability to use e-learning platforms.	3.05	1.19	HE	3.02	1.22	HE
8.	Digital literacy encourages participation in online training and capacity-building programs	3.18	0.77	HE	3.19	0.77	HE
9.	Digital literacy enables community members to seek and apply for jobs through digital platforms.	3.36	0.54	HE	3.39	0.55	HE
10	Digital literacy enhances communication and collaboration among community development groups	3.13	1.18	HE	3.18	1.21	HE
	Grand Mean	3.25	0.88	HE	3.35	0.89	HE

Source: *Researcher’s Field Result, 2025*

The result presented in **Table 4.2** shows the mean ratings and standard deviations of respondents' responses on the role digital literacy plays in facilitating the use of ICT for lifelong learning in community development in **Khana** and **Gokana Local Government Areas**. The findings reveal that digital literacy significantly contributes to the adoption of ICT for lifelong learning and community development across the two local government areas. The grand mean scores of **3.25** in

both **Khana** and **Gokana LGAs** indicate a **high extent (HE)** of agreement among respondents that digital literacy plays a critical role in community development.

The result shows that digital literacy helps community members access **educational materials online** for lifelong learning, with mean ratings of **3.52** in Khana and **3.57** in Gokana, which are both categorized as **Very High Extent (VHE)**. This implies that community members who possess digital literacy skills are more likely to explore online educational resources such as e-books, journals, and open-access educational platforms to improve their knowledge and skills. This finding highlights the transformative impact of digital literacy on self-directed learning among community members. Furthermore, the findings reveal that digital literacy improves the ability of community members to **use e-learning platforms** for education and training, with mean ratings of **3.05** in Khana and **3.02** in Gokana. This shows that digital literacy enables individuals to utilize various online learning platforms such as Google Classroom, Coursera, and other virtual learning applications to acquire new knowledge and enhance their skills. Additionally, the result shows that digital literacy encourages participation in **online training and capacity-building programs**, as indicated by mean scores of **3.18** in Khana and **3.19** in Gokana. This suggests that community members who are digitally literate are more likely to engage in virtual workshops, webinars, and certification programs that improve their employability and contribute to community development initiatives. The result also reveals that digital literacy empowers community members to **seek and apply for jobs through digital platforms**, with mean ratings of **3.36** in Khana and **3.39** in Gokana. This finding indicates that digital literacy facilitates access to job opportunities by enabling individuals to search for employment opportunities on job portals, create professional CVs, and submit applications through online platforms, thereby enhancing economic empowerment in the communities. Moreover, digital literacy enhances **communication and collaboration among community development groups**, with mean scores of **3.13** in Khana and **3.08** in Gokana. This implies that community members who possess digital literacy skills are more likely to engage in online discussions, share information through social media platforms, and participate in group decision-making processes, thereby fostering collective action in community development efforts. The grand mean scores of **3.25** in both local government areas confirm that digital literacy plays a **highly significant role** in facilitating the use of ICT for lifelong learning and community development. This finding is consistent with the work of **Okonkwo and Nwafor (2020)**, who emphasized that digital literacy enhances access to information, promotes online learning, and improves the socio-economic wellbeing of rural communities. The result highlights the importance of digital literacy in equipping community members with the skills necessary to leverage ICT for education, capacity building, and sustainable community development.

Research Question Three: To what extent are the potential impact of e-governance on community engagement and sustainable development in Khana and Gokana Local Government Areas?

Table 4.3: Mean Ratings of respondent's responses on the potential impact of e-governance on community engagement and sustainable development in Khana and Gokana Local Government Areas

S/N	Statement Items	Khana LGA n= 240		Remarks	Gokana LGA n= 80		Remarks
		Mean	Std.		Mean	Mean	
11	E-Governance will improve access to government information and services for community members	2.84	0.93	HE	2.74	0.86	HE
12	E-Governance promotes transparency and accountability in community development projects	2.82	0.86	HE	2.76	0.85	HE
13	Online platforms for public complaints and feedback encourage community participation in decision-making.	2.81	0.86	HE	2.84	0.85	HE
14	E-Governance enhances the efficiency of public service delivery in rural communities.	2.96	0.82	HE	2.79	0.83	HE
15.	E-Governance improves citizen engagement in environmental sustainability projects.	2.65	0.83	HE	2.81	0.87	HE
Grand Mean		2.82	0.86	HE	2.79	0.85	HE

Source: Research's Field Result, 2025

The result presented in **Table 4.3** shows the mean ratings and standard deviations of respondents' responses on the potential impact of **e-governance** on community engagement and sustainable development in **Khana** and **Gokana Local Government Areas**. The grand mean scores of **2.82** in Khana and **2.79** in Gokana indicate that respondents agree to a **high extent (HE)** that e-governance has a significant potential impact on enhancing community engagement and promoting sustainable development in the study areas. The result reveals that **e-governance improves access to government information and services** for community members, with mean scores of **2.84** in Khana and **2.74** in Gokana. This implies that the introduction of e-governance platforms such as government websites, mobile applications, and information portals will enhance the availability of public information and make it easier for community members to access government services, including environmental protection programs and health services. Additionally, the result shows that **e-governance promotes transparency and accountability in community development projects**, with mean ratings of **2.82** in Khana and **2.76** in Gokana. This suggests that digital governance platforms, such as online budget tracking and e-procurement systems, will enable community members to monitor government projects, report cases of corruption, and hold public officials accountable for the delivery of development projects. Furthermore, the study reveals that **online platforms for public complaints and feedback encourage community participation in decision-making**, with mean ratings of **2.81** in Khana and **2.84** in Gokana. This finding indicates that e-governance platforms that allow community members to lodge complaints, provide feedback, and participate in public consultations will promote inclusiveness and enable citizens to have a voice in local governance. The result also indicates that **e-governance enhances the efficiency of public service delivery in rural communities**, with mean scores of **2.96** in Khana and **2.79** in Gokana. This implies that the adoption of e-governance systems will streamline

administrative processes, reduce bureaucratic delays, and improve the timely delivery of essential services such as education, healthcare, and social welfare programs. Moreover, the result shows that **e-governance improves citizen engagement in environmental sustainability projects**, with mean scores of **2.65** in Khana and **2.81** in Gokana. This suggests that e-governance platforms can facilitate information sharing, mobilize community members for environmental campaigns, and promote participation in environmental protection initiatives such as tree planting, waste management, and climate change adaptation projects. The grand mean scores of **2.82** in Khana and **2.79** in Gokana confirm that e-governance has a **high potential impact** on community engagement and sustainable development. These findings align with the study by Adebayo and Lawal (2021), which emphasized that e-governance systems improve public service delivery, foster transparency, and promote citizen participation in governance processes. The result highlights the transformative role of e-governance in empowering rural communities to actively engage in decision-making processes and contribute to the sustainable development of their localities.

Hypotheses Testing

1. **There is no significant difference between the challenges and barriers to ICT adoption in community development in Khana and Gokana Local Government Areas.**

Table 4.4: **Z-test Analysis of the difference between the challenges and barriers to ICT adoption in community development in Khana and Gokana Local Government Areas**

Mean	n	Mean	Std.	Z-test	Z-Calculated	Decision
Khana	240	2.82	0.76	0.185	± 1.96	Not Significant
Gokana	80	2.80	0.86			

Source: Research's Field Result, 2025

Table 4.4 contains the Z-test Analysis of the difference between the challenges and barriers to ICT adoption in community development in Khana and Gokana Local Government Areas. The calculated Z-test value is approximately 0.19. Since the calculated Z-value (0.19) is less than the critical value of ± 1.96 at a 95% confidence level, the decision is to accept the null hypothesis. This means there is no significant difference in the mean responses between Khana and Gokana Local Government Areas regarding the challenges and barriers to ICT adoption in community development.

2. **There is no significant difference between the impact of the Digital literacy for lifelong learning on community development in Khana and Gokana Local Government Areas.**

Table 4.5: Z-test Analysis of the difference between the impact of the Digital literacy for lifelong learning on community development in Khana and Gokana Local Government Areas.

Mean	n	Mean	Std.	Z-test	Z-Calculated	Decision
Khana	240	3.25	0.88	-0.87.	± 1.96	Not Significant
Gokana	80	3.35	0.89			

Source: Research's Field Result, 2025

Table 4.5 shows the results of Z-test Analysis of the difference between the impact of the Digital literacy for lifelong learning on community development in Khana and Gokana Local Government Areas. The calculated Z-test value is -0.87. Since the Z-calculated value (-0.87) falls within the acceptance region of ± 1.96 , the result is not significant. This implies that there is no significant difference between the impact of digital literacy for lifelong learning on community development in Khana and Gokana Local Government Areas.

3 There is no significant difference between the impact of E-governance on community engagement and sustainable development in Khana and Gokana Local Government Areas.

Table 4.6: Z-test Analysis of the difference between the impact of E-governance on community engagement and sustainable development in Khana and Gokana Local Government Areas.

Mean	n	Mean	Std.	Z-test	Z-Calculated	Decision
Khana	240	2.82	0.86	0.27.	± 1.96	Not Significant
Gokana	80	2.79	0.85			

Source: Research's Field Result, 2025

Table 4.6 contains the results of the Z-test Analysis of the difference between the impact of E-governance on community engagement and sustainable development in Khana and Gokana Local Government Areas. The calculated Z-test statistic value is **0.27**. Since the Z-calculated value (**0.27**) is less than the critical Z-test value (± 1.96), the decision is not significant, meaning there is no significant difference between the impact of ICT adoption on community development in Khana and Gokana Local Government Areas.

Discussion of Results and Comparison with Previous Studies

Table 4.1 presents the mean ratings of respondents' responses on the challenges and barriers to ICT adoption in community development in Khana and Gokana Local Government Areas. The result shows that lack of infrastructure (electricity and internet connectivity) poses a major barrier to ICT adoption, with mean ratings of 2.82 in Khana and 2.81 in Gokana. This finding is consistent with the study by Okwu and Ede (2020), which identified poor infrastructure as a critical challenge to ICT adoption in rural communities. Similarly, the high cost of ICT devices and services was reported as a significant barrier, with mean ratings of 2.93 in Khana and 2.78 in Gokana. This aligns with the findings of Adesina et al. (2020), who emphasized that the affordability of ICT devices is a major determinant of ICT adoption in developing regions. Limited ICT skills among community members were also identified as a major barrier, with mean ratings of 2.84 in Khana and 2.83 in Gokana. This supports the study by Okonkwo and Nwafor (2020), which found that digital literacy gaps hinder ICT adoption in rural communities. Additionally, cultural beliefs and resistance to technology were noted as barriers, with mean ratings of 2.73 in Khana and 2.76 in Gokana. This result is in line with the work of Adeyemi and Aluko (2019), who highlighted the role of cultural norms in shaping technology adoption patterns in African communities. Poor government policies and lack of support were also identified as challenges, with mean ratings of 2.80 in Khana and 2.81 in Gokana, consistent with the findings of Ekeh and Nnadi (2021), who emphasized the importance of government intervention in promoting ICT adoption in rural areas.

Table 4.2 shows that digital literacy plays a critical role in facilitating the use of ICT for lifelong learning and community development. The grand mean scores of 3.25 in both Khana and Gokana LGAs indicate a high level of agreement among respondents. Digital literacy was found to enhance access to educational materials online, with mean ratings of 3.52 in Khana and 3.57 in Gokana, supporting the findings of Okonkwo and Nwafor (2020). The study also reveals that digital literacy improves the ability to use e-learning platforms, encourages participation in online training programs, and empowers community members to seek job opportunities through digital platforms. These findings align with the work of Adebayo and Lawal (2021), who emphasized the transformative role of digital literacy in promoting socio-economic development in rural communities.

Table 4.3 presents the potential impact of e-governance on community engagement and sustainable development. The grand mean scores of 2.82 in Khana and 2.79 in Gokana indicate a high extent of agreement that e-governance enhances access to government information and services, promotes transparency and accountability, encourages community participation, and improves public service delivery. These findings are consistent with the study by Adebayo and Lawal (2021), which highlighted the role of e-governance in fostering citizen participation and promoting sustainable development. The result also aligns with the work of Olatunji and Ogunleye (2020), who found that e-governance platforms improve service delivery and enhance community engagement in rural areas. The findings of this study underscore the importance of addressing infrastructural deficits, promoting digital literacy, and implementing supportive government policies to enhance ICT adoption, lifelong learning, and community development in Khana and Gokana LGAs.

For the test of hypotheses, the first hypothesis investigated the significant difference between the challenges and barriers to ICT adoption in community development across the two local government areas. The Z-test analysis in Table 4.4 indicated a calculated Z-value of 0.19, which is less than the critical value of ± 1.96 at a 95% confidence level. This result implies that there is no significant difference between the mean ratings of respondents in Khana and Gokana LGAs regarding the challenges and barriers to ICT adoption. Both areas identified lack of infrastructure (electricity and internet connectivity), high cost of ICT devices, limited digital literacy, cultural beliefs, and poor government policies as the major challenges. This finding aligns with the study by Okwu and Ede (2020), which reported that lack of infrastructure and poor government policies hinder ICT adoption in rural communities. The second hypothesis examined the impact of digital literacy for lifelong learning on community development in Khana and Gokana LGAs. The Z-test analysis presented in Table 4.5 revealed a Z-calculated value of -0.87, which falls within the acceptance region of ± 1.96 . This result indicates that there is no significant difference in the impact of digital literacy between the two local government areas. The findings showed that digital literacy enhances access to educational materials, promotes participation in online training programs, improves employability, and encourages collaboration among community development groups. These results corroborate the findings of Okonkwo and Nwafor (2020), who emphasized that digital literacy empowers individuals to leverage ICT for lifelong learning and community development.

The third hypothesis assessed the potential impact of e-governance on community engagement and sustainable development in Khana and Gokana LGAs. The Z-test analysis in Table 4.6 yielded a calculated Z-value of 0.27, which is lower than the critical value of ± 1.96 . This indicates no significant difference between the two local government areas in the perceived impact of e-governance on community development. The findings highlighted that e-governance improves access to government information, promotes transparency and accountability, enhances public service delivery, and encourages citizen participation in decision-making processes. These results are consistent with the study conducted by Adebayo and Lawal (2021), which found that e-governance systems improve public service delivery and foster citizen engagement in governance processes.

Conclusion

Based on the findings, the study concludes that the challenges and barriers to ICT adoption in community development in Khana and Gokana LGAs are similar, with lack of infrastructure, high cost of ICT services, limited digital literacy, cultural resistance, and poor government support being the major barriers. Digital literacy plays a critical role in facilitating lifelong learning and community development across both local government areas by enhancing access to educational resources, promoting capacity building, and improving employability. E-governance has the potential to improve community engagement and sustainable development by providing access to government information, promoting transparency, enhancing service delivery, and encouraging citizen participation.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Government and private sector stakeholders should invest in the provision of basic ICT infrastructure such as electricity and internet connectivity to improve ICT adoption in rural communities.
2. Community-based digital literacy training programs should be organized to equip community members with the necessary skills to leverage ICT for lifelong learning and community development.
3. Subsidies and financial assistance programs should be introduced to make ICT devices and services more affordable for community members.
4. Government agencies should implement inclusive e-governance platforms that allow community members to access public services, provide feedback, and participate in decision-making processes.
5. Cultural reorientation campaigns should be conducted to address resistance to technology and promote positive attitudes towards ICT adoption in rural communities.

Contributions to Knowledge

The study contributes to the existing body of knowledge in the following ways:

1. It provides empirical evidence on the challenges and barriers to ICT adoption in community development in Khana and Gokana Local Government Areas.
2. The study highlights the role of digital literacy in enhancing lifelong learning and community development in rural communities.
3. It underscores the potential of e-governance systems in improving community engagement and promoting sustainable development in rural communities.
4. The findings provide a basis for policy formulation and implementation aimed at improving ICT adoption, digital literacy, and e-governance in rural communities.

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