

# Investigating E-Readiness of Rural Banks in Ghana

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**Abstract :-Banks need to be plugged in to the information-based system at whichever level of their operations. Rural banks, in pursuit of their core mandate, face a myriad of challenges of which one is inadequate technology. As such, e-readiness seeks to measure the preparedness of an entity to enable it partake in the digital world. The study sampled data from 30 rural banks that were selected randomly, out of a population of 140 rural banks. Data in the study was organized using frequency tables and a multiple regression analysis done to determine the level of generalization of the sample results to the entire population. The study showed that network access influences the readiness of rural and community banks in Ghana. It was also obvious that network society-readiness significantly influences the e-readiness of rural and community banks. The study further found network economy to influence rural and community banks e-readiness significantly while network policy does not influence the e-readiness of rural and community banks.**

**Keywords:-** (8 Maximum) E-Readiness,

## I. INTRODUCTION

The nature of global relationships and processes have been highly influenced by information and communication technology (ICT), especially as ICT keeps evolving with time (World Bank, 2003; Domeher, et al., 2014).The world's economy has become highly dependent on access to information, as well as the capacity to partake in the global economic processes(Budhiraja&Sachdeva, 2002; Alaaraj & Ibrahim, 2014). To partake in this information-based system at whichever level, countries and institutions use an ICT channel. E-readiness seeks to measure the preparedness of an entity to enable it partake in the digital world(Alaaraj & Ibrahim, 2014).

As a formal financial institution, rural banks were introduced in Ghana to address the disparity between urban and rural areas in their access to financial services, especially credit (Kuffour, et al., 2012; Baffour, et al., 2013).Rural banks, like banks the world over, therefore seek innovative ways to achieve their purpose.This includes the incorporation of technologies (Domeher, Frimpong, & Appiah, 2014). An implication of this paper is that it will serve as a guide on how e-readiness is to be conceptualised and assessed in the banking sector. Based on this tailor, banking services can be tailored to meet the demands of clients based on existing technologies. In addition, this study will contribute to existing literature on e-readiness in general, and particularly in the banking sector.

### A. Problem Statement

Rural banks, in pursuit of their core mandate, face a myriad of challenges of which one is inadequate technology (Kuffour, et al., 2012; Baffour, et al., 2013). Countries and institutions have sought to measure how prepared they are in partaking in the information-based global economy, as seen in the increased interest and various assessments being conducted on e-readiness(Maugis, et al., 2005).Having realised that significant differences exist in factors which influence e-readiness, earlier e-readiness assessments have been criticized for assuming similar conditions in countries under study, and also mainly focusing on industrialising countries (Maugis, et al., 2005). In light of this, this paper seeks to determine how e-readiness is contextualised in Ghana's rural banking sector, on which basis e-readiness can be assessed.

### B. Objectives of the Paper

This paper seeks to explore the level of e-readiness in the rural banking sector in Ghana. Specifically, the paper will consider e-readiness in terms of conditions of access (infrastructure and services available) of the rural banks, as well as the specific applications that are available to clients of rural banks. For this study, rural banks were the focus.

### C. Research Questions

- How is e-readiness conceptualized in Ghana's rural banking sector?
- What is the level of e-readiness in the rural banking sector (i.e. infrastructure and services)?
- Which alternative(s)is/are being used to facilitatee-readiness in the rural banking sector?

### D. Organization of the Study

The paper is organised in five parts. The first part introduces the study and includes the problem statement, study objectives, and research questions. Following this section is a review of literature on e-readiness in general and rural banking in particular. The study methodology is presented in the third part. Presentation of study results and analysis are presented in the fourth section while the conclusions are summarised in the fifth section.

## II. LITERATURE REVIEW

ICT has facilitated the inter-connectivity of individuals irrespective of where a person is located. Having become an integral part of human activities, the success of any activity is largely dependent on the level of ICT integration into

those activities (World Bank, 2003). However, accessing ICT does not occur in a vacuum, but must be preceded by some preparations that facilitate the use of ICT. Such preparations seek to make the entity 'ready' to incorporate ICT into its activities (World Bank, 2003).

#### A. *E-Readiness*

The world's economy thrives on access to information, which is further facilitated by the levels of ICT development in a country (Budhiraja & Sachdeva, 2002). On the basis of ICT development, a marked difference exists between developed and developing countries. To bridge this gap and take advantage of the opportunities which exist in a world economy which is information based, developing countries need to put in place measures and strategies that can help them access the information channels. The measures must include deliberate actions to improve ICT-based infrastructure, without which integration to the information-based economy becomes challenging (Budhiraja & Sachdeva, 2002).

Information Readiness, also known as e-Readiness, shows how a country or institution is prepared to partake in the information-based networked environment (World Bank, 2003). It is an indication of the readiness of an institution or society to participate and tap into the opportunities that ICT presents in a knowledge-based society, and include factors such as infrastructure, human resources and policies necessary to facilitate this participation (Budhiraja & Sachdeva, 2002; Alaaraj & Ibrahim, 2014). E-readiness is the ability to pursue value creation opportunities that is facilitated by internet use (Maugis, et al., 2005: 316).

E-readiness is therefore a significant feature of the global economy, which is mainly characterised by digitised transactions. This has influenced measures being adopted to address health, education and production challenges in societies today (Alaaraj & Ibrahim, 2014). E-readiness has been widely associated with governments as a measure of good governance, and now also considers other sub-levels such as organizations/institutions and individuals (Alaaraj & Ibrahim, 2014). E-Readiness is assessed by considering how the various aspects and requirements needed for the usage of ICT has been provided or acquired by the institution involved (World Bank, 2003). At the country level, e-readiness assessments are presented in indices and rankings (Dada, 2006).

Various institutions such as Asian Pacific Economic Cooperation (APEC), Computer Systems Policy Project (CSPP), Economist Intelligence Unit (EIU), among others identify certain components in measuring the e-readiness of an institution (Alaaraj & Ibrahim, 2014; Budhiraja & Sachdeva, 2002; Dada, 2006). A review of some of these indicators reveals the existence of some indicators common to the various institutions, and include: Basic Infrastructure and technology; Level of Accessibility; Applications and services; E-environment; Policy enablers; Education and human resources (Alaaraj & Ibrahim, 2014; Budhiraja & Sachdeva, 2002). These indicators, among others,

have been proposed to help measure the preparedness of a society to partake in the increasingly digitised global economy at the levels of e-government, e-commerce and general ICT used by residents (Alaaraj & Ibrahim, 2014).

The concept of e-readiness is therefore context specific, since it means different things to different people (Maugis, et al., 2005). Where contextualisation is not done, it creates a disconnection between e-readiness as a concept on one hand, and the practical application of e-readiness on the other hand since a 'one-size fits all' approach may be used. There is therefore the need to properly establish the context in which e-readiness is being presented in a particular society, and this would help in the proper determination of its application and implications (Maugis, et al., 2005).

The rate of technology adoption and technological improvements have generated interest in e-readiness' potentials (Maugis, et al., 2005). This is seen in the conduct of e-readiness studies especially in developing countries. However, most literature from e-readiness studies have mostly focused on industrial countries in which linkages between e-readiness and performance are assessed (Maugis, et al., 2005). Such earlier studies have also been criticised for assuming that conditions which affects e-readiness among the various study countries' studies were the same. There is also a disparity between developed and developing countries in the number of times that country level e-readiness assessments have been conducted using a particular assessment tool, ranging from zero (0) for some developing countries to about eight (8) times for some developed countries (Maugis, et al., 2005).

E-readiness assessments provide several benefits. E-readiness helps in the determination of the preparedness of a society or institution to partake in the global information-based environment by using existing infrastructure as the basis of the assessment upon which deficient areas are addressed. Information obtained about the level of preparedness of that society enables the fashioning of appropriate policies and interventions which can best improve the levels of e-participation within the society (Dada, 2006; Alaaraj & Ibrahim, 2014).

On the basis of employment, e-readiness provides an avenue for business opportunities to be created; further increasing the levels of competition within the ICT industry in the society. The increased levels of participation by members of society have a cascading effect on e-readiness and how this facilitates increases empowerment of societal members. Benefits associated with participation in a digitised world include addressing governance, national economy and human resources challenges through the use of ICT (Dada, 2006; Alaaraj & Ibrahim, 2014).

Improvements that emanate from e-readiness assessments help give a society or institution greater access or participation in the global economy which eventually gives that society or institution a competitive edge in its industry. E-readiness improves the levels of efficiency and transparency in the conduct of certain activities; since clients

are able to fairly appreciate the workings of the systems they access their services (Alaaraj & Ibrahim, 2014).

Economic achievements of developing countries have reported as being tied to the extent of technological progress within those countries (Alaaraj & Ibrahim, 2014). Governments in such countries therefore seek ways that facilitates and maintains their involvement with advancing technologies. The pursuit of e-readiness as a policy by governments is therefore important due to the ability of such policies to promote economic efficiency and popular participation in government's activities (Alaaraj & Ibrahim, 2014).

### *B. Rural banking in Ghana*

The liberalisation of the banking industry in Ghana resulted in the rapid growth of the banking industry (Adams & Lamptey, 2009). Despite this, a significant number of Ghanaians (10 out of 15 million adults) did not have bank accounts as at 2010 (CGAP, 2011). Since its introduction in Ghana in 1976, rural banks, like any other financial institution, are to serve the financial needs of clients where they are found (Kuffour, Worts, Acquaye, Owusu-Asantewaa, & Akologo, 2012). Rural banks were established to help bridge the development gap between urban and rural areas using access to financial services as a tool for development (Baffour, Boampong, Kodua, Prempeh, & Owusu, 2013). This involves mobilising funds and offering credit services to support the economic activities of clients who reside in rural areas (Kuffour, Worts, Acquaye, Owusu-Asantewaa, & Akologo, 2012).

The success of banks in achieving this is largely dependent on nature of products or services it offers to its clients (Domeher, Frimpong, & Appiah, 2014). Through technological improvements, banks are now networked and can therefore operate the various branches as a single unit. This has reduced the need for physical presence at banking centres when accessing financial services (Diniz, Porto de Albuquerque, & Cernev, 2011; Ivatury & Mas, 2008).

The incorporation of adequate technologies such as Internet banking, mobile banking and Automated Teller Machine (ATM) products have changed the nature of service provision in the banking sector. It has helped banks reduce their cost of production, while clients can access more services at a relatively cheaper cost (Domeher, Frimpong, & Appiah, 2014). With increased accessibility to mobile phones, banking institutions have partnered with most telecommunication providers to develop mobile phone-based internet banking services to its clients (Asante, Agyapong, & Adam, 2011). Thus, the usage of internet or mobile phone banking applications, enable banks to operate virtually (Shamim & Sardar, 2010).

From one rural bank at the time of its first introduction, the number of rural banks formally registered and recognised by the Bank of Ghana as at April 2016 was 140 (Bank of Ghana, 2016). Though the increased number should signify increased service delivery, teething challenges persist. These

range from inability to retain competent staff as workers, mismanagement of mobilised funds, poor loan recoveries, inadequate technology, among others (Kuffour, et al., 2012; Baffour, et al., 2013). Having indicated the benefits obtained when technology is introduced in the banking sector, it becomes imperative that the challenge of inadequate technologies in the rural banking sector be addressed to enable rural banks to fully partake and take advantage of the opportunities that exist in the global information-based economy.

### **III. STUDY METHODOLOGY**

The study of levels of e-readiness of any institution considers two main factors: Perceived Organizational E-Readiness (POER) and Perceived External E-Readiness (PEER) (Dada, 2006; Kahn, 2015). POER focuses on the institution under study, while PEER considers the environment within which the institution works. POER factors include: awareness; human resource; business resource; technology resource; commitment; and governance (Dada, 2006; Kahn, 2015). For this study, the researcher focuses on technology resources of rural banks. Specifically, the following variables will be assessed: computer availability, central information system availability, website availability, and nature of website services.

#### *A. Sample size, Data Collection and Analysis*

The 140 rural banks will serve as the study population. Out of these, a sample of 30 rural banks was randomly selected, with targeted respondents being the person in charge of IT at the bank. In their absence, any worker with working knowledge on the subject will be interviewed. A questionnaire based on the variables for the study will be administered to the identified respondents. Data obtained will be organised using frequency tables, and a multiple regression analysis done to determine the level of generalization of the sample results to the entire population.

### **IV. RESULTS**

#### *A. Demographic Results*

Out of the one hundred (100) respondents selected from thirty (30) rural and community banks, only eighty-four (84) questionnaires were returned for the analysis. This represent 84.0% response rate. Table 1 presented the demographic characteristics of respondents. It was observed that most of the banks (representing 92.9%) selected for the study were rural banks. Also most of the participants were branch managers (representing 35.7%). About 21.4% were operations managers, while others were IT officers and clerks. Again it was observed that 50% of the banks had been in operation for over 10 years, while others have also been in operation for a period ranging between 1 to 9 years. Finally, 34.5% have HND certificate, 24.7% are bachelor's degree holders, 16.7% are post-graduate degree and 21.4% are holders of professional certificate.

Majority of the respondents mentioned that they offer e-banking product such as SMS banking, transfer funds between customer account at the bank, ATM/Debit card services, transfer funds to same bank customers and sending secured messages to customer care.

Variable	Frequency	Percent (%)
<b>Type of Bank</b>		
Community Bank	6	7.1
Rural Bank	78	92.9
<b>Position</b>		
Branch Manager	30	35.7
Operation Manager	18	21.4
OG-2	12	14.3
IT Officer	15	17.8
Clerk	9	10.7
<b>Years in operations</b>		
1-3 years	6	7.1
4-6 years	18	21.4
7-10 years	42	50.0
Above 10 years	18	21.4
<b>Education</b>		
HND	29	34.5
Bachelor’s Degree	23	24.74
Post-Graduate Degree	14	16.7
Professional certificate	18	21.4

Table 1: Demographic Characteristics of Respondents

Table 2 present the Cronbach's Alpha Reliability Analysis of the 4 independent variables used in the study. As can be

observed from Table 2, all the independent variables passed the reliability test since the reliability values were all above 0.700. This suggests that the independent variables are reliable and the results obtained can be generalized.

Table 3 presents the Analysis of Variance (ANOVA) result along with the adjusted R-squared. As can be observed from the table, the adjusted r-squared obtained a value of 0.599 which suggest that 60% of the variation among rural bank e-readiness can be explained by the independent variables used in the study. Also F-statistic value was 42.396 with a p-value of 0.000, suggesting that the overall regression model is statistically significant at the 0.05. From Table 4, the estimated model showed that technological construct such as networked society-readiness, networked access and network economy has a positive effect on rural banks e-readiness.

Variables	Items	Reliability
Networked Policy	9	0.950
Network Access	8	0.958
Networked Society-Readiness	7	0.839
Networked Economy	7	0.935

Table 2: Reliability Analysis

Model	Sum of Squares	df	Mean Square	F	Sig.	Adjusted R squared
Regression	27.361	3	9.120	42.396	.000	0.599
Residual	17.210	80	.215			
Total	44.571	83				

- a. Dependent Variable: e-readiness
- b. Predictors: (Constant), NS, NA, NEC

Table 3: ANOVA Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.741	.394		-1.883	.063
NS	1.245	.205	.844	6.081	.000
NA	.535	.132	.466	4.040	.000
NEC	.345	.147	.298	2.348	.021

Dependent Variable: e-readiness

Table 4: Estimated Model

**V. DISCUSSION**

This present study examined the influences of the technological construct (Network policy, Network access, Network society-readiness and Network economy) on e-

readiness among rural banks in Ghana. The study showed that network access influences the readiness of rural and community banks in Ghana. This means that for rural and community banks to be e-ready, managers must have a widely available network access in their banks, have a strong firewall, create access to internet via cabled or wireless network, their internet must be reliable and have a high speed. This will enable rural banks to serve their clients effectively and efficiently by reducing costs and time wasted for example by branch managers visiting the headquarters for client's loan and payments processing. This finding concurs with the study of Chau & Lai (2003) and Choucri et al. (2003). Also the result revealed that network society-readiness significantly influences the e-readiness of rural and community banks. This result implies that for rural and community banks to be e-ready, they must have an interactive institutional website, set up interactive websites on core business systems (clients and finance) as well as for communication and educational purposes. There is the need also for client and staff to be regular users of the internet. This finding is consistent with the finding of Chau & Lai (2003). Network economy was found to influence rural and community banks e-readiness significantly. This result implies that rural banks e-readiness is dependent on how they fully adopt and use ICT enabled services such as core banking systems, ATMs, and the use of mobile services as mode of payment in their banking operations. Finally, the study showed that Network policy does not influence the e-readiness of rural and community banks. These findings are contrary to the findings of Chau & Lai (2003).

## VI. CONCLUSION

The study sought to examine the e-readiness of rural banks in Ghana. Rural banks in Ghana offer e-banking product such as SMS banking, transfer funds between customer account at the bank, ATM/Debit card services, transfer funds to same bank customers and sending secured messages to customer care. Network society was found to be the most significantly related factor influencing e-readiness of rural banks, followed by network access and network economy. Following from this study, future research may be conducted on how ready rural bank customers are to use the technologies in service delivery.

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