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Research article

UNDERLYING CHALLENGES OF INFORMATION AND COMMUNICATION TECHNOLOGY ADOPTION IN COMMUNITY DEVELOPMENT EFFORTS BY NDAGBO WOMEN TOWN UNION GROUP OF ABIA STATE, NIGERIA

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ABSTRACT

Challenges of ICT adoption by Ndagbo–Women Town Union Group was conducted in Abia State, Nigeria. It made use of 120 respondents realized through multi- stage sampling method. Data were generated using structured questionnaire and participant observations respectively. Data analysis made use of descriptive statistics. Results revealed that the mean age and monthly income of the respondents were 42.9 years and ₦ 70,079.00 respectively. About 75 % and 83.3 % of the respondents were literates and married. About 29.2, 25, 20, and 16.7% respectively of the respondents were traders, farmers, self – employed, and public servant respectively. Results equally, revealed that all (100 %) of the respondents, 79.2 %, 66.7 %, and 33,3 % respectively owed phones, belonged to cooperatives, held leadership positions and could send text messages with phones respectively. Radio, ATM,

Phones, Videos, Tape–recorder, and Cameras were identified as ICT resource facilities frequently accessed and used by the respondents. Lack of ICT equipment/ accessories, lack of awareness, lack of computer skills, lack of empowerment and lack of local content among others were identified as limiting factors to adoption of ICT resource facilities in the study area. Spearman's correlation coefficient (r_s) = 0.947, $H0_1$ is hereby rejected and the alternative accepted . Zcal. = 0.104*, Since Zcal = 0.104*< Ztab = 1.64*, $H0_2$ is therefore accepted. The study recommends awareness creation and computer skill training for the rural women. Also, inclusion of local content and ICT needs for rural women should be given a major priority.

Key Words: Ndagbo-Women Town Union Group, ICT, Community Development,

INTRODUCTION

Information and communication Technology (ICT) is the current and topical issue that has reduced the world into a global village. The world today has been described as an information society[9] and the effective use of ICTs can be regarded as the defining element of the 21st century. ICT tools have helped people to find, explore, analyze, exchange and present information, most importantly, without discrimination[5]. ICT when appropriately used can provide quick access to ideas and experiences from wide range of people, communities and cultures[8]. In agreement,[5] asserted that technology has become an imperative tool for economic and business growth, helping to access produce and apply information to managing business and developing human capacities. He further, contended that undoubtedly, the explosion in mobile phone usage in Nigeria has placed the country as the fastest growing market in Africa, giving the country's prospect to enjoy the benefits of technology on a different level.[1] corroborated the above observations when they stated that ICT application in agriculture enhanced farmers' ability to collate information, arouse collaborative learning among farmers , present avenue for exchange of time sensitive information (such as market rise, disease out breaks) and facilitates multi – stake holder brain–storming, and equally, facilitates training and demonstration among farmers. However,[2] contended that in as much as ICT has enabled communities and institutions to get quality and affordable services easily, that the quality of information about ICT situation in African countries Nigeria inclusive, differs from one country to another and also with institutions, organizations and individuals. It was on that premise that[8] argued that access to ICTs implied not only the physical availability of those models and channels but also, the existence of the right conditions for getting and communicating information that are not bound by language, culture or distance. Therefore, he asserted that the use of ICTs implied the level to which the potentialities of information technologies devices were harnessed for information generation and transfer. This implies that whenever, ICT is available, its usage depends on the capability of the user. Additionally,[8]observed that ICT capability equals knowledge and skills required for effective utilization of communication equipment and correctly receiving and transmitting information.[11] confirmed this by asserting that most African nations face a lot of challenges such as poverty, hunger and disease and therefore, warned that further isolation of these nations from not participating in the ICT revolution would exacerbate the gap between the rich and poor. He further, suggested evaluation of social and economic impacts of ICTs in order to create opportunities for capacity building that would ensure beneficial use and absorption within national economies and civil society.

On the other hand,[2] contended that women have less income, education, time, mobility and face religious and / or cultural constraints that restricted their access to and use of ICT. Therefore, opined that some groups of women (rural women) are more disadvantaged than the younger, more literate or richer urban women. In like manner,[9] emphasized the above by observing that the use of ICTs is limited by lack of awareness, skills, training, a shortage of capital resources for sustainability and maintenance and low provision of appropriate content both in terms of

language and subject matter.[7] equally, observed acute lack of infrastructure, mostly in the South-East rural Nigeria which seriously limited opportunities for women to use ICTs for economic and social development. On the other hand,[4] defined community as term used to describe human population within a specific locality or district, who share common interest, basic infrastructural facilities and natural resources. He further defined community development as a process by which the efforts of the people themselves are united with those of the government authorities to improve the economic, social and cultural conditions of communities and to enable them to contribute fully to national progress. This implies that   community development is a process where community members come together to take collective actions and generate solutions to their common problems. Therefore, community development ranges from small initiatives within a small group to large initiatives that involve the broader community. Often, when we think of community we think in geographic terms. Our community is the city, town or village where we live. When community is defined through physical location it has precise boundaries that are readily understood and accepted by others [6]. Evidences on ground in the rural areas of Nigeria today, have shown that it is almost impossible to plan for any meaningful community development without the women and their groups [6]. Therefore, the Ndagbo-Women Town Union Group (NWTUG) is a group made up of all married women to Ndagbo Community in Umuahia North Local Government Area of Abia State, Nigeria. The roles of this women group apart from complementing those of the males include, decision – making in the leadership affairs of the community, engagement into community development activities, women mobilization and networking among others [6]. The group is one of the three main leadership components via men's town union group, and that of the youth wing. The three groups are independent but inter – related in decision – making in the community's affairs. However, the men's group's decisions over- ride and supersede that of the other two groups when it comes to cultural and traditional issues [6]. It was based on the above that the study sought to assess the extent of adoption of ICT facilities by the NWTUG in their community development efforts in the study area.

Therefore, the following objectives guided the study to:

 (i) describe the socio – economic characteristics of the respondents,
 (ii) identify the ICTs resources facilities frequently accessed and used by the respondents to enhance their social and quality of life, education business in the study area,
 (iii) ascertain the respondents' perception on the access and use of ICT in the study area, and
 (iv) identify challenges to access and use of ICT in the study area

 The following null hypotheses were tested:

$H0_1$= There is no significant relationship between access and use of ICT by the respondents in the study area?

HO_2 = There is no significant difference between access and use of ICTs resource facilities in the study area?

MATERIALS AND METHOD

The study was conducted in Ndagbo Community of Umuahia North Local Government Area of Abia State, Nigeria. The population of the study comprised all persons that belonged to Ndagbo – Women Town Union Group (NWTUG). The Ndagbo community is one of the seven component communities of Ibeku Clan of Umuahia [6]. The leadership of the community is the Town Union comprising the men's group, the women's group and the youths' group respectively. Each of the groups has its own constitution guiding its members, but the main constitution of the community is drawn from the culture and traditions of the community. The culture and traditions of the community have undergone changes and modifications over time due to the contributions from these three main groups [6]. Issues bordering on culture and traditions, the decisions of the men's group supersede that of the other two groups.

3

The tempo of development depends on the dynamics of the groups. The study focused on the underlying challenges to the adoption of ICT by the NWTUG in their community development efforts. A sample size of 120 respondents from the women's group was realized through multi- stage randomized sampling methods. Firstly, the Ndagbo - Women Group was stratified into four main groups via their educational attainments. Those with no formal education, Those who spent six years in school, Those who spent twelve years and Those who spent above twelve years in school respectively. This was done through the help of the secretaries of the women age grades of NWTUG. Secondly, through a simple randomized method thirty (30) respondents each were selected from the four (4) groups to give a total of 120 respondents that was used for the study. Structured questionnaire and participant observation methods were employed in realizing the primary data. Data were analyzed using statistical tools such as frequency counts, percentages, pooled means, ranks, Spearman's correlation coefficient, and Z- Test scores respectively.

RESULTS AND DISCUSSION

Socio – Economic Characteristics

Table 1 shows that the mean age of the respondents was 42.9 years with a very high proportion (83.33%) married with only 12.5 and 4.2 % being divorced / separated and widowed respectively. Table 1 equally, shows that 29.2, 25.0, 20.0 and 16.7 % of the respondents were traders, farmers, self- employed and public servants respectively. Only very minor proportions (1.7 and 6.6 %) of the respondents were house – wives and other occupations respectively. Table 1 equally shows that the mean monthly income of the respondents was ₦70,079.17 with about 79.2 % of them belonging to co-operative societies, 66.7 % having held leadership positions and all (100 %) listening to radios and owning one respectively. Table 1 further show that all (100 %) the respondents owned a phone and only 33.33 % of them could send text messages with their phones. The implications of the results in Table 1 are that with about 75 % of the respondents being literates, with mean age of 42.9 years the respondents were quite qualified in terms of capacity building training in ICT. The result collaborates [3] who stated that age and education co relate positively with level of participation.

Determination of ICT Resource Facilities that are most commonly accessed and used by the Respondents.

Table 2 shows that the most accessed and used ICT resource facilities in the study area were: Radio, Automated Teller Machine (ATM), Cell – Phones, Video Player, Tape- Recorder, and Cameras respectively. They were averagely scored in descending order 71.67, 62.67, 61.66, 60, and 56.67 % respectively. This implies that the 12 ICT resource facilities investigated, only 6 were accessed and used by the respondents. The ICT resource facilities include: Radio, 50 % of the respondents for educational purposes, 75 % for health, 66.67 % for business, 83.33 % for agricultural and social welfare respectively (Table, 2). Equally, for ATM, 58.33 % of the respondents were for education, 41.67 % for health, 58.33 % for business, 66.67 % for agriculture and 83.33 % for social welfare respectively. Tape – recorder, 25 % of the respondents were for education and health respectively, while 83.33 % were for business and social welfare and 66.67 % for agriculture respectively. Table 2 further shows that for video – player, 50 % of the respondents were for education, 33.33 % for health, while 66.67 % for business, and agriculture respectively and 83.33 % for welfare. Also, for cameras, 16.67 % of the respondents were for education, 33.33 % for health, 58.33 % for business, 66.67 % for agriculture and 83.33 % for social welfare respectively (Table, 2). This implies that the ICT resource facilities were employed differently in the study area. This is in line with [7] who observed that the use of ICT varies with individuals, organizations and institutions.

Respondents' Perceptions on Access and Use of ICT Resource Facilities in the Study Area.

Table 3 shows that 12 ICT resource facilities were investigated and only 6 were accessed by the women in the study area. The six are: Radio which was scored a mean of 3.5 and ranked 1st, ATM scored 3.3 and ranked second,. Others are Cell – Phones, TV, Social Media, and Video – Player respectively. They are scored and ranked as follows: 2.83, 2.67, and 2.5 respectively, and ranked 3rd, 4th, 5th, and 6th respectiv1ely. On the other hand, Table 3 further shows 12 ICT resource facilities that were investigated for usage by the women respondents, only three were used. They are: Cell – Phones 3.90 and ranked 1st, followed by radio with a mean of 3.25 and ATM with a mean of 2.75 and ranked 3rd respectively (Table, 3). The implication of this result is that the women could not use all the accessed ICT resource facilities in the study area due to other barriers and limitations, in other words, ICT accessibility does not translate to usage, this collaborates [8] who stated that women could not use ICT facilities as accessed due to illiteracy, poverty, cost and other barriers that limit them.

Challenges limiting Access and Usage of ICT Resource Facilities in the Study Area.

Table 4 shows that all (100 %) of the respondents indicated high cost of ICT equipment/ accessories, lack of computer skills/ training, lack of empowerment, and awareness respectively as the most limiting factors. Table 4 further shows that 83.33 % of the respondents indicated lack of local content, and 66.67 % indicated lack of source of power, lack of acceptability and lack of time respectively as other limiting factors to access and use of ICT by the women in the study area. The finding collaborates [10] who observed that men and women do not benefit equally from ICTs deployed in the rural area of developing countries, since the ICT did not address the women's needs.

CONCLUSION

The study was conducted in Ndagbo Community of Umuahia North Local Government Area of Abia State, Nigeria. It was guided by following objectives: describe the socio – economic characteristics of the respondents, identify the ICTs resources facilities frequently accessed and used by the respondents to enhance their social and quality of life, ascertain the respondents' perception on the access and use of ICT in the study area, and identify challenges to access and use of ICT in the study area. The study made use of 120 respondents realized through multi – stage sampling method. Data generated using structured questionnaire and participant observations were analyzed using descriptive statistical tools. Results revealed that the mean age and monthly income of the respondents were 42.9 years and ₦70,079.00 respectively. About 75 % and 83.3 % of the respondents were literates and married respectively. Results equally revealed that all (100 %) the respondents, 79.2 % , 66.7 %, and 33.3 % respectively owed cell phones, belonged to co- operatives, held leadership positions, and could send text messages respectively. Lack of ICT equipment / accessories, lack of awareness, lack of computer training skills, lack of empowerment and lack of local contents respectively were identified as limiting factors to adoption of ICT resource facilities in the study area. The study recommends awareness creation and computer skill training for the women. Also, inclusion of local content and ICT needs of the rural women mostly those in the study area should be incorporated into the ICT packages   for   them.

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Table 1: Distribution of the Respondents According to Socio – Economic Characteristics. n= 120

S/ Nos	Variables	Frequency	Percentage	Mean
01	**Age in years**			
	18 - 33	35	29.17	
	34 - 49	25	20.83	
	50 - 65	30	25.00	42.9 years
	66 - 81	20	16.67	
	82 and above	10	8.33	
02	**Marital Status**			
	Married	100	83.33	
	Divorced/ Separated	15	12.50	
	Widowed	5	4.17	
03	**Occupation**			
	Trading	35	29.17	
	Farming	30	25.00	
	Public Service	20	16.67	
	Self – employed	25	20.83	
	Others	8	6.66	
	House – Wife	2	1.67	
04	**Monthly/Income/Naira**			
	10,000 – 35000	25	20.83	
	36000 - 61000	35	29.17	
	62000 – 87000	30	25.00	₦70,079.17
	88000 – 113000	20	16.67	
	11400 & above	10	8.33	
05	**CooperativesMbers**			
	Yes	95	79.17	
	No	25	20.83	
06	**Leadership Positions**			
	Yes	80	66.67	
	No	40	33.33	
07	**Listen to Radio**			
	Yes	120	100	
	No	0	0.0	
08	**Radio ownership**			
	Yes	120	100.00	
	No	0	0.00	
09	**Phone ownership**			
	Yes	120	100.00	

	No	0	0.00
10	**Can send text**		
	Yes	40	33.33
	No	80	66.67

Source: Field Survey 2016

Table 2: Distribution of the Respondents According to ICTs Resources Accessed and Used in the Study Area.

n= 120

S/No	ICTs Resources	EDUCATION		HEALTH		BUSINESS		AGRICULTURE		SOCIAL WEFARE		AVERAGE MEAN
		F	%	F	%	F	%	F	%	F	%	
01	Radio	60	50	90	75	80	66.67	100	83.33	100	83.33	71.67
02	Cell-Phones	40	33.33	30	25	100	83.33	100	23.33	100	83.33	61.66
03	Tape-Recorder	30	25	30	25	100	83.33	80	66.67	100	83.33	56.67
04	ATM	70	5833	50	41.67	70	58.37	80	66.67	100	83.33	62.67
05	Video Player	60	50	40	33.33	80	66.67	80	66.67	00	83.33	60.00
06	Social Media	20	16.67	30	25	40	33.33	40	33.33	80	66.67	35.00
07	Camera	20	16.67	40	33.33	70	58.33	80	66.67	100	83.33	51.67
08	CD/DVD/ROM	20	16.67	30	25	50	41.67	70	58.33	100	83.33	45.00
09	Computer/Internet	10	8.33	20	16.67	20	16.67	60	50	60	50	28.33
10	Land Phone	-	00	-	00	-	00	-	00	-	00	00.00
11	News Paper	20	16.67	30	25	30	25	30	25	40	3.33	28.00
12	Mobile Cinema	10	8.33	-	-	-	-	10	8.33	80	66.67	16.67

Source: Field Survey 2016
Decision Rule: Any score ≥50% was adjudged to be significant while any scores <50% was adjudged insignificant.

Table 3: Distribution of the Respondents According to access and use of ICT in the Study Area.

n= 120

S/No	ICT Resources	Access Rating						Use Rating					
		Always 4	Often 3	Sometimes 2	Never 1	Mean Total	Ranks	Always 4	Often 3	Sometimes 2	Never 1	Mean Total	Ranks
1	Radio	60	40	20	-	3.50 420	1st	60	40	10	10	3.25 390	2nd
2	ATM	70	30	20	-	3.42 410	2nd	40	30	30	20	2.75 330	3rd
3	Cell Phone	50	60	10	-	3.3 400	3rd	50	60	10	-	3.90 400	1st
4	TV	40	30	40	10	2.83 340	4th	20	30	50	20	2.42 290	4th
5	Social Media	30	40	30	20	2.67 320	5th	-	40	30	50	1.9 230	6th
6	Video Player	30	30	30	30	2.5 300	6th	-	40	40	40	2.00 240	5th
7	News Papers	10	30	40	40	2.08 250	7th	5	25	40	50	1.88 225	7th
8	Tape Recorder	10	20	40	50	1.92 230	8th	-	20	50	50	1.75 210	8th
9	Cameras	5	10	20	85	1.46 175	9th	-	-	40	80	133 160	9th
10	Computers	-	10	20	90	1.33 160	10th	-	-	-	120	1.00 120	10th
11	Scanners	-	-	20	100	1.17 140	11th	-	-	-	120	1.00 120	11th
12	Fax-Machine	-	-	10	110	1.08 130	12th	-	-	-	120	1.00 120	12th

Source: Field Survey 2016

N/B;   Always was weighted and scored 4 points

Often was weighed and scored 3 points

Sometimes was weighed and scored 2 points

Never was weighed and scored 1 point.

Decision Rule: Any mean ≥ 2.5 was adjudged to be significant and any mean <2.5 was adjudged insignificant.

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Table 4: Distribution of the Respondents According to challenges to access and use of ICT in the Study Area.
n= 120

S/No	Challenges to ICT	Frequency	Percentage
01	High Cost of ICT Equipment		
	Yes	120	100
	No	-	-
02	Lack of Awareness		
	Yes	120	100
	No	-	-
03	Lack of Computer Skills/Training		
	Yes	120	100
	No	-	-
04	Lack of Source of Power		
	Yes	80	66.67
	No	40	33.33
05	Lack of Acceptability		
	Yes	80	66.67
	No	40	33.33
06	Lack Of Empowerment		
	Yes	120	100
	No	-	-
07	Lack of Time		
	Yes	80	66.67
	NO	40	33.33
08	Lack of Local Content		
	Yes	110	91.67
	No	10	8.33

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Source; Field Survey, 2016

Table 5: Calculation of Spearmans's Correlation Co-efficient

S/No	ICT Resources	Access (ICT)		ICT Use		D	D^2
		Score	Ranks	Score	Ranks		
1	Radio	3.5	1st	3.25	2nd	-1	1
2	ATM	3.42	2nd	2.75	3rd	-1	1
3	Cell-Phones	3.33	3rd	3.90	1st	2	4
4	TV	2.83	4th	2.42	4th	0	0
5	Social Media	2.67	5th	1.90	6th	-1	1
6	Video-Player	2.5	6th	2.00	5th	1	1
7	News-Paper	2.08	7th	1.88	7th	0	0
8	Tape-Recorder	1.92	8th	1.75	8th	0	0
9	Cameras	1.46	9th	1.33	9th	0	0
10	Computers	1.33	10th	1.00	10th	0	0
11	Scanners	1.17	11th	1.00	10th	1	1
12	Fax-Machine	1.08	12th	1.00	10th	2	4
							13

$r_s = 1 - \dfrac{6\Sigma D^2}{n\,(n^2-1)}$ ……………… (1) $= 1 - 6 \ \times \ 13 / \ 12\,(11^2) = \ 1 \ - 0.0537 = \ 0.947$

$\Gamma_s = 0.947$

Decision Rule =   Therefore since Γ_s is positive and significant . It then implies that there is a significant relationship between access and use of ICT resource facilities in the study area. This also means that when access increases, use also increases. Therefore, H0$_1$ which states that there is no significant relationship between access and use is hereby rejected and the alternative accepted.

Where
r_s = spearman's correlation coefficient

D^2 = Difference between ranked pairs

n = number of observations.

CALCULATION OF Z- SCORES.

Z- test, which formula is thus;

$$Z \text{ calculated} = \frac{\overline{X} - X}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \ (2)$$

Where:

Z = Z calculated

$\overline{X}1$= mean score for ICT Resource Facilities access.

$\overline{X}2$= mean score for ICT Resource Facilities use.

n_1 = number of observation for access

n_2 = number of observation for use

S^2 = Variance of access

S_2^2 = Variance of use

Table 6: Calculation of Zcal

ACCESS Mean = X	$(X_1 - X)^2$	$\sqrt{\frac{s^2}{n_1}}$	USE Mean = X_2	$(X - X_2)^2$
3.50	1.596		3.25	1.5129
3.42	1.124		2.75	1.5329
3.33	0.941		3.90	3.5344
2.83	0.221		2.42	0.1600
2.67	0.096		1.90	0.0144
2.50	0.020		2.00	0.0004
2.58	0.078		1.88	0.0200
1.92	`28.794		1.75	0.0730

1.46	0.810	1.33	0.4260
1.33	1.061	1.00	1.0400
1.17	1.416	1.00	1.0400
1.08	1.638	1.00	1.0400
X = 2.36	Σ(117.9853.136)	Y = 2.02	Σ (9.440)

Zcal. = 0.34 ∕ 3.26 = 0.104

Decision Rule : Zcal. = 0.104* , and Ztab. = 1.64* Therefore, since Ztab = 1.64* > Zcal. = 0.104* respectively. It then implies that there on significant difference between access and use of ICT resource facilities in the study area. $H0_2$ is hereby accepted.