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Gender Analysis of Access and Utilisation of Information and Communication Technologies in Ekiti state, Nigeria

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Abstract

There is disparity in access to Information and Communication Technologies between male and female especially in developing countries. This study did a gender analysis of access and use of ICTs in Ekiti state, Nigeria. Multistage sampling procedure was used to select 178 respondents. Data collected were analysed using descriptive statistics and t-test at $\alpha_{0.05}$. Radio (198.7), mobile phones (186.4) and television (182.9) were the mostly accessed ICT tools. More (30.7%) male had appreciable access to ICTs than (25.6%) female. Also, more (25.6%) male use ICTs appreciably than (23.9%) female and the pattern of ICT preferences (radio, television, and mobile phone) were the same among them. More (35.8%) female had substantial constraints to ICTs than (22.7%) male, and significantly different (t=-3.744) in constraints to ICTs access and use.

1. Introduction

Effective and sustainable agricultural development depends on access to economic and other physical resources such as technology by all individuals involved in the enterprises. It is rather unfortunate that the rural area where major agricultural activities take place is characterised with inadequate infrastructures, poor information dissemination system, low standard of living and poor health delivery system (Ekong, 2003). There is therefore the challenge to improve rural life and all forms of activities that can be found there. An important tool that has been identified to have the potential for overcoming this challenge is the Information and Communication Technology (ICT).

The contribution of ICTs to the development and progress of nations has been described as tremendous, especially in the area of development communication. The breakthrough in technology and innovation has brought vast benefit to certain sectors and sub-sector of a number of countries' economy. ICTs transcends the layman's view that limits it to computer system and telecommunication, it is rather conceptualised as innovation that facilitates the capturing, storage, processing, transmission and display of information by several means. In essence, ICTs are sets of technologies that facilitate communication and processing, storage, retrieval and transmission of information. According to Mobolaji (2004), it involves the tools used for the acquisition, production, transformation, storage and transfer of data or information either electronically, manually or through other means in forms such as vocal, pictorial, textual and numerical so as to facilitate interactions. They include amongst others; VCDs, fax machines, telephone, outdoor media, computer system, multimedia projector, newspapers, journals and filmstrips etc (Yahaya, 2003).

The promise of ICTs in the facilitation of development is that it can energise the collection, processing and transmission of data resulting in faster diffusion of quality information to the people in a bottom-up and interactive manner (Uguru, 2001). These technologies offer new approaches to agricultural information management, which ensure access to vast information and contribute immensely in closing the gap between urban and rural dwellers in that regard.

Access to resources generally, including information, has been reasonably determined on gender basis. Researches from around the world have shown that gender inequality, in terms of access to information, tends to slow down economic growth and make escape from poverty more difficult (Adejo, Idoka, and Adejo, 2013; Gillwald, Milek, and Stork, 2010; UNECA, 2005). Concern for gender issues in agriculture has often narrowly been limited to interests in designing technology suitable for the condition under which women work in order to improve their food production capabilities. Gender analysis of access and use of information will help to explain and organise social relationships and obligations within households, communities and the society at large.

ICTs are important tools that can be used to increase the capability of women's participation in societies and make them more effective in the agricultural workforce. This will require good ICT infrastructure and access to education and training for comprehensive and expanding range of economic and social activities (Montagnier and Welsum, 2006). ICTs are therefore very important for the achievement of equal access to information content and control of content, as well as capacities and connectivity, which will lead to reduction in gender disparity in terms of education, economic opportunities and decision-making (UNECA, 2005).

Lack of adequate statistics relating to the gender digital divide has led to significant deficiencies in the knowledge and the analytical approach to the problem of access and use of ICTs in development efforts. This study was therefore designed to do a gender analysis of access and utilisation of ICTs in Ekiti state. The specific objectives of the study are to:

1. Determine the level of access to ICTs facilities by men and women.
2. Ascertain the extent of use of ICTs by male and female respondents.
3. Find out respondents' preference for specific ICT tools as source of information.
4. Identify the respondents' constraints to access and utilisation of ICTs in the study area.

The following hypotheses were tested to provide further insight into the study.

H_{01}: There is no significant difference in level access and utilisation of ICTs by male and female in the study area.

H_{02}: There is no significant difference in the constraints to access and utilisation of ICTs between male and female respondents in the study area.

2. Materials and Methods

The study was conducted in Ekiti state, southwest Nigeria. It is located between longitudes 4°51′ and 5°45′ east of the Greenwich meridian and latitudes 7°15 and 8°51′ north of the Equator. Indigenes of Ekiti state is are of Yoruba tribal extraction. It lies south of Kwara and Kogi state, East of Osun state and bounded by Ondo state in the east and in the south. The state has total land area of 5887.890sq km, 16 Local Government Areas (LGAs) and a total population of 2,384,212 persons (NPC, 2011).

Agriculture is the main occupation of the people in the area, which provide income and employment for more than 75% of the people. The study area is endowed with a vast area of fertile land for the cultivation of arable crops such as rice, maize, cassava, tomatoes and a variety of vegetables and cash crops like sugarcane, kola nuts, cocoa, and oil palm. The study population comprised of all adults in state. Multistage sampling procedure was used to select the respondents. Two, out of the three senatorial districts in the state, were randomly selected (Ekiti Central and Ekiti South). One LGA was randomly selected from each of the selected senatorial districts. Two communities were randomly selected from the selected LGAs. Then, there was a systematic selection of 22 households from each of the selected communities. The respondents at households were purposively selected based on sex i.e. selecting equal number of male and female, which gave a sample size of 176 respondents.

Interview schedule was used to solicit responses on access to available ICTs, extent of ICT usage, preferences for specific ICT tools and constraints to access and use of ICT facilities. Data collected was described with the use of descriptive statistics such as frequency and percentages while t-test was used for test of differences in pursuit of the study hypotheses.

3. Results and Discussion

3.1 Personal characteristics of the respondents

Results on Table 1 revealed that most (71.60) of the respondents are below 50 years of age. With the mean age of 40.48 years, this implies that the respondents are still in their active and productive ages. This finding is in line with that of Yekinni (2011), who reported the mean age of 44.9 years for respondents in a similar study. Also, 56.8% of the respondents were married, while only 19.9% do not have formal education. Farming is the primary occupation of 29.0% and secondary occupation to 57.6% of the respondents.

Table 1. Distribution of respondents based on personal characteristics

Characteristics	Frequency	Percentages
Age		
20 – 34	68	38.6
35 – 49	58	33.0
50 – 64	36	20.5
65 – 79	14	8.0
Marital Status		
Married	100	56.8
Single	42	23.9
Widowed	20	11.4
Divorced	14	8.0
Years of formal education		
None	35	19.89
1 – 6	35	19.89
7 – 12	72	40.91
13 – 17	34	19.32
Literacy language		
Not applicable	26	14.8
Yoruba language only	62	35.2
Ibo language only	2	1.5
English language only	10	5.7
Yoruba and English languages	79	43.2
Primary occupation		
Farming	51	29.0
Civil Service	35	19.9
Artisan	33	18.8
Business	31	17.6
Student	26	14.8
Secondary Occupation		
Farming	101	57.6
Business	31	17.6
Student	18	10.2
Total	176	100

Table 2. Distribution of respondents based on access to ICTs, n=178

ICT facilities	To a large extent	To a lesser extent	Not at all	Weighted score
Radio	98.5	1.7	0.0	198.7
Mobile phone	86.4	13.6	0.0	186.4
Television	83.5	15.9	1.0	182.9
Posters	34.7	64.6	1.0	134.0
Newspaper	32.4	64.2	6.0	129.0
E mail	7.4	40.3	92.0	55.1
Social network	6.3	37.5	99.0	50.1
Land phone	0.0	0.0	176.0	0.0

3.2 Access to ICTs

According to results on Table 2, most of the respondents have access to radio (198.7), mobile phone (186.4) and television (182.9); being the three most accessible ICT formats. This finding suggests that these ICT tools have great potentials for use in development communication in the study area. Furthermore, gender analyses of access to ICTs, on Table 3, revealed that male have slightly higher access compared to female. This finding can be explained by the fact that the digital gap between male and female is reducing with time (Sorenson, 2002).

3.3 Use of ICTs

The study categorised and reported the various uses to which ICT tools are put; results on Table 4 showed that the respondents mostly use ICTs appreciably to obtain market information (57.4%), for leisure and entertainment (56.8%) and record keeping (54.0%). Results of level of use of the facilities, on Table 5, showed that more (25.6%) of men use ICTs appreciably than women (23.9%). This finding is in

line with the general opinions in gender and technology studies that men adopt and use ICTs more than women (Jerneck and Olsson, 2014; Gillwald *et al.*, 2010 and Gefen and Straub, 1997).

3.4 Preference for ICTs

Results on Table 6 shows that radio is the most preferred ICT tool (1.72) in the study area, this is followed by television (2.34) and mobile phone (2.46).

Table 3. Distribution of respondents based on level of access to ICTs, n=178

Gender	Level of access	
	High	Low
Male	30.7	19.3
Female	25.6	24.4
Total	56.3	43.7

Table 4. Distribution of respondents based on ICT use, n=178

Uses of ICTs	Level of use	
	High	Low
Obtaining market information	57.4	42.6
Leisure and entertainment	56.8	43.2
Record keeping	54.0	46.0
Religious and cultural related information	48.9	51.1
Advertising	48.3	51.7
Developmental Information	47.2	52.8
Government policies and programme	46.6	53.4
Health information	46.0	54.0
Connecting with customers	41.5	58.5
Education and training purposes	39.2	60.8

Table 5. Distribution of respondents based on level of ICT use, n=178

Gender	Level of use	
	High	Low
Male	25.6	24.4
Female	23.9	26.1
Total	49.5	50.5

Table 6. Distribution of respondents' preference of the ICT tools

ICTs Facilities	Mean scores	Rank
Radio	1.72	1st
Television	2.34	2nd
Mobile phone	2.46	3rd
Newspaper	4.76	4th
Multimedia	5.44	5th
Poster	6.30	6th
Land phone	7.04	7th
Email	7.27	8th
Social Network	7.7	9th

The finding is not unconnected with the fact that radio can be run on batteries, is relatively cheap and portable. These characteristics make the device much more adaptable to the circumstances of the respondents in the study area. Stienen, Bruinsma, and Neuman (2007) mentioned that market information is disseminated via rural radio, TV or mobile phone to reach a wider audience, thereby creating a 'level playing field' between producers and traders. Furthermore, a gender analysis of the preferences for the ICT tools, on Table 7, does not reveal any difference between the male and female respondents. This finding is expected, since the issue of preference seem to be based on the available tools and as well as the intrinsic characteristics of the tools. The extent to which the tools fulfilled the needs of the people in the area informed their preferences, which informed the harmonised gender choices.

3.5 Constraints to access and use of ICTs

Results on Table 8 shows that availability (151.5), affordability (145.4), connection problem (139.2), in that order, are the mostly encountered constraints by most of the respondents in the study area. This finding points to the fact that ICT facilities still face substantial infrastructural deficit in the rural area. Gender analyses of the constraints on Table 9 reveals that more (35.8%) of the female respondents encountered substantial constraints than the male (22.7%) to access and use of ICTs. This finding can be explained by the fact that women usually encounter more constraints in aspects of socioeconomic, political, cultural, technicality/ complexity, skills and cost of acquisition (Gillwald *et al.*, 2010; Hafkin, 2002).

3.6 Tests of Hypotheses

The first hypothesis tested for difference in access and uses based on gender using t-test. Result of the analysis in Table 10 showed that there is no significant difference between male and female in their access (t=-0.85, p=0.397) and utilisation (t=1.352, p=0.178) of ICTs. This implies that men and women do not differ substantially in their access and use of ICTs. This finding is in line with the finding of UNECA (2005), who compared male and female in terms of ICT connectivity, physical access and social accessibility, and concluded that the disparities are real, but less significant.

The other hypothesis tested for difference between male and female as regards the constraints they faced in access and use of ICT tools. The test was carried out using t-test and the result on Table 11 reveals that significant difference (t=-3.744, p=0.000) existed in the constraints encountered by male and female in their access and use of ICTs tools. This is

due to the fact that females are generally more constrained than the males in terms of access and use of ICTs (Gillwald *et al.*, 2010; Hafkin, 2002).

Table 7. Distribution of respondents based on ICTs preference

	Male		Female	
ICTs facilities	Mean scores	Rank	Mean scores	Rank
Radio	1.7	1st	1.8	1st
Television	2.4	2nd	2.3	2nd
Mobile phone	2.5	3rd	2.4	3rd
Newspaper	4.5	4th	5.0	4th
Multimedia	5.3	5th	5.6	5th
Poster	6.3	6th	6.2	6th
Land phone	7.3	7th	6.7	7th
Email	7.3	8th	7.3	8th
Social media	7.7	9th	7.7	9th

Table 8. Distribution of respondents by constraints to access and use of ICTs, n=176

Constraints	Serious constraint	Mild constraint	Not a constraint	Weighted Scores
Availability	61.9	27.8	10.2	151.6
Affordability	58.5	28.4	13.1	145.4
Connection problem	47.7	43.8	8.5	139.2
Lack of technical assistance	52.8	33.5	23.6	139.1
Lack of loan/credit	46.0	44.3	9.7	136.3
Inadequate information	43.8	47.2	9.1	134.8
Irrelevance of ICT contents	47.2	40.3	12.5	134.7
Complexity	45.5	42.0	12.5	133.0
Illiteracy and technical know-how	47.7	34.1	18.2	129.5
Inadequate power supply	40.9	46.6	12.5	128.4
Accessibility	37.5	53.4	9.1	128.4
Lack of manpower	38.1	45.5	18.5	121.7
Schedules of household activities	31.3	51.7	17.0	114.3
Religion restriction	27.8	47.2	25.0	102.8
Gender restriction	26.1	38.1	35.8	90.3
Cultural restriction	21.6	43.2	35.2	86.4
Spouse restriction	23.9	25.0	51.1	72.8

Table 9. Distribution of respondents by level of constraints to access and use of ICTs

Gender	Level of constraints	
	High	Low
Male	22.7	27.3
Female	35.8	14.2
Total	58.5	41.5

Table 10. Tests of difference between male and female in access and use of ICTs

Variable	t-value	p-value	Inference
Access to ICTs	-0.850	0.397	Not significant
Uses of ICTs	1.352	0.178	Not significant

Table 11. Test of difference in constraints encountered by male and female in access and use of ICTs

Variable	t-value	p-value	Inference
Constraint	-3.744	.000	Significant

4. Conclusion and Recommendations

This study concludes that gender does not basically predetermine access and usage of ICTs in the study area however, it predetermines the severity of constraints faced in the access and use of ICTs. There is the need to address the identified constraints to access and use of ICTs among the respondents. It is specifically recommended that the government should invest more in the provision of basic infrastructure needed to facilitate access and use of ICTs.

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