

Evaluation of Relevance of Mobile Phone on Rural Livelihood Choices in South-West Nigeria: An Implication for Rural Poverty Alleviation.

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-----ABSTRACT-----

The twenty first century is synonymous with proliferation of telecommunication boom whereby mobile phone has become an indispensable social capital by which economy thrives. Recently, mobile phone has altered rural livelihood choices. Arising from this background, this study examined how the advent of mobile phone has created new livelihood choices and enhanced rural livelihoods with the intent of ameliorating poverty scourge. Specifically, this study examined the socio-economic characteristics of the Respondents, identified the factors that influence the choice of livelihood activities among rural dwellers, assessed the relevance of mobile phone usage on livelihood related activities and assessed the severity of constraints encountered by the respondents in usage of mobile phone for their livelihood related activities. A multistage sampling technique was employed for the study. Data were collected with the use of structured interview schedule and described using descriptive tools. Logistic regression analysis was used to investigate the significance of factors influencing the choice of livelihood among the respondents and relevance of mobile phone on their livelihood activities.

The study identified farming, trading and artisanship as major livelihood activities in the study area and majority of the sampled respondents possessed their personal mobile phone which they use on their livelihood related activities. The study further identified MTN as the major Mobile Phone Service Provider while majority of the respondents indicated to have been using mobile phones for their livelihood related activities for over seven years averagely. The need to contact customers and reduce frequency of trips ranked first among factors that influence mobile phone usage on livelihood related activities. Logistic regression analysis to investigate the significance of factors influencing the choice of livelihood among the respondents and the relevance of mobile phone on their livelihood activities revealed that technical know-how ($p \leq 0.002$), natural endowment ($p \leq 0.01$), geographical/environmental factors ($p \leq 0.004$), inheritance ($p \leq 0.000$), acquired skills ($p \leq 0.000$), parental influence ($p \leq 0.040$), physical condition of respondents ($p \leq 0.043$) as factors influencing the choice of livelihood activities was significant at 5% level of significance. The study identified poor power supply as major constraint to usage of mobile phone therefore recommends a provision for an alternative power source to recharge the mobile phone of Respondents, the study also suggested as part of corporate social responsibility among Network Service Providers, a toll-free platform where Extension Service and other rural community development Partners could operate among respondents who are mostly farmers.

Keywords: *Mobile Phone, Rural Livelihood, Poverty, Livelihood Choices, Poverty Alleviation, Evaluation*

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I. INTRODUCTION

The deregulation of the telecommunication sector of the Nigerian economy has led to a geometric increase in the number of mobile phone users in the country where mobile phone possession and usage was hitherto considered a luxury. Mobile phones are increasingly becoming affordable for an average Nigerian (even to the poor) and have assisted in overcoming rural isolation and facilitated prompt information delivery and feedback mechanism. Recently, Mobile phones have opened new opportunities and altered how things are done,

opening new social fabrics, thereby boosting the social capital of the rural poor, reduced necessity of trips, enhanced prompt and timely market information, access to government services, it accelerates wider delivery of appropriately packaged agricultural information and other germane information required to assist the livelihoods of the rural dwellers. Mobile phones offer information and knowledge thereby exposing the rural people to better livelihood choices and grant them an unrestricted access to reliable market information and open new regional and global markets that fetch better prices and increased earnings which are critical components of poverty alleviation strategies. Robert Chapman (2016) opined that mobile-phones have assisted in the empowerment of a number of rural communities in Nigeria and have given rural poor a voice that permits them to contribute to the national development process. With mobile phones, several livelihood alternatives are being generated via the establishment of rural information centres, phone kiosks, POS Services, sales of recharge cards and mobile phone accessories, repair and charging of mobile phones and lots more, thereby bringing about a positive trends in rural livelihoods by augmenting rural poverty alleviation strategies. Ownership of mobile phones by the rural people has immense potentials in providing information to rural dwellers on markets, prices, source of capital, technology and weather Osondu, C. K and Ibezim (2015). It also ensures a contact with development partners, Non-government Organizations, health care institutions, suppliers of inputs and also facilitates socio-economic development in the livelihoods of the rural people. Sound decision-making which is dependent on the availability of a comprehensive, accurate, timely, and up-to-date information have been possible among the rural entrepreneur class sequel to their possession of mobile phone through which information are exchanged with development partners. According to the Nigerian Communications Commission, the number of active mobile-phone lines in use in Nigeria as at September 2015 is put about 148 million with teledensity put at 107.61% (NCC,2015). Information sharing is the fulcrum around which development revolves, Provision of continuous and updated information to the rural populace on various activities such as current market prices of goods and services, market locations, simple food processing techniques, weaving, dying, fashion and designing, agricultural practices, transportation system and new job opportunities is an essential condition for livelihoods diversification, enhanced productivity and income growth. Generally, information provision facilitates the resourcefulness of the local users as well as their standard of living which in turn has a positive on effect on their poverty status (Ugwu, 2009). Rural teledensity in Nigeria is quite low and this has been attributed to the dearth of communication infrastructure in most regions of rural Nigeria, a situation that has created the digital gap between the urban and rural areas in Nigeria (Okewusi E.B 2016). This situation has warranted the need for extension of mobile telecommunication infrastructure especially in the rural areas where major income generating activities revolves around agriculture. In the recent years, the proliferation of mobile phone in rural life has tilted the dynamics of rural life and altering how things are done in the rural economy. This study therefore aims at evaluating the relevance of mobile phone usage for rural livelihood choices as an approach to rural poverty alleviation in South-West of Nigeria.

The specific objectives are to:

Describe the socioeconomic characteristics of the respondents.

Identify the factors influencing choice of livelihood activities among the Respondents.

Assess the relevance of mobile phone usage on livelihood related activities by the Respondents

Assess the severity of various constraints to the use of mobile phone on livelihood activities.

Hypotheses of the study

Based on the stated objectives of the study, the following hypothesis was tested;

H₀₁: There is no significant relationship between factors influencing the choice of livelihood activities among the Respondents and the relevance of mobile phone usage on their livelihood related activities.

II. METHODOLOGY

A multistage sampling technique was employed for this study whereby 33.3% of the states in South-west Nigeria were randomly selected. Respondents were drawn from Oyo and Ogun states out of the six states that make up the South-West region of Nigeria. The next stage involved random selection of fifty percent (50%) of Agricultural Development Programme zones in each of the selected states and two ADP zones were randomly selected from each of the four (4) ADP zones in each of both states. The ADP zones in Oyo state include: Ibadan/Ibarapa, Oyo, Ogbomoso and Saki zones and in Ogun state are Abeokuta, Ikenne, Ijebu-Ode and Ilaro zones. For this study however, Ibadan/Ibarapa and Saki were selected from Oyo state and Ijebu-Ode and Ilaro zones from Ogun State. Thereafter, 25 percent of ADP blocks were randomly selected and a purposive selection of 20 percent of the registered trade groups in the ADP blocks were selected based on rurality and availability of mobile phone infrastructure. The list of registered members of each of the identified rural groups and associations in the selected ADP blocks were obtained and the final stage involved a random selection of ten and twenty percent of the total number of the registered members of each of the registered rural groups or associations from Oyo and Ogun states respectively. By this, a total of one hundred and sixty

respondents were selected from each of the states that make up the area for the study. The breakdown revealed the selection of five ADP blocks (Oluyole, Iddo, Ibadan/Ibarapa, Saki- West and Atisbo) from Oyo and three ADP blocks (Odogbolu, Isonyin and Ipokia.) from Ogun State.

Selected State ADP Zones/ Blocks and Number of Respondents of the Study

States	Selected ADP Zones (50%)	Selected ADP Blocks (25%)	Registered Rural Groups/ Associations	20% of Registered Rural Groups/ associations	Total Number of Registered members	10% & 20% of Total Registered Member from Oyo and Ogun Respectively
Oyo	Ibadan / Ibarapa Zone	Oluyole	46	9	561	56
		Iddo	22	5	346	35
		Ibarapa Central	18	4	315	32
	Saki Zone	Saki – West	17	3	196	20
		Atisbo	14	3	184	18
Ogun	Ijebu – Ode Zone	Odogbolu	30	7	475	95
		Isonyin	17	3	152	30
	Ilaro Zone	Ipokia	15	3	169	34
2 States	4 ADP Zones	8 ADP Blocks	179 Rural Groups/Associations	36 Rural Groups/Associations (20%)	2405 Total Registered Members	320 Respondents

Source: Field Survey 2020

III. RESULTS AND DISCUSSION

This study delves into the analyses and interpretation of results for the socio-economic characteristics of Respondents in accordance with the stated specific objectives and the hypothesis of the study. The result revealed the mean age of respondents to be 44years while those within the age range of 41 – 50 years are in the majority. This conforms to the finding by Ayoade (2012) who asserted that the rate of adoption of innovations most especially those that are technologically inclined is very high among the middle age category in Oyo State. The result also indicated male (63.4%) in majority perhaps for male being mostly household heads with propensity to own a productive assets over their female counterpart. Majority (85.9%) of the respondents are married. The result corroborates Adewale (2002) and Ayoade (2012) who opined that marriage institution is of great importance in south west Nigerians anyone of marriageable age that still remains single or the divorced are somewhat culturally stigmatized. Also, by religious inclination, the Christians (69.1%) are in the majority while respondents are moderately educated with about 67.2% educated up to High school. The result of the occupation shows that farming (44.1%), Trading (28.4%) and Artisanry (17.5%) were the major livelihood activities that respondents indulge in. The years of experience revealed the mean year of involvement in the chosen livelihood activities by the respondents as 18years while the average household size is six (6) members.

Socio-Economic Characteristics of the Respondents

Socio-Economic Characteristics	Frequency	Percentage (%)
Age (years)		
≤ 30	38	12.2
31-40	80	25.0
41-50	125	39.3
51-60	61	19.2
≥60	16	5.1
Sex		
Male	203	63.4
Female	117	36.6
Marital Status		
Married	281	87.8
Separated	19	5.9
Divorced	14	4.4
Widow	6	1.9
Religion		
Christianity	221	69.1
Islam	89	27.8
Traditionalist	10	3.1
Educational Attainment		
No formal education	36	11.2
Elementary Education	108	33.8
High School	125	39.2
Tertiary Education	51	16.1
Occupation		
Farming	138	43.1

Trading	85	26.5
Artisanship	52	16.1
Civil Service	19	6.1
Transportation	16	5.2
Clergy	10	3.1
Years of Experience on Livelihood (Years)		
≤ 10	97	30.3
11-20	96	30.3
21-30	78	24.4
31-40	41	12.8
≥ 41	8	2.5

Field survey 2020

Factors Influencing Choice of Livelihood Activities among the Respondents

The study investigated various factors that influence what each of the respondents do to earn a living and among the factors considered included: natural endowments, geographical or environmental factors, inheritance, acquired skills, parental influence, education/literacy, technical-know-how, physical condition of the respondent, access to capital, governmental policy and religious or cultural beliefs. The study revealed that 87.5 percent of the respondents signified technical-know-how as factor that determines their livelihood activities and this is the most ranked factor determining choice of livelihood. Also, 59.5 percent of the respondents identified natural endowment as determining factor of their livelihood activities. Also, government policy and legislation as a factor that determines what the respondents do to earn a living was relatively low as only 24.9 percent of the respondents identified it as determining their choice of livelihood, this may be sequel to the fact that the study was carried out in rural area of the states under study where government policy and legislations may barely impact the livelihood of the people which is mostly rooted in agriculture.

Distribution of Respondents by Factors Influencing Choice of Livelihood Activities by the Respondents.

Factor Influencing Choice of Livelihood	Frequency	Percentage
Technological Know-How	280	87.5
Natural Endowment	190	59.5
Geographical/Environmental Factor	203	63.5
Inheritance of Livelihood	175	54.8
Acquired Trainings and Skills	250	78.2
Parental Influence	231	72.3
Educational Attainment	171	53.6
Physical Condition of Respondents	154	48.3
Availability and Access to Capital	168	52.6
Government Policy and Legislation	80	24.9
Religion and Cultural Beliefs	31	9.7

Field Survey 2020

Multiple Choices

Distribution of Respondents by Relevance of Mobile Phone Usage on Various Aspects of Livelihood Activities

The study sought to examine how mobile phone usage have impacted on various aspects rural livelihood activities of the respondent and it was revealed that the need to contact customers and reduce frequency of trips (wms=0.99) was the most ranked relevance of mobile phone usage on the livelihood related activities of the respondents. The prominence of information sourcing and dissemination as ranked in this study substantiates the postulation of Ugwu, (2009) who opined that, provision of current and up-to-date information to the rural populace on the various aspects of their livelihood activities such as current market prices of goods, market locations, simple food processing, weaving, dying, fashion and designing, agricultural practices, etc. is a prerequisite for increased productivity and income growth. Generally, information provision increases the resourcefulness of the local users as well as their standard of living which on a long-run enhance the poverty status. Also, Kaba, Diallo, Plaisent, Bernar and N'Da, 2006; Michiels and Van Crowder (2001) stated that understanding rural people's livelihoods, the motivations behind adoption and usage and their perceived relative advantage derived from mobile phone usage is vital in understanding the adaptability of this technologies to social, cultural, and economic practices, thereby reinforcing the livelihood of the rural dwellers against risk, shock and unforeseen circumstances.

The least ranked relevance of mobile phone usage on the livelihood of the respondents however is the usage of mobile phone to carry out financial transaction and money transfer (wms=0.49) this however may be sequel to the fact that the study was carried out in rural area where presence of financial institution is not much pronounced and where respondents rarely operate banking system either for their level of literacy or lack of trust in the financial institutions.

Distribution of Respondents by Relevance of Mobile Phone Usage on Various Aspects of Livelihood Activities

	Very Relevant	Relevant	Barely Relevant	Not Relevant	WMS	Rank
	Freq.	Freq.	Freq.	Freq.		
The need to contact customers and reduce frequency of trips	306 (95.3)	14 (4.7)	-	-	0.99	1 st
Access to market information	266 (89.1)	34 (10.9)	-	-	0.90	3 rd
Procurement of inputs	210 (65.9)	96 (29.9)	7 (2.2)	7 (2.2)	0.86	5 th
Access to capital	138 (43.3)	72 (22.4)	60 (18.7)	49 (15.3)	0.64	11 th
To address emergency cases	249 (77.9)	57 (17.8)	3 (0.9)	11(3.4)	0.93	2 nd
Access to labour	128 (39.9)	109 (34.3)	61 (19.0)	22 (6.9)	0.69	10 th
Confirmation of delivery of goods and services	230 (71.9)	64 (19.9)	21 (6.5)	5 (1.6)	0.87	4 th
Aversion / reduction of perishability of goods	160 (49.8)	75 (23.4)	60 (18.9)	25 (7.8)	0.72	9 th
General security in the neighbourhood/ investment	123 (38.3)	159 (49.0)	15 (4.7)	23 (7.2)	0.73	8 th
Price negotiation with customer	187 (58.6)	107 (33.3)	16 (5.0)	9 (2.8)	0.82	6 th
Arrangement of logistics	125 (38.9)	158 (49.2)	21 (6.5)	16 (5.0)	0.74	7 th
Contact with Extension Agent & others development partners	49 (15.3)	134 (41.7)	64 (19.9)	77 (22.1)	0.58	12 th
Arrangement of business meetings	118 (36.8)	156 (48.6)	40 (12.5)	6 (1.9)	0.74	7 th
Financial transactions and fund transfer	102 (31.8)	100 (31.2)	53 (16.5)	65 (20.2)	0.49	13 th
Advertisement of product	168 (52.3)	83 (25.9)	30 (9.3)	39 (12.1)	0.73	8 th

Source: Field Survey, 2020

Figures in parenthesis are percentages

Severity of Various Identified Constraints to Ownership and Usage of Mobile Phone on Livelihood Related Activities

The study further revealed that numerous factors as depriving Respondents' opportunities of gaining ownership and usage of mobile phone on their livelihood related activities. Result identified poor power supply with weighted mean score of 0.60 as most severe constraint to mobile phone usage on livelihood activities of the respondents. This is in concordance with Falola and Adewumi (2013), who opined that non availability of electricity to charge up mobile phones remain very crucial issue on mobile phone usage among residents of Ondo state in south-west Nigeria. Also, instability and or fluctuation of mobile phone network service (wms=0.48) was ranked second most severe of all the constraints to mobile phone usage on the livelihood activities of the respondent. This implies that mobile phone technology is an innovation that enjoys a wide-spread acceptance in south-western Nigeria and this supports the finding of National Telecommunication Commission which opined that 63 percent of adult in south-western Nigeria possess mobile phones (NCC, 2014). This was further corroborated Blake (2014) who postulated that mobile phone usage has increased by 51 percent among rural adult in Nigeria between between the year 2012 and 2013.

Severity of Various Identified Constraints to Ownership and Usage of mobile Phone on Livelihood Related Activities

Constraints to Ownership and Usage of Mobile Phone on Livelihood Activities	Level of severity of Constraints				WMS	Rank
	Very serious constraint	Serious Constraint	Mild Constraint	Not a Constraint		
	F	F	F	F		
Poor Power supply	120 (37.4)	87 (27.1)	42 (13.1)	71 (22.1)	0.60	1 st
Cost of procurement of gadget	40 (12.5)	60 (18.7)	115 (35.8)	105 (32.7)	0.36	5 th
Cost of maintenance of gadget	29 (9.0)	78 (24.3)	95 (29.6)	118 (36.8)	0.37	4 th
Cost of recharge voucher	49 (15.3)	45 (14.0)	87 (27.1)	139 (43.3)	0.34	6 th
Cosmopolitaness/ Conservativeness on the part of rural dwellers	9 (2.8)	29 (9.0)	56 (17.4)	226 (70.4)	0.13	12 th
Distraction caused by handling of phone that leads to loss of man-day	19 (5.9)	76 (23.7)	70 (21.8)	155 (48.3)	0.29	8 th
Instability of mobile phone network	80 (24.9)	139 (43.3)	71 (22.1)	30 (9.3)	0.48	2 nd

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Poor Technical know-how	36 (11.2)	135 (42.1)	79 (24.6)	70 (21.8)	0.40	3 rd
Conservativeness on the part of the Respondents	19 (5.9)	49 (15.3)	88 (27.4)	164 (51.2)	0.15	10 th
Government Legislation/Policy on livelihood Activities	15 (4.7)	27 (8.4)	135 (42.1)	143 (44.5)	0.14	11 th
Risk of theft of phone	11 (3.4)	104 (32.4)	72 (22.4)	133 (41.4)	0.33	7 th
Exposure to social vices	8 (2.5)	73 (22.7)	107 (33.3)	132 (41.1)	0.18	9 th

Source: Field Survey 2020

wms = Weighted Mean Score

Test for Hypothesis of the study

The hypothesis for this study states that; there is no significant relationship between the factors influencing the choice of livelihood activities among the respondents and the relevance of mobile phone usage for livelihood related activities. The logistic regression analysis to test the significance of factors influencing the choice of livelihood among the respondents and the relevance of mobile phone on their livelihood activities revealed that technical know-how ($p \leq 0.002$), natural endowment ($p \leq 0.01$), geographical/enviromental factors($p \leq 0.004$), inheritance($p \leq 0.000$),acquired skills($p \leq 0.000$), parental influence($p \leq 0.040$), physical condition of respondents($p \leq 0.043$) as factors influencing the choice of livelihood activities of respondents have significant relationship with the relevance of mobile phone usage for livelihood activities at 5% level of significance.

However, it can be further explained that factors such as technical know-how, natural endowment, geographical/enviromental factors, inheritance, acquired skills, parental influence, physical condition of respondents have the probability of success (odds ratio) of 0.2982953, 0.1094245, 8.222929, 21.42031, 0.1034995, 5.154768, 2.469456, respectively. Also, the categorization of the level of relevance of mobile phone usage on the livelihood of the respondents setting the mean at 47.41 and the standard deviation put at 7.69 indicated that 84.4 percent of the respondents indicated relevance for mobile phone usage on their livelihood while 15.6 opined not relevant. It could therefore be deduced from the result of logistic regression that there exist a significant relationship between the factors influencing choice of livelihood among the respondents and the relevance of mobile phone usage on their livelihood related activities.

Result of Logistic Regression between the Factors Influencing Choice of Livelihood

Factors	Odds Ratio	Std. Err.	P>z	[95% Conf.Interval]	
Technological know-How	0.2982953	0.11877	0.002	0.1366	0.6509
Natural Endowment	0.1094245	0.07572	0.001	0.0281	0.4247
Geographical Factor	8.222929	5.976154	0.004	1.9787	34.170
Inheritance	21.42031	15.34612	0.000	5.2601	87.226
Acquired Skill	0.1034995	0.062796	0.000	0.0315	0.3399
Parental Influence	5.154768	4.249637	0.040	1.0244	25.938
Educational Attainment	1.893786	1.0699	1.130	0.6258	5.7308
Physical Condition	2.469456	1.10176	0.043	1.0299	5.9206
Access to Capital	0.7759544	0.31409	0.531	0.35097	1.7155

Categorization of Ratio of Relevance of Mobile Phone Usage for Livelihood Related Activities of the Respondents.

Variable	Range	Frequency	Percentage
Not Relevant (\bar{x} -SD)	(23- 40)	50	15.6
Relevant \geq (\bar{x} -SD)	(41-60)	270	84.4

Mean = 47.41

SD=7.69

IV. Conclusion

Based on the empirical evidences arising from the results of the study it is concluded that majority of the rural dwellers randomly selected for this study were moderately youthful with mean age of forty-four years

and in their active and productive stage of life with favourable disposition to adoption of mobile phone technology to enhance their livelihood activities. Majority (85.9%) are married and maintain a moderate household size with six (6) household members been the average household size. The respondents were moderately educated and this enhances their disposition towards adoption of innovation, particularly the adoption of mobile phone usage. Farming (44.7%), Trading (28.4%) and Artisanship (17.3%) were the prominent livelihood activities among the respondent.. The need to be in constant contact with customers and reduce frequency of trips (wms0.99) was the most identifiable relevance of mobile phone usage among respondents while monitoring of financial transactions and funds transfer (wms0.49) was the least relevance of mobile phone. Poor power supply (wms0.60), fluctuating mobile network service and poor technical know-how were the most severe constraints mitigating the usage of mobile phone in the study area. The study recommends provision for alternative power source for charging of mobile phones and a toll-free platform where those in the same livelihood group can enjoy unrestricted conversation and exchange of information on their livelihood concerns.

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