Analysis Of Information and Communication Technology (ICT) And Social-Economic Development of Ogbia, Bayelsa State

Clement Ebizimor Deinne
Department of Geography and Environmental Management, Faculty of Social Sciences, Niger-Delta University, Wilberforce Island, Bayelsa State, Nigeria
Corresponding author: cedeinne@ndu.edu.ng

Ifeanyi Otodo
Department of Sociology, Faculty of Social Sciences, Niger-Delta University, Wilberforce Island, Bayelsa State, Nigeria
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Abstract
This study examines information and communication technology (ICT) and social-economic development of Ogbia, Bayelsa state. A survey research design was adopted. Results revealed that male respondents were 324 (65.2%), while females represent 173 (45.9%). This study showed that civil servants were (53.2%), followed by traders (26.5%). Moreover, (3.2%) had no-formal education, while (19.7%) had primary education, (30.6%) had secondary education, and (46.5%) had tertiary education. The result of chi-square calculated value of 401.04 and chi-square table value of 7.815 at (df=3) implies that Ogbia does have the needed ICT infrastructure for social-economic development at 0.05 level of significance. The result of Pearson Correlation reveals that r = 0.678 which translates to a positive relationship between ICT and socio-economic development of Ogbia at 0.05 significance level. This study recommends direct investment in ICT infrastructure and improved access to infrastructural facilities in Ogbia to accelerate socio-economic development of the coastal community in Bayelsa state.

Keyword: *ICT; socio-economic development; stratified sampling; Bayelsa State*

1. INTRODUCTION

The United Nations Development Program (UNDP) defined ICT as, "ICTs are basically information handling tools, a varied set of goods, applications and services that are used to produce, store, process, distribute and exchange information. They include the 'old' ICTs of radio, television and telephone, and the 'new' ICTs of computers, satellite and wireless technology and the Internet. These different tools are now able to work together, and combine to form our 'networked world' – a massive infrastructure of interconnected telephone services, standardized computing hardware, the Internet, radio and television, which reaches into every corner of the globe".

Chacko (2005) stated that ICT can contribute towards development. ITU (2019) stressed that (ICT) has revolutionized societies globally, but it also presents challenges at both global and local levels. Understanding these challenges is crucial for policymakers, stakeholders, and communities to harness the potential benefits of ICT effectively. At the global level, one significant problem is the digital divide, which refers to the unequal access to and use of ICT among different regions and populations. Guillèn and Suårez (2005) stated that historically, a lack of access to ICT was defined as a 'digital divide' a separation of society, based upon who has or not effective access to digital technology. Studies of the digital divide keep us aware that access and the use of ICTs are unequally distributed both across geographic areas and within communities.

World Bank (2016) reported that many developing countries and marginalized communities face limited infrastructure, connectivity issues, and lack of digital skills, hindering their ability to fully participate in the digital age. This creates a global divide, exacerbating existing social and economic inequalities. (OECD, 2019) stated that the rapid pace of technological advancement presents challenges related to obsolescence and digital exclusion. As ICT evolves, older technologies become outdated, and individuals and communities who do not have access to the latest ICT tools and skills risk being left behind. This creates a cycle of exclusion and perpetuates the digital divide. According to UNESCO (2017), at the local level, specific challenges arise in the implementation and utilization of ICT in communities. One problem is the lack of ICT infrastructure, particularly in remote and underserved areas. Insufficient broadband connectivity, limited electricity supply, and inadequate telecommunications networks hinder the effective deployment of ICT and restrict access to its benefits.

Researchers such as Ajijola, et.al., (2015) examined socio-economic effect on the use of ICT among rural farming households in Afijio LGA, Oyo state. Tijani, Anaeto & Emerhirhi (2017) studied perceived effects of use of information and communication technologies (ICTs) on rural farmers' knowledge in Orlu agricultural zone, Imo State. Chikaire, Anaeto, Emerhirhi & Orusha (2017), examined the effects of use of ICTs on farmers' agricultural practices and welfare in Orlu agricultural zone of Imo State, Nigeria. Okafor & Enemuo (2022) studied the role of ICT entrepreneurship education for global employability and competitiveness in Nigeria. However, there is a dearth of research on the analysis of information and communication technology (ICT) and social-economic development of coastal cities in Nigeria. It is against this background that this study focuses on the nexus between adequate ICT infrastructure and socio-economic development of Ogbia, Bayelsa state with a view to examine the availability of the needed ICT infrastructure for socio-economic and development of Ogbia, and determine the relationship between ICT on the social-economic development of Ogbia, Bayelsa state.

The following hypotheses were formulated for this study

i. Ogbia does not have the needed ICT infrastructure for socio-economic

development.

ii There is no significant relationship between ICT and social-economic development of Ogbia, Bayelsa state.

This article is structured thus; aside this introductory section, a discussion of the research methods and sampling technique is undertaken in section 2. A discussion of results and findings is presented in section 3. Section 4 concludes with the summary of findings and recommendations.

2 RESEARCH METHODS AND STUDY AREA

2.1 The study area

Ogbia lies between latitude 41^0 16'N and 41^0 13'N and longitude 19^0 21'E and 18^0 52'E. Ogbia town is bounded on the North by communities like Otuabagi, Otuogidi and on the South by Oloibiri. It is also bounded on the West by Abobiri, Otuobula; on the East it is bounded by Opume, Amakalakala respectively (see Fig 1). Ogbia is reported to have a population of 179,926 people as at the 2006 Census, NPC (2006) cited in Morgan, Wasini & Larry (2021).

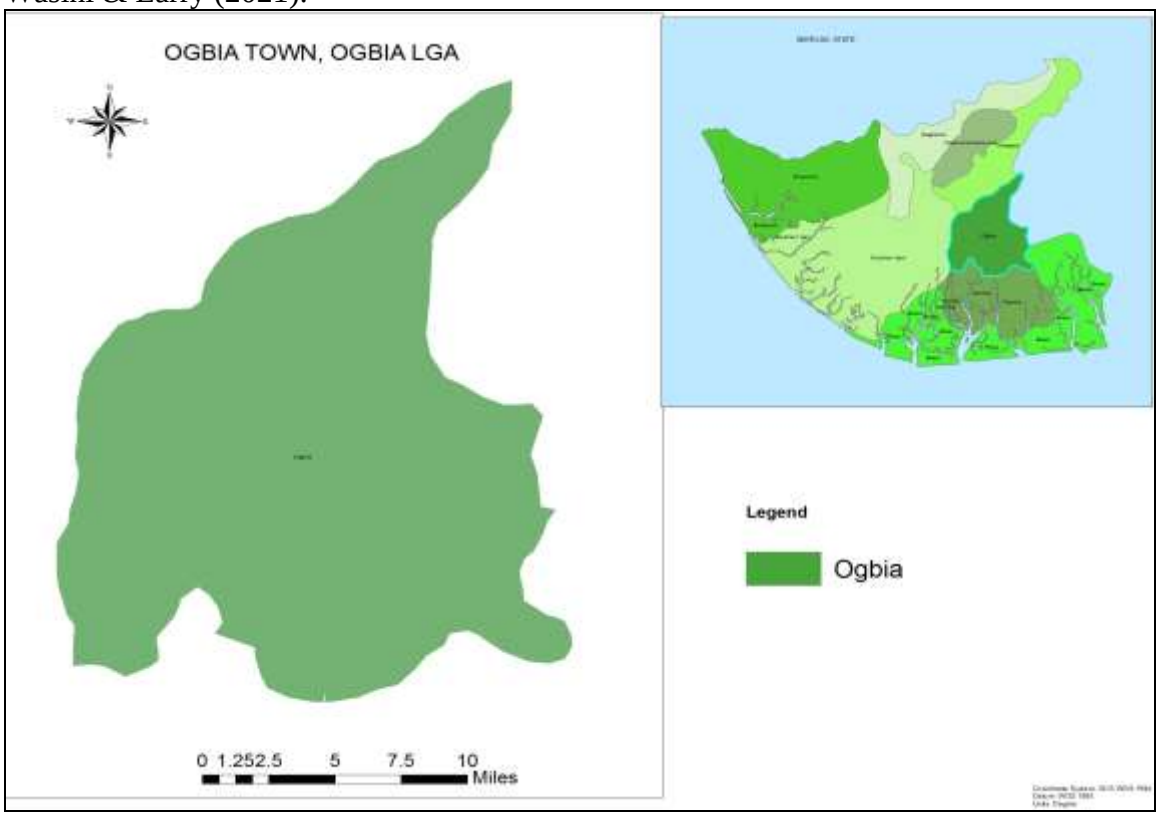

Figure 1: The Study Area
Source: Author's GIS Laboratory (2024)

2.2 Research methods

A survey research design, and a three staged stratified sampling technique was utilized. In the first stage, Bayelsa state was purposively selected as the study area due to the dearth of research on the relationship between information and communication technology (ICT) and socio-economic development in the state. In the second stage, Ogbia town was purposively chosen for this study due to the need of ICT facilities for the social-economic development of the town. In the third stage, using a systematic random sampling, a structured questionnaire was administered to household heads at a sampling interval of every fifth (5) household along major streets of Ogbia town.

2.2.1 Sample Size and Sampling Technique

The 2006 population of Ogbia 179,926 was projected using a growth rate of 3% to a population of 299,000 in 2024. According to Krejcie and Morgan (1970), professional researchers typically set a sample size of 500. This sample size was further increased by 5% to account for sampling errors, non-response and human errors. Hence, 532 copies of structured questionnaire were administered to heads of households in Ogbia town, using a systematic random sampling technique at a sampling Interval of every fifth (5) household. Out of the 532 questionnaires administered, 497 were retrieved representing a response rate of 90.03%.

The first hypothesis which states that Ogbia town does not have the needed ICT infrastructure for socio-economic development was tested using Chi-square, while the second was tested using Pearson Correlation. The analyses was carried out at 0.05 significance level.

3. DISCUSSION OF FINDINGS

A discussion of the demographic profile of the respondents and findings is undertaken in this section.

3.1 The demographic profile of respondents

Table 1 presents the information on gender distribution of the respondents surveyed, a significant proportion of 324 respondents representing (65.2%) are males, while 173 (34.8%) are females.

Table 1: Gender of respondents

Gender	Frequency	Percentage (%)
Male	324	65.2
Female	173	34.8
Total	497	100

Source: Author's Fieldwork, 2024

Table 2 presents the information on the distribution of respondents according to age group. A significant proportion of the respondents 247 (49.7%) are less than 20 years,

followed by 160 (32.2%) respondents between 21-30 years, while 54 (10.7%) are between 31-40 years old.

Table 2: Age categories of respondents

Categories	Frequency	Percentage (%)
<20 years	247	49.7
21-30 years	160	32.2
31-40 years	54	10.7
41-50 years	32	6.4
51 years and above	4	0.8
Total	497	100

Source: Authors' Fieldwork, 2024

Table 3 represents information on the occupations of the respondents surveyed, 5.6% of the sample engaged in farming; 53.2% in civil service works, 26.5% in trading and 15.9% engage in other forms of occupation. This study shows that civil servants had the highest occupational list with 53.2% followed by trading (26.5%). This implies that Ogbia is an urban settlement and the residents are majorly into civil service and other economic activities like trading.

Table 3: Occupation of respondents

Occupation	Frequency	Percentage (%)
Farmer	13	5.6
Civil servant	124	53.2
Trader	59	26.5
Others(small scale businesses)	37	15.9
Total	497	100

Source: Authors' Fieldwork, 2024

Table 4 presents information on the educational status of the respondents, out of the total 497 respondents surveyed, 16 respondents representing (3.2%) had no-formal education, while 98 (19.7%) had primary education, 152 (30.6%) had secondary education and 231 (46.5%) had tertiary education. This implies that educational level of respondents surveyed is considerably high since a significant proportion of the respondents had up to tertiary education.

Table 4: Education levels of the respondents

Educational Status	Frequency	Percentage (%)
No-Formal Education	16	3.2
Primary	98	19.7
Secondary	152	30.6
Tertiary	231	46.5
Total	497	100

Source: Authors' Fieldwork, 2024

3.2 Test of research hypotheses

As stated in the method of data analysis, the first hypothesis was tested with Chi square analysis, while the second was tested using Pearson Product Moment Correlation.

3.2.1 Research hypothesis one

The hypothesis that Ogbia town does not have the needed ICT infrastructure (preconditions) for socio-economic development.

$$X^2 = \sum \left(\frac{0-e}{e}\right)^2$$

Where 0 = Observed frequency

E = Expected frequency which is the total number of respondents ÷ by the total categories of responses i.e, 497 ÷ 4 = 124.25

The degree of freedom (df) = total categories of responses – 1 (N – 1), 4 – 1 = 3

The calculated Chi-square is 410.04

The critical value at a 0.05 level of significance, 3 df = 7.815.

The chi-square test in Table 5 shows that the calculated X^2 value is 410.04, while the table value is 7.815. This result implies that Ogbia town does have the needed ICT infrastructure for socio-economic development.

Table 5: Chi-square test

Category	Observed Frequency (0)	Expected Frequency (E)	(0 – E)	$(0 – E)^2$	$\left(\frac{0-E}{E}\right)^2$
Strongly Agree	50	124.25	-74.25	538.31	4.33
Agree	53	124.25	-71.25	5,076.56	40.86
Disagree	65	124.25	-59.25	3,510.56	28.25
Strongly Disagree	329	124.25	204.75	41,820.25	336.6
Total	497				410.04

Source: Authors' Analysis, 2024

3.2.2 Research hypothesis two

The result of the Correlation in Table 6 shows a coefficient value (r = 0.678) at 0.001 significance level. This result implies a positive relationship between ICT and socio-economic development of Ogbia Town.

Table 6: Pearson Product Moment Correlation Analysis

Variables		ICT	Socio-Economic Development
ICT	Pearson Correlation	1	.678**
	Sig. (2-tailed)		.000
	N	497	497

Socio-Economic Development	Pearson Correlation	.678**	1
	Sig. (2-tailed)	.000	
	N	497	497

Source: Authors' Analysis, 2024

The widespread adoption of digital technologies has revolutionized various aspects of human life, empowering individuals, businesses, and governments alike. The relevance of ICT in economic and social development cannot be overstated. The transformative power of digital technologies has touched every aspect of human life, leading to significant advancements in various domains. From driving economic growth and productivity to promoting financial inclusion and empowering individuals through education and healthcare, ICT has proven to be a catalyst for positive change in society.

This findings corroborate the results obtained by Ajijola, Awoyemi, Egbetokun, Odetola and Usman (2015), the authors discovered that use of ICTs (Radio) and accessibility to ICT contributed significantly to socioeconomic development of Afijio LGA, Oyo state, Nigeria.

4. SUMMARY AND CONCLUSION

This study examined information and communication technology (ICT) and socioeconomic development of Ogbia town in Bayelsa state. A cross-sectional survey research design adopted. The chi-square test revealed that the calculated value is 410.04, while the chi-square table value is 7.815 at 0.05 significance level, which implies that Ogbia town had the needed infrastructure for sustainable ICT development. The Pearson Correlation result revealed that (r = 0.678) which implies a positive relationship between ICT and socio-economic development of Ogbia town at 0.05 significance level. This finding is in tandem with results obtained by Ajijola, Awoyemi, Egbetokun, Odetola and Usman (2015). Hence, this study recommends direct investment by the state government and non-governmental organizations in ICT infrastructure and improved access to the ICT facilities in Ogbia town to accelerate the socioeconomic development of the coastal community in Bayelsa state

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