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Effects of Non-Performing Loans

Profitability of Commercial Banks

Highlights

Analysis of Financial Development

Study of Microfinance Institutions

Discovering Thoughts, Inventing Future

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Econometrics Analysis of Financial Development and Economic Growth: Evidence from Nigeria

By Godwin Chigozie Okpara, A. N. Onoh, B. M. Ogbonna, Eugene Iheanacho & Iheukwumere Kelechi. J
Abia State University

Abstract- This work explored the relationship between financial development and economic growth in Nigeria. Specifically it investigated the extent to which financial development engenders economic growth. It also verified the existence of supply leading and/or demand following hypotheses in Nigeria. To evaluate these, the researchers firstly determined the stationarity of the variables which informed the use of co integration and then the vector error correction model to finding the long run impact of financial development variables on the growth of the economy. The diagnostic test was employed to determine the authenticity and stability of our model. The researchers also employed the Granger Causality test to investigate the existence of supply leading and/or demand following hypothesis. The results of the analyses show that there is a long run relationship between financial development and economic growth in Nigeria and that besides the metric for banking system financing of the economy variable which is significantly inadequate, all other financial development indicators engender economic growth. Our diagnostic test shows that the model is adequate, plausible, and stable.

Keywords: financial development, economic growth, supply leading, demand following hypotheses, cointegration.

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Econometrics Analysis of Financial Development and Economic Growth: Evidence from Nigeria

Godwin Chigozie Okpara [α], A. N. Onoh [σ], B. M. Ogbonna [ρ], Eugene Iheanacho [Ѡ] & Iheukwumere Kelechi. J [¥]

Abstract- This work explored the relationship between financial development and economic growth in Nigeria. Specifically it investigated the extent to which financial development engenders economic growth. It also verified the existence of supply leading and/or demand following hypotheses in Nigeria. To evaluate these, the researchers firstly determined the stationarity of the variables which informed the use of co integration and then the vector error correction model to finding the long run impact of financial development variables on the growth of the economy. The diagnostic test was employed to determine the authenticity and stability of our model. The researchers also employed the Granger Causality test to investigate the existence of supply leading and/or demand following hypothesis. The results of the analyses show that there is a long run relationship between financial development and economic growth in Nigeria and that besides the metric for banking system financing of the economy variable which is significantly inadequate, all other financial development indicators engender economic growth. Our diagnostic test shows that the model is adequate, plausible, and stable. The short run causality test shows bidirectional causality between capital market liquidity or economic volatility and the growth of the economy while market capitalization ratio, broad money velocity and the banking system rate of financing the economy drive economic growth with no feedback effect. On the basis of the findings, the researchers call on the government to articulate reform packages (such that may involve vigorous financial inclusion) capable of enhancing the banking sectors' involvement in the financing of the economy so as to achieve enormous economic growth.

Keywords: financial development, economic growth, supply leading, demand following hypotheses, cointegration.

I. Introduction

a) *Financial Sector and Economic Growth and Development*

The financial sector plays important role in economic growth and development through the process of financial intermediation. The sector's role in influencing the savings-investment process for acceleration of the rate of economic growth and poverty reduction cannot be overemphasized. Robinson (1954) refers financial sector to as the handmaiden of economic development. McKinnon (1973) contended that the financial sector can be more than a handmaiden to the real economy as it is the major driver of economic growth and development especially when it is liberalized. Williams Amaha (1988) added that if financial sector is free, it can provide the necessary fillip for economic growth and development. Levine et al (2000) also asserted that the growth of components of financial intermediation engenders positive growth in the real sector of the economy.

World Bank (2009) asserts that the financial sector is the brain of the economy and that when it functions properly, it allocates resources to the most productive and efficient uses. In the words of Sanusi (2002), well-functioning financial systems are able to mobilize household savings, allocate resources efficiently, diversify risk, enhance the flow of liquidity, reduce information asymmetry and transaction cost and provide an alternative to raising funds through individual savings and retained earnings. The question of whether Nigerian financial system is actually well functioning gives a food for thought. Furthermore, Soludo (2009) maintains that in terms of policy thrust, the banking sector reforms are expected to build and foster a competitive and healthy financial system to support development and to avoid systematic distress.

The stock market on the other hand is vital for the provision of investible funds and requires the participation of the key economic agents whose participation in Nigerian capital market seems passive rather than active. For instance a look at the participants in the stock market reveals that the leading sub-sector on the stock exchange is banking sector which accounts for about 50% of the total equity market capitalization. Each of the other sectors such as breweries and building materials takes a proportion which is at most 10 percent. Engineering technology has 0% of the total market capitalization. Heavy industries especially in the area of technology are virtually inactive or non-existent in the stock market (Onwumere and Modebe, 2007). These heavy industries are the core of industrial production and their products add heavily to the gross domestic product (NSE Fact Books 2005-2006). Invariably, the non-participation of

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these core industries in the stock market may have negative implications on the Nigerian stock market development and the economy at large.

Schumpeter (1911) posited that financial intermediation through the banking system played a pivotal role in economic development by affecting the allocation of savings thereby improving productivity, technical change and the rate of economic growth. By mobilizing savings from the surplus unit to the deficit unit who are desirous for productive investment, capital inflow are facilitated. The financial markets not only stimulate investments in both physical and human resources but also channel savings to more productive uses by collecting and analyzing information about investment opportunities (Jalloh, 2009). In the words of Sanusi (2011), Well functioning financial system are able to mobilize household savings, allocate resources efficiently, diversify risk, enhance the flow of liquidity, reduce information asymmetry and transaction costs and provide an alternative to raising funds through individual savings and retained earnings.

Finance is a life wire of every productive activity. Public as well as private sector operators need various financial instruments to enable them invest in short as well as long term investment. The financial market is divided into two - the money market and the capital market. The money market is a market where short term securities are traded while long term securities are traded in the capital market. Included in the money market are financial access that are short term, highly marketable and accordingly possess low risk and high degree of liquidity. The markets facilitate trading in short term debt instruments to meet short term needs of large users of funds. Government raises short term funds from the money market to finance its short term investment. The capital market on the other hand is a market which provides industrial and commercial firms with long term finance for their capital developments. Capital market therefore, adds to the stock of capital and generates capital formation for new investments (Okpara, 2012).

Government raises long term funds from the capital market to finance its long term investment projects such as social overheads like public hospital, construction of roads, airports, public schools, dam construction etc. Corporations issue corporate bonds to finance long term development projects like construction of new plants, new buildings, new technology and expansion of existing ones while issuing equities to raise additional financial resources for long term investments. Thus wealth creation for economic growth is facilitated by the financial markets.

II. Literature Review

a) *Financial Development and Economic Growth*

Patrick (1966) quoted in Isu and Okpara (2013) identified two possible causal relationships between financial development and economic growth. They include demand following hypothesis which sees the demand for financial services as dependent upon the growth of real output and the commercialization and modernization of agriculture and other subsistence sectors. In other words, it posits a unidirectional causation from economic growth to financial development.

In support of supply leading hypothesis, Clarke, (2002) and Jayaratne and Strahan (1996) concluded that banking sector development following deregulation has led to state level economic growth in the U.S.

Wadud (2005) in his study of long-run causal relationship between financial development and economic growth for 3 South Asian countries namely India, Pakistan and Bangladesh disaggregated financial system into "bank-based" and "capital market based" categories and by employing a cointegrated vector autoregressive model found that the results of error correction model indicate causality that runs from financial development to economic growth.

Nnanna (2004) using ordinary least square regression technique, concluded that financial sector development does not significantly affect per capital growth of output. Others who used various methods and data to establish a positive and significant relationship and/or causality running from financial development to growth are De Grgor and Guidotti (1995), Guiso, et al (2002), empirical work by Gelb (1989), Ghani (1992), King and Levine (1993), DeGregorio and Giudotti (1995), Levine and Zervos (1996) have all lent support to the supply-leading hypothesis in the case of many developing and developed countries (See Nwezeaku and Okpara, 2014).

Odiambo (2004) investigated the finance-growth nexus in South Africa using cointegration approach and vector error correction model and found out a demand-following response between financial development and economic growth and therefore discredited the supply-leading hypothesis. Guryay et. al (2007) examined the relationship between financial development and economic growth for Northern Cyprus for the period of 1986-2004 and concluded that there was evidence of causality from economic growth to the development of financial intermediaries in Northern Cyprus. Shan, et al (2001) in their study reached a conclusion that economic growth causes financial development in China.

Arestis and Demetriades (1997), using time series analysis, concluded that evidence favors a bidirectional growth. Also Murinende and Eng (1994) found evidence of such bi-directionality in the case of Singapore, while Demetriades and Hussein (1996) also found a feedback effect for 16 developing countries. Demetriades and Hussein (1996), using time series analysis for a study of developing economies also found causality running both ways.

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A study of China by Shan et al (2006) not only found a bidirectional causality between financial development and economic growth but also revealed that the Granger causality from economic growth to financial development is stronger than that from finance to growth. Likewise, Luintel and Khan (1999), investigated the finance-growth nexus in a multivariate VAR model and found bidirectional causality between financial development and economic growth in all their sample country.

Adelakun (2010) in his study of relationship between financial development and economic growth found that there is a substantial positive effect of financial development on economic growth in Nigeria. Using Granger causality test, he also found that financial development promotes economic growth. Akinlo, Enisan, Egbetunde and Tajudeen (2010), in examining the long run relationship between financial development and economic growth for ten countries in sub-Saharan Africa found that financial development is cointegrated with economic growth. They also added that financial development Granger causes economic growth in Central African Republic, Congo Republic, Gabon and Nigeria while economic growth Granger causes financial development in Gambia. However in Kenya, Chad, South Africa, Sierra Leone and Switzerland bidirectional relationship was established between financial development and economic growth. In their study, Odenira and Udeaja (2010) examined the relationship between financial sector development in Nigeria using Granger Causality and found a bidirectional causality between financial development and economic growth. Bi-directional causality hypothesis has been advocated by Altay and Atgur (2010).

III. Materials and Methods

To assess whether financial development impacts and/or drives economic growth (Supply leading) or whether it is economic growth that drives the financial sector (demand following) and leads to aggressive expansion of the financial sector or whether there exists a feedback effect?, the financial market indicators such as capital market liquidity proxied by value of share traded divided by GDP (VST/GDP), market capitalization ratio denoted by market capitalization divided by GDP (MKTCAP/GDP), broad money velocity denoted by broad money supply divided by GDP (M_2/GDP) economic volatility represented by credit to private sector over GDP (CPS/GDP), intermediation efficiency indicated by currency outside banks over broad money supply (COB/M_2) and the metric for banking system financing of the economy which is proxied by demand deposit over narrow money supply (DD/M_1) are presented in table 4.1.

The researchers therefore posit the following hypotheses stated in null form as follows:

Ho_1 : Financial development does not exert positive and significant impact on economic growth.

Ho_2 : Financial development does not drive economic growth

To assess these hypotheses, the researchers employed cointegration and error correction model as there are seen appropriate for impact determination. Also the Granger causality test was used for causality test.

It must have to be noted that one thing drives or predicts another must not be seen as leading the later to a fortune. Something can be led to a misfortune, in such a situation, the leader or driver has driven it/him to a wrong direction. It is on this note that Granger causality has failed to indicate the desired direction of a particular economic variable. To augment or authenticate Granger causality, the direction of any variable on another must have to be determined through a well built and tested model to avoid recommending a causal relationship that will be detrimental to economic policy. This argument can be justified by the fact that a variable say X can be found to be negatively related to the dependent variable Y yet such a variable X will be found to granger cause Y with no feedback effect. The question of the direction the variable X is driving Y must be of concern. Thus, the researchers diligently tested the parameters of the variables in order to determine the significance of the magnitude of each of the variables as well as exploring their direction.

IV. Estimation and Analysis of Data

The relevant data presented in table 4.1 are estimated and analyzed in lieu of the stated objectives and hypothesis.

Table 4.1: GDP and Financial Development Indicators

Year	GDP	VSTGDP	Mcapgdp	M2GDP	CPSGDP	COBM2	DDM1
1981	94.33	323	5	15.3	9.1	27	49
1982	101.01	213	5	15.6	10.6	27	50
1983	110.06	362	5	16.1	10.6	27	50
1984	116.27	221	5	17.3	10.7	24	50
1985	134.59	235	5	16.6	9.7	22	50
1986	134.6	370	4	17.7	11.3	22	50
1987	193.13	198	3	14.3	10.9	22	53
1988	263.29	323	3	14.6	10.4	25	48
1989	382.26	160	3	12	8	21	39
1990	472.65	48	3	11.2	7.1	28	40
1991	545.67	44	3	13.8	7.6	31	44
1992	875.34	56	3	12.7	6.6	33	44
1993	1,089.68	74	3	15.2	11.7	35	42
1994	1,399.70	70	2	16.5	10.2	39	39
1995	2,907	63	4	9.9	6.2	37	39
1996	4032.3	172	7	8.6	5.9	34	42
1997	4189.25	25	7	9.9	7.5	32	48
1998	3989.45	34	7	12.2	8.8	32	45
1999	4679.21	301	5	13.4	9.2	30	51
2000	6713.57	419	7	13.1	7.9	31	54
2001	6895.2	837	8	18.4	11.1	27	55
2002	7795.76	762	8	19.3	11.9	26	53
2003	9913.52	1215	14	19.7	11.1	21	47
2004	11411.07	1979	19	18.7	12.5	22	55
2005	14610.88	1800	20	18.1	12.6	21	55
2006	18,564.59	2,533	28	20.5	12.3	17	66
2007	20657.32	5209	64	24.8	17.8	14	74
2008	24296.33	6911	39	33	28.6	11	75
2009	24794.24	2766	28	38	36.9	10	68
2010	54612.26	3465	18	20.2	18.6	10	69
2011	62980.4	1014	16	19.3	16.9	10	73
2012	71713.94	1124	21	19.4	20.4	10	68
2013	80092.56	2935	24	18.9	19.7	10	73
2014	89043.62	1499	19	19.9	19.2	8	75

Source: Compiled from CBN Statistical Bulletin

The GDP and financial development indicators in the table above are tasted for stationarity to avoid spurious results which could have arisen if non stationary data are used for regression. The result shows that all the variables are stationary at first difference. In other words all the variables are integrated of order one, I(1). The summary of these results is shown in table 4.2 as follows:

Table 4.2: Augmented Dickey-Fuller Unit Root Test

	Lag	ADF Test Statistic	Critical Values		
	SCI	1st difference	1%	5%	Remarks
GDP	4	-3.863830	-3.653730	-2.957110	Stationary
VSTGDP	8	-6.552533	-3.653730	-2.957110	Stationary
MCAPGDP	8	-5.879994	-3.653730	-2.957110	Stationary
M2GDP	8	-5.378874	-3.653730	-2.957110	Stationary
CPSGDP	8	-5.726112	-3.661661	-2.960411	Stationary
COBM2	8	-4.870376	-3.653730	-2.957110	Stationary
DDM1	8	-5.232303	-3.653730	-2.957110	Stationary

From the above table, the ADF statistics of all the series are more negative than their 1 percent critical values and far more than that of 5 percent at first difference. This implies that the series are differenced once for them to be stationary. They are therefore said to be integrated of order one.

This being the case, the researchers resorted to testing for cointegration between the variables and found that there are three cointegrating equations in the series which invariably suggest the existence of long run relationship between the GDP series and the financial market indicators in Nigeria. The result of the cointegration test is presented in table 4.3 below.

Table 4.3: Cointegration Test for GDP-Financial Development Data

Sample (adjusted): 1983 2014
Included observations: 32 after adjustments
Trend assumption: Linear deterministic trend
Series: GDP COBM2 CPSGDP DDM1 M2GDP MCAPGDP VSTGDP
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.940660	252.7749	125.6154	0.0000
At most 1 *	0.859101	162.3917	95.75366	0.0000
At most 2 *	0.818445	99.68086	69.81889	0.0000
At most 3	0.597176	45.08262	47.85613	0.0890
At most 4	0.262219	15.98641	29.79707	0.7132
At most 5	0.123385	6.254930	15.49471	0.6654
At most 6	0.061788	2.040926	3.841466	0.1531

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The existence of cointegrating equations formed the basis for the researchers' use of the error correction model. The parsimonious result of the error correction model is shown in table 4.4 as follows.

Table 4.4: Parsimonious Result of the Error Correction Model

Dependent Variable: D (GDP)
Method: Least Squares
Date: 03/04/17 Time: 17:16
Sample (adjusted): 1986 2014
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP(-3))	1.131716	0.092826	12.19176	0.0000
D(GDP(-4))	0.128731	0.045405	2.835145	0.0132
D(COBM2(-1))	-285.0871	112.1978	-2.540933	0.0235
D(COBM2(-3))	311.5502	113.4656	2.745768	0.0158
D(CPSGDP(-1))	316.4391	136.0973	2.325094	0.0356
D(CPSGDP(-2))	654.3071	67.66742	9.669456	0.0000
D(CPSGDP(-3))	783.8138	137.5658	5.697737	0.0001
D(DDM1(-2))	-194.4585	60.83273	-3.196609	0.0065
D(DDM1(-3))	-410.7492	109.3208	-3.757283	0.0021
D(M2GDP(-1))	417.7338	189.1424	2.208568	0.0444
D(MCAPGDP(-1))	109.6002	28.91204	3.790815	0.0020
D(VSTGDP(-1))	-3.163521	0.218548	-14.47518	0.0000
D(VSTGDP(-4))	2.407486	0.539429	4.463028	0.0005
ECT(-1)	-0.071766	0.028613	-2.508156	0.0251
C	320.4475	222.6680	1.439127	0.1721
R-squared	0.986988	Mean dependent var		3065.829
Adjusted R-squared	0.973976	S.D. dependent var		5894.833
S. E. of regression	950.9460	Akaike info criterion		16.85904
Sum squared resid	12660176	Schwarz criterion		17.56626
Log likelihood	-229.4560	Hannan-Quinn criter.		17.08053
F-statistic	75.85309	Durbin-Watson stat		2.476241
Prob(F-statistic)	0.000000			

The results of the analysis show that past GDP at lags 3 and 4 reinforces the present GDP. In other words, increase in past GDP leads to increase in the present value of GDP. The intermediation efficiency indicator (COB/M2) is negative and significant at its immediate past level indicating that the rate at which the financial sector intermediates in the economy seems to initially impose untold hardship. However as time passes by, the intermediation efficiency increases and exerts positive impact on the economic growth. The broad money velocity (M2/GDP) is positive and significant while the metrics for banking system financing of the economy (DD/M1) is negative and significant implying that the banking sector financing of the economy is significantly inadequate to engender growth of the economy. The Stock market liquidity (VST/GDP) for the first lag is negative and significant suggesting that significant illiquidity which hampers the growth of the economy exists in the capital market at lag 1. However, this anomaly corrects as time passed by as the market liquidity exerts positive impact on the growth of the economy at lag 4. Economic volatility (CPS/GDP) and market capitalization ratio (MKT/GDP) are positive and significant. From these findings, \the researchers adduced that the financial market activities generally impact economic growth. To accept this model, we embarked on second order econometric tests namely serial correlation test, multicollinearity test using the condition index criteria, heteroskedasticity test, normality test and Model adequacy test. The serial correlation LM test is presented in table 4.5 as follows:

Table 4.5: The serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.074760	Prob. F (1,13)	0.3188
Obs*R-squared	2.214464	Prob. Chi-Square (1)	0.1367

The LM test accepts the hypothesis of no serial correlation up to order 2. Implying that the residuals are not serial correlated and the equation therefore should not be respecified before using it for hypothesis testing. The researchers also moved on to testing for multicollinearity using the condition index criteria. The test of multicollinearity is presented in Table 4.6 as follows:

Table 4.6: Multicollinearity Test

Variance Inflation Factors
Date: 03/04/17 Time: 17:26
Sample: 1981 2014
Included observations: 29

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
D(GDP(-3))	0.008617	9.709253	8.410134
D(GDP(-4))	0.002062	2.163407	1.929747
D(COBM2(-1))	12588.35	2.951161	2.857077
D(COBM2(-3))	12874.44	3.146364	3.004485
D(CPSGDP(-1))	18522.49	13.15236	13.09515
D(CPSGDP(-2))	4578.880	3.248920	3.232151
D(CPSGDP(-3))	18924.35	13.17132	13.14267
D(DDM1(-2))	3700.621	2.561753	2.516033
D(DDM1(-3))	11951.03	7.942701	7.701627
D(M2GDP(-1))	35774.85	21.96579	21.96230
D(MCAPGDP(-1))	835.9058	2.154706	2.143199
D(VSTGDP(-1))	0.047763	2.048665	2.035250
D(VSTGDP(-4))	0.290983	9.506051	9.396512
ECT(-1)	0.000819	2.387260	2.386915
C	49581.02	1.590017	NA

Table 4.6 shows that all the centered variance inflation factors VIF (which is numerically identical to $1/1-R^2$) are less than 30 for one to talk of severe presence of multicollinearity. Precisely, eleven out of fourteen variables have VIF less than 10 while the remaining three variables have VIF less 30. Thus, the VIF indicates no severe multicollinearity among the differenced variables. The heteroskedasticity test is presented in table 4.7 as follows.

Table 4.7: Test of Heteroskedasticity

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.366528	Prob. F(14,14)	0.9647
Obs*R-squared	7.778335	Prob. Chi-Square(14)	0.9006
Scaled explained SS	2.868501	Prob. Chi-Square(14)	0.9993

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 03/04/17 Time: 18:50
Sample: 1986 2014
Included observations: 29

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	568553.5	223891.9	2.539411	0.0236
D(GDP(-3))	-72.87875	93.33653	-0.780817	0.4479
D(GDP(-4))	-33.52181	45.65501	-0.734242	0.4749
D(COBM2(-1))	-11069.69	112814.5	-0.098123	0.9232
D(COBM2(-3))	37468.49	114089.3	0.328414	0.7475
D(CPSGDP(-1))	126687.9	136845.5	0.925774	0.3702
D(CPSGDP(-2))	-7574.406	68039.38	-0.111324	0.9129
D(CPSGDP(-3))	-184679.0	138322.0	-1.335138	0.2031
D(DDM1(-2))	33204.94	61167.12	0.542856	0.5958
D(DDM1(-3))	48026.08	109921.7	0.436912	0.6688
D(M2GDP(-1))	-168869.5	190182.1	-0.887936	0.3896
D(MCAPGDP(-1))	-1271.794	29070.96	-0.043748	0.9657
D(VSTGDP(-1))	-115.3502	219.7492	-0.524917	0.6079
D(VSTGDP(-4))	617.9393	542.3940	1.139281	0.2737
ECT(-1)	37.68962	28.77029	1.310019	0.2113

R-squared	0.268218	Mean dependent var	436557.8
Adjusted R-squared	-0.463563	S.D. dependent var	790370.7
S.E. of regression	956173.2	Akaike info criterion	30.68551
Sum squared resid	1.28E+13	Schwarz criterion	31.39273
Log likelihood	-429.9399	Hannan-Quinn criter.	30.90700
F-statistic	0.366528	Durbin-Watson stat	1.646029
Prob(F-statistic)	0.964737		

The F statistic and the observed R^2 test show that the series are not hetroskedastic but homoskedastic. This is of course expected since the series has already been shown to be stationary. We proceed to test for the normality of the residual to ascertain the distributive condition of the stochastic variables in fig. 4.2.

Normality Test

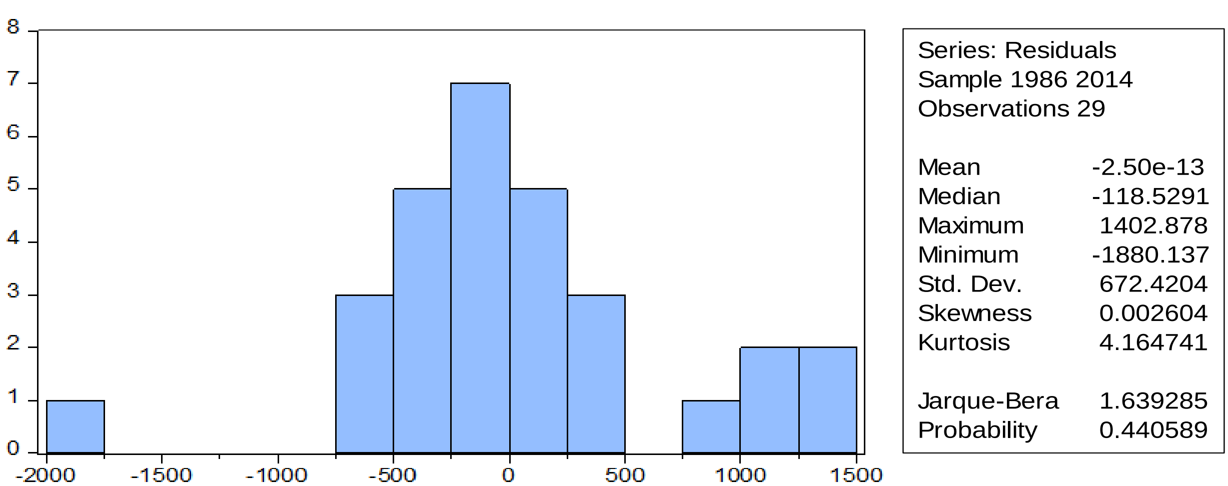

Fig. 4.1: Histogram-Normality Test

Figure 4.1 shows that the value of Jarque-Bera is 1.639285 with a probability of 0.440589 or 44.1 percent which is numerically greater than 5 percent. In the light of this, we concluded that the stochastic variables for the model is normally distributed. To make sure that our model is adequate, we carried out a test for model adequacy of output. Researchers and particularly Carter Hill (2012) contend that coefficient of determination R^2 and its adjusted component are not a good measure for goodness of fit or adequacy of a model when using two stage least square estimates. In the light of this, Ramsey reset test was used to test for goodness of fit of the model.

The essence of these diagnostic tests is to ascertain the authenticity of the model so as to be sure that we are not working with a misleading model that yields inconsistent estimates and spurious results. The Ramsey's reset test for the adequacy of the model is presented in table 4.8 as follows:

Table 4.8: Ramsey RESET Test

Equation: Untitled
Specification: D (GDP) D (GDP (-3)) D (GDP (-4)) D (COBM2 (-1)) D (COBM2 (-3)) D (CPSGDP (-1)) D (CPSGDP (-2)) D (CPSGDP (-3)) D (DDM1 (-2)) D (DDM1 (-3)) D (M2GDP (-1)) D (MCAPGDP (-1)) D (VSTGDP (-1)) D (VSTGDP (-4)) ECT (-1) C
Omitted Variables: Powers of fitted values from 2 to 6

	Value	df	Probability
F-statistic	2.638290	(5, 9)	0.0977
Likelihood ratio	26.17199	5	0.0001

F-test summary

	Sum of Sq.	df	Mean Squares
Test SSR	7525695	5	1505139
Restricted SSR	12660176	14	904298.3
Unrestricted SSR	5134481.	9	570497.9

LR test summary

	Value	df
Restricted LogL	-229.4560	14
Unrestricted LogL	-216.3700	9

The table shows that the probability of the calculated F statistic (0.0977) is greater than 5 percent. That is 0.0977 > 0.05 implying that the model is adequately specified and that that no variable is omitted. We therefore conclude that the model is adequate and plausible.

We also know from various Econometric literature that if two or more time series are cointegrated, then there must be Granger causality between them either on one way or in both directions. Thus, employing Granger causality test, we show the causal relationship between financial development indicators and the growth of the economy in table 4.9.

Table 4.9: Granger Causality Test

Pairwise Granger Causality Tests
Date: 03/04/17 Time: 14:10
Sample: 1981 2014
Lags: 3

Null Hypothesis:	Obs	F-Statistic	Prob.
VSTGDP does not Granger Cause GDP	31	47.1264	3.E-10
GDP does not Granger Cause VSTGDP		7.18051	0.0013
MCAPGDP does not Granger Cause GDP	31	164.102	4.E-16
GDP does not Granger Cause MCAPGDP		0.30826	0.8192
M2GDP does not Granger Cause GDP	31	9.43084	0.0003
GDP does not Granger Cause M2GDP		2.36327	0.0963
CPSGDP does not Granger Cause GDP	31	19.9556	1.E-06
GDP does not Granger Cause CPSGDP		5.00972	0.0077
COBM2 does not Granger Cause GDP	31	1.06892	0.3808
GDP does not Granger Cause COBM2		0.71302	0.5538
DDM1 does not Granger Cause GDP	31	3.89079	0.0213
GDP does not Granger Cause DDM1		1.51774	0.2354

Table 4.9 shows that there is short run causality between capital market liquidity (VST/GDP) and the growth of the economy with a feedback effect. Economic volatility (CPS/GDP) also has a feedback effect with the growth of the economy. While Market Capitalization ratio (MKTCAP/GDP), Broad money velocity (M2/GDP) and the banking system rate of financing the economy (DD/M1) are one directionally driving economic growth. In other words, in the short run, financial development indicators drives economic growth.

V. Conclusion

The intermediation efficiency of the financial sector as well as capital market liquidity do not instantly impact positively on economic growth rather it takes a little time lag for them to manifest positive and significant impact on the economy. The broad money velocity, economic volatility, and market capitalization ratio engender economic growth in the country while the banking sector financing of the economy is significantly inadequate and consequently poses a negative impact on the growth of the economy.

There is bidirectional causality between capital market liquidity or economic volatility and the growth of the Nigerian economy. While market capitalization ratio, broad money velocity and the banking system rate of financing the economy drive the growth of economy with no feed-back effect. For the Nigerian economy to achieve an increased economic growth, government should embark on well articulated reform packages capable of increasing the banking sector involvement in the financing of the economy.

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Balanced Scorecard in Business Performance Measurement and Its Effect on Financial Structure

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Abstract- An effective performance appraisal system is substantially important for the success of the enterprises competing in complex environments. Performance measures are used in the evaluation, control and development of the enterprises' processes to ensure achieving their goals and objectives. Performance measures are also used to compare the performance of different enterprises, factories, departments, teams, and individuals. Traditional performance appraisal methods based on financial criteria have been widely used in assessing business performance. However, performance evaluation methods, which are based on only financial criteria, are not enough to evaluate the performances of the enterprises today. Recognizing the incomplete aspects of performance measures based on financial measures, has led to the emergence of multidimensional performance appraisal approaches in assessing organizational performance. Therefore, along with the financial perspective, enterprises should also consider other perspectives while designing performance appraisal systems. The Balanced scorecard method is one of the multidimensional performance evaluation methods used in evaluating organizational performance.

Keywords: performance measurement, balanced scorecard, financial structure.

GJMBR-C Classification: JEL Code: G20

BALANCEDSCORECARDINBUSINESSPERFORMANCEMEASUREMENTANDITSEFFECTONFINANCIALSTRUCTURE

Strictly as per the compliance and regulations of:

Balanced Scorecard in Business Performance Measurement and its Effect on Financial Structure

Mustafa Iyibildiren [α] & Fehmi Karasioglu [σ]

Abstract- An effective performance appraisal system is substantially important for the success of the enterprises competing in complex environments. Performance measures are used in the evaluation, control and development of the enterprises' processes to ensure achieving their goals and objectives. Performance measures are also used to compare the performance of different enterprises, factories, departments, teams, and individuals. Traditional performance appraisal methods based on financial criteria have been widely used in assessing business performance. However, performance evaluation methods, which are based on only financial criteria, are not enough to evaluate the performances of the enterprises today. Recognizing the incomplete aspects of performance measures based on financial measures, has led to the emergence of multidimensional performance appraisal approaches in assessing organizational performance. Therefore, along with the financial perspective, enterprises should also consider other perspectives while designing performance appraisal systems. The Balanced scorecard method is one of the multidimensional performance evaluation methods used in evaluating organizational performance.

In this study; first, the concept of performance is explained with the main lines, and among the multidimensional performance evaluation methods, the balanced scorecard method is discussed. In the sequel, the methods used for evaluating the enterprises' financial structures are given. Finally, an analysis is carried out on the financial structure state and the resulting changes of a medium-sized industrial enterprise before and after the application of the balanced scorecard.

Keywords: performance measurement, balanced scorecard, financial structure.

I. Introduction

According to modern management concept; performance measurement and management plays a crucial role in today's competitive business environment characterized by the shortage of resources. Enterprises need to make effort for improving their productivity and performance and to achieve compliance by closing the strategic gap between business and environmental elements, in order to be successful in the global competition (Kádárová, Durkáčová, Teplická, & Kádár, 2015, p. 1503). They also have to demonstrate organizational innovation-focused growth and development behaviour, while achieving strategic alignment. In an environment, where competition increases day by day on a global scale and conscious consumer behaviour develops, one of the most important tools of enterprises' competitive management approach is measuring business performance. In this respect, performance management and measurement are important in terms of ensuring compatibility with the business environment as well following and developing management capabilities on the internal business processes of the enterprises.

II. The Concept and Aim of Performance Management

Performance management involves basically; planning and managing business resources in line with predetermined performance targets, gathering business data regularly, monitoring and evaluating improvements about business objectives (Sujova, Rajnoha, & Merková, 2014, p. 276). The concept of performance management is defined as "a form of management that envisages the unification of all employees in the organizations with a team culture and common goals aimed at continuous improvement of business performance and the planning, measurement, orientation and control activities necessary to achieve these goals in coordination with other functions of management" (Efe, 2012, p. 123).

The concerns that had led to the emergence of the concept of performance management are related primarily to the concepts of effectiveness, efficiency and economy. In addition, the provision of transparent and accountable good governance is one of the factors that lead to the development of the concept of performance management (Efe, 2012, p. 124). Performance management in general is; a management process that fulfils the duties of collecting and comparing information

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on the current and future status of the business with the aim of directing the enterprises to predetermined goals, and initiating and maintaining the necessary activities to ensure continuous improvement of performance (Dinçer, 2003, p. 7).

In addition to providing effective control, performance management and measurement benefits managers in planning, control and creating an effective decision-making mechanism for objectives. It also provides information on the organizational process areas, where improvement is needed. Thus, continuous control and improvements made will have a positive impact on the success of the enterprise.

III. Development of Performance Measurement

At global scale, it is known that, performance management and measurement studies have been conducted for a long time, in developed countries. It is seen today that the success of the institutions depends on the criteria of efficiency and effectiveness in the processes as well as presentation of quality services and products. Performance understandings of the companies have shown a constantly evolving and changing process until today. Within this process, some insights of performance have lost importance, while some new or more important ones emerged. Shortly, this development has led to a management approach aimed at the organization of the future by focusing on the criteria such as customer satisfaction, quality and innovation; from the traditional management approach aiming at the most amount of production and high profit through the lowest cost. Moreover, it has been envisaged that the traditional budget and financial indicators alone is not sufficient for the success criteria and non-financial instruments should be evaluated in terms of performance (Kıngır, 2007, p. 98)

In the field of performance measurement Cost-based financial methods and techniques were developed at the beginning of the 20th century and were used as a measure of success and performance for a long-term by the enterprises. Despite significant changes on administration in the field of management, the performance measurement approach, where financial methods and techniques were used, has remained unchanged for a long time. Traditional performance measurements, which use cost-based financial indicators, are not successful in supporting existing business objectives because they do not have the ability to provide continually improvement on other factors that affect performance for the enterprises (Tucker & Tucci, 1994, p.3)

On the other hand, in the studies of 2000s, performance was considered from a conceptual and functional point of view. In addition, the focus was on performance measurement perspectives, evaluation resources and evaluators. While performance management was primarily considered in the field of accounting departments concerned with the budget and planning, later it was seen as a function of superior management due to its being directly related to planning and supervision and therefore having a strategic importance in decision processes (Schiff, 2010, p. 2). In this process, which is seen as a stage of maturity of enterprises in terms of performance management; cultural perspectives, team evaluations and quality cycles are emphasized in performance improvement, planning and implementation for increasing the productivity of the employees and integrating them with the general objectives of the enterprises.

IV. Performance Measurement Methods in Enterprises

The first point that draws attention, when an enterprise is evaluated, is the final financial results. Regardless of whether the enterprise is large or small, the first indicator as a measure of success is the financial performance. Performance measures based on accounting data relate rather to "final business performance" than "relative business performance." Thus, these performance measures are used to assess the overall business performance as a whole. These criteria also allow for the performances assessments of managers in the middle and lower levels, whose areas of responsibility are limited to only one department or place of production (Çelik, 2002, p. 5).

Financial performance measurement methods are examined under four headings: financial statements analysis, residual income, economic value added and market value added.

a) *Financial Statements Analysis*

The most common method used to measure financial performance is financial statements analysis. Financial statements analysis is the study made up of the stages: applying various analysis methods on complex and large amounts of data in the financial tables resulting from the activities of the enterprise in order to make them more comprehensible and usable information; criticizing, interpreting and evaluating the derived results taking the past activity period, sector average, current economic situation of the country into consideration (Argun & İbiş, 2004, p. 39).

Groups interested in financial analysis can be classified as intra-enterprise groups and non-enterprise groups. According to this classification; while intra-enterprise groups involve enterprise owners, managers, employees, etc.; non-enterprise groups are investors, lenders, investment analysts, government, labour unions, public etc. (Short & Welsh, 1990, p. 764). Company managers are the ones, who use financial statements most frequently. Managers use financial statements in; examination of the current structure of the enterprise, determination of how well past decisions were made, and formation of future by taking the elements mentioned into account (Akgüç, 2013, p. 19). Financial statements are used by business managers for the aims such as; assessing the success of the company, determining the level of achieving objectives, if any finding out the causes of negative results, taking decisions for the future, developing the policies of supply, production and marketing, and planning activities to increase profits (Okka, 2006, p. 40).

By taking advantage of various analysis techniques, it is tried to determine the issues such as the profitability and solvency of the enterprise and the productivity of the assets; and the change that the enterprise has shown over time is analyzed.

b) Residual Income

The residual income method has been mainly developed to calculate the net profit as a result of business activities. With the residual income method, the value of the net profits of the enterprise in a period is calculated by deducting the capital cost of the enterprise in that period. Accordingly, the net profit that is left after the investors' expected return on their investments is deducted from the profit made at the end of the period is called residual income (Biddle, Bowen, & Wallace, 1999, p. 6).

Residual income can be expressed in short by the following formula:

Residual Income = Profit Obtained - (Expected Profit Ratio x Investments)

The decisive factor for the expected profit expressed in the equation above is the cost of capital invested by the enterprise. The enterprise wishes to obtain as much as the cost of the invested capital at least. Accordingly, the equality can be expressed as:

Residual Income = Profit Obtained - (Deposited Capital x Cost of Capital)

The residual income method is a performance appraisal method preferred by many enterprises. Because enterprises want to see the added value emerging as a result of their activities, also the residual income is expressed as the amount, not the percentage, such as in some other methods. Enterprises want to maximize their residual income, that is, to obtain more profits than the profits demanded by the investments (Christensen, Feltham, & Wu, 2002, p. 2).

c) Economic Value Added

Enterprises predispose creating value in the performance appraisal methods they use in order to maximize firm value, adapt to competitive conditions and sustain their presence in a sturdy manner. From here, many value-based performance criteria, which are used to determine firm value and performance measurement and are based on accounting data and financial literature, have emerged. The most widespread of those is the economic added value created by developing the concept of residual income (Merchant, 2006, p. 904).

Economic Value Added (EVA), which was patented by the New York-based Stern Stewart consulting firm in 1991, is the value difference between the profit gained by investment and the capital cost, and it is a different alternative to measuring corporate performance (Chakrabarti, 2000, p. 279).

The following formula can be used to calculate the economic value added (Hacırüstemoğlu, Şakrak, & Demir, 2002, p. 3):

EVA = After-Tax Operating Profit– [(Total Resources – Debts) x Weighted Average Capital Cost]

The basic idea of economic value added is; the achieving a positive value, that is enterprise's obtaining higher after-tax operating profit or creating value added than the cost of the assets invested by the enterprise. In other words, it is self-sacrifice's earning at least the as much profit as an investment at the same risky situation can earn in capital markets. The negative outcome indicates that the enterprise had spent its capital rather than creating value and had used the value added created in the previous periods. A zero increase in economic value added can be regarded as an adequate success; because the investors earn enough to cover the risk. As a result, the financial aim of the enterprise is to have a positive economic added value in a constantly positive tendency.

d) Market Value Added

With the widespread adoption of a value-based management approach, it has become necessary to see the market value of companies in order to seek an answer to the question on the direction the shareholders' capital change. The Stern Stewart consulting firm, which is the developer of economic value added, developed the measure of market value added (MVA-Market Value Added) that shows how much the company adds value to the shareholder's investment, or how much it causes it to fall (Önal, Kandır, & Karadeniz, 2006, p. 16).

Market value added is equal to the difference between the market value of the enterprise and the capital it owns. Market value is also a measure of what an executive's management can achieve with a particular resource (Sullivan & Needy, 2000, p. 167).

Market Added Value = Total Market Value of the Enterprise - Invested Capital

If the total market value of the enterprise is higher than the capital used, the shareholder value of the enterprise is increased, whereas if the market value of the enterprise is less than the capital invested, the value of the enterprise is decreased.

As market value indicates the relationship between market value and the capital invested, this assessment may be made for only public companies. Correspondingly; the market added value emerges also as a perceived value of a company's past or future capital projects in the securities market. The market value added not only shows how successfully the capital projects have been implemented in the past periods, but also provides a prediction about whether the new capital projects will be implemented successfully in the future periods (Stewart, 1999, p. 154).

V. Balanced Scorecard and its Perspectives

With increasingly growing industries for information technology, attention on the business resources, which are not easily measured by financial methods, is increasing day by day. In order to optimize their performance, organizations want to ensure a relationship between the strategies and performance of processes, using a variety of tools (Kádárová, Durkáčová, & Kalafusová, 2014, p. 177). For this reason, managers try to improve performance measures, systems and management styles that perfectly assess the performance of their organization. These measurement systems must be flexible, not based on just financial data and must be changeable as needed (Öztürk, 2006, p. 83).

Depending on these, modern performance appraisal methods, which could use the budgets efficiently in short term and make focusing on long-term goals available, have been needed. Modern performance appraisal methods have been designed to compensate for the incomplete aspects of traditional methods. The Balanced Scorecard method emerges as one of the most important modern methods.

a) Balanced Scorecard Definition

Balanced Scorecard was developed for the first time by Robert Kaplan and David Norton with the thought that financial data should be defined in intangible indicators for the enterprises to be able to set future visions and provide competitive advantage. Balanced Scorecard was created in USA in 1992 with the article “The Balanced Scorecard Measures That Drive Performance”, which dealt a study, conducted on twelve enterprises in the private sector as part of a project examining future performance measures and was published in Harvard Business Review and authored by Norton and Kaplan (Gumbus, 2005, p. 619).

Balanced Scorecard is defined as a measurement based strategic performance management system that forms a framework by transforming the missions and strategies of the organizations into comprehensive performance criteria sets (Kaplan & Norton, 1996a, p. 2). Balanced Scorecard; is a performance measurement method that has goals designed according to perspectives, criteria and strategic actions categorized according to a specific structure (Erkollar & Oberer, 2015, p. 943). The Balanced Scorecard, based on the principle of "non-measurable is unmanageable" principle, has emerged as a performance measurement system based on measurement of multiple performance components and briefly reporting them through each performance measurement with a specific weight (Coşkun, 2005, p. 54).

b) Balanced Scorecard Perspectives

Balanced Scorecard uses specific systematic structure to provide managers a broad framework while transforming the company's vision and strategy into a set of performance criteria. Kaplan and Norton suggest that within the Balanced Scorecard, the performance of an operator should be measured in non-financial perspectives such as customer perspective, internal business process perspective, and learning and growth perspective as well as financial perspectives (Kaplan & Norton, 1996a, p.9) However, according to Kaplan and Norton again, these four perspectives should be regarded rather as a pattern or template, than a sewn and ready-to-wear jacket. (Kaplan & Norton, 1996a, p.34) While only two or three of these four perspectives can be used, there may be some enterprises to add one or more perspectives to them according to the conditions in which the firms operate, and the strategy of the enterprise, as well. Those four key perspectives, given in Figure 2.1, are used to measure performances of the organizations and give managers an idea on what to do for being successful.

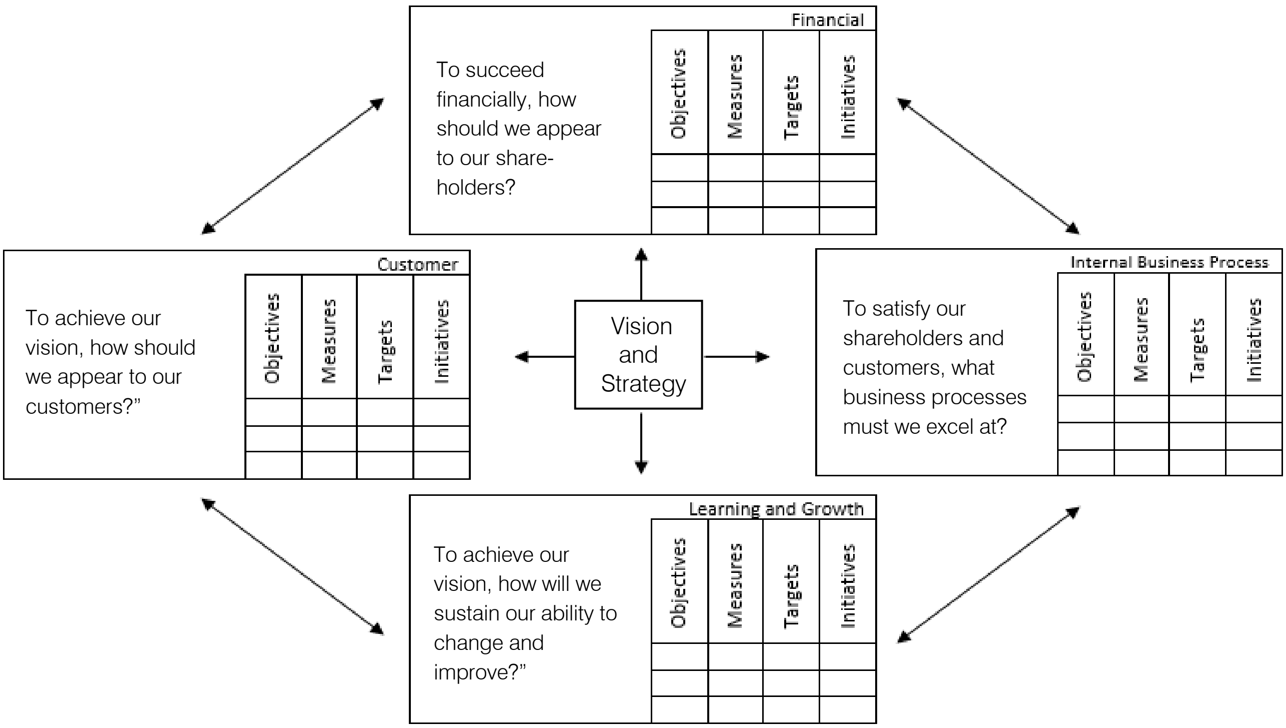

Figure 4.1: Balanced Scorecard Four Main Perspectives

Source: (Kaplan & Norton, 1996b, p. 76)

i. *Financial Perspective*

Financial measures are used to summarize the results of the past work and the measurable outcomes of the current situation with respect to those events. Financial measurements provide a common language for the evaluators to compare and analyze firms. The most important feature that distinguishes Balanced Scorecard from many other performance evaluation methods is that non-financial criteria are used in the system as well as those financial criteria. The financial perspectives is the focus of also the Balanced Scorecard as it is in many other methods.

The financial perspectives concerns the ability of providing financial profitability and financial stability or cost efficiency / effectiveness (Nassar, Othman, Hayajneh, & Ali, 2015, p. 99). The financial perspectives questions how the firm should seem to its shareholders in order to earn success and measures the contribution of the firm strategies to the results on financial structure.

ii. *Customer Perspective*

While enterprises focused on the performance of products and technological innovations, and concentrated more on their own internal competencies in the past, they today focus their attention on the external stakeholders, which are customers. The reason why a customer-focused management approach has become very important is; the quality of the enterprises' products being assessed by the customers. If the enterprises want to create a sustainable business structure in addition to good financial performance in the long term, they need to produce products and services that customers value (Pan & Nguyen, 2015, p. 180).

As growth and profitability for enterprises depend heavily on their ability to satisfy their customers, many enterprises today adopt focusing on customers (Kaygusuz, 2005, p.92). That perspective of Balanced Scorecard; defines which methods will be used to create which values for the customers, how the customers will demand those values to be satisfied, and why they will be willing to pay for those values(Olve, Roy, & Wetter, 1999, p. 61).

iii. *Internal Business Process Perspective*

It is known that almost all of the enterprises today are working to improve quality, reduce processing times, increase productivity and profitability, minimize the amount of raw materials used, and reduce the cost of processes. However focusing on these issues intensively will allow enterprises to gain some advantages, it will not be enough to gain a significant competitive advantage against their competitors. At this stage, the internal business processes that reveal the two fundamental differences between traditional performance measurement systems and Balanced Scorecards appear.

The first one among these differences is that; while the current methods emphasize improving the measures based on cost, quality and time, Balanced Scorecard allows the enterprises to identify new methods and processes that must be applied in a perfect way to obtain objectives on customers and finance. The second one is the inclusion of the renewal process in the internal business processes perspective so that enterprises can identify new emerging and potential needs of customers through the renewal procedure of the Balanced Scorecard application and develop products and services to meet those needs (Ölçer, 2005, p. 95).

iv. *Learning and Growth Perspective*

Factors such as education and motivation are considered to be insignificant by most of today's companies and expenditures made in those areas are seen to be unnecessary. However, the development and self-renewal of an enterprise are directly related to human resources as well as material resources. That is why the fourth and final perspective of the Balanced Scorecard is the learning and growth perspective, which involves the objectives to provide organizational learning and development, and their measurement. At that perspective, intangible assets, which are effective in the formation of strategic success, may be identified (Fooladvand, Yarmohammadian, & Shahtalebi, 2015, p. 952).

The most important element of the learning and growth perspective is the degree of having future value creation capacity of the enterprises for their shareholders (Amaratunga, Baldry, & Sarshar, 2001, p. 184). The ability of an enterprise to meet expectations such as growth and profits for its shareholders and those such as new and quality products for its customers depends on its learning and growth capacity.

VI. The Effect of Balanced Scorecard Application on Financial Structure

In this part of the study, the impact of Balanced Scorecard application, which was conducted at a manufacturing company, on the financial structure of the enterprise will be addressed. A one-year term has been preferred as the measurement and evaluation period, for the Balanced Scorecard created for the enterprise

Three strategic goals have been identified with regard to the financial structure of the enterprise;

- Creating a sturdy financial structure
- Reducing financial costs
- Reducing foreign Exchange losses

Three performance indicators have been put forward in order to determine at which level the objective of creating a strong financial structure has been achieved. Those are; the budget compliance rate, the average maturity term and the foreign resources ratio. Despite trying to carry out a budgeting study within the enterprise, it has not been possible to actually put that into action. It has been determined according to the information obtained from the company that; the budget prepared could go beyond being a draft, no intra-period revisions were made and accordingly serious differences occurred in the period-end comparison. Regarding gradual solution of that problem, a compliance target of 85% was set for that period and efforts were made to ensure the reliability of the data provided in the budget preparation process.

A collection problem, especially regarding spot products, is faced during maturity periods. About the issue, it has been determined that, the maturity dates are stretched by the customers having open-account in addition to the long maturity terms. For that reason, it has planned to make a collection program to the enterprise and to review the maturity dates. For that purpose, it has been aimed firstly to reduce the maturity periods of 120 or more days to 90 days, in the short term.

The final objective for a strong financial structure is reducing the foreign source ratio. However, it is clear that the short-term success may not be achieved due to the fact that the enterprises' usage of long-term foreign resources is excessive. It has been favoured for the enterprise not to ignore that objective in the long term and to set a small reduction target -60%- on the ratio of foreign resources, through leastwise advance purchase target.

It was aimed to raise the enterprise's interest-coverage capacity and the target ratio was set at 4.5%.

One of the most important problems faced by the enterprise is foreign exchange losses. The enterprise is constantly confronted with this problem due to having to buy the raw material that needs especially foreign exchange. In order to encourage reduction of that loss, a target of 4% has been set for the ratio of foreign exchange losses to the sales.

In line with those strategic objectives determined, it was targeted to improve collection times, to reduce the liability ratio, to raise interest coverage capacity and to reduce foreign exchange losses. The performance indicators related those targets, past period achievements, targets and results are given in Table 5.1.

Table 5.1: Results on Performance Indicators (Financial Perspective)

Perspective	Strategic Aim	Performance Objective	Performance Indicator	Current Situation	Target	Result
FINANCIAL PERSPECTIVE	Creating a Sturdy Financial Structure	Adapting the Budget	Budget Compliance Rate	%65	%85	%80
		Improve the collection time of spot products	Average Maturity Period	120	90	94
		Reducing the ratio of foreign resources in total resources	Foreign Resources/ Total Sources Ratio	%63	%60	%62,3
	Reducing Financing Costs	Raising the interest coverage capacity	Interest Coverage Ratio	4,1	4,5	4
	Reducing Foreign Exchange Losses	Reducing the ratio of foreign exchange losses to sales below the current rate.	Foreign Exchange Loss/ Sales	%4,8	%4	%5,2

While the budget harmonization rate, which is adopted as an indicator in determining whether a business has a sturdy financial structure, is partially successful; the foreign resource usage target is seen to be 60%, however the borrowing targets are not met, so the rate becomes 62.3%. Again, the average maturity for this purpose is close to the target and is reduced to 94 days.

The calculated rate of interest-coverage capacity is 4, with a difference of 0.5 points from the target, as well.

The ratio of foreign exchange losses to sales, which is a very important indicator of financial performance for the enterprise, is 5.2%, and it is so higher than the target. The atmosphere of the country and the ongoing fragilities in the global markets have been reflected in foreign exchange prices, the enterprise have moved away from the stated objective and exceeded the rates of previous periods.

VII. Conclusion

Along with modern business management, there have been a number of changes in the competition approach in recent years, as well. Those changes can be dealt under many perspectives such as quality, innovation culture, flexible management/ production capability, speed and authenticity. In the light of all these factors, enterprises should develop a performance-focused competitive perspective, in terms of effective and efficient usage of financial and non-financial resources. Among others, foremost important managerial problem of enterprises operating at a high level of competition is the lack of performance management based on strategic planning. That is, the difficulties in determining at which level they can reach objectives and expectations, or how reachable they are. This problem has led to a rapid increase in the importance of performance and especially performance measurement in enterprises.

In such an environment, enterprises are limited in looking through their futures with traditional measurement systems that only act with past period data and analyze their situation accordingly. For that reason, the performance indicators used to achieve performance measurement in a healthy manner need to be carefully selected. Non-financial factors as well as financial performance criteria should be taken into consideration in performance measurement.

Balanced Scorecard, which has been developed by recognizing the shortcomings and deficiencies of traditional measurement systems, has introduced a comprehensive performance management approach that uses the financial indicators and the non-financial ones together, and takes into account not only the tangible but also the intangible ones in line with the missions and strategies of the enterprises.

After the results of the Balanced Scorecard application in the scope of this study were revealed, a report has been prepared for the enterprise, where the study was conducted. In that report, some important issues were pointed out for each perspective and some suggestions were made about them. Among those suggestions, the ones related to the financial structure are as follows;

- Preference of advance purchases options to the extent that financial possibilities for the supply of raw materials are affordable, for reducing foreign exchange losses.
- Use of alternative financing methods (forward, future, option, etc.) in order to control foreign exchange losses.
- Realising some efforts for solving the inadequacy of equity, in order to reduce the dependency on the foreign source and to increase the interest-coverage capacity.

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The Causes of Default Loans Risk in Microfinance Institutions in Ghana: Case Study of Some Selected Microfinance Institutions in Kumasi and Accra

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Abstract- Purpose: The purpose of the study was to investigate how non-performing loans affect the operating profits, and interest income of microfinance institutions.

Design/Methodology/Approach: The research concentrated in some selected microfinance institutions within the Kumasi and Accra metropolis where majority is located. The study focused on 6 microfinance institutions in Kumasi and Accra. A total of 140 respondents were administered questionnaires and interviewed out of the total population. These include 20 loan officers, 10 recovery and risk management officers, 10 managers and 100 clients were chosen for the study. The study used purposive sampling and simple random techniques. Primary and secondary data were used for the study.

Findings: The study identified the manufacturing sectors have the highest incidence of NPLs. The study discovered a connection between delinquent of recovery and unpaid loans and profitability of the microfinance institutions. A unit change in problem of recovery and outstanding of loans will lead to changes in profitability by 0.685.

Keywords: microfinance, loan, default, risk.

GJMBR-C Classification: JEL Code: H81, D00

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Strictly as per the compliance and regulations of:

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Findings: The study identified the manufacturing sectors have the highest incidence of NPLs. The study discovered a connection between delinquent of recovery and unpaid loans and profitability of the microfinance institutions. A unit change in problem of recovery and outstanding of loans will lead to changes in profitability by 0.685. It was established from the findings of the study that between 2009 and 2014, these selected Microfinance companies recorded 3.60% as the uppermost non-performing loans in 2014 and with the second highest of 2.82% recorded in 2013. The lowest non-performing loans ratio was recorded in 2009 representing 1.36%. The study also discovered that there is a constant rise in interest income from the loan portfolio from 2009 to 2014. The study further indicated that operating profit was affected as the provision of loans impairment increase.

Research Limitations/Implications: In common with others, the study is limited to microfinance in Kumasi and Accra cities of Ghana. The results may differ if replicated in other geographies.

Practical Implications: A number of significant implications are drawn from this study, for example, the study will help the managers in microfinance institutions to develop strategies to control loan default risks in the microfinance operations thereby improving the financial performance and profitability.

Social Implication: Policymakers in developing countries have been looking for answers to help alleviate poverty of their people and thus improve the standards of living. The results of the study helps to provide some answers.

Originality/value: The paper provides valuable insights, from the key stakeholders' in microfinance perspectives, into how non - performing loans affect the operating profits, and interest income of microfinance institutions.

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I. Introduction

a) Background

For the past decade, majority of developing countries have witnessed some financial system experiences (changes) and innovation as result of the emergence of Microfinance Institutions (MFIs). International organizations have come in terms that Microfinance Institutions are genuine and efficient ways to ensure efficient implementation of programme mainly poverty alleviation schemes (projects) as well as seeking direct information on the needs and the interest of the poor across developing countries (Okumadewa, 1998). Microfinance is explained by Robinson (2001) as the small scale financial services that are given to people who are engaged in petty business in the urban and rural communities.

According to Mohammed and Hassan (2008), Microfinance program was established to give loans, saving and forms of financial services to the poor people and low income earners for use in their small and medium businesses. The purpose of micro finance is not only to provide capital but to fight poverty on individual or group of people at all levels and also create institutions that provide financial services, training to the poor in terms of how the capital is used, which are incessantly ignored by the commercial banks (Otero 1999). These microfinance institutions consist of community banks, cooperative banks, rural banks, thrift banks, credit cooperative unions and NGOs.

According to Consultative Group to Assist the Poor (CGAP, 2001) report that nearly three billion (3 bn) poor people are deficient in accessing basic financial services necessary for them to run their businesses and it is projected that 35% of poor people found in developing countries are below the poverty line leading to most of them not able to contribute much to the GDP. In the case of Ghana, it is estimated in GPRS 2003 report that the poverty line of women in the country is 51% and men are 49%. This situation makes it difficult for them to set up and develop their businesses due to inability to access credit. In Ghana, the purpose of Microfinance institutions is to close the gap of the people through economic development method, thus empowering the people more especially the rural poor in form of providing micro financial services to them.

The key objective of Ghana Growth and Poverty Reduction Strategy two (GPRS II) to make sure the country achieved sustainable fair growth, speed up poverty decline and the protection of the weak and eliminate within a decentralized and democratic environment. The purpose of this strategy is to reduce general poverty and increasing income disparity mainly among productive poor people which represent the greater part of the working populace. According to the 2010 population and Housing Census, 80% of the working populace was found in the informal sector. This group of the working populace has challenges in accessing the credit which retard the development and growth of the informal sector of the economy. According to International Monetary Fund (May 2003) report on Ghana, difficulty in the financial sector cripple the prospect of finances of productive private investment. Thus, affecting business growth in Ghana. Since 2000s, the influx of Microfinance in the country has made majority of the people restore to accessing credit as way of running or startup business due to the easy way of accessing loans or services.

Bank of Ghana (BoG) Financial Stability, report covering operations of bank's revealed that Non-Performing Loans (NPLs) has hit 70% (GHC6.1 billion) leading some experts in the industry worried that it might have collapse some banks. In the case of microfinance, GHAMFIN 2008 report the total non-performing loan of the microfinance institution was 6% in 2004, it increase to 9% in 2006 and further to 21% in 2007. loans and Advances constituting over 50 to 70 percent of the total operating assets of the Microfinance institutions, this means that anytime there is a problem in non-performing Loans will lead to enormous negative consequences on the operations of the Micro finance institutions in Ghana causing some of the microfinance institution to collapse. That is some of loans issued by these MFIs regrettably turn out to be non performing leading to bad debt which affects the overall performance of the institutions. This problem has created huge attention from the general public in recent years since it threatens the sustainability of the banking and non-banking financial institutions and the country at large (Arko, 2012). Typical examples are Noble Dream Microfinance, Eden Microfinance, DKM Microfinance, God is Love Microfinance, Lord Winners Microfinance among others. Based on this problem that, there is need to find out how loans default risk affect the microfinance institutions in the country.

b) Problem Statement

According to Boateng and Ampratwum (2011), demand for micro credit is very high due to structure of the economy of Ghana where majority (80%) of the workforce is working in the informal sector. This situation causes a greater risk in the industry as result of the sector it serves. In most microfinance institution, the techniques of granting loans to an individual are using based on favoritism, speculative and experience of the earlier decision which is not data driven to objective analysis it (Arku, June 2013).

Over the years, the banking industry has seen periodic bank distress and sometimes collapse, with the microfinance institutions worst affected. This difficultly of bank distress has been outlined to number of factors, well known among them are improper risk management, favoritism, lack of unqualified personnel, economic factors such as the high interest rate, unstable inflation rate, and non-compliance to monitory and regulatory authorities (Nnanna 2003). Idama et al (2014) argue that credit risk continues to be a danger to microfinance sustainability.

Loan portfolio represents the highest operating cost and source of revenue to many of the microfinance institutions. However, most of loans given out to customers turn out to be non performing which have affected on the profitability and the general performing of financial lending institutions in developing countries. Most of the microfinance institutions that lend money in Ghana are faced with problem of increasing non-performing loans portfolios in spite of attempts to decrease the problem.

The sustainability of microfinance institutions depends mainly on the willingness to collect the loans well and competently as possible. That is financial viability depend on microfinance institution ensuring that their customers pay back their loans (low default of loan) and ensuring due diligent are done when loans are issued.

In recent times, there have been complaints from customers that most the MFIs do not pay back their interest accrued from the money and actual money. These MFIs attributed to the high default rate of clients which means that majority of microfinance institutions are not attaining the internationally accepted standard risk of 3% of the bank's portfolio which raise concern on impact of businesses, individuals and the economy at large. Currently, these defaults of loans have started approaching deep into the operations of microfinance institutions in Ghana. Against this background that the researchers seek to find out the causes of loan default risks in the operations of microfinance institutions in Ghana.

c) Research Questions

The research seeks to address the following research questions.

1. What are the causes of loans defaults in microfinance in Kumasi and Accra?
2. What are the connection between delinquent of recovery and outstanding of loans and profitability of the microfinance institutions?
3. What are the impact of default loans on interest income and loanable funds?
4. What are the effects of non-performing loans on operating profit?

II. Literature Review

a) *Introduction*

Schreiner and Colombet (2001) define microfinance as an effort to improve ways by which small loans and small deposit from the poor are ignored by the commercial banks. In other words, Otero (1999) explained microfinance as provision of financial services to very poor and low income who are self-employed people living within a country. Therefore, microfinance can be defined as providing financial services such as loans, saving and insurance to the low-income earners living in both rural and urban setting who are unable to get such services formal the commercial banks.

For the past years, Microcredit and microfinance have being used interchangeably by among people within the country, it is therefore essential to draw attention to the differences between the two which sometime confuse people. Sinha (1998) explained microcredit as small loans whiles microfinance is suitable where NGOs and MFIs complement the loans with other financial services such as saving, insurance, among others. Okiocredit, (2005) further clarified microcredit as element of microfinance which involves giving credit facilities to the poor people but microfinance means providing extra noncredit financial services such as insurance, savings and payment services.

b) *Development of microfinance institution in Ghana*

According to Asian Development Bank (2000), microfinance rendered financial services to the poor and low income families found in both the rural and urban to develop their business and repay the loan within the due time. The study further revealed that institution of microfinance started before independence but was common throughout the country so as to attain the millennium goal project.

Microfinance has been seen by the policymakers and government as one of the important intervention of providing financial services to its people in the developing countries. It is not amazing that successive governments recognized microfinance as one the key to achieving the larger goal of reducing poverty since this aimed to providing services to the poor both urban and rural of which commercial banks do not provide service to.

In Ghana, the microfinance sector over the years has seen some increase in growth due the some financial sectors policies and programmes done by successive government since independence. Some of them include:

- In the 1950s, Provision of subsidized credits
- The setting up of the Agriculture Development Bank in the 1965 which aimed at providing financial needs to the agricultural and fisheries sector.
- The setting up of Rural and Community Banks as well as regulations set out by the Central Bank in the 1970s and the early 1980s. One of the regulations was the commercial bank setting aside 20% of the total portfolio on the Small and Medium industries and agriculture.
- The movement from a limiting financial sector system to a liberalized system in 1986.
- Dissemination of PNDC law 328 in 1991 to permit the setting up of the various categories on non bank financial institutions as well as the saving and loans. Since then the growing access to financial services in the country has expands the financial services which help economics activities.

Successive governments since independence have come out with policies to groups establishment of microfinance institutions. These include

- Official suppliers such as rural and community banks, saving and loans companies and commercial and development banks
- Semi-official suppliers include financial non-governmental organizations (FNGOs), credit unions and cooperatives;
- Unofficial suppliers include moneylenders, Susu collectors and clubs, rotating and Accumulating savings and credit Associations.

In term of regulatory framework set out by the Bank of Ghana, the Saving and Loans companies are controlled under the Non-Bank Financial Institutions (NBFI) Law 1993 (PNDC Law 328) as well as Rural and Community banks are controlled under the banking Act 2004 (Act 673). As a result of the rapid growth in the microfinance institutions throughout the country the Bank of Ghana since 2011 has come out with operational rules, guidelines and licensing procedures to ensure efficient functions of Microfinance institutions.

c) *Classification of microfinance institution in Ghana*

Bank of Ghana has group these microfinance institutions into various categories. These include the saving and Loans companies, Rural and community Banks, Credit Unions and Financial non-Governmental Organizations.

i. *Saving and Loans Companies*

Saving and loans companies are financial institutions control by the Central Bank which require a

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minimum capital requirement lower that the commercial banks but higher than the rural and community banks under the Non-Bank Financial institution law 1993. The motive behind this law is to help the speedy expansion and transformation of the financial services belonging the private individuals and organizations into saving and loans companies working in the rural and urban areas in the country. These banks normally serve the informal sector whose are mostly unbanked population and designed a products and services that meet the needs of the group within the country. These banks are controlled in term of range of financial services such as providing credit to SMEs and low income clients, money transfer, mobilization of deposit by the Bank of Ghana. They used normally used methodologies of microfinance to provide an average loan size to their clients which are higher the various microfinance institutions the spreading within the country.

ii. *Rural Banks*

Rural banks are entity banks which belong and directed by people living in the community. These banks are recorded under the company code and are accredited by the Bank of Ghana to participate in banking business. Per the company code, these are not allowed opening branches throughout the country but are allowed to open agencies within their areas of operations. The key functions of these banks are saving mobilization and provision of credit facilities to reliable clients within their catchment areas. The aim reason why the Bank of Ghana licensed these rural banks is to serves a way of developing the rural areas within the country.

iii. *Credit Unions*

Credit unions are licensed under Co-operatives branch as a cooperative parsimony society in Ghana and are allowed to receive deposit and offer loans to only their members. These unions have set up an organization known as CUA which serve as regulatory apex body for its members and its affiliates.

d) Financial Non-Governmental Organizations

Financial Non-Governmental Organizations are semi-formal system which is included as companies certify under the companies' code. These FNGOs are recorded Registrar General but not accredited by the Bank of Ghana. FNGOs are usually vigorous within the rural communities and are normally done by the missions. They tailor their products and services to alleviate the poor customers living the country. These FNGOs do not collect money in form of deposit from the customers but used external funds for the microcredit. This money is generally from the government programmes, donors and social investors.

Microfinance institutions in Ghana deal with provision of financial services which aim of targeting the low income earners through designing products. These microfinance institutions manage their customers' funds and also offer products such as savings, loans, and transfer services, insurance and among others. Studies have shown that Microfinance provide various financial services that deal with the development of the poor so as to alleviate them from poverty. This development that microfinance plays to the poor can be as look critically in three broad roles:

- It helps low income earners to meet their basic needs
- It links to improvement in the household welfare
- It also helps to give power to low income earners more especially women by supporting them with programme that seeks to promote equity among the people.

e) The Definitions of Loan Default and Loan Delinquent

i. *Loan Default*

Loan default is explained as the incapability of the borrower to abide by his or her loans responsibility as at when time for payment is due (Adedapo, 2007). In other words, www.investopedia.com defined as loan default as inability to repay a loan given to client according to the agreement between the two parties within a particular period. That is, loan default arises when the debtor is inability to meet the legal requirement for debt repayment within the schedule plan (Murray 2011). In short, when client is not able to pay back a loan issued by the financial services or entity. Pearson and Greeff (2006) also describe default as a risk threshold that explained the time or the point in the borrower's reimbursement history where clients fail to pay at least three installments within 24-month period. This definition is coherent with international standards and was important because the study adapted this definition. This does not mean that the borrower does not pay the loan but the amount of payment done by the borrowers is always lower than the total loan given (Balogun and Alimi, 1990).

Delinquent loans are loans that have a sum of the funds due for payment by the customers but not received the financial institutions or entity. A delinquent loan is said to become default when the chances of retrieval of the money that was given to clients are minimal (Ledgerwood, 2000). That is loans are in arrears, past schedule time, and overdue time and have not being paid by customers of the financial institutions. Delinquency is calculated because it shows a rise loss of credit risk, cautions of operational challenges. This measurement helps to project how much of the portfolio will not be retrieve from the clients. Thus it will never be repaid by the customers (CGAP 1999).

According to CGAP (1999), the delinquency can be analyzed by looking at two broad indicators. These include collection rates measures the amount of money over schedule for payment by the customers (clients) as against the amount of loan issued out. Risk rate of the portfolio measures the unpaid loans balance that were not settled on time by the clients against total loans balances. Agene (2011) explained credit risk portfolio as the worsening of the quality of loan portfolio leading to losses of loan from clients and rising delinquency cost of management.

f) Causes of Loan Defaults

Most of the customers often want to find out if these microfinance institutions are serious in term of collecting the loan payment since most of the MFIs employed staff who do not have much knowledge in financial industry (in term of strategies of collecting the loans). In addition to this, most of the clients believe that MFIs are non-profit organizations which are mostly funded by foreign donors and for that matter these clients do not put their maximum best to ensure that they make profit since there are no shareholders to report to (Dan Norell, 2003).

Customers' survivals are unpredictable in the sense that sickness or death of a family member may force some of the client to borrow from the MFIs with the aim help them since refusal may cause the extended family members to hate the person. This situation lead to most of them not being able to pay the loans since the loans were not entered into profitable business that help repay the loan (Dan Norell, 2003).

Balogun and Alimi (1998) argued that the key causes of loan default are high interest rate, delay in loan delivery, poor supervision on the part of the staff, non profitable venture of the clients of the MFIs and inadequate government interventions such as credit programme and regulations of the microfinance industry. High interest rate, Loan payment gap can influencing rise in borrowing coming from transaction cost which inturn influence negatively performance repayment of clients according to Olomola (1999).

If Loans given to clients for their business are big, additional funds may be put into their personal use. When such loans are due to be repaid, customers find it difficult to pay back the loans since the amount used for the business is not enough to repay the total loans. For instance, NGO based in USA, world vision's Georgia credit fund argues that the loans for personal uses are one of factor that determines whether a client will pay back a loan or not (Dan Norell, 2003). Moreover Akinwani and Ajayi (1990) discovered that age of famers, size of the family, expense of the family, farm size and experience to management methods are some of the causes that affect the farmer capacity of repayment.

Favoritism is one of cause of loan default. If loan given to clients are based on favoritism, customers may decide to holdup payment or default. They believe that their friend working in these microfinance institutions will persuade the organization to cancel the loan rather than encouraging the organization to take them to court or seize their property. This can be setback with small or large business loans leading to default loans. Ahmad (1997), also further explained that the cause of loan default include: lack of readiness of the clients to the loan together with movement of funds by the borrowers, willful abandon and inappropriate appraisal by credit officers. Kwakwa (2009)) further argue that rises in corporate loan default causes in real gross domestic product to fall which in turn cause exchange rate to depreciate and also affect repayment capability of borrowers.

According to Okorie (1986)found out that disbursement time and nature of the loan, profit earned from business and supervision of the staffs are the main cause of loan default in Ondo state in Nigeria leading to clients finding it difficult in repayment of the loans. Other reasons that cause loan delinquencies are the type of the loan, interest on the loan, loan term, the clients (borrowers) income and transaction cost incurred on the loans.

Another cause of loan delinquencies is type of the business. Most of clients do not extensive study on the type of business they want to enter before they enter into. If instance if their friend is doing a business which earns him or her profit for her to pay off her loan collected from the bank, they also enter into that same the business with hope of making profit. They enter into the business and the income generate out of business is not enough to pay back the loan leading to default of loan. In addition to training of clients on recording keeping, how to use your resources and among others are also factor the can lead to default of loan. The clients may spend their loan any how making it difficult for them to pay back the loan when time is due.

Updegrave (1987) establish in his study that there are eight variables which affect credit risk of the consumer. These include age of the borrower, bankruptcy, income, occupation, historical repayment records of the borrowers, number of years a borrower will stay or work in particular place, the position of the saving account and bankruptcy history. This was confirmed by a research of Steenackers and Goovaerts did in 1983. They study used personal loans data in Belgian Credit Company and the findings revealed that number of years a borrower will stay or work in particular place, age of borrower, housing ownership, occupation, monthly income, the number and period of loans, public sector workers or not have a significant connection with repayment.

According Bloem and Gorter (2001) factor that cause loans default are as follows foreign exchange rate, price of main export of the country, volatility in interest rate and cost of petroleum products. They also revealed that poor supervision, poor management and overconfident assessments of creditworthiness during the time the country is experiencing economic booms from government assurances could result in default of loans.

Speculation in form of investing in high risk assets is also factor that can lead to default loans. This happen when these microfinance institutions invest their capital into high risk asset areas and the yields are not coming and also deceitful practices giving loans to unqualified clients or without location or security are some of causes of non-performing loans which turn lead to loan default. In addition to this, internal causes such as shortage or agitation of labour as well as market failures, high interest rate, undue dependence on high priced price inter-bank borrowings are causes of non-performing loans resulting in default of loans. External factors such as natural disasters and economic recessions, term of trade worsening, macroeconomic instability, moral hazard are other variables that can influence loans default (Goldstein and Turner, 1996).

According to World Bank study on non-performing Loans in sub Saharan Africa indicated that non-performing loans attributed to economic shocks together with high cost of capital and low interest margins (Fofack, 2005). Other factors such as Overdrawn account where there is no limited given to clients, overdraft taken in surplus of the practical operational boundary and overdraft account which has not active operated for some time among others have affect performance of loans resulting in default of loans Nicholas Rouse (1989).

g) Repercussion of loan defaults Risk

The interest income produces from loans plays important role to the profitability performance of microfinance institutions. However whenever a microfinance institution experience a loan default, then it means that the health and operations is going to negatively affected. Based on this, Bank of Ghana set up regulations for the microfinance institutions to make provisions and charges of credit losses in term bad debt which eventually decrease level of profit (Bank of Ghana, (2012).

Toxic asset is another consequence of loan default risk. This occur when these depositors and investors loss confidence in the microfinance institution resulting in liquidity problems. Again another consequence is the colossal amount of bad debt that some of these MFIs experience which have negative impact on the profit and wealth of shareholders as well as the growth of the business (Arko 2012). In instance, in Ghana, most of the depositor clients and investors loss interest in the microfinance institutions leading to some of them collapsing. Noticeably among them is the DKM microfinance, Eden microfinance, Noble Dream microfinance, God is Love microfinance Soul winners microfinance and among others.

According to Berger and De Young (1997), most of banks that have fail in doing business have colossal amount of non-performing loans which affect the Asset quality which is significant in predicting insolvency.

h) An Approach of Decreasing Default of Loans

According to Golden and walker (1993), there are 5Cc approaches to decreasing default of loans. These includes

i. Complacency- this refers to the tendency that things are good in the past and for that matter this will be good in the future. Typical example is over reliance on guarantors, account of past loan repayment success since objectives are successful in the past.
ii. Carelessness refers to bad underwriting caused by insufficient loan documentation, inadequate financial information as well as relevant credit information files and deficient protection in the loan agreement.
iii. Communication refers to when financial institutions (lenders) credit objectives and policies are not clearly sent across after a problem arises. To solve this situation, management should collaborate together to effective communicate loan policies as well as enforcing the laws. Loan officers should periodically send information in term of loans to management for them to address it.
iv. Contingencies refer to a situation where lenders down play or ignore circumstances which must loan to loan default. This focal point here is being proactive by identifying risk rather than reactive to risk.
v. Competition involves following the competitors' ways of doing things rather than continuing credit standards of the lenders.

Again, loan repayment should be constantly monitored and whenever there is a default in repayment, a quick action should be taken. The Microfinance should also avoid granting loans to the risky customers or for speculative ventures, monitor loan repayments, and renegotiate loans whenever borrowers get into difficulties. (Kay Associates Ltd, 2005).

Kay Associates Limited (2005) cited by Aballey (2009) states that bad loans can be restricted by ensuring that loans are made to only borrowers who are likely to be able to repay, and who are unlikely to become insolvent. Credit analysis of potential borrowers should be carried out in order to judge the credit risk with the borrower and to reach a lending decision.

i) Strategies of Reducing Default Loans

There are many strategies that most these microfinance institution used to check the rate of loan default. Some of these strategies are discussed as follows;

i. *Portfolio at Risk (Over One Day Late)*

This is explained as the ratio of risk amount to the same value of remaining balance of loans over a late period of one day divided by the value of the remaining loans. The portfolio at risk over one day late ratio is one of the initial warning signal showing that the microfinance is deficient when it come financial discipline in the system. For microfinance institutions to ensure efficient and effective its operations, it is appropriate to installed computer tracking device system to check partial payment that were recorded late which acquired late payment charges. This is put in portfolio at risk over one day late statistics tracking device. This will show management that whether clients are paying back or not paying back the loans and may lead to the loans arrears problems since some customers often know one another. The industry standard portfolio at risk over one date late is below 10% (Dan Norell, 2003).

ii. *Portfolio at Risk Over Thirty Days Late*

This is defined as the remaining balances of loans that are more than thirty late divided the amount of loans remaining. It is one of the ways of measuring arrears of the banking institutions. The higher portfolio at risk means that the likelihood that there is going to high rate of default of loan. When this happen, credit officer or manager should take actions to stop it or stand losing the total amount of loan (Dan Norell, 2003).

iii. *Principle Payment in Arrears Over One Day Late*

This ratio is estimated by dividing the amount of principal payment in arrears by the total amount of loans remaining which is similar to portfolio at Risk. The only variation is that the numerator has the amount of principal payment in arrears rather than the amount of remaining balance of loans that are not paid (arrears) which make it lower than the portfolio at risk over one day late measurement. Many professional in the banking industry choose the portfolio at risk to value the remaining balances of loans that are not paid (arrears). This calculates the whole value that Microfinance institutions stands to lose including the principal payment.

iv. *Principal Payment in Arrears Over Thirty Days Late*

This ratio is estimated by the value of customers' payments that are in arrears divided by the total amount of loans remaining. There is no clear industry standard for calculating principle payment in arrears; it however varies from one country to country. For instance, in USA, World Vision uses a standard which below 4 percent.

v. *Repayment Rate*

This ratio is estimated as the amount of money paid by the clients (minus prepayment) divided by the total sum amount of money that is due payment in addition to the amount that is past payment. Although good, this strategy of reducing loans default has create challenges among the microfinance professionals because it hold back arrears of payment which threatening the industry. When calculating repayments rate it is important not to deduct the prepayment, which means that it must cover up delayed payment of clients in arrears. The industry has 95% standard rate.

vi. *Financial Ratios*

It is very important for management in the Microfinance industry to critically to study the financial ratios very well as it helps them to know health of the loans portfolio status. This also helps management to know the arrears rate of the company and what measures to take to reduce the arrears rate.

j) Empirical Evidences

Berger and De young (1995) studied the causes of loan default in some of the banks in India by looking at industrial sector. The result of the study showed that wrong selection of clients (Enterprenuer), inadequate information in term of viability of client project, insufficient of collateral security, unachievable term and plan of repayment of the loan, strategies of collection of the loans by the staff and natural disaster are the major causes of loan default in India.

NishimuruKazuhito and Yukiko, (2001) investigated the fundamental causes of Japan's extended economic stagnation leading to most loans issued by the banks not doing well or loan default. The result of the study indicated that loans given to companies and industries by the financial institutions for the period of the simmer did not do well leading to default of loans. This situation led to the country experiencing structural reforms and also disallowed financial intermediary system from working well. Kohansal and Mansoori (2009) did further studies which the outcomes indicated that diversion of loans, poor management actions and reluctance to pay back the loans, interest rate ceiling are the causes in loan default in Japan.

Vasanthi and Raja (2006) examined connection between income and other variables on the probability of default risk using data from Australian Bureau of Statistics. The study used the variables such as socio-economic, homeowners and housing characteristics in Australia to determine the cause on default risk. The study used a sample of 3431 households; the findings revealed that repayment is significantly high comparing to consumer credit which is accounting for 93.03%. The findings further indicated that the head of the household has major impact on the default risk. Younger household tend to increase their chance of mortgage payments other than the older household.

Agarwal et al. (2008) investigated the main determinant of loan default in automobile industry. The study used set of individual automobile loans data to evaluate whether the consumption choice of the borrower influence the future loan performance. The findings indicated that an increase in income of individual raises the likelihood of repayment while a rise in unemployment increases the likelihood of loan default. The study further stated that a fall in three month treasury increase the repayment and default of loan. The outcome is connected to the amount of the loan. The findings also revealed that the individual that used their loans on expensive automobiles have a higher likelihood of prepayment whereas loans of economy automobile have a lower likelihood of default.

Autio et al (2009) studied how young adult use small instant loans in Finland. The study used 1951 young adult between 18-29years and the variable used for the research include employment, occupation status, income and structure of the family. The outcomes of the findings revealed that 18-23 years use small immediate loan more than the 24 to 29 year old. The age group 24-29 years used more credit loan as result of their status and higher income. From the result, there is a negative relationship between Gender and loans taken but rather income, structure of the household and occupational status have influence in number of loans taken.

Merritt (2009) examined the cause of mortgage loan defaults. The outcome of the study showed that 36% of restriction of income, unemployment rate (8%) marital challenges (3%) and sickness on the part of client (family member) are cause of loan default and delinquencies. Amilie and Allen (2006) also investigated three key financial ratios to be the main cause of loan default. These ratios include liquidity, profitability and leverage. The result of the study showed that these three financial ratios have a positive impact on the default loans calculation. An increase in any of the three financial ratios variables will lead to default of loan increasing.

Okpugie (2009) investigated the main cause of loan delinquencies and default in Nigeria. The result study showed that high interest rate by these microfinance institutions are the main cause of alarming loan default by clients. This situation led to most of the SMEs working for the MFIs institutions. This was confirmed by a study Vandel (1993) which also revealed that the high interest rate charge by these MFIs create loan default by the clients.

Mario and Claudio (2010) examined whether both behavioral and socio-demographical variables have impact on default loans in United States. The variables used in the study under socio-demographical include age, education level, income, time, ownership of credit card and nationality and result of the finding indicated that there is variation which exclude some of the variables in predicting whether it the cause of these default of loans in US.

Gan et al (2012) studied the causes of mortgage default loans in china. The outcome of the study revealed that the demographic characteristics of borrower affected the lending decision process of the banks. The outcome of study also revealed that amount of loan and interest rate are positively connected to loan default in China. This means that a unit change in amount of loan given to the borrower and interest rate have a change in loan default. The other variable such as bank rate, occupation and whether the clients live in the same catchment of the banks showed a negative relationship with the default of loans.

Bichanya and Aseyo (2013), explored the causes of loan default within microfinance institution in Kenya. The study used a sample of 150 respondents using the simple random sampling. The result of the findings indicated that non supervision on the part of the MFIs staff on borrowers and insufficient training for borrowers in term of how the loans will be used were the cause of loan repayment default. The study also showed that majority of the borrowers did not use the amount of the loan given them to planned and approved project.

Arku (2013) investigated the delinquency and default risk modelling of the microfinance in Ghana within the period of January 2011 to December 2012. The study used criterion model for the study and the outcome of the findings showed that, trading and manufacturing experiences higher rate of default loans than the food vendors as well as the service sectors. The customers of these banks are comparably less dangerous.

Arko, (2012) examined the determinant of causes and the effect of performing loans on the operations of microfinance institutions. The study used focus on Sinapi Aba Trust where five -year data such as interest incomes, operating profit and loanable funds was used the research. The study revealed that Sinapi Aba Trust bank witnessed significant amount of non-performing loans within the five year period and affect the profitability of the bank, loanable funds and the Liquidity position of the bank. The study further revealed that lack of proper monitoring of loans by the staff, business failure on the part of the borrowers, poor marketing opportunities were identified to be the major causes of non-performing loans in the bank. The research also showed that trade and service sector has the highest frequency of non-performing loans.

Addae-Korankye, (2014), explored the causes and control of loan default in microfinance institutions in Ghana. The study adopted random sampling procedures for the work and the result of the findings reveals that inadequate size of loan, poor appraisal on the part of the staff, lack of effective monitoring systems, high interest rate and inappropriate customer selection. The study further stated that the MFIs should have a clear and efficient credit policies and guidelines and must be reviewed. The government and Bank of Ghana should monitor the activities of these MFIs.

Ntiamoah et al (2014) investigated loan default rate and its effect on profitability and measures to control loans defaults in microfinance institutions. The study used qualitative and quantitative methods. The outcome of findings showed that there is a positive relationship creates of loan default rate and profitability of the different microfinance institutions.

Asongo and Adamu (2014), examined the determinant of the causes of loan default in microfinance banks in Nigerian especially standard microfinance Bank Limited. The study used one Hundred and sixty nine questionnaires and Statistical package for social sciences. The outcome of the findings indicate that there was high customers dropout and staff turnover, lack of sanctions given to some defaulters, lack of job experiences of the staffs, poor supervision on clients relation to repayment, non-remainder of the clients in term of repayment, many borrowing on the clients and lack of compliance polices.

III. Methodology

a) Research Design

The study used case study design because it gives clear details and account for many parts of any given social situation. A case study involves empirical analysis of a particular modern day problems within area situation using various sources of facts (Saunder et al (2007)). The study used case study method because it helped in answering the questions asked in the study. This was confirmed by Saunders et al (2007) that case study answers the questions such as what, how, which, why, which help in responding the research questions.

The study also used explanatory design of which face to face interviews were performed by the researchers to get an in-depth understanding of the problem.

b) Population and Sampling

According to Cooper and Schindler (2001), population is defined as the total collection of element about which we wish to make some inferences. According to Bank of Ghana, There are 385 microfinance institutions recognized in Ghana which have more than 3000 staff. These institutions provide services that meet the needs of the SMEs located in both rural and urban area in the Ghana. The study focused on 6 microfinance institutions in Kumasi and Accra. These microfinances were made up of staff and clients of Pathway Microfinance, Nativity Microfinance, Heritage Microfinance, Christian Community Microfinance Limited, Alliance Trust Microfinance limited, Legacy Capital Microfinance Company Limited which are located in Kumasi and Accra. The population of the study was seven hundred and fifty (750) which was made up of fifty staff and seven hundred clients within Kumasi and Accra.

c) Sampling Procedure

A total of 140 respondents were administered questionnaires and interviewed out of the total population. These include 20 loan officers, 10 recovery and risk management officers, 10 managers and 100 clients. The study used purposive sampling technique for the staff because these are the people that will provide the necessary information needed for the study. These staff have diverged knowledge in administration of the microfinance and clients selected were based on the number of times they have gotten loans from their microfinance institutions through convenience sampling. Convenience sampling refers to those respondents that are ready and prepare to give the information.

Unfairness was eliminated in the selection of the respondents by drawing six staff and twenty clients from each of the chosen MFIs at different branch locations. At each branch, loan officers and managers were administered questionnaires and interviewed. This was done to ensure that important information relating to the research understudied was achieved.

IV. Results

a) Background Information of Clients

From the Table 4.1, it was revealed the study that 42.0% of the respondents were males and 58.0% were females. This means that there is a dominance of females in doing business with the microfinance institutions since there is not much difficulty in assessing their financial products compare with the commercial banks.

Table 4.1: Demographic Information of Client

Variable	Category	Frequency	%
Gender	Male	42	42.0
	Female	58	58.0
	Total	**100**	**100.0**
Age	21-30 years	18	18.0
	31-40 years	39	39.0
	41-50 years	25	25.0
	51-60 years	14	14.0
	61 and above	4	4.0
	Total	**100**	**100.0**
Education	Primary	10	10.0
	Junior High	20	20.0
	Senior High	45	45.0
	Tertiary	25	25.0
	Total	**100**	**100.0**

Source: Field Survey 2017

From table 4.1, it was shown that 18% of the respondents were between the ages of 21-30. 39%, 25%, 14% and 4% were in the ages ranges of 31-40, 41-50, 51-60 and 61 and above respectively. Majority of the respondents were in the active working population comprising of 82% of the total respondents. This means that according to the study majority of the working population access these microfinance institutions products such as loans to grow their businesses which in turn affect the SME sector in the country.

From table 4.1, it was shown that majority of respondents forming 45% had Senior High education, 25% had tertiary education, 20% had Junior High and 10% had primary education. The level of education had an effect on the operational activities of the customers since it helps one to know how to keep records of the business, managerial skills, which type of business to enter into, which will earn profit and among others.

b) Background Information of Staff

From Table 4.2 it was revealed that most of the respondents were males representing 57.5% and 42.5% representing females. Most of the respondents were between the ages of 21-40 forming 67.5% and the rest forming 32.5%. Additionally, 70.0% of the people have completed their tertiary level whiles 30.0% of the people have completed Senior High level, with most of SHS graduate working as loans officers. It also revealed that, 37.5% of the staff has worked with the organization for 0-1 years, 25% of the staff has worked with Microfinance institutions for 2-3 years, 17.0% of the staff has work for 4- 5years and 20.0% have worked for 6years and above. This means that majority of staff forming 63% have experienced in the microfinance industry.

Table 4.2: Demographic Information of Staff

Variable	Category	Frequency	%
Gender	Male	23	57.5
	Female	17	42.5
	Total	**40**	**100.0**
Age	21-30 years	11	27.5
	31-40 years	16	40.0
	41-50 years	9	22.5
	51-60 years	4	10.0
	Total	**40**	**100.0**
Education	Senior High	12	30.0
	Tertiary	28	70.0
	Total	**40**	**100.0**
	≥ 1 year	10	25.0
	2 – 3 years	15	37.5
	4 – 5 years	7	17.0
	6 years and above	8	20.0
	Totals	**40**	**100.00**

Source: Field Survey 2017

c) Causes of Loan Default

After issuing out of the questionnaires and carrying out the interview by the researchers, the answers given by the respondents are discuss below. The important factors recognized by these respondents were, high interest rate, high utility services, inadequate monitoring of clients, diversion of funds, poor credit appraisal techniques, business failure among others. The respondents were asked to rank the causes of default of loans in MFIs using the scale of 1-10, with 1 being the main cause and the 10 being the least cause. The result are showed in Table 4.3

Table 4.3: Causes of Loan Default

Causes	Frequency	%	Rank
High interest rate	44	23.4	1st
Inadequate monitoring	29	15.4	2nd
High utility service	33	17.6	3rd
Diversion of funds	25	13.3	4th
Business failure	19	10.1	5th
Improper credit appraisal techniques	23	12.2	6th
Others	15	8.0	7th

Source: Field Survey 2017

The respondents were asked to rank the causes of loan default in the microfinance institutions in Kumasi using a scale of 1-10 with 1 being the important and the 10 the least factor. The result showed that high interest rate which has a frequency of 44 representing 23.4% was dominant cause of loan default in microfinance institutions. These respondents attribute this high interest rate as the cause of problems in business makes it difficult to pay back the loans whenever access loans from the microfinance institutions. These MFIs interest rate ranges from 40% to 60% which it makes difficult for borrowers to pay back all the loans leading to Non Performing of Loans which in turn cause loan defaults. This confirmed to the Bank of Ghana financial Stability report in 2016 that interest rate is one of causes of Non-Performing Loans which in turn lead to loans default.

According to 29 of those who answered the questionnaires, inadequate monitoring was cited third significant factor that causes the default of loans in microfinance institutions representing 15.4%. The respondents explained that inadequate logistics such as vehicles, motorbikes lead to staffs not able to visit their clients effectively and encourage them to pay off their loans. Thus, there is no effective monitoring of clients. This situation leads to most of the clients not paying the loans that they have access resulting in default of loans.

High utility service was cited second important factor that causes of loan default in microfinance institutions with the results representing 17.6%. These respondents explained that tariff set up by the Public Utility Regulatory Commission are high which increase electricity prices in country leading to operational cost of business increases. When this happen, they pass on to the prices of their products or services couple with the slowdown of the economy made demand to fall which affect the revenue of the customers to pay their loans that are contracted from the microfinance institutions. This confirmed to the moody investors service report (2016) that energy issues (utility service) is the cause of Non-performing loans resulting in loans default.

The next factor cited by the respondents was the diversions of funds. 25 of the respondents representing 13.3% believe diversion of funds is one the causes of default of loans. Diversion of funds is where funds meant for specific project is not used for its intended purpose. They explained this to mean that some of the staff gave these loans to their family members without properly accounting for it and also loans not used for intended purpose by the clients. This lead to a fall in the MFIs projected cash flows resulting in loans default.

In the view of 19 respondents, business failure was rated the 5th significant factor that causes non-performing loans leading to loans default microfinance institutions representing 10.1%. These respondents said that most of the clients do not think through the business before they start the business or project. They start the business or project and eventually collapse within certain period making payment of the loans that they have contracted difficult to pay. This situation leads to default of loans within the microfinance institutions.

Poor credit appraisal techniques on the part loan officers was also factor cited by the respondents to be the cause of loan default in microfinance institutions. These respondents rated poor credit appraisal techniques as the 6th key factor that causes default of loans. These respondents describe that as some loans officers do not have the skills to properly assess or examine whether the clients business is economically viable or not. They accept to give loans to them to undertake their project which eventually lead to them not able to pay the loan resulting in default of loans.

Other factors such as high import duties, difficulty in locating loans defaulters house as result of poor house and street numbering system, family size, lack of business management knowledge on the part of loan officers, familiarity of the loans takers, corruption and non-compliance of credit policy representing 8.0% were some of minor causes identified by respondents to be cause of loans default in the microfinance institutions in Kumasi and Accra.

d) Sector that Access of Loans

From table 4.4 it was revealed that 20% of the respondents were in the manufacturing industry, 31% were into trading sector, 28% were in the food industry (food sellers) and 21% were in the service industry. This result suggests that trading industry were the people who access much loans facility from the microfinance institutions than the rest of the sector. This is followed by food industry, service industry and manufacturing sector in that order. Low access of loans in food industry could be attributed to the high demand of the food which translates into rises in revenue which makes them used in their business.

Table 4.5: Sector that Access of Loans

Sector	Frequency Non – Default	Default Rate	Total	%
Manufacturing	5	15	20	75.0
Trade industry	12	19	31	61.2
Food industry(food vending)	22	6	28	21.4
Service industry	13	9	21	42.9

Source: Field Study, 2017

e) Connection between Problems of Recovery and Outstanding of Loans and Profitability

To accomplish the research objective, the connection between delinquent of recovery and outstanding of loans and profitability of the microfinance institutions is presented in Table 4.5using Pearson correlation. The result showed that there was a relationship between delinquent of recovery and unpaid loans. A unit change in problem of recovery and outstanding of loans will lead to changes in profitability by 0.685. This means that good management of credit or loans portfolio will lead to an increase in profitability of microfinance institutions.

Table 4.5: Connection between Problems of Recovery and Outstanding of Loans and Profitability

	Problem of Loans Recovery and Overdue of Loans	Profitability
Problem of Loans Recovery and Overdue of Loans	1	
Profitability	0.685**	1

***Correlation is significant at the 0.01 (2-tailed)*

f) Analysis of the Movement of the Non-Performing Loans

The analysis is done to determine the trends of non-performing loans within the selected microfinance institutions for the period 2009 to 2014. The Table below shows the effect within the six year period.

Table 4.6: Analysis of the Movement of the Non-Performing Loans

Year	2009	2010	2011	2012	2013	2014
Loans	4,875,058	7,802,367	13,825,252	13,245,362	19,096,718	21,809,395
Impairment (credit losses)	66,102	107,829	199,754	227,365	539,451	784381
Percentage of impairment to total loans portfolio	1.36%	1.38%	1.44%	1.72%	2.82%	3.60%

Source: Annual and Financial 2009 -2014

From the Table 4.6, it can be seen that amount of credit loses stated as percentage of total loan portfolio were 1.36%, 1.38%, 1.44% 1.72%, 2.82%, 3.60% for 2009, 2010, 2011, 2012, 2013 and 2014 respectively. These ratios are disturbing because according to the World Bank the global standard of percentage of loan portfolio that are non-payment for over one year is 1.5% compared with Ghana which has 4.5%. It can be seen from the table 4.7 that the ratio of Non-Performing loans raises from 1.36% in 2009 to 1.44% in 2011, it however increase further in the ratio to 1.71% in 2012 as result of renegotiated loans with the clients and also hold up MFIs cash for the fear of losing their investment during election. For the fear of these MFIs suffered from financial difficult in their operations, renegotiated loans were treated as current credit facilities. The ratio increases from 0.98% in 2012 to 2.82% and it further increase to 3.60% in 2014. The increase in ratio was not amazing, looking at the energy crises that the country experienced affected businesses couple with slowdown of the economy made some clients to default the loans. This loans default came as result that these companies increase their loans portfolio by 488.4% without increasing employment of additional credit officers and as well as vehicles, motor bikes among others to ensure efficient and effective monitoring of clients. The resultant impact was that an increased in loan portfolio by more than 100% lead to credit loses increasing.

g) Impact of Default of Loan on Interest Income

Interest income is the main source of income to all financial institutions in Ghana more especially the Microfinance. The study seeks to analyze the effect of NPLs on interest income.

Table 4.7: Impact of Default of Loan on Interest Income

Year	2009	2010	2011	2012	2013	2014	Total
Interest income	2,698,456	3,854,339	5,754,321	8,476,274	9,065,954	12,896,543	42,745,887
Impairment (credit losses)	66,102	107,829	199,754	227,365	539,451	784,381	1,924,882
Percentage of impairment to total loans portfolio	2.45%	2.78%	3.47%	2.68%	5.95%	6.08%	4.50%

Table 4.7 reveals that there was a constant rise in the interest income produce from the loan portfolio from 2009 to 2014. The study further indicated that both loans issued out and interest income was increasing but indicated credit losses by comparing with loans issued out within the period understudy as stated as 2.45%, 2.78%, 3.47%, 2.21%, 5.95%, 6.08% for 2009, 2010, 2011, 2012, 2013, 2014 respectively. From the 4.8, it can be seen from 2009 to 2014 that there was a substantial increase in bad debt amount with exception of 2012 which experienced a fall to 2.21%. The study indicated that provision for credit losses decreased the general interest income for the six year period by $GH₵$ 2114842 representing 4.94%. From 2009 to 2011, an increase in

loans portfolio from *GH₵* 4875058 in 2009 to *GH₵* 13835252 without these MFIs matching with loans officers lead to ineffective monitoring of the clients both fresh loans and renegotiated and refinanced loans in 2010 leading to loans default by some of the clients. Thus, the ratio of NPL to interest income was 2.45% in 2009 but rose further to 3.47% 2011. It however reduced significantly to 2.21% in 2012 as result of election year, for the fear of losing their investment as well as renegotiation and refinancing of the adversely classified loans. The huge provision of loans made in 2013 and 2014 lead to NPL to interest income ratio increase again from 2.21 in 2012 to 5.95% which increase further to 6.0% 2014. This was attributed to the energy challenges that bedeviled the country couple with the slow down the economy as well as high prime rate were some of the factors that made it difficult for most of the clients to pay of the loans resulting in loans default. From the discussion above, it is seen that there is relationship between interest income and credit losses. An increase in credit losses will lead to a fall in interest income which in turn affects the total income of the microfinance companies.

h) The Impact of NPLs on Operating Profit

The analysis is done to determine the effect of Non-performing Loans on the operating profit of selected Microfinance institutions for the period 2009 to 2014. This table below shows the effect within the six year period.

Table 4.8: The impact of NPLs on operating profit

Item/ year	2009	2010	2011	2012	2013	2014	Total
Operating Profit	1,297,452	1,985,661	2,889,344	5,294,321	6,785,432	8,945,321	27,197,531
Provision for credit Losses	66,102	107,829	199,754	227,365	539,451	784,381	1,924,882
Ratio provision credit to Operating Profit	5.09%	5.43%	6.91%	4.33%	7.95%	8.66%	7.08%

From Table 4.8, it can be seen that operating profit was affected as the provision of loans impairment increase. In 2009, 5.09% of operating profit was eroded by provision of loan impairment of the MFIs. It however increase in 2010 by 5.43% which means that an increase in provision of credit loss affected the MFIs operating profit by 5.43% whilst *GH₵* 2889344 of the operating profit in 2011 representing 6.91% was lost as result of bad debt. In 2012 the ratio of operating profit to credit loss falls from 6.91% in 2011 to 4.33% in 2012. This come a result of measures put in place by management of the MFIs which include renegotiation, effective monitoring, loans financing and also not to invest much during the election year. After the election year in 2013, *GH₵* 6,785,432 representing 7.95% of the operating profit was eaten by loans impairment (bad debt). It however experiences the highest effect of Non-Performing Loans in 2014 where the ratio of operating profit to credit loss was 8.66%. In the six year period, the average ratio of operating profit to bad debt representing *GH₵* 27,197,531 was 7.08%. This situation deter potential investors who want enter or partner existing Microfinance company as well as customers who was to increase the saving investment (wealth) rather than losing it as result of increasing non-performing loans or Loans default. In totality, the situation has an effect on the microfinance industry.

V. Conclusion and Recommendation

a) Conclusion

The study revealed that high interest rate, inadequate monitoring and high utility prices were considered the most important factors the influence the loan default in the microfinance institutions within the country. The study indicated that manufacturing is riskier than the rest of the sector in term of loans default. It is therefore expected that management of these microfinance institutions adopt measures to reduce the non-performing loans leading to loans default.

From the finding of the study, it was revealed that that Non - Performing Loans increase throughout the six year period i.e. 2009-2014 which affect the business operations. In 2012 there was improvement in quality Non Performing Loans due to renegotiation of the loans, loans financing and reduction in provision of loans.

The study further indicated that the provision of Non-Performing Loans and loans default have impact on the interest income and operating profit which in turn affect the financial performance of the Microfinance institutions in relation to liquidity and profitability within the 2009-2014 period.

b) Recommendations

- Government and Bank of Ghana should come together to reduce the lending interest rate by designing policies to help shape the Microfinance industry in Ghana.
- Government should look to strategic investors through private sector participation to efficiently and effectively produce electricity at a low cost since reduction a tariff prices set up by the Public Utility Regulatory Commission reduces the operations of the Customers business.
- These microfinance institutions should provide adequate logistics such as vehicles, computers and among others to their staff so as to ensure effective monitoring of the clients who have accessed loans from the microfinance.

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- Management of microfinance institutions should provide regular training programs to staffs more especially loans officers to abreast themselves in modern techniques in tracking their clients who are within the non performing loans or loans default categories and also sharpen their skills and knowledge. These training should be in the areas of risk management, proper accounting and records of their customers, financial analysis and management of Non Performing Loans.
- Management and loan officers should regularly visit these clients periodically to advise them on how to manage their business which in turn help them pay their loans in the long run. Management should effectively monitor this loan facility and periodically review the customers' accounts so as to give an early signal to the management and take measure to non performing loans or loan default.
- Bank of Ghana should restructure and sanitize the operations of the MFIs. This will help reduce the credit loans emanating from Non performing Loans and also reduce its effect on financial performance in the Microfinance industry.

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Effects of Non-Performing Loans on the Profitability of Commercial Banks - A Study of Some Selected Banks on the Ghana Stock Exchange

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Abstract- The aim of this study was to establish the effect of non-performing loans on profitability of four of the major banks listed on the Ghana Stock Exchange (GSE) as this could enhance profitability in banks and consequently contribute to a healthy financial system. Panel regression analysis was employed to establish the relationship between credit risk and profitability in order to account for heterogeneity among selected banks; Standard Chartered Bank (SCG), ECO Bank Ghana (EBG) Ghana Commercial Bank (GCB) and Cal Bank (CBG) for a data span of 2006 to 2015. By the use of Eveiws, the analysis was conducted based on fixed effects model and Correlated Random fixed effects - Hausman test.

The study proxied return on equity (ROE) for profitability -dependent variable. Non-performing loan ratio (NPLR) and capital adequacy ratio (CAR) were the two key explanatory variables. The study revealed that NPLR negatively affect profitability of banks but rate of CAR showed a significant positive relationship with profitability. Bank Size equally showed a positive relationship with profitability. The R^2 explained 89 % of the variations on profitability performance of the banks. Managers of banks are to comply strictly with the rules that regulate the operations of banks in Ghana especially on the issue of capital adequacy ratio. Banks should also be cautious on the rate they expand since bank size can equally affect the fortunes of banks. The central bank must also be up and doing to ensure that banks keep- to all ratios set down by the Central Bank, the banking regulations and the various bards.

GJMBR-C Classification: JEL Code: H81, D00

EFFECTSOFNONPERFORMINGLOANSONTHEPROFITABILITYOFCOMMERCIALBANKSASTUDYOFSOMESELECTEDBANKSONTHEGHANASTOCKEXCHANGE

Strictly as per the compliance and regulations of:

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I. Introduction

Industry in Ghana has been driven largely on credit facilities from the banks and other financial sectors in the Ghanaian economy and has played a pivotal role in our socio-economic development, (Hamisu ,2011). The banking industry has to be applauded for this prominence and influential role. This means that the other industries in Ghana have depended mostly on the financial sector especially the banks for various financial supports and this has contributed to the survival of the Ghanaian economy.

However, many banks in Ghana today are making huge losses due to the problem of non-performing loans in their books. The possibility of a bank to make losses as a result of loans defaults by debtors often happens in the financial sector especially banks. This is clearly a negative effect against the intermediary role the banks play towards the growth of the economy. The rate at which these institutions give credit to businesses and some individuals step up the pace of economic growth of the nation (Kolapo, Ayeni, Oke, 2012).

Ghana banking system is regulated and monitored by the bank of Ghana with the Banking Act made by the parliament of Ghana. The Acts has regulations which guide the activities of all banks and some other financial institutions in the country. Unfortunately, records show that profits in the sector fell sharply in the years 2005 to 2007 to numerous reasons amongst the non-performing loans ratio(NPLR) on the books of most banks but however saw a better liquidity and profitability performance at the close of 2009 (Bank of Ghana, 2012).

Financial institutions all over the world face several risks of nonperforming loans, it is however prudent for these institutions to introduce monitoring mechanisms to follow up with the activities of borrowers. It is well noted that importance of credit risk management has increased particularly in the developing countries for both lenders and borrowers. It is a fact that average bank asset quality worsened sharply due to the global economic meltdown. It is argued however that the poor performance of loans was very uneven in a number of countries. It is also established that a number of variables significantly affect NPL ratios which includes but not limited to lending interest rate, share prices and some risk factors. Non-Performing Loans is the possibility of a borrower defaulting an unpaid loan either partly or in full (Basel Committee on Banking Supervision ,2001), This is in line with Ahmad and Ariff (2007), who stated that NPL is a percentage of loans that are not repaid within three months. The committee further emphasized on credit risk management practices due to the rise of NPLs which is unfavorable to banks achievement of core targets.

Balasubramaniam (2013) outlined some effects that NPLs can have on bank's activities. He argued that

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dealing with NPLs takes essential part of management's time and effort to the detriment of other essential activities of the bank since management could have engaged in fruitful activities to bring good return with the time and effects wasted on NPLS. The author further mentioned that banks do not earn interest income on NPLs and end up losing asset but also waste money to institute specialised departments and hired specialised financial engineers to deal with NPLs. According to Balasubramaniam (2013) NPLs in addition, block income which compels banks to borrow and these results in additional cost to the bank, hence a reputational risk to the bank. If a bank faces NPL problems, it negatively affects its good standing, merging with other institutions to take advantage of better business opportunities.

The study of the impact of credit risk on banks is important because they affect the financial intermediation role of commercial banks which is a core source of income to the banks and ultimately, the financial stability of an economy (Klein, 2013). In this regard, NPLs have gradually drawn attention with the recognition that a result of huge NPL ratios on the books of banks shows clearly the level of inactivity of the economy. This is largely because commercial banks measure their profit performance among other things by the level of loan recoupment and failure to do so adversely impact on the performance (Balasubramaniam, 2013). Khemraj and Pasha (2012) explain that high percentages of NPLs are highly correlated with banks' performances especially in emerging economies. Fofack (2005) also associated banks' heavy accumulation of NPLs with profitability and observed that the NPLs can heavily contribute possible financial distress.

Ghana Banking Survey conducted in 2013 showed that most commercial banks in Ghana are facing huge bad loans, a situation the central bank considered as serious because key banks such as Standard Chartered Bank (SCG), Eco Bank Ghana (EBG), Ghana Commercial Bank (GCB) and Cal Bank (CBG) were not spared. The report did not however indicate the actual outcomes of it but other proofs suggest that bad loans adversely affect the banks' financial condition.

According to Karim, Chan and Hassan (2010), the main effect of bad loans is the ability to hinder the bank to grow financially. This is because bad loans drag banks into liquidity problems and make them unable to extend funds to other potentially viable businesses. Karim et al. also maintained that the banks cannot take up some procreative investment opportunities because of locked up capital due to bad loans and makes banks experience shortfalls in revenue generation.

Ensuring strong credit risk management for building quality loan portfolio is of paramount importance to robust performance of commercial banks as well as overall economy (Charles and Kenneth, 2013). The growing stock of literature in finance and economics underscores that failure in credit risk management is the main source of banking sector crises which possibly leads to economic failure experienced in the past including 2008 global economic financial crises (Fofack, 2005; Onaolapo, 2010). Loan portfolio constitutes the largest operating assets and source of revenue of most financial institutions. However, some of the loans given out become non-performing and adversely affect the profitability and overall financial performance of the lending institutions. Many lending institutions in Ghana are confronted with the challenge of rising non-performing loan portfolios despite efforts at stemming the tide.

This work sought to investigate extensively into how NPL can affect commercial banks profitability performance in Ghana. Thus, this work aims to establish whether non-performing loan has an effect on profitability.

a) *Empirical Review*

The effects of non-performing loans on profitability levels of commercial banks do not occur in a vacuum. Olawale (2014) studied how commercial banks in Nigeria performances are affected by credit risk during the period of 2008 to 2012. The study used a secondary data collected from the companies audited annual accounts published in their websites and also from the publication of the Central Bank of Nigeria. OLS method of analysis was employed. Profitability was measured with ROA as a function of NPLR and Loan and Advances ratio (LA/TD). The author's results show a negative relationship but not significant between loan ratio and total advances in terms of deposits and further shown a significant negative relationship between non-performing loans and advances rate and banks' profitability. The paper further mentioned that banks profitability could be affected inversely by the levels of non-performing loans and advances, thus affecting greatly the banks' liquidity.

Wangai et al., (2014) also examined how the Financial Performance of Kenyan Microfinance Industry has been impacted by Non-Performing Loans and the effects on the survival of small and medium enterprises. This study aimed at establishing how far microfinance banks (MFBs) in Nakuru, Kenya have been affected by non-performing loans over a period of time. They used primary data which was collected from the respondents with a structured questionnaire. The paper analyzed data collected both descriptively and inferentially. It was established that risk associated with credit significantly affected MFBs in Nakuru town's financial performance. The authors further concluded that, increase in credit risk would significantly reduce the financial performance of the MFBs.

Gizaw et. al. (2015) also in their paper examined how far the profitability performance of commercial banks in Ethopia has been affected by risk associated with credit. The study used a secondary data collected from the companies' respective audited annual accounts published in their websites and also from the publication of the Central Bank of Ethopia. The authors were collected from eight commercial banks from a period of twelve year (2003 to 2014). The data was then analyzed using descriptive statistics. Their results showed that variables such as non-performing loans, loan loss provisions and capital adequacy which were used as proxy for credit risk had a significant impact on commercial banks profitability performance in Ethopia. A panel data model was adapted by the paper in line with Kolade et al. (2012). Return on Asset (ROA) and Return on Equity (ROE) were used by the paper as the indicators of profitability performance. The study recommended that commercial banks in Ethiopia need to institute policies and programmes to check credit risk to ensure their profitability and survival.

Chimkono et al (2016) carried out a study that was intended to examine the relationship that exists between non-performing loan ratio and other factors and financial performance of commercial banks in Malawi covering a7-year period from 2008 to 2014. Correlation research methodologies and multiple regression analysis were adopted. Census study applications were used to collect secondary data from the audited financial statements of 10 commercial banks. In this study, financial performance was measured in terms of return on assets (ROA) while non-performing loans (NPL) was measured as the NPL ratio (which was calculated as a percentage of non-performing loans to gross loans, thus Gross NPLs/ Gross loans). It was discovered that non- performing loan ratio, cost efficiency ratio and average lending rate significantly affected bank performance whereas cash reserve ratio directly associated with performance but was insignificant. The authors suggested that the monetary authorities should provide specific support systems to the banking sector and the banks themselves must provide innovations that would enhance their operations.

Bentum (2012) conducted empirical assessment of the determinants of profitability of commercial banks in Ghana during the global financial rises. To address the research problem, the study aimed at evaluating the impact of bank-specific factors, industry characteristics and macroeconomic factors on profitability in the commercial banking sector in Ghana. Secondary data from the annual reports of the banks for 10 years from 2001 to 2011 were used. Multiple linear regression in the form of fixed effect model (FEM) was used. The dependent variable, ROA was used as a proxy for profitability whereas internal and external factors were used as independent variables. The study reported that profitability was determined by bank-specific variables, industry factors as well as macroeconomic factors. Bank factors that influence profitability, according to the study are capital and reserve to total assets, non-interest income to gross income ratio and the natural log of total deposits. Macroeconomic factors that affected profitability during the study period were real GDP growth rate, annual growth rate of inflation and annual growth rate of money supply.

Ali (2015) conducted an investigation into the effects of credit risk management on the financial performance of commercial banks in Jordan during the period 2005 -2013. The purpose of the study was to examine the influence of credit risk management indicators (such as capital adequacy ratio (CAR), ratio of non-performing loans to gross loans (NPL/GL), ratio of credit interest to credit facilities (CI/CF), leverage ratio and the ratio of facilities loss to net facilities (FL/ NL)) on financial performance (profitability) of commercial banks. Profitability was measured by ROA and ROE. Panel regression in the form of pooled least squares and correlation analysis was carried out along with descriptive statistics. Stationarity of the variables was tested with the ADF. Secondary data from the annual reports of 13 banks were used and analyzed. Empirical findings indicate that the ratio of non-performing loans to gross loans positively related to financial performance and an inverse relationship was found between the ratio of facilities loss to net facilities and financial performance but no impact of CAR and CI/CF on financial performance was recorded. The study recommended an improvement in the credit management procedures through an establishment of appropriate policies.

Nkegbe & Yazidu (2015) investigated the trends and determinants of bank performance in Ghana. Panel data regression models were estimated for analysis along with trend graphs and equations. Secondary data from the annual reports of 27 banks covering the period 2000- 2010 were used for the study. Performance which was represented by profitability was measured in terms of ROE, ROA and NIM (Net Interest Margin). Among the independent variables used as determinants of profitability were liquidity, non-performing loans (NPL), bank size (MSL) and operational efficiency. The study reported a negative trend in bank performance and a positive relation between market of loan and bank performance. Macroeconomic factors that the study cited as drivers of profitability were GDP, CPI and broad money supply (M2+). Results further indicated that liquidity, market share of loans and operational efficiency had a positive association with all profitability indicators. But NPL was reported as having negative relation with ROE and ROA. Provision of training to the informal sector on financial statement preparation was suggested as a means of dealing with NPL.

Beck et al (2013) conducted an empirical study on the determinants of non-performing loans (NPL) in seventy-five countries in a dynamic panel regression, fixed and random effects framework. Secondary data set for the period 2000-2010 was used. The ratio of NPL to gross loans was used as the dependent variable. Empirical results indicate that real GDP growth, share prices, exchange rates and lending rates significantly influenced NPL. Of these factors, real GDP growth was mentioned as the main driver of CR.

Asantey & Tengey (2014) studied the effects of bad loans on banks' lending ability and financial performance using secondary data from the annual reports of four listed commercial banks (Eco bank, GCB Bank, CAL Bank, and Agricultural Development Bank) for a-5 year period covering 2008 to 2013. The aim of the paper was to examine the effects of bad loans on the lending ability and net profit (return on investment) of the banks. Pearson correlation test and OLS were used to examine the data. The study discovered a high negative correlation between bad loans and lending ability at 0.05 alpha level and a high negative correlation between bad loans and financial performance, measured as return on investment or net profit at 0.05 level.

II. Material and Methodology

The study uses positive quantitative research paradigm which is appropriate because it enables the capturing of knowledge through measurements of phenomena in which mathematical and statistical procedures are used to describe, predict and explain behavioral phenomena (Krasuses, 2005). The study is basically a quantitative research that aimed at examining the effect of non- performing loans on the profitability of commercial banks as it involves the collection and analysis of audited financial reports using statistical methods. The use of statistical modeling enables the researcher estimate and establishes the existence of causal relationships between the variables of interest.

The study used secondary data that span from 2009 to 2016. Annual time series data for each of the variables; return on equity (ROE), Non-Performing Loan Ratio (NPLR),Bank Size (BS) and Capital Adequacy Ratio (CAR) were sourced from audited annual financial reports of the Standard Chartered Bank (SCG), Eco Bank Ghana (EBG) Ghana Commercial Bank (GCB) and Cal Bank (CBG). Data on consumer price index used as a proxy for inflation (INFL) was obtained from the Ghana Statistical Services annual bulletin. The choice of these variables was informed by literature on the effect of non-performing loans on the profitability of commercial banks in Ghana.

a) *Model Specification*

With the central aim of investigating the effect of non-performing loans on the profitability of commercial banks understudy, the present study followed a panel data model employed by Gizaw et al. (2015) in their investigation of the impact of credit risk on profitability performance of commercial banks in Ethiopia. This study added inflation (INFL) as a control variable to the model to capture the role of price volatility on profitability of banks. Profitability (ROE) is therefore stated as a function of NPLR, CAR, BS and INFL and it is expressed mathematically as:

$$ROE = f\ (NPLR,\ CAR,\ BS,\ INFL) \quad (1)$$

The regression models are thus formulated as

$$P_1 = \beta_0 + \beta_1 NPLR_i + \beta_2 CAR_i + \beta_3 BS_i + \beta_4 INFL_i + \varepsilon \quad (2)$$

From equation (2): P_1 refers to profitability measured by ROE; β_0 is a constant term; β_1, β_2, β_3 and β_4 are coefficients of explanatory variables to be estimated; $NPLR_i$ refers to non-performing loan ratio, CAR_i represents capital adequacy ratio, BS_i represents bank size $INFL_i$ represents the rate of inflation and ε is the error term assumed to be normally and independently distributed with zero mean and constant variance, which captures all other explanatory variables which impact profitability but were not captured in the model.

Return on equity (ROE) refers to the proportion of net income to total equity. Total equity is the amount of funds invested by owners (shareholders) of a company. ROE is calculated as net income divided by total owners' equity and it gives an indication of the rate of return made by owners' equity. Thus, it is a financial ratio that compares the earnings attributable to ordinary shareholders with the book value of their investment in the business. A higher value of ROE means that the company has the ability to generate cash internally and the better for the company in terms of profit generation. ROE has also been extensively used in the literature as a measure of how profitable it is for investors (shareholders) to invest their funds in companies (Hassan & Bashir, 2003).

Non-Performing Loan Ratio (NPLR) is the ratio of non-performing loans to total loans and advances. It is one of the major indicators of credit risk and a measure of credit quality and it shows the proportion of total loans and advances that are in default or overdue for more than 90 days. Some studies have reported a negative linkage between NPLR and profitability (see for example Nkebe and Yazidu, 2015; Gizaw et al., 2015;

Chimkono et., al. 2016 and Olawale ,2014). A negative relationship is therefore expected between NPL and profitability, thus, $\beta_1 < 0$.

Capital adequacy ratio (CAR) refers to the percentage of total owners' equity and reserves that the banks are expected to hold against risky assets. It is meant to safeguard depositors against unanticipated losses. CAR is measured as tier 1 capital plus tier 2 capital divided by risk adjusted assets. Literature has shown that CAR can be negatively or positively related to profitability. For example Garba (2014) and Ali (2015), reported a positive and a negative relationship between capital adequacy ratio and financial performance respectively, Thus, $\beta_2 < 0$ or $\beta_2 > 0$.

Bank size (BS_i) is proxied for the book value of total assets of each bank. This representation was adopted from the empirical studies of Alper and Anbar (2011). Positive effect of bank size on profitability has been reported in the literature (see the works of Alper and Anbar (2011) whiles others such as Naceur (2003) have had a negative linkage. Therefore, $\beta_3 < 0$ or $\beta_3 > 0$

Inflation ($INFL_i$) refers to the rate at which general price level rises in an economy in a year. The consumer price index is used as a proxy for inflation in this study. Accurate and precise prediction of inflation can have a positive impact on profitability and vice versa (Ali, 2015). Empirical research works have mainly reported positive effect of inflation on financial performance (see Athanasoglou et al., (2008); and Davydenko, 2010). In this study, it is assumed that inflation has a negative effect on profitability. That is $\beta_5 < 0$.

b) Method of Estimation and Testing

i. *Panel data regression model specifications*

Panel data can be estimated and analyzed in three different specification models. These are the correlation matrics, the Fixed Effect Model (FEM) and the Random Effect Model (REM). In this study, the fixed effect model is chosen over pooled OLS regression because of the advantages the former has over the latter.

ii. *Pooled Regression Model*

To obtain a reliable and unbiased estimate for analysis, this estimation method uses the classical linear regression assumptions which according to Albright, Zappe and Winston, (2011) stipulate that the error term should be independently and normally distributed with zero mean and constant variance and more importantly must not correlated with the independent variables. The pooled OLS linear regression is given as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{4it} + \beta_4 X_{5it} + U_{it} \quad (3)$$

where Y_{it} is the dependent variable; β_0 is a constant term; X_1 to X_4 are the independent variables; β_1 to β_4 are slope parameters; i…n refers to the cross-sectional units and t is the time period. Using this regression specification, the model for this study is thus written as:

$$ROE_{it} = \beta_0 + \beta_1 NPLR_{it} + \beta_2 CAR_{it} + \beta_3 BS_{it} + \beta_4 INFL_{it} + U_{it} \quad (4)$$

Gujarati (2009) opined that pooled OLS regression model has the advantage of being the simplest, easy to understand and interpret as compared to the other models but the model is associated with some weaknesses. It assumes that cross-sectional units are homogeneous. This assumption may not be realistic. For example, the slope coefficients and intercept must be the same for all the banks that constitute cross-sectional units in this study. This may not be possible and it may be wrong to make this assumption. The error term is assumed to have taken care of the individual bank specific effects and the time components of data. Another weakness of pooled OLS regression may be the existence of autocorrelation in the model which results in errors and invalid conclusions.

iii. *The fixed effect model (FEM)*

The fixed effect model is highly comparable to the pooled OLS regression model in the sense that the slope coefficient is the same for all cross-sectional units and that the intercept remains unchanged across time. One difference between them is that the fixed effect model recognizes heterogeneity among cross-sectional units as against homogeneous units in the case of the pooled OLS regression model. Thus, under the fixed effect model, individual specific effects of cross-sectional units are captured (Batalgi, 2005). In this study individual bank specific effects may include the level of innovation, policies, location, marketing strategies, skills of workforce, clientele base etc. Employing the fixed effect least-squares dummy variable (LSDV) approach, the issue of heterogeneity is taken care of by providing different intercepts for every cross-sectional unit (Brooks, 2008). The fixed model can be specified as:

$$Y_{it} = \alpha_i + \beta_1 X_{it} + \beta_2 X_{it} + \beta_3 X_{it} + \beta_4 X_{it} + U_{it} \quad (8a);$$

Where i in α_i refers to the cross-sectional units representing the intercept values for each cross-sectional unit. Now, inserting the independent variables of this study into this model yields the following equations:

$$ROE_{it} = \alpha_i + \beta_1 NPLR_{it} + \beta_2 CAR_{it} + \beta_3 BS_{it} + \beta_4 INFL_{it} + U_{it} \quad (8b)$$

Among other things, the fixed effect least-squares dummy variable (LSDV) approach is limited by its inability to deal with large samples. It has been stated that larger number of cross sectional units results in a bigger decrease in the degree of freedom (Hsiao, 2006). But Batalgi (2005), believes that this issue is solved with the use of the fixed effect within-group estimator methodology. This approach makes use of de-meaned values of variables to estimate associations. It also does away with large decreases in the degree of freedom associated with large samples. One central weakness of this model according to Hsiao, (2006), has to do with the issue of multicollinearity, which emerges in large samples of cross-sectional units. A linear relationship between two or more independent variables describes the concept of multicollinearity where standard errors are extremely higher hence estimations are distorted. Moreover, the FEM is able to deal with time variant variables only, compared to time invariant ones in estimating coefficients.

III. Results and Discussions

a) *Data Analysis*

According to Brooks (2008), panel data is a data which comprises both cross-sectional and times series characteristics. Panel data analysis is appropriate and significant for this study as it is able to capture heterogeneity among the banks under study. This study uses the fixed effect model to analyse panel data.

b) *Correlation Analysis*

The importance of correlation analysis is to ensure that independent variables are not correlated with each other to avoid multicollinearity. Correlation also provides information regarding the linear association between the dependent variable and each of the independent variables. Correlation refers to the strength of linear associations between two or more Variables (Albright et al., 2011).

Table 1: Correlation Matrix

Correlation	BS	CAR	INF	NPLR	ROE
BS	1.000000				
CAR	0.306883	1.000000			
INF	0.142691	0.174249	1.000000		
NPLR	0.286683	-0.001812	0.273259	1.000000	
ROE	0.541974	0.497600	0.014432	-0.055613	1.000000

From table 1 above all the independent variables have weak to moderate correlation and therefore do not pose any problem of multicollinearity. Interestingly, NPLR is negatively correlated to ROE while CAR is positively correlated which satisfy the prepositions on the effects of NPLR and CAR on profitability. More so, ROE are highly positive correlated also fulfil the condition that ROE can be good proxy for profitability.

c) *Fixed Effects Model*

According to Batalgi (2005), the fixed effects model is akin to the pooled regression model in that it follows classic linear regression assumptions, and that its slope coefficients remain the same for the cross-section units under study. One of the advantages of the fixed effects model is that unlike the pooled regression model it considers heterogeneity among the cross-section units by giving a different intercept for each cross-section unit. In this study, the four banks have different intercepts.

Table 2: Fixed effects model: Dependable Variable (ROE)

Variables	Coefficient	Std. Error	t-statistic	P-Values
NPLR	-2.071178	0.797842	-2.595975	0.0130*
CAR	-0.619268	0.436040	-1.420209	0.1631
BS	0.057950	0.028339	2.044898	0.0473*
INF	-0.002487	0.005611	-0.443180	0.6600
Constant	-0.531453	0.575378	-0.923659	0.3611
R2 Adjusted R^2	0.885643 0.863329			
F-Statistic Prob(F-Statistic)	39.69073 0.000000			

, ** and * indicate significance levels at 1%, 5% and 10% respectively. Source: SCG, EBG, GCB and CBG and SGB (2006 – 2015)*

Table 3: Correlated Random fixed effects- Hausman test

Effects test	Statistic	Chi-Sq. d.f	Prob.
Cross section Chi-square	13.013826	4	0.0112

Source: SCG, EBG, GCB and CBG (2006 – 2015)

Tables 2 and 3 above presents the fixed effects model results. The results are based on 40 balanced observations pooled from the four major banks for the years 2006 to 2015 with ROE as the dependent variables respectively.

The results are in conformity with the prepositions for all the research variables. The p-values for almost all research variables are less than 0.05 which indicates a significant relationship between the dependent variables and the independent variables. The annual inflation is however insignificant since the p-value is greater than 0.05, which is consistent with Chin' Anga (2015) and Wangai, Bosire and Gathogo (2014).

After the pooled regression model and the fixed effects model estimations to ascertain the relationship between the independent variables and the dependent variables it then becomes essential to select the best model and give a more detailed summary of the results of the best model.

In order to choose the most appropriate model a fixed effect redundant test was employed to estimate whether the cross-section units are the same. The null hypothesis forfixed effect redundant testing is, 'The fixed effects are redundant' (De Sousa -Brown, 2008: 87).'

d) Presentation of the fixed effect redundant test results

The null hypothesis is rejected at the 0.05 level of significance as indicated by the test statistic and the p-values on the table. This indicates that heterogeneity exists among the five banks. Since the pooled regression model does not consider heterogeneity among the banks, the most appropriate model to use is the fixed effects model.

The standard errors of the estimators are made to be robust in order to control the presence of heteroskedacicity and autocorrelations in the variables. As indicated in table 2 the R^2 for the model is 89% which shows that the nonperforming loans indicators, thus the independent variables in the model (NPLR, CAR, BS) explains 89% of change in profitability performance of Ghanaian Commercial banks measured by ROE.

Coming to the effect of each independent variable, the results in table 2 indicates that the rate of nonperforming loan to total loan and advances (NPLR) negatively affect profitability measured by ROE at 1% significant level. This implies that a unit increase in non-performing loan amount will result in 25% decrease in ROE. Contrary to this, the rate of CAR shows a positive effect at 0.05 significant level. This means that holding all other variable constant, a unit increase in CAR brings a 11% unit change on ROE. BS equally shows a positive relationship with ROE, this means a unit increase in BS will increase ROE by 1% at 1% significant level. The results from the model, presented by table 2 also show R^2 to be 89% suggesting that the independent variables in the model explained 89 % of the variations on profitability performance measured by ROE.

In reference to the effect of each independent variable, the result in table 2 indicates that NPLR and BS negatively and positively affect ROE at 0.01 and 0.05 significant levels respectively. This means that a unit increase in BS will results in approximately 6% increase in ROE. The results general show ROE of commercial banks in Ghana is highly sensitive to ratio of nonperforming loan to total loan and advances (NPLR), CAR and BS. However, the effect CAR has on ROE is not statistically significant.

The Adjusted R-squared value of 0.863329 implies that about 86% of the variations in the ROA and ROE are explained by variations in the independent variables used for this study. This means that other variables can explain 14% of variations of ROE. Further, the F-statistics values of 41.47419* for ROE indicates that the independent variables used for this study jointly and significantly affect profitability.

e) Discussion of results

Tables 2 and 3 show the results of the study using thefixed effect model. Balanced panel da ta are used for 2006 to 2015 with a total of 40 observations from four sampled banks with ROE as the dependent variables. NPLR and CAR are the study's main independent variables which represent nonperforming loans of profitability. The results for the first proposition (P1) on CAR; CAR has a positive effect on profitability are confirmed in the ROE model. That means that a unit increase in CAR will results in an equal increase in the banks' profit and are consistent with Molyneux and Thornton (1992), Berger et al. (1995), Naceur (2003), Goddard et al. (2004) Brewer and Jackson (2006). Havrylchyk et al. (2006), Athanasoglw et a1. (3008), Ara et al. (2009), Ramlall (2009) and Oladele et al. (2012).

Consistent with the findings of Buyuksalvarci and Abdiogiu (2011) and Qin and Dickson (2012), this study shows that CAR has a significant negative effect on ROE. In this regard, Ezike and Oke (2013) stated that holding capital beyond the optimal level would inversely affect the efficiency and profitability of banks. Though the minimum CAR requirement of Commercial banks in Ghana is 10%, (Banking Act, 2004, Act 673), the descriptive statistics indicated average CAR of the banks under study was 16%, higher than the minimum requirement. Taking the argument of Ezike and Oke

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(2013) the prevalent negative relationship between CAR and profitability appears to result from having reserves beyond the necessary amount enough to handle unexpected risk the banks may encounter.

However, the results for the second proposition (P2), Contrary to the CAR results, NPLR has a negative relationship with ROE.Interpretations from the table 2 and 3 suggest that NPLR which measures the extent of nonperforming loans show a statistically significant large negative effect on profitability measured by ROE. It thus means that a unit increase in NPLR will cause an equal decrease in the profitability of the banks under review. This results is consistence with studies by Godlewski (2004), Achou and Tenguh (2008), Ara et al. (2009) and Aduda and Gitonga (2011), Poudel (2012), Funso et al.(2012) and Chen (2008), who found that increases in NPLR reduce profitability in banks. Consistence with findings of previous studies in Ghana and elsewhere, the criticality of risk nonperforming loans has on efficient utilization of asset by Ghanaian commercial banks is illustrated here.

The empirical results of bank size (BS) were in line with the third proposition (P3). BS has a positive relationship with profitability explained by ROE which is inconsistent with similar studies by Goddard, Molyneux and Naceur (2003) and Javaid et al. (2011) who found bank size to impact on bank profits negatively. Bank size prove to have a positive effect on profitability in Ghanaian banks as shown by the positive coefficient.

Even though the proposed effect on profitability (P4), the effect of inflation on profitability is confirmed, it is insignificant since its p-values is 0.6600, far above the bench mark probability value of 0.05. This is consistence with studies by Revel (1979) and Perry (1992) who found that inflation could have either a positive or negative effect on profitability. The model as a whole indicates a high prediction of the percentage of variation in ROE explained by all independent variables as revealed by the adjusted R^2. Adjusted R^2 shows that 86.33% of the variations in ROE can be explained by the explanatory variables.

The interestingly from the descriptive statistics and the observation of the trend on NPL in Ghanaian banks as per the study of Getahum (2012) and Metahun (2012) showed some decline which indicates that managers and policy makers in Ghana have strengthen their credit management strategies in the banking industry.

IV. Conclusion

The paper was set out to identify the prevailing relationship between non-performing loans and profitability performance of commercial banks in Ghana. Previous studies in Ghana are few and studies in general were inconclusive. Motivated to fill this gap a descriptive statistics and panel data regression analysis were employed on secondary data collected from five commercial banks listed on the Ghana Stock Exchange for a period of 10 years (2006 - 2015).

The study found the fixed effects model to be the most appropriate method to analyse the data. A detailed analysis of the results from the fixed effects model is presented. The study finds that non-performing loans has an effect on profitability in Ghanaian banks as expected, with CAR having a positive signficant effect and NPLR having a negative significant effect on profitability at the 1% level of significance in line with the study by Ara et al (2009). This suggests that credit risk management could be used to enhance profitability in banks by increasing capital adequacy requirements.

The result revealed that nonperforming loans (credit risk) profile of Ghanaian banks had been improving during the study period. The ratio of nonperforming loan (credit risk) is gradually declining in past years. The CAR of commercial banks was found to be higher than the regulatory requirement (Banking Act, 2004, Act 673) at local and international level, but the descriptive analysis proved commercial banks in Ghana have adequate capital to absorb shocks resulting from non-performing loans and other operational risks. The study found that non-performing loans and capital adequacy have a negative and positive significant impact respectively on profitability of commercial banks in Ghana.

Having underscore a significant overall effect of the effect of non-performing loans on the profitability of commercial banks in Ghana, it is suggested that a rigor credit risk management process is of paramount importance to the banks. Hence managers are advised to employ a modern credit risk management technique and diversify the earning activity of their respective banks. Banks should also be cautious on the rate they expand since bank size can equally affect their fortunes. Government, in collaboration with the central bank has to control the macro-economic variables such us inflation and exchange rate (cedi depreciation) since they also impact on profitability of banks.

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Customers' Adoption and use of E-Banking Services: A Study in Public Commercial Banks, Sri Lanka

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Abstract- Internet banking plays a major role in banking sector. It seems that commercial banks has not yet attracted sufficient customers to use internet banking when compared with the other developed and developing countries in Sri Lanka. In many developed countries growth has been experienced in banking sector due to evolution of internet banking in last two decades. Huge investments have been made by different banks in interactive information systems in order to provide advanced services to their customers and in return expect increased profits and market share. However, if customers fail to accept or fully utilize such services than the chances of losses from these investments are likely. In this study the researcher concerns the factors influencing on the customer adoption and uses of E-Banking system in Sri Lankan public commercial banks' perspective especially in Colombo District. The research framework based on the factors which mainly include customer attitude, subjective norms, perceived behavioral Control, A Questionnaire survey was conducted to gather the data and 231 complete responses were gathered from banking customers who were internet users from Colombo district. Public commercial banks have been selected in Colombo District based on non-probability sampling method (quota sampling method). Multiple regression has been used for the analysis.

Keywords: e-banking, customer attitude, subjective norms, perceived behavioral control, srilanka, commercial banks.

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CUSTOMERSADOPTIONANDUSEOFEBANKINGSERVICESASTUDYINPUBLICCOMMERCIALBANKSSRILANKA

Strictly as per the compliance and regulations of:

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Dhanushanthini Ajanthan

Abstract- Internet banking plays a major role in banking sector. It seems that commercial banks has not yet attracted sufficient customers to use internet banking when compared with the other developed and developing countries in Sri Lanka. In many developed countries growth has been experienced in banking sector due to evolution of internet banking in last two decades. Huge investments have been made by different banks in interactive information systems in order to provide advanced services to their customers and in return expect increased profits and market share. However, if customers fail to accept or fully utilize such services than the chances of losses from these investments are likely. In this study the researcher concerns the factors influencing on the customer adoption and uses of e- banking system in Sri Lankan public commercial banks' perspective especially in Colombo District. The research framework based on the factors which mainly include customer attitude, subjective norms, perceived behavioral Control, A Questionnaire survey was conducted to gather the data and 231 complete responses were gathered from banking customers who were internet users from Colombo district. Public commercial banks have been selected in Colombo District based on non-probability sampling method (quota sampling method). Multiple regression has been used for the analysis. Researcher found the factors influencing on the customer adoption of e- banking and gives recommendations in this study to identify the factors influencing on customer adoption of internet banking in the study area.

Keywords: e-banking, customer attitude, subjective norms, perceived behavioral control, srilanka, commercial banks.

I. Introduction

Internet banking facilitates for bank customers to carry out financial transactions on their own through the use of a secured internet website operated by the commercial bank, a retail or virtual bank, credit union or building society (Edojariogba, 2014).Internet banking becomes as the new trend and it comes as the latest technology in the current era. Due to the development of technological advancements ATM's, credit cards, debit cards, Tele-banking, internet banking have become as effective delivery channels. It helps to deliver traditional banking products. Banks have realized that the internet helps to expand their performance local into global (Mavri and Ioannou, 2006).

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Internet banking becomes popular day by day. Every person are busy with their works. They are seeking immediate services from the banks to maximize their benefits. Instead of paper banking now moves to the paperless banking systems. It helps to get quicker services with a minimum time and cost. Customers can use internet banking facilities during 24 hours while staying anywhere such as home, business, and etc. Moreover, internet banking calls many names. Such as, E-Banking, Online banking, virtual banking. Bank customers can access their accounts through the internet. Here, Customers are given their own user names and password, by the banks to access their accounts. By using their own user name and password they can do their all transactions without going to the banks (Burnham, 1996).

The concept of internet banking activities performed through electronic networks. It is the most recent delivery channel of banking services which is used for both business to business (B2B) and Business to customers (B2C) transactions. By using internet banking customers can get varieties of services. Such as, payment of bills and invoices, transfer of funds between accounts, applying for loans, payment of loan installments, sending funds to third parties via e-mails or internet connections regardless of where the client is located (Rahman,2002). Internet banking is the cost effective and cheapest delivery channel which reduces a large number of staff needs. Because no need a large number of employees to do their transactions. All the transactions can be done through the internet. Internet banking provides competitive advantages to the banks (Ortega, Martínez and Hoyos, 2007). With the development of the information technology banking sector's performance boosts day by day. Banks should consider reducing the inconvenience, minimizes cost of transactions and time saving to be important (Kaleem, 2008).

Internet banking can be defined as transactional online banking. Its helps to customers to access their accounts via the internet. Because by using internet banking customers can possess varieties of benefits: Such as to access their account via the internet, view their account details, buying financial services through the online, transfer funds. Unlike traditional banking, internet banking is available for 24 hours a day.

Therefore, customers can access their accounts at any time (Sathye, 1999).

According to the (Tan and Teo, 2000), internet banking facilitates varieties of transactions to their customers. When initially introduced, Internet banking was used as information delivery methods. Because, banks published their information on their websites. Therefore, customers can access and can get much information. With the development of the internet and information technologies, banks tend to adopt and internet banking as transaction mode an information mode. Further, he found that internet banking facilitates common banking transactions to their customers: Such as writing checks, paying bills, transferring funds, printing statements, and inquiring about account balances. Internet offers, opportunity with ease and convenience to perform banking transactions such as cash withdrawals, money transfer, payment of goods and services, payment of utility bills (Chavan, 2013).Some authors and researchers have described and defined internet banking in different ways:

On the other hand electronic banking is the means by which the services and products of banks are made available to their customers through the use of internet and electronic digital devices irrespective of the location of the customer and time of carrying out the transaction. Furthermore, this implies that electronic banking channels enable customers to carry out transactions on their own with ease and convenience (Ovia, 2002). Consequently, customers can carry out banking transactions, such as withdrawal of cash, deposits or transfer of funds, make payment for goods and services online without the direct help of the bank. Internet banking is the use of electronic channels such as telephone, mobile phones, computer systems, the internet and so on for the delivery of banking services and products. This implies that for a customer to successfully use any e-banking product for performing financial transactions there must be an internet connection and smart digital systems such as computers and mobile phones (Sharma, 2011).Internet banking offers the traditional players in the financial services sector the opportunity to add a low cost distribution channel to their numerous different services. Internet banking also threatens the market share of traditional banks, because it neutralizes so many of the competitive advantages of having a traditional branch network (Nehmzow, 1997).Internet banking services vary from bank to bank. Virtually all banks that offer internet banking services allow consumers to check the balance in their accounts, transfer funds and make electronic bill payments, while the more sophisticated internet banking systems allow customers to apply for loans, trades tocks or mutual funds, and even view actual images of their deposit slips (Tang, 2004).

Internet banking is the term used for new era banking structure (Elisha, 2010). The term can ordinarily be referred to as online banking and it is a product of personal computer banking which uses the internet as the delivery channel (Elisha, 2010).This implies that electronic banking requires the use of computer systems connected to the internet. this method enables customers to carry out banking transactions such as transfer of funds, payment of bills, viewing and checking account balances, payment of mortgages and purchase of financial instruments and certificates of deposits' banking is the automated delivery of existing and new banking products and services to customers through various electronic interactive communication channels.

Internet banking is becoming increasingly globalized through the use of internet and World Wide Web. Due to the successful ending off an ethnic conflict which ran over 30 years, the infrastructure facilities are now developing in Sri Lanka. As well as the education level of Sri Lanka Lankans is in a high position and people are heading towards better life styles. Many researchers conducted on the understanding of how Relative Advantage, perceived ease of use, Perceived usefulness, demographics factors, perceived trust, social influence, Compatibility, perceived Security, Trialability, Service quality, Complexity factors influence on the customer adoption of internet banking (Ghaith, Sanzogni and Sandhu, 2010). In that manner, all the commercial banks are trying to use internet banking as the competitive tool, in order to get the competitive advantage. Internet banking allows creating solutions and plans to attract more customers to gain more share in the internet banking market. However in Sri Lankan context there are few researches only undertaken to identify the factors influencing on the customer adoption of internet banking system (Wijesiriwardana, 2003). This research also applied for the public commercial banks in Sri Lanka (Peoples' bank and Bank of Ceylon). On the other hand, the public commercial banks introduced the internet banking in recent years and they have very large customer base in Sri Lanka. Therefore, to identify the factors influencing on the customer adoption of internet banking system, in public banks are necessary.

In that manner the major problem associated with this research is whether there are any factors influencing on the customer adoption of internet banking system, in public banking system in Sri Lanka. In that manner following research question is developed.

What are the factors influencing on customers' adoption and use of e-banking services in public commercial banks, Sri Lanka?

II. Literature Review

a) Internet Banking

The advent of Internet, electronic commerce, communication technology and users' response to this technology has opened opportunity for many businesses including the financial institution. Adoption of electronic banking service delivery is fast gaining ground in Nigeria. Different e-Banking channels such as electronic cards, internet banking and mobile banking services have been introduced. Electronic banking offers benefits to both banks and customers. Pikkarainen et al. (2004) mentioned two fundamental reasons underlying online banking development and penetration. First, that bank gets significant cost savings in their operation through e-Banking services. It has been proved that online banking channel is the cheapest delivery channel for banking products once established. Second, that bank have reduced their branch networks and downsized the number of service staff, which has paved the way to self-service channels as quite many customers felt that branch banking took too much time and effort.

On the other hand, customers enjoy self-service, freedom from time and place constraint, and reduced stress of queuing in banking hall. Therefore, time and cost savings and freedom from place have been found the main reasons underlying online banking acceptance. It was indicated that electronic banking services delivery are the cheapest, the most profitable and wealthiest delivery channel for banking products (Pikkarainen et al., 2004).

However, not all bank customers engage in the use on e-Banking services. There are multiple reasons for this. First, customers need to have an access to the Internet in order to utilize some e-Banking facilities such as Internet and Mobile banking facilities. Furthermore, most new online users need first to learn how to use the service. Second, nonusers often complain that online banking is incomprehensible, difficult to use and has no social dimension, i.e. the lack of face-to-face situation at branch (Karjaluoto 2001; Mattila et al., 2003). Third, customers are afraid of security issues (Ezeoha, 2005).

This research study is mainly focus on identifying the factors influencing to adoption of internet banking in public commercial banks Sri Lanka. The research framework for this study is based on the extension to decomposed theory of planned behavior (Tan & Teo, 2000).

Extension to Decomposed Theory of Planned Behavior (TPB) is widely studied model from social psychology which was extended from the theory of reasoned action (TRA). TPB hypothesized by individual's behavioral intension (BI) to perform a behavior is jointly determined by the individual's attitude toward performing the behavior (ATB), subjective norm (SN) and perceived behavioral control (PBC). Taylor and Todd (1995) extended theory of planned behavior by decomposing the attitude component (as relative advantage, compatibility, complexity, which were mentioned in diffusion of innovation theory by Rogers, (1983) and perceived behavioral control component (as self-efficacy and facilitating conditions). Based on the above decomposed theory of planned behavior, Tan & Teo (2000) extended it to identify the factors influencing internet banking adoption behavior on Singapore. So this research study is mainly based on this extended theory of planned behavior and it is composed with;

i. *Customer Attitude*

Attitude is defined as an individual's positive and negative feelings (evaluative effect) about performing target behavior (Fishbein & Ajzen, 1975). The different dimensions of attitudinal belief toward an innovation can be measured using the five perceived attributes (relative advantage, compatibility, complexity, trialability and observability) specifically first three attributes of an innovation (Taylor & Todd, 1995). These attributes were originally proposed in the diffusion of innovations theory (Rogers, 1983), were applied in this framework with the exception of observability, which is defined as the degree to which the results of an innovation are visible to others (Rogers, 1983). Observability was considered irrelevant in this study because an important characteristic of doing banking is 'privacy'. Therefore, observing others using internet banking services may prove difficult unless one makes a conscious effort to do so (Tan & Teo, 2000).

ii. *Subjective Norms*

Subjective norms refer to the person's perception that most people who are important to him/her think he/she should or should not perform the behavior in question (Fishbein & Ajzen, 1975). It is related to behavior because people often act based on their perception of what others think they should do. Subjective norms have been found to be more important prior to, or in the early stages of innovation implementation when users have limited direct experience from which to develop attitudes (Taylor & Todd, 1995). Most of the consumer oriented services, the consumer-relevant groups around the individual may influence the individual' adoption. Adopter's friends, family, and colleagues/peers are groups that will potentially influence the adoption (Tan & Teo, 2000). Although there is no basis on which to predict how each of these groups will affect adoption of internet banking, it is nonetheless expected that the influence of these groups as a whole will be significantly related to the individual's adoption internet banking (Tan & Teo, 2000).

iii. *Perceived Behavioral Control*

Perceived behavioral control refers to the factors that may impede the performance of the behavior. This definition encompasses two components. The first component is "self-efficacy" and is defined as an individual's self-confidence in his or her ability to perform a behavior. The second component is "facilitating conditions" and it reflects the availability of resources needed to engage in the behavior.

Self-efficacy predicts intentions to use a wide range of technologically advanced products. Thus, an individual confident in having the skills in using the computer and the internet is more inclined to adopt internet banking. This is because the individual is comfortable in using the innovation (Tan & Teo, 2000).

The second component, facilitating conditions refers to the easy access of technological resources and infrastructure. The government can play an intervention and leadership role in the diffusion of innovation. Potential users, in turn would view new applications such as internet banking services more favorably and hence be more likely to use them (Tan & Teo, 2000).

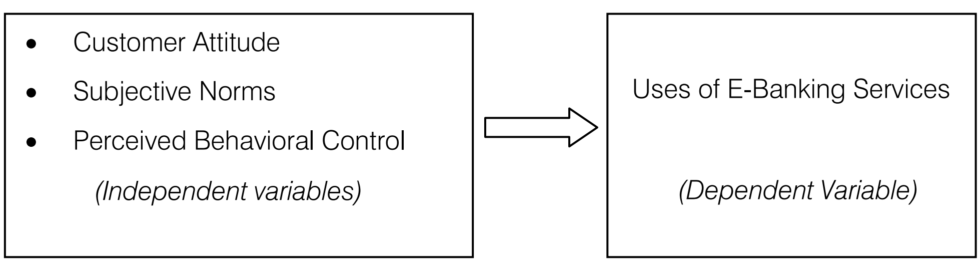
b) Importance of Internet Banking

Importance of Internet banking concerns doing banking activities via the Internet. Internet banking allows customers of commercial banks to check the balances of their accounts, transfer funds and pay utility bill payments. The facilities available for Internet banking differ from bank to bank. Nowadays the Internet is the main channel for Internet banking. Internet banking offers many benefits to banks and their customers (Karjaluoto, 2002). The main benefits to commercial banks are cost savings, convenience, easy access, reaching new segments of the market, efficiency, enhancement of commercial bank's reputation and better customer service and satisfaction (Jayawardhena and Foley, 2000). On the other hand Internet banking provides also new value to customers of commercial banks. Internet, banking has no limitation to time or geography. Customers of commercial banks all over the world have access 24 hours per day, seven days a week. It makes available to customers a full range of services including some services not offered at branches. Internet banking saves time and money provides convenience and accessibility (Karjauloto, 2003). It has been claimed that Internet banking offers the customer more benefits at lower costs (Mols, 1998). Turban et al. (2000) indicated that Internet banking is extremely beneficial to customers because of the savings in costs, time and space it offers, its quick response to complaints, and its delivery of improved services, all of which benefits make for easier banking. To summarize, Internet banking provides many benefits to customers of commercial banks.

c) Adaptation of Internet banking in Sri Lanka

Internet banking has become more popular features of the banking industry with the growing popularity of modern telecommunication technology among Sri Lankans. There are 24 listed commercial banks in Sri Lanka most of the commercial banks have the facilities of Internet banking but it seems customers of commercial bank still using traditional way to get their service internet banking in Sri Lanka from bank. Further, most of the customers aware about the Internet banking they just own or have the facilities to access Internet banking, but not ready to access or use Internet banking services. It is good opportunity to increase the usage of Internet banking since most of the customers are using smart phones comfortably. The mangers of commercial banks have the duty to make understand the benefits of Internet banking to their customers.

d) Conceptual Model



e) Hypothesis

H1: There is a positive impact of customer attitude on customers' adoption and use of e-banking services in public commercial banks, Sri Lanka.

H2: There is a positive impact subjective norms on customers' adoption and use of e-banking services in public commercial banks, Sri Lanka.

H3: There is a positive impact of perceived behavioral control on customers' adoption and use of e-banking services in public commercial banks, Sri Lanka.

III. Method

Quantitative methodology was applied and questionnaire was used to collect data. From two public commercial banks in Colombo district 231 customers were selected based on the quota sampling method. Before the final data collection pilot study was undertaken. In this study questionnaire was developed with the support of previous studies carried out by experts in the relevant subject areas.

Prior to data analysis, data purification process was conducted to ensure suitability of measures (Churchill, 1979). For ensuring the reliability of scale, Cronbach's alpha was computed. Multiple regression analysis had been used as data analysis tools and used to test the hypothesis.

Table 01: Cronbach's Alpha Coefficient for Variables

Variables	No. of items	Cronbach's Alpha Coefficient
Customer Attitude	8	0.724
Subjective Norms	5	0.814
Perceived Behavioral Control	7	0.985

Source: Survey Data

Table 02: Factors influencing on uses of E-Banking Services

Hypotheses	Variable Independent	Depend. Variable	Standardized Coefficient Beta	Sig.	Adjusted R^2
H1	Constant Customer Attitude	uses of e-banking services	0.830	0.00	0.781
H2	Constant Subjective Norms	uses of e-banking services	0.573	0.00	0.516
H3	Constant Perceived Behavioral Control	uses of e-banking services	0.776	0.00	0.692

Source: Survey Data

H1: There is a positive impact of customer attitude on the uses of e-banking services in Sri Lankan public commercial banks- According to the table 02, the fitted model encountered that the customer attitude has a strong positive effects on the uses of e-banking services (I.e. R^2=0.781). These predictions had been significant at the P-value of less than 5% ($p< 0.05$) and the regressed model was satisfactory fits to the data and the predictability power of the fitted model was high and residuals also followed a normal distribution.

H2: There is a positive impact of subjective norms on the uses of e-banking services in Sri Lankan public commercial banks- According to the table 02, the fitted model encountered that the subjective norms has a positive effects on the uses of e-banking services (I.e. R^2=0.516). But not strong. These predictions had been significant at the P-value of less than 5% ($p< 0.05$) and the regressed model was satisfactory fits to the data and the predictability power of the fitted model was high and residuals also followed a normal distribution.

H3: There is a positive impact perceived behavioral control on the uses of e-banking services in Sri Lankan public commercial banks- According to the table 02, the fitted model encountered that the perceived behavioral control has the strong positive effects on the uses of e-banking services (I.e. R^2=0.692). These predictions had been significant at the P-value of less than 5% ($p< 0.05$) and the regressed model was satisfactory fits to the data and the predictability power of the fitted model was high and residuals also followed a normal distribution.

IV. Discussion, Conclusion and Recommendation

The ultimate objective of the research is to identify the factors influencing in the uses of e-banking services in Sri Lankan public commercial banks. The regression result shows that there is a strong positive impact of customer attitude and perceived behavioral control on the uses of e-banking services in Sri Lankan public commercial banks. It means that customer attitude has strong positive effects on the uses of e-banking services in Sri Lankan public commercial banks and 78.1% of change in the uses of e-banking services is explained by customer attitude in Sri Lankan public banks. These findings are in the line with Jayasiri & Weerathunga (2008). Based on that, the first hypothesis (H1) has been accepted. Further the regression result shows that there is a strong positive impact of perceived behavioral control on the uses of e-banking services in Sri Lankan public commercial banks. It means that the perceived behavioral control also has strong positive effects on the uses of e-banking services in Sri Lankan public commercial banks and 69.2% of change in the uses of e-banking services is explained by perceived behavioral control in Sri Lankan public banks). Based on that, the first hypothesis (H3) has been accepted. At the same time subjective norms also have the positive impact on the uses of e-banking services in Sri Lankan public commercial banks, even though this impact is not strong. That means only 51.6% of the changes can be explained by the subjective norms of the uses of e-banking services in Sri Lankan public commercial banks.

During this study, researcher encountered the following recommendations. This research has only been confined to the public commercial banks Industry. Therefore same research can be extended to other service sector entities such as hospital industry, private banking industry, telecommunication industry etc. Furthermore this research has been undertaken in different perspective in different context (B to B) context.

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Effect of Self-Attribution Bias on Investment in the Rwandan Stock Market

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Abstract- The main objective of this study was to establish the effect of self-attribution bias on investment in the Rwanda Stock Exchange. The study used cross-sectional descriptive survey research design to ascertain and establish the effect of behavioural biases on investment in the Rwanda stock exchange. The target population comprised of 13,543 individual, group investors at the Rwanda Stock Exchange. Random sampling was used where the targeted population was individual investors to finally yield a sample size of 374 respondents. A questionnaire was used to collect the primary data. A pilot test was undertaken by carrying out a small scale trial run of the research instrument. Data analysis involved the use of descriptive and inferential statistics. A Linear regression model was used to predict the probability of different possibility outcomes of dependent variables, helping to predict the probability of an investor to invest in RSE. The results confirmed that there was a significant positive linear relationship between self-attribution biasand Investment in Rwanda stock market.The study also concluded that most investors suffered from self-attribution bias in investment in stock markets.The study recommends that investors should be keen to identify such bias to increase their rationality in stock trading.

Keywords: self-attribution bias, investment, rwanda, stock, exchange.

GJMBR-C Classification: JEL Code: E29

EFFECTOFSELFATTRIBUTIONBIASONINVESTMENTINTHERWANDANSTOCKMARKET

Strictly as per the compliance and regulations of:

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Abstract- The main objective of this study was to establish the effect of self-attribution bias on investment in the Rwanda Stock Exchange. The study used cross-sectional descriptive survey research design to ascertain and establish the effect of behavioural biases on investment in the Rwanda stock exchange. The target population comprised of 13,543 individual, group investors at the Rwanda Stock Exchange. Random sampling was used where the targeted population was individual investors to finally yield a sample size of 374 respondents. A questionnaire was used to collect the primary data. A pilot test was undertaken by carrying out a small scale trial run of the research instrument. Data analysis involved the use of descriptive and inferential statistics. A Linear regression model was used to predict the probability of different possibility outcomes of dependent variables, helping to predict the probability of an investor to invest in RSE. The results confirmed that there was a significant positive linear relationship between self-attribution biasand Investment in Rwanda stock market.The study also concluded that most investors suffered from self-attribution bias in investment in stock markets.The study recommends that investors should be keen to identify such bias to increase their rationality in stock trading.

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I. Introduction

a) Background of the Study

Behavioural finance is the new field that seeks to combine behavioural (aspirations, cognition, emotions) and cognitive psychological theory. It explains why investors makes a rational financial decisions on the stock market (Lodhi, 2014). It describes the outcomes of interactions between investors and managers in financial and capital markets; and it prescribes more effective behaviour for investors and managers. The investment is mostly influenced in a large proportion by psychological and emotional factors (Sukanya & Thimmarayappa, 2015).

Behavioural finance attempt to better understand and explain how emotional and cognitive errors influence investment on the stock markets (Subrahmanyam, 2008). The stock markets are able to positively influence the economic growth through encouraging savings amongst individuals and providing avenues for firm financing. Liquid stock markets may improve the allocation of capital and enhance prospects for long-term growth (Wasiu & Temitope, 2013).

Investment is not an easy process, since the assumption is that investors always expect to maximize the returns although not all investors are so rational (Sukanya & Thimmarayappa, 2015). Traditional financial theories assume that investors are rational and risk averse, and hold diversified, optimal portfolios (Bhamra & Uppal., 2015). However, this doesn't work in reality since investors must consider the behavioural biases in investing as this can help the investors to avoid some unnecessary mistake made in investment in order to maximize the return and minimize the risk (Sukanya & Thimmarayappa, 2015; Bhamra & Uppal., 2015).

According to Shefrin (2007) bias is nothing else yet the inclination towards failure. Bias is tendency to make decisions while the decision maker is already being subjected to an underlying credence or belief. There are so many biases in human psychology (Shefrin, 2010). These biases lay impact on individuals in such a way that they frequently deed on an obviously silly way, routinely disregard conventional ideas of risk aversion, and make foreseeable lapses in their conjectures and judgments (Sewell, 2007).

These biases play their part in shaping individual's choices, financial decisions in corporations and financial markets. Unreasonable choices hamper the investor's wealth and the execution of companies and additionally the productivity of business sector. Scholars have identified so many biases (Kafayat, 2014). Kahnemann and Tversky, (1979) wrote a paper in which they stated different states of mental biases that may impact the investment process; they are risk aversion, regret aversion and self-attribution and the locus of control (Barberis & Thaler, 2003).

According to Lam (2004) the investors' predictions of the market fluctuations with certain methods, may be technical or fundamental analysis used to predict money market. Technical analysis is used in forecasting stock price fluctuations while fundamental analysis attempts at differentiating the investment approach (Ince & Trafalis, 2007).

African stock markets have historically offered a limited, narrow range of products with the principle role of financial sector being the provision of the source of domestic funding to offset government budgetary deficits. Common factors still inhibiting stock market development include the lack of legal protection for

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investors and creditors (Odera, 2012). Other constraints are that most African Stock Exchanges have limited trading hours and are closely synchronized with other regional markets (Piesse & Hearn, 2005). Trading in the majority of markets is overwhelmingly dominated by a handful of stocks, even if more securities are actually listed and bulk trading of a limited number of stocks in the smaller exchanges hinders activity on the domestic markets (Wójcik, 2011).

The first stock exchange in sub Saharan Africa was Zimbabwe Stock Exchange (ZSE), the official stock exchange of Zimbabwe which started in 1948. It has 64 listed companies and opened to foreign investment since 1993 (Mahonye, 2014). Zimbabwe Stock Exchange was established after Egyptian Exchange stock (EGX) which started in 1883. The EGX is the largest in Africa with 833 listed companies followed by Johannesburg Security Exchange or JSE that started in 1887 and in 2003 had an estimate of 472 listed companies. The Nigeria Stock Exchange (NSE) stated in 1960 and it has a population of 223 listed companies (Mawowa, 2013).

Prices in the African stock markets tend to be highly volatile and enable profits within short periods. Critics point out that the actual operation of the pricing and takeover mechanism in well-functioning stock markets lead to short term and lower rates of long term investment (Mbaru, 2003). This is because prices react very quickly to a variety of information influencing expectations on financial markets (Mahonye, 2014).

These problems are further magnified in developing countries especially sub-Saharan African economies like Rwanda, with their weaker regulatory institutions and greater macroeconomic volatility (Bizimana, 2010). The higher degree of price volatility on stock markets in developing countries reduces the efficiency of the price signals in allocating investment resources. These serious limitations of the stock market have led many analysts to question the importance of the system in promoting economic growth in African countries (Dailami & Atkin, 1990).

Some of the common mistakes made by investors in designing their investment are identified as follows: investors fail to design their investment avenues systematically; investors fail to diversify their investment choice (Sukanya & Thimmarayappa, 2015); investors generally overestimate their skills, attributing success to ability they don't possess and seeing order in information or data where it doesn't exist i.e., investors are overconfident while making investment; investors blindly follow the crowd (herd mentality) while making investment which leads to wrong investment; investors anchor on historical information; investors think that good times are permanent (Nofsinger, 2016). They feel that ones they earn a good profit from their investment avenue ,the investment would give them good returns permanently; investors are greed and they want to earn money quickly (instant gratification) which also leads to wrong investment. Finally, investor's generally make short term investments rather than long term investments (Shefrin, 2002).

Rwanda is one of the youngest stock market in East Africa with a small number of listed companies and low market capitalization, an indicator of low Stock Market development (Bizimana, 2010). The Rwanda Stock Exchange Limited (RSE) was incorporated in 2005 and launched officially in 2008. It is the principal stock exchange operating under the jurisdiction of Rwanda's Capital Market Authority (CMA), previously known as Capital Markets Advisory Council (CMAC), which in turn reports to the (MINECOFIN) Ministry of Finance and Economic Planning (Babarinde, 2012). Rwanda's Stocks Exchange is young compared to the other markets in EAC, like Nairobi Security Exchange (NSE) which was established in 1954, Dares Salaam Security Exchange in 1996 and Uganda Stock Exchange in 1997. Currently RSE has only three Initial Public Offering (IPO), Bralirwa, Bank of Kigali and Crystal Ventures as primarily listed in Rwanda and four IPO as secondarily listed in Rwanda includes: Kenya Commercial Bank Group and Nation Media Group, which are primarily listed in Nairobi Stock Exchange and cross listed on the Rwanda Stock Exchange (Kidd, 2012).

The government has ensured that investors in the Rwanda Stocks Exchange are protected, by advising and guiding companies seeking investment through provision of important infrastructures and conducive environment for business development (Mauwa, 2016).

Despite these efforts, investment in the Rwanda stock exchange is low and the Rwanda Stocks Exchange is not growing at the pace expected. Currently there are approximately 13,543 registered investors, all these investors are composed by the individual investors, group investors and institutional investors. The market capitalization of Rwanda Stocks Exchange is USD 3.7 billon with 7 listed companies (RSE, 2015). In comparison with Nairobi Securities Exchange, there are approximately 66 listed companies with a total market capitalization of approximately USD 23 billion (Mwangi, 2016).

II. Literature Review

a) *Theoretical Background*

There are a number of theories that explain the relationship between behavioral biases and investment decision. These include herding behaviour theory, prospect theory and heuristics theory. In addition, Marchand (2012) states that heuristics stands for the tendency that individuals make judgments quickly. Heuristics are strategies used to access complex problems and limit the explaining information. Investors tend to make rules of thumb in order to process the information so that they can make investment.

Waweru, Mwangi and Parkinson (2014) proposed that herding can drive property trading and create the momentum for trading. In the case of Rwanda Stock Exchange, the impact of herding behaviour may break down when it reaches a certain level because the cost to follow the herd may increase to get the increasing abnormal returns. Choices are made when people tend to give losses more weight than gain, where they focus on how much they gained or lost instead of how much they gained. Choices are also made where people are interested in their gains and losses as opposed to their final income and wealth. In the case of investment choice in the Rwandese Stock Exchange, investors may attribute choice of investments to own initiatives leading to self-attribution bias (Kahneman & Lovallo, 1993).

In general, heuristics are quite useful, particularly when time is limited (Waweru et al., 2008), but sometimes they lead to biases (Tversky & Kahneman, 1974; Ritter, 2003). In addition, Marchand (2012) states that heuristics stands for the tendency that individuals make judgments quickly. Heuristics are strategies used to access complex problems and limit the explaining information. Investors tend to make rules of thumb in order to process the information so that they can make investment.

b) *Empirical Literature Review*

Though the literatures of behavioural finance are very large, some of the empirical cases of behavioural finance, which are based on the psychology, attempt to understand how behavioural biases and cognitive errors influence individual investors' behaviours (Chaudhary, 2013). Hoffmann and Post (2014) conducted a study on self-attribution bias in consumer financial decision-making and how investment returns affect individuals' belief in skill in Netherlands firms. The study found that the higher the returns in a previous period are, the more investors agree with a statement claiming that their recent performance accurately reflected their investment skills and vice versa. The study further established that while individual returns relate to more agreement, market returns have no such effect.

Tine (2013) study focused on attribution bias and overconfidence in escalation of commitment the role of desire to rectify past outcomes. This research investigated two cognitive biases that we posit lead to IT escalation of commitment, namely, attribution bias and overconfidence in an escalation decision, as well as desire to rectify past outcomes (DRPO) for its potential role as a mediator. To test our research model, 160 IT managers participated in a web-based role-playing experiment. Attribution was manipulated at two levels (internal and external), creating two treatment conditions. We posited that the participants assigned to the internal attribution condition would escalate their commitment to the failing IT project to a greater extent than participants assigned to the external attribution condition; that individuals that have a high, versus low, level of overconfidence would have a greater tendency to escalate; and that DRPO would mediate the effects of attribution and overconfidence on escalation of commitment. Attribution bias was significant at the level, but in the opposite direction of what was hypothesized; overconfidence showed a significant main effect on escalation. The effect of attribution bias on escalation was significantly mediated by DRPO, but the effect of overconfidence on escalation was not mediated by DRPO. Implications of these findings for both research and practice are discussed.

Malmendier and Tate (2005) in a study on CEO over-confidence and the market reaction found that the motivational process e.g. self-enhancement and self-preservation combines with cognitive factors e.g. self-esteem and locus of control creates self-attribution bias. In addition, chief operation officers (CEOs) suffering self-attribution bias credit the success of company because of their abilities, while failures are attributed to economic situation, CEOs suffering from self-attribution bias tend to overestimate their capabilities and therefore invest in such projects which are risky.

Schneider et al. (2012) found that self-attribution bias also builds up an individual's overconfidence Individual exposed to self-attribution bias think that they have more abilities than average, known as "Batter then average effect". As self-attribution enhances overconfidence, so the subjects who suffer from this bias will be overconfident in their decisions and judgments. Self-attribution bias affects the ability of a person to estimate his/her abilities and also affects the learning from past performances of that person to estimate his/her abilities and also affects the learning from past performances of that person.

Gervais and Odean (2001) in a study on the effects of previous performances of the investors on their behaviour, and found that success strengthens the overconfidence. Further, when an investor is successful, they credit this success with their own capabilities and skills and firm their beliefs regarding their ability too much, as a result they become overconfident. Finally, it was found that people suffering from self-attribution bias become more overconfident after a success and it affects the conception about own capabilities as it hinders the evaluation of past performance, this leads to overconfidence.

Yosef and Kumar (2012) found that investment agents (brokers) biased self-attribution bring excessive optimism. When confronted with uncertainty investors tend to be increasing biased self-attributing, which ultimately induce overconfidence in them. The study also found that individuals become more overconfident instead of going for self-assessment when affected by self-attribution bias. Investors are overconfident about the events which they hope will generate positive

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outcomes and will personify them. So self-enhancement triggers overconfidence in investors.

Choi and Lou (2008) found in their study of self-attribution bias, that self-attribution bias affects the impression of people regarding their abilities and diverts them from learning from past successes. Self-attribution biases is a significant channel that hinder people to link their successes with their internal forces e.g. personal capabilities, and their non-successes with external forces. Furthermore the evidence shows that the investors who are not exposed or aware of the biases make rational decisions and thus they enjoy more favourable outcome. While on the other hand the rational investors will make optimal decisions and generate the desired results. So it is established that self-attribution motivates overconfidence hindering the investor from rational.

III. Research Methodology

The underlying epistemology of this research was positivist; focusing on examining earlier established theories under the assumption that reality is objectively given and can be described by measurable properties independent of the observer and the instruments.

The study used cross-sectional descriptive survey research design to assess and establish the effect of behavioural biases on investment at the Rwanda stock exchange. The design was suitable for the proposed study because it attempted to determine current status of the phenomenon. The cross-sectional descriptive survey method was suitable for this study since data was collected at one particular time (Silverman, 2013) across the respondents in the Rwanda Stock Exchange. The target population of this study comprised of individual, group and institutional investors at the Rwanda Stock Exchange which are approximately 13,543 RSE, 2015. There are approximately 10,662 local investors, 2,474 from EAC and 407 registered as foreigner investors, all these investors are composed by the individual investors, group investors and institutional investors (Directory, Rwanda Stocks Exchange, 2015).

Stratified random sampling was used and it involved dividing the population into homogeneous subgroups followed by a simple random sample (Kombo & Tromp, 2006).

To determine the sample size for small populations, we use the normal approximation to the hyper-geometric distribution, similar studies (Morris, 2014) have adopted the hyper-geometric distribution due to its ability to estimate sample sizes from small populations accurately. The sample size formula for small (hyper-geometric) populations is shown as follows:

$$n = \frac{NZ^2pq}{\{E^2(N-1)+Z^2pq\}} \text{................Equation (1) Morris, 2014)}$$

Where;

n= is the required sample size
N= is the population size (13,543)
Z= is the level of confidence of the sample size (set at 95%) thus Z=1.96
P and q are the population proportions (Each set to 0.5).
E sets the accuracy of the sample proportions (set to 0.05).

Therefore;

$$\frac{13543\times1.96^2\times0.5\times0.5}{0.05^2(13543-1)+1.96^2\times0.5\times0.5}$$

$$n = 13006.6972 \div 34.8154$$

Hence, 374 was the suitable sample size for the population of 13543 investors from Rwanda Stock Exchange. The sample size is 374, were selected using the simple random sampling. A semi-structured questionnaire was used to collect the primary data. The semi-structured questionnaire was designed to contain both closed and open-ended questions and a five-point Likert scale. The questionnaire was divided into three parts: (a) demographic information (b) investment (c-g) information on biases. Data analysis involved the use of descriptive and inferential statistics in order to help the researcher to establish the relationship between emotional bias and investment. Descriptive statistics such as mean, standard deviation and the inferential techniques such as regression and correlation will be used as well. Data was also analyzed and expressed in terms of charts and tables for quick references. In relation to inferential statistics, the linear and multi linear regression models were utilized to further give inferences to the data obtained using the Statistical Package for Social Sciences (SPSS). The study used the model below to test the hypothesis.

$$Y=\beta_0+\beta_1X_1+\varepsilon$$

Where:

Y= Investment in Rwanda Stock Exchange
β_0= Constant
β_1............β_4=Represents the regression coefficients
X_1= Self Attributing Bias
ε = Represents the Error Term

H0: Self attributing bias has no significant effect on investment in the Rwandan Stock Exchange.

IV. Analysis, Findings and Discussions

The study administered a total of 374 to selected individual investors in Rwanda stock market. A total of 350 questionnaires were dully filled and returned. This represented a response rate of 93.6%.

a) Respondents Background Information

Table 1 presents the demographic characteristics of the respondents. This was aimed at describing the sample that was used in this study. The study sought to establish the age bracket of the respondents, genders of the respondents and there highest education qualifications.

Table 1: Respondents Background Information

Bio Data	Response	Percent
Age	21-30years	48.3
	31-40years	41.4
	41-50 years	3.4
	51-60 years	6.9
Gender	Male	68.9
	Female	31.1
Highest level of education attained	Undergraduate	20.9
	Graduate	65.1
	Post Graduate	14
Total		100

b) Descriptive Results

Table 2 contains the descriptive findings on the effects of self-attributing on investment in the Rwandan stock market.

Table 2: Descriptive Results on Self Attributing Bias

	SD	D	NS	A	SA	Mean	Std Dev
I consider my investment performance to be always well thought out	18.6%	17.7%	20.0%	25.4%	18.3%	3.07	1.38
Loss making is a result of investment advice taking from other people	24.9%	27.4%	21.1%	11.1%	15.4%	2.65	1.37
I consider losing stock as a results of poor advice from others	22.0%	30.0%	20.6%	16.9%	10.6%	2.64	1.28
I view buying 'hot' stock as result of my proactive knowledge of the stock market	20.3%	20.6%	20.9%	22.3%	16.0%	2.93	1.37
I know when to trade and how much to invest in the stock market without making loss	21.1%	16.6%	24.6%	19.1%	18.6%	2.97	1.40
I consider my investment performance to be always well thought out	14.9%	24.3%	22.3%	23.4%	15.1%	3.00	1.30
My skills and knowledge of stock market always help me to outperform the market	24.0%	13.1%	23.4%	26.6%	12.9%	2.91	1.37
I always rely on my predictive skills to time and outperform the stock market	17.4%	23.7%	19.1%	22.3%	17.4%	2.99	1.36
I ensure my reaction is as quickly as possible to the changes of the market and follow the reactions to the stock market	20.9%	21.1%	17.7%	26.0%	14.3%	2.92	1.37
I consider the information from close friends and relatives as the reliable reference for investment in the stock market	23.4%	23.4%	23.4%	19.7%	10.0%	2.69	1.30

The study sought to find out whether investors considered their investment performance to be always well thought out, the results showed that 25.4% of the respondents agreed, 18.3% strongly agreed while 18.6% and 17.7% strongly disagreed and disagreed respectively. The finding further revealed that 27.4% and 24.9% disagreed and strongly disagreed that loss making is a result of investment advice taking from other people. Those who agreed and strongly agreed were 11.1% and 15.4% respectively.

On whether investors at Rwanda stock exchange considered losing stock as a result of poor advice from others, 30.0% and 22.0% of the respondents disagreed and strongly disagreed respectively. The findings further showed that 16.9% and 10.6% agreed and strongly agreed respectively. The mean of 2.64 confirmed that majority of the respondents disagreed with the statements. The study further sought to establish whether respondents viewed buying 'hot' stock as result of their proactive knowledge of the stock market, the findings showed that 20.6% disagreed, 20.3% strongly disagreed, 20.9% were not sure, 22.3% agreed while 16.0% strongly agreed.

The results further revealed that 21.1% strongly disagreed, 16.6% disagreed, 24.6% not sure 19.1% agreed and 18.6% strongly agreed that they knew when to trade and how much to invest in the stock market without making loss. Similarly, the findings of this study established that respondents were divided on whether they considered their investment performance to be always well thought out as shown by the mean response of 3 and standard deviation of 1.30.

The study sought to find out from the respondents whether their skills and knowledge of stock market always helped them to outperform the market, the findings showed that 26.6% and 12.9% agreed and strongly agreed while 24.0% strongly disagreed and 13.1% disagreed. The results further revealed that majority of the respondents disagreed they always relied on my predictive skills to time and outperform the stock market as shown by the mean of 2.99. This study further sought to establish whether, investors at Rwanda stock market ensured their reaction was as quickly as possible to the changes of the market and followed the reactions to the stock market; the findings showed that 20.9% and 21.1% of the respondents disagreed while 26.0% agreed and 14.3% strongly agreed.

Finally, the study sought to establish whether investors considered the information from close friends and relatives as the reliable reference for investment in the stock market. The findings showed that 23.4% strongly disagreed, another 23.4% disagreed, 19.7% agreed and 10.0% strongly agreed. The statement had a mean of 2.69 which further confirmed that majority of the respondents disagreed while the standard deviation of 1.30 indicated wide varying from the mean in the responses received.

These findings implied that investors at Rwanda stock market lacked self-attribution bias and this could explain why they don't invest heavily in securities. Schneider et al. (1979) found that self-attribution bias builds up an individual's overconfidence Individual exposed to self-attribution bias think that they have more abilities than average, known as "Batter then average effect. Self-attribution enhances overconfidence, so the subjects who suffer from this bias will be overconfident in their decisions and judgments.

Self-attribution bias affects the ability of a person to estimate his/her abilities and also affects the learning from past performances of that person to estimate his/her abilities and also affects the learning from past performances of that person. Gervais and Odean (2001) also found that people suffering from self-attribution bias become more overconfident after a success and it affects the conception about own capabilities as it hinders the evaluation of past performance, this leads to overconfidence and investors place too much weight on information they collect themselves due to excessive optimism.

c) Correlation Tests

The researcher investigated the association between the dependent variable and the independent variables as well as between the independent variables themselves using the correlation coefficient matrix as recommended by (Dancy & Reidy, 2004) as shown in table 3.

Table 3: Correlation Results

		Self-Attribution Bias
Investment In RSE	Pearson Correlation	0.550
	Sig. (2-tailed)	0.000
	N	350

The findings also established that the correlation between Investment in Rwanda Stock Market by individual investors at the Rwanda stock market and Self-Attribution Bias was 0.550 with a corresponding p value of 0.000. These findings implied that there existed a positive and significant association between Self-Attribution Bias and Investment in Rwanda Stock Market by individual investors at the Rwanda stock market. The findings further implied that if Self-Attribution Bias increases individuals Investment in Rwanda Stock Market also increases.

Schneider et al. (1979) found that self-attribution bias builds up an individual's overconfidence Individual exposed to self-attribution bias think that they have more abilities than average, known as "Batter then average effect. Self-attribution enhances overconfidence, so the subjects who suffer from this bias will be overconfident in their decisions and judgments. Gervais & Odean (2001) also found that people suffering from self-attribution bias become more overconfident after a success and it affects the conception about own capabilities as it hinders the evaluation of past performance, this leads to overconfidence.

d) Regression Results for Self-Attribution Bias and Investment in RSE

The study employed a linear regression analysis to test the relationship between independent variables and the dependent variable. According to Kothari (2014), regression is the determination of a statistical relationship between two or more variables. In simple regression, there are two variables, one variable (defined as independent) is the cause of the behavior of another one (defined as dependent variable).

Table 4: Model Summary Results for Self-Attribution Bias

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.648	.420	.417	.37518

The study conducted a regression analysis to test the effect of Self-Attribution Bias sub constructs which included success self-attribution tendency and failures external attribution tendency on investment in Rwanda stock exchange. The finding showed that model had R-squared of 0.420 which indicated that 42.0% of the variation in investments in Rwanda stock market can be accounted for by Self-Attribution Bias sub constructs.

Table 5: ANOVA Results for Self-Attribution Bias

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.436	2	17.718	125.875	.000
	Residual	48.844	347	.141		
	Total	84.280	349			

The results of ANOVA test show F-statistics =125.875 with a corresponding p-value = 0.000 which was less than 0.05, meaning that there is a relationship between Self-Attribution Bias subcontracts and Investment in Rwanda stock market.

Table 6: Regression Results for Self-Attribution Bias and Investment in RSE

	B	Std. Error	Beta	t	Sig.
(Constant)	3.004	0.062		48.192	0.000
Self-Attribution Bias	0.249	0.02	0.55	12.281	0.000

The model Y= $\beta 0+ \beta 1$ X1+ε therefore became Investment in Rwanda stock market = 3.004 +0.249 (Self-Attribution Bias) +ε.

The results on the beta coefficient of the resulting model showed that the constant α = 3.004 is significantly different from 0, since the p- value = 0.000 is less than 0.05. The coefficient β = 0.249 is also significantly different from 0 with a p-value=0.000 which is less than 0.05. The results imply that change in self-attribution bias will result in 0.249 units change in Investment in Rwanda stock market. This further confirms that there was a significant positive linear relationship between self-attribution bias and Investment in Rwanda stock market.

These findings concurs with those of Schneider et al. (1979) who found that self-attribution bias builds up an individual's overconfidence Individual exposed to self-attribution bias think that they have more abilities than average, known as "Batter then average effect. Self-attribution enhances overconfidence, so the subjects who suffer from this bias will be overconfident in their decisions and judgments. Gervais & Odean (2001) also found that people suffering from self-attribution bias become more overconfident after a success and it affects the conception about own capabilities as it hinders the evaluation of past performance, this leads to overconfidence. Conclusion

The coefficient of over-optimism bias in the multivariate regression analysis revealed a statistically significant relationship between over- optimism bias and investment in the Rwandan Stock Exchange. Hence the study rejected the null hypothesis and concluded that over-optimism bias has a significant effect on investment in the Rwandan Stock Exchange. Based on the findings, the study also concluded that over optimism bias affects the financial decision making of many investors at the stock markets. Over-optimism bias occurs majorly when investors place too much weight on past information.

V. Conclusions

The coefficient of over-optimism bias in the multivariate regression analysis revealed a statistically a significant positive linear relationship between self-attribution bias and Investment in Rwanda stock market. The coefficient of self-attribution bias in the multivariate regression analysis revealed a statistically significant relationship between loss aversion bias and investment in the Rwandan Stock Exchange. Hence the study rejected the null hypothesis and concluded that self-attribution bias has a significant effect on investment in the Rwandan Stock Exchange.

VI. Recommendations

The study finding established that self-attribution bias is a significant channel that hinders people to link their successes with their internal forces and their non-successes with external forces. The study recommends that investors should be keen to identify such bias to increase their rationality in stock trading.

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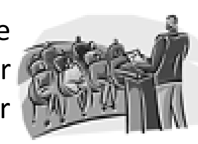

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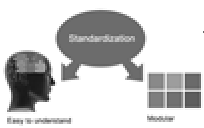

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The FARSBA is eligible to earn from sales proceeds of his/her researches/reference/review Books or literature, while publishing with Global Journals. The FARSBA can decide whether he/she would like to publish his/her research in a closed manner. In this case, whenever readers purchase that individual research paper for reading, maximum 60% of its profit earned as royalty by Global Journals, will be credited to his/her bank account. The entire entitled amount will be credited to his/her bank account exceeding limit of minimum fixed balance. There is no minimum time limit for collection. The FARSC member can decide its price and we can help in making the right decision.

The FARSBA member is eligible to join as a paid peer reviewer at Global Journals Incorporation (USA) and can get remuneration of 15% of author fees, taken from the author of a respective paper. After reviewing 5 or more papers you can request to transfer the amount to your bank account.

MEMBER OF ASSOCIATION OF RESEARCH SOCIETY IN BUSINESS (MARSBA)

The ' MARSBA ' title is accorded to a selected professional after the approval of the Editor-in-Chief / Editorial Board Members/Dean.

The “MARSBA” is a dignified ornament which is accorded to a person’s name viz. Dr. John E. Hall, Ph.D., MARSBA or William Walldroff, M.S., MARSBA.

MARSB accrediting is an honor. It authenticates your research activities. After becoming MARSBA, you can add 'MARSBA' title with your name as you use this recognition as additional suffix to your status. This will definitely enhance and add more value and repute to your name. You may use it on your professional Counseling Materials such as CV, Resume, Visiting Card and Name Plate etc.

The following benefitscan be availed by you only for next three years from the date of certification.

MARSBA designated members are entitled to avail a 25% discount while publishing their research papers (of a single author) in Global Journals Inc., if the same is accepted by our Editorial Board and Peer Reviewers. If you are a main author or co-author of a group of authors, you will get discount of 10%.

As MARSBA, you will be given a renowned, secure and free professional email address with 30 GB of space e.g. johnhall@globaljournals.org. This will include Webmail, Spam Assassin, Email Forwarders,Auto-Responders, Email Delivery Route tracing, etc.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time.This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.

The MARSBA member can apply for approval, grading and certification of standards of their educational and Institutional Degrees to Open Association of Research, Society U.S.A.

Once you are designated as MARSBA, you may send us a scanned copy of all of your credentials. OARS will verify, grade and certify them. This will be based on your academic records, quality of research papers published by you, and some more criteria.

It is mandatory to read all terms and conditions carefully.

Institutional Fellow of Open Association of Research Society (USA)-OARS (USA)

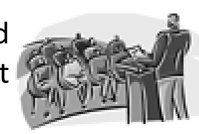
Global Journals Incorporation (USA) is accredited by Open Association of Research Society, U.S.A (OARS) and in turn, affiliates research institutions as “Institutional Fellow of Open Association of Research Society” (IFOARS).

The “FARSC” is a dignified title which is accorded to a person’s name viz. Dr. John E. Hall, Ph.D., FARSC or William Walldroff, M.S., FARSC.

The IFOARS institution is entitled to form a Board comprised of one Chairperson and three to five board members preferably from different streams. The Board will be recognized as “Institutional Board of Open Association of Research Society”-(IBOARS).

The Institute will be entitled to following benefits:

The IBOARS can initially review research papers of their institute and recommend them to publish with respective journal of Global Journals. It can also review the papers of other institutions after obtaining our consent. The second review will be done by peer reviewer of Global Journals Incorporation (USA)
The Board is at liberty to appoint a peer reviewer with the approval of chairperson after consulting us.
The author fees of such paper may be waived off up to 40%.



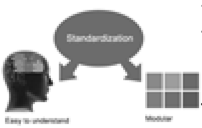
The Global Journals Incorporation (USA) at its discretion can also refer double blind peer reviewed paper at their end to the board for the verification and to get recommendation for final stage of acceptance of publication.

The IBOARS can organize symposium/seminar/conference in their country on behalf of Global Journals Incorporation (USA)-OARS (USA). The terms and conditions can be discussed separately.

The Board can also play vital role by exploring and giving valuable suggestions regarding the Standards of “Open Association of Research Society, U.S.A (OARS)” so that proper amendment can take place for the benefit of entire research community. We shall provide details of particular standard only on receipt of request from the Board.

The board members can also join us as Individual Fellow with 40% discount on total fees applicable to Individual Fellow. They will be entitled to avail all the benefits as declared. Please visit Individual Fellow-sub menu of GlobalJournals.org to have more relevant details.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time. This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.



After nomination of your institution as "Institutional Fellow" and constantly functioning successfully for one year, we can consider giving recognition to your institute to function as Regional/Zonal office on our behalf.
The board can also take up the additional allied activities for betterment after our consultation.

The following entitlements are applicable to individual Fellows:

Open Association of Research Society, U.S.A (OARS) By-laws states that an individual Fellow may use the designations as applicable, or the corresponding initials. The Credentials of individual Fellow and Associate designations signify that the individual has gained knowledge of the fundamental concepts. One is magnanimous and proficient in an expertise course covering the professional code of conduct, and follows recognized standards of practice.

Open Association of Research Society (US)/ Global Journals Incorporation (USA), as described in Corporate Statements, are educational, research publishing and professional membership organizations. Achieving our individual Fellow or Associate status is based mainly on meeting stated educational research requirements.

Disbursement of 40% Royalty earned through Global Journals : Researcher = 50%, Peer Reviewer = 37.50%, Institution = 12.50% E.g. Out of 40%, the 20% benefit should be passed on to researcher, 15 % benefit towards remuneration should be given to a reviewer and remaining 5% is to be retained by the institution.

We shall provide print version of 12 issues of any three journals [as per your requirement] out of our 38 journals worth $ 2376 USD.

Other:

The individual Fellow and Associate designations accredited by Open Association of Research Society (US) credentials signify guarantees following achievements:

- The professional accredited with Fellow honor, is entitled to various benefits viz. name, fame, honor, regular flow of income, secured bright future, social status etc.

- In addition to above, if one is single author, then entitled to 40% discount on publishing research paper and can get 10%discount if one is co-author or main author among group of authors.
- The Fellow can organize symposium/seminar/conference on behalf of Global Journals Incorporation (USA) and he/she can also attend the same organized by other institutes on behalf of Global Journals.
- The Fellow can become member of Editorial Board Member after completing 3yrs.
- The Fellow can earn 60% of sales proceeds from the sale of reference/review books/literature/publishing of research paper.
- Fellow can also join as paid peer reviewer and earn 15% remuneration of author charges and can also get an opportunity to join as member of the Editorial Board of Global Journals Incorporation (USA)
- • This individual has learned the basic methods of applying those concepts and techniques to common challenging situations. This individual has further demonstrated an in–depth understanding of the application of suitable techniques to a particular area of research practice.

Note :

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- In future, if the board feels the necessity to change any board member, the same can be done with the consent of the chairperson along with anyone board member without our approval.
- In case, the chairperson needs to be replaced then consent of 2/3rd board members are required and they are also required to jointly pass the resolution copy of which should be sent to us. In such case, it will be compulsory to obtain our approval before replacement.
- In case of "Difference of Opinion [if any]" among the Board members, our decision will be final and binding to everyone.

"

Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from https://globaljournals.org/Template.zip

Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at submit@globaljournals.org or get in touch with chiefeditor@globaljournals.org if they wish to send the abstract before submission.

Before and during Submission

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct,* along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s') names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

Policy on Plagiarism

Plagiarism is not acceptable in Global Journals submissions at all.

Plagiarized content will not be considered for publication. We reserve the right to inform authors' institutions about plagiarism detected either before or after publication. If plagiarism is identified, we will follow COPE guidelines:

Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
- Ideas
- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures

- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

Authorship Policies

Global Journals follows the definition of authorship set up by the Open Association of Research Society, USA. According to its guidelines, authorship criteria must be based on:

1. Substantial contributions to the conception and acquisition of data, analysis, and interpretation of findings.
2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

Copyright

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Appealing Decisions

Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

Declaration of funding sources

Global Journals is in partnership with various universities, laboratories, and other institutions worldwide in the research domain. Authors are requested to disclose their source of funding during every stage of their research, such as making analysis, performing laboratory operations, computing data, and using institutional resources, from writing an article to its submission. This will also help authors to get reimbursements by requesting an open access publication letter from Global Journals and submitting to the respective funding source.

Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.

Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11'", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.
b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
d) An introduction, giving fundamental background objectives.
e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
f) Results which should be presented concisely by well-designed tables and figures.
g) Suitable statistical data should also be given.
h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.

Format Structure

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in a research paper?" Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Management Research Paper

Techniques for writing a good quality management and business research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.
Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

21. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

22. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.

- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- o Single section and succinct.
- o An outline of the job done is always written in past tense.
- o Concentrate on shortening results—limit background information to a verdict or two.
- o Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

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- o Explain the value (significance) of the study.
- o Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- o Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
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Approach:

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When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

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The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

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Approach:

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- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

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Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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