



To cite this article: Longinus, O. (2018). Artificial Intelligence System: Implication for Proper Record Keeping in Microfinance Banks in Nigeria, International Journal of Academic Research in Accounting, Finance and Management Sciences, 8 (1): 131-136, <http://dx.doi.org/10.6007/IJARAFMS/v8-i1/3926> (DOI: 10.6007/IJARAFMS/v8-i1/3926)

Artificial Intelligence System: Implication for Proper Record Keeping in Microfinance Banks in Nigeria

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Abstract

The utilization of artificial intelligence in carrying out accounting functions has been a subject of tremendous optimism, as it forms essential part of accounting profession, providing heavy lifting for many of the most challenging problems in accounting functions. This study assesses the effect of artificial intelligence on proper record keeping in microfinance banks in Nigeria. The objective of the study was to determine effect of artificial intelligence system on proper record keeping in microfinance banks in South East Nigeria. Descriptive research design was adopted in the study among 34 staff of 17 microfinance banks in Enugu. Structured questionnaire was used to obtain the information needed for the study. Data collected were presented in table. The study hypothesis was tested using linear regression at 5% level of significance. The result of the study showed that artificial intelligence system positively enhances proper record keeping in microfinance banks in Enugu Nigeria ($r = .859$; $T = 28.654$; $p = .000$). It was conclude that artificial intelligent influences the performance of microfinance banks in Enugu.

Key words

Artificial Intelligence System, Roper Record Keeping, Microfinance Banks

Received:	28 Dec 2017	© The Authors 2018
Revised:	03 Feb 2018	Published by Human Resource Management Academic Research Society (www.hrmars.com)
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Published Online:	05 Apr 2018	

1. Introduction and literature review

The sector has remained competitively a viable sector of the economy as intense competition is been experience among the players in the sector. However, in comparative with other sector of the economy, the sector has remained acceptably underperformed and with one or two microfinance bank dying annually despite the central bank effort in ensuring the stability of the sector through recapitalization (CBN, 2015)

Extant (David and Miklos, 2016) literatures have suggested that the underperformance of the sector in recent global competition might be due to inability of the sector to tap from the advances in technology especially within the scope of accounting and finance. Business environment and operation as at today, are rapidly embracing digital technology such as computer/machine devices. In last few decades, accounting functions like other professions functions have experience revolution following the wide adoption of computer softwares/system in the performance of daily functions.

All aspect of accounting functions are essentially been affected especially, aspects of accounting that relates to information collection. Accounting functions previously performed by individuals manually are currently been taken by various computer system thereby moving accounting systems and operations from the arena of paper journals and ledgers into computer- based formats (PWC, 2016).

In advanced nations like the United States of America, and United Kingdom, the use of computer system in account record keeping has advanced to include adoption of Artificial intelligence (AI). AI is a

component of computer system that can sense its environment, think, learn, and take action in response to what they're sensing and their objectives. Carol and Brad (2006) noted that accounting profession has notably been associated the application of artificial intelligence. Lam (2004) echoed Carol and Brad (2006) assertion by stating that the domain of accounting researchers applied various artificial intelligence technologies and techniques with some success to specific tasks in financial reporting and analysis as well as in auditing and assurance.

Artificial intelligence is embedment of human intelligence into machines thereby enabling systems to learn, adapt and develop solutions to problems on their own. Various AI-related technologies, such as natural language processing (NLP), computer vision, robotics, machine learning and speech recognition, have substantially progressed over the years to coalesce into systems that do, think, learn and continuously adapt (Tata Consultancy Services (TCS), 2016). The utilization of artificial intelligence in carrying out accounting functions has been a subject of tremendous optimism, as it forms essential part of accounting profession, providing heavy lifting for many of the most challenging problems in accounting functions (Davenport, 2016). From the auspices of auditing, taxation, information collation, presentation to analysis, artificial intelligence has created accurate financial information for decision making.

In developing countries like Nigeria, the adoption and utilization of AI in record keeping, continued to be faced with mirage of challenges ranging from underfunding to inadequate human skill despite organizations realization of the potentials of artificial intelligent (Avneet Pannu, 2015). This study therefore examines the artificial intelligence system: implication for proper record keeping in microfinance banks in Nigeria.

1.1. Objectives of the Study

The main objective of the study is to examine the effect of artificial intelligence on proper record keeping in microfinance banks in Nigeria. The specific objectives were to: Examine the effect of artificial intelligence system on proper record keeping in microfinance banks in South East Nigeria.

1.2. Study Hypothesis

- Artificial intelligence system positively enhances proper record keeping in microfinance banks in South East Nigeria.

2. Methodology of research

This study makes use of descriptive research of the sample survey type. Sample survey gathers data and information from a percentage of the population to represent the entire population (Uzoagulu, 1998). The source of data comprises of two types this includes primary and secondary data. This choice of data is logically dictated by the fact that this study is, as earlier stated, a descriptive research of the survey type.

2.1. Area of Study

This research was carried out in Enugu state of Nigeria. Enugu state is one of the ancient states in Nigeria, located within the South Eastern Nigeria. It is one of the most enterprising states in the country, thereby giving her the privilege to be a host of numerous small and medium scale enterprises.

2.2. Population of the Study

The population of the study comprises the management and accountants' of 17 microfinance banks in Enugu, South East Nigeria (See Table 1). The choice of the study population was detected by the fact that, these personalities have more informed decision regarding the information required for the study. The population strength of the study is 34 participants (Two staff from each organization).

Table 1. Distribution of the population size for the study

S/N	Name	Category	Address
1.	Chidera Microfinance Bank Limited	Unit	1/15 Chime Avenue, New Haven, Enugu, Enugu State

S/N	Name	Category	Address
2.	DEC-Enugu Microfinance Bank Limited	Unit	3-5 Dec Avenue, Independent Layout, Enugu, Enugu State
3.	Destiny Microfinance Bank Limited	Unit	No 1 Old Aji Road, Agrute, Igbo-Eze North L.G.A, Enugu State
4.	Golden Funds Microfinance Bank Limited	Unit	Red Cross Way, Ogbete, Enugu
5.	Good Shepherd Microfinance Bank Limited	Unit	NO 16, KENYATTA STREET, ENUGU, ENUGU STATE
6.	Green-Bank Microfinance Bank Limited	Unit	68, Abakaliki Road, Enugu, Enugu State
7.	Ifeanyichukwu Microfinance Bank Limited	Unit	78 Old Okigwe Road, NA Quarters, Agwu, Enugu State
8.	IMT Microfinance Bank Limited	Unit	IMT Campus, Independence Layout, Enugu, Enugu State
9.	Isi-Uzo Microfinance Bank Limited	Unit	Isi-Uzo Local Government Secretariat, Isi-Uzo, Enugu State
10.	Kenechukwu Microfinance Bank Limited	Unit	State Bishop Shenahan Hospital (Annex),46 Enugu Road, Nsukka, Enugu State
11.	Obollo Microfinance Bank Limited	Unit	, University Road, Obollo-Afor Udenu L.G.A, Enugu State
12.	Ogbete Microfinance Bank Limited	Unit	Local Govt Building, Ogbete Main Market, Ogbete, Enugu State
13.	Ogige Microfinance Bank Limited	State	20, Market Road, Alu Dele Nsukka, Enugu State.
14.	Ohha Microfinance Bank Limited	State	No. 1, Ogui Road, Enugu, Enugu State
15.	Orie-Orba Microfinance Bank Limited	Unit	1, Obollo Road, Orba, Udenu Local Govt Area, Enugu State
16.	Prisco Microfinance Bank Limited	Unit	Enugu
17.	Umuchinemere Procredit Microfinance Bank Limited	State	Plot 5, Ikwuato Street, Uwani, Enugu State

Source: Extracted from CBN Microfinance banks In Nigeria, January, 2017

2.3. Sample size and Sampling Techniques

The entire population was used in the study in consideration of the small nature of the available study population, hence no sample size determination. Convenience sampling method was adopted to give proper representation to the accountants in the microfinance banks.

2.4. Instrument for Data Collection

Structured questionnaire was used to obtain data for the study. The questionnaire was divided into three sections. Section A solicited information on the socio-demographic data of the accountants while section B addressed the respective objectives. The questionnaire items relating to the study objectives were structured in open ended and likert Scale format.

2.5. Administration of the Instrument

Due to time constrain, the researcher trained two research assistants who assisted in data collection. Specifically, the researcher trained the research assistant on the purpose of the study and methods of administering the instrument. Both the researcher and the research assistance collected the data for the study by meeting with the participants in their various offices.

2.6. Validity of the Instrument

The questionnaire was properly designed and a conduct of a pre-test on every question contained in the questionnaire was carried out to ensure validity. The researcher subjected the instrument to face and

content validity by giving it to two experts in artificial intelligence and a chartered accountant in University of Nigeria, Enugu Campus who studied the instrument thoroughly to ensure they are in line with the objectives of the study.

2.7. Reliability of the Instrument

Procedurally, the researcher pre tested forty (30) copies of the test instrument before the actual survey for the study. The responses obtained from the pre-study survey were subjected to the Cronbach Alpha's internal consistency test via SPSS (statistical package for social sciences) version 23.0. Based on the inter-item correlation of Twelve (12) items on the questionnaire the result of the reliability test is 0.933. Since the item on the questionnaire were uniformly scaled and in accordance to the Bernstein and Nunnally (1994), benchmark of Cronbach's alpha should be 0.700 or above. The raw Alpha Coefficient of 0.933 shows that the items on the questionnaire are internally consistent, hence they are reliable.

2.8. Method for data analysis

The data collected for the study was analyzed and presented in tables using p frequency and percentages. Inferential statistic of regression analysis was used in testing the study hypotheses at 5% level of significance.

Decision Rule

The decision rule adopted for the study is Reject H_0 if the p-value is greater than 0.05.

3. Data Presented Interpretations

Table 1. Shows the Distribution and Return Rate of Data Collection Instrument

OPTIONS	Frequency	Percentage
No Returned	34	100
Not returned	0	0
Total	34	100

Table 1 shows the questionnaire distribution. From the table, all the administered questionnaire were returned.

3.1. Test of Hypotheses

The hypothesis postulated were tested using regression analysis aided by computer through the application of Statistical Package for Social Sciences (SPSS 23 version) of Microsoft environment.

Ho: Artificial intelligence system positively enhances proper record keeping in microfinance banks in South East Nigeria

Table 2. Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.859 ^a	.738	.737	.40967	.160

a. Predictors: (Constant), Artificial intelligence system

b. Dependent Variable: Proper Record Keeping

Table 3. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.449	.054		8.386	.000
Artificial intelligence system	.829	.029	.859	28.654	.000

a. Dependent Variable: Proper Record Keeping

3.2. Result Summary

$R = .859$; $R^2 = .738$; $F = 821.070$; $T = 28.654$; $DW = .160$

4. Interpretation of the Results

A linear regression analysis conducted to examine the effect of artificial intelligence system on proper record keeping in microfinance banks in South East Nigeria. The result shows that there is strong positive relationship between artificial intelligence system and proper record keeping (R - coefficient = .859). The R square, the coefficient of determination, shows that 73.8% of the variation in proper record keeping can be explained by artificial intelligence system with no autocorrelation as Durbin-Watson (.160) is less than 2 with the linear regression model; the error of estimate is low, with a value of about .40967. The extent to which artificial intelligence system affects proper record keeping with .859 value indicates a positive significance between artificial intelligence system and proper record keeping which is statistically significant (with $t = 28.654$) and $p = .000 < 0.05$. Therefore, the null hypothesis is rejected and the alternate hypothesis accepted accordingly.

5. Discussion of Findings

The result of the study revealed that artificial intelligence system influences proper record keeping in microfinance banks in Nigeria. With the advent of technology and its subsequent advancement to the artificial intelligence, organizations are put under pressure to be innovative by adopting technology in form of software and hardwares in carrying out their daily business. Accountants in this position are often challenged to discard traditional ways of conducting business and adopting modern (innovative) ways. In the banking industries, this is evident as the use of softwares characterized majority of their financial transactions. Today, the use of cameras, intelligent cyber security technology as well as intelligent security doors are visibly experienced in banking industries, however, in this part of the world where finances remains the bound of organizational growth, microfinance banks are often not equipped to fund such advance technological innovation. This might therefore result in inadequate financial records, hence resulting in financial fraud and other financial crisis within the organization.

6. Conclusions

Evidently, this study has made some vital discoveries, such as influence of artificial intelligence system on proper record keeping. Globally, the consistent increase in technological advancement has led to the infusion of different accounting practices requiring the utilization of advanced technology in record keeping especially in microfinance banks. Microfinance banks, especially those that engage in online transaction often face the challenges of adequate record keeping, hence the need for adoption of artificial intelligence for proper record keeping. Within the sphere of Enugu, the microfinance banks operation has limited adoption of artificial intelligence which might be due to financial incapacitation this is despite the fact that the use of artificial intelligence positively influences proper record keeping.

7. Recommendations

Based on the findings of this study, the followings are recommended

1. Management of microfinance banks through the accountants should see it as a necessity to consistently adopt innovative technology in order to maintain accurate record within the organization
2. The accountants of Microfinance banks should seek professional corporation with international organization that could facilitate their adoption of artificial intelligence in enhancing their record keeping.

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