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# MODELING MICROFINANCE MANAGEMENT FOR INDUSTRIALIZATION AND ECONOMIC DEVELOPMENT IN NIGERIA: FACTOR ANALYTICAL APPROACH

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*By*

**OKAFOR, SAMUEL. O.,**

*Department of Economics*

*Nnamdi Azikiwe University Awka Anambra State Nigeria*

**OLERIBE, EDITH. C.**

*Department of Economics*

*Nnamdi Azikiwe University Awka Anambra State Nigeria*

*And*

**MBAH, S. A**

*Department of Economics*

*Federal University Oye-Ekiti Ekiti State Nigeria*

## **ABSTRACT**

*This study was aimed at identifying the potent factors in the interrelationship among microfinance, economic growth and development for a possible infusion as active microfinance policy instruments. It was designed essentially as a correlational study. Data were sourced from National Bureau of Statistics and Central Bank of Nigeria. Results indicate that: (1) The two potent factors which affected the impact of microfinance on industrialization and economic development are economic empowerment and entrepreneurship training (2) Aggregate output was an active variable which propelled economic development in Nigeria. (3) Microfinancing was effective for providing advisory services and enhancing the employability of operators of SMEs. (4) Microfinance impacted positively on output in the industrial sector. (5) Entrepreneurship training for operators of SMEs contributed sizeably to economic growth. Based on the findings, it was recommended, inter alia, that Federal Government should pursue more vigorously the economic empowerment of the operators of SMEs by providing massive financial support to MFIs.*

**Key words:** factor analysis, matrix, micro-financing, small and medium enterprises,

## 1. INTRODUCTION

Nigeria is yet to achieve sustainable economic growth and development through industrialization. Over 50 year after independence, the country's industrial base still remains fragile and therefore is incapable of promoting economic growth and development. The dawn of realization that small and medium enterprises (SMEs) hold sway over economic growth and development has resulted to the increasing emphasis on SMEs. In spite of FG efforts, SMEs in Nigeria have remained grossly underdeveloped due to capital starvation. Capital starvation of small firms is solely attributable to their poor institutional framework which tends to restrict their use of external finance (Beck, Demirgüç-Kunt & Maksimovic, 2006)

No wonder then, the establishment of microfinance institutions (MFIs) in Nigeria in the 1970s was aimed at providing financial services, mainly loans and non-financial business advisory services (Oladeji, 2005). Madubueze (2008) had aptly remarked that the relevance and importance of MFIs in the development of any economy cannot be overemphasized. CBN's (2006) national microfinance policy and regulations were issued to provide financial support to the poor to engage in SMEs.

Over 40 years since inception, the contribution of MFIs to the country's economic growth and development has remained abysmally low. Several studies carried out in this area had revealed the causes of poor performance of MFIs to include the following: Exchange rate fluctuation (Obitayo, 2001), inadequate and inefficient infrastructural facilities (Sanusi, 2001), lack of focus (Iheduru, 2002), high risk, heavy transaction cost and mounting loan losses (Yaron, 2002), financial constraint (Olawaju, Kolawole, Babatunde & Scminu, 2004), etc.

Obviously, it is on the strength of these studies that further studies in this area have become necessary. Literature is replete with evidences of massive support of MFIs to SMEs which had enhanced their contributions to economic growth and development of several economies (Kilby, 1988; Ogunleye, 2000; Guiso, Sapeinza, & Zingales, 2002; Demirgüç-Kunt, 2006; Akinteye, 2008; Nwosu, 2008). Therefore there is an urgent need to carry out a detailed analysis of the interrelationship among microfinance, growth and development indicators in order to identify active and passive variables to constitute microfinance policy instruments. No microfinance policy that does not infuse active and passive variables as policy instruments can ever be expected to be effective.

This article has been organized into five sections including the running section on introduction. Section two deal with methods while section three deals with results. Section four contain the discussion of findings, recommendations and concludes the study.

## 2. METHODS

It was designed essentially as a correlational study. Data were sourced from Bureau of Statistics and the CBN, Abuja. Data were analyzed using the statistical method of factor analysis.

The main focus of factor analysis in this study was the determination of the nature of the correlates of microfinance for the Nigerian economy. For factorizing the intercorrelation matrix the 'Principal Axes' method was applied. This method is also known as the method of 'Principal Component' or 'Principal Factor Solution.'

To keep the number of independent dimensions to the essential minimum, extraction of factors was restricted to only those values of the correlation coefficients greater than or equal to unity. "Furthermore, a conservative rule of thumb for accepting a factor as real is as follows: No attempt is made to take decision on the significance of unrotated loadings, e.g., as obtained from the Centroid method or the method of Principal Axes" (Nunnally, 1967).

Thus, following this principle, the 'Varimax' rotation of the factor matrix was carried out. By rotating the factors slightly in a clockwise direction, the strength of the relationship between the factors and the tests clustered near each other was increased (Popham, 1967). Interpretation of results was based on the new values of factor loadings obtained through the use of 'Orthogonal Rotation' formula expressed in the form of  $x_1 = x \cos\theta + y \sin\theta$ . Factor loadings which were greater than or equal to  $\pm 0.30$  were considered to be significant (Guilford, 1956; Frick et al., 1959).

However, for the sake of an elaborate discussion, loadings of  $\pm 0.250$  or a little below were also included. Factor loadings of the criterion variable were given for all factors disregarding the level of significance so as to ascertain whether or not the factors represented correlates of microfinance. The process of factor extraction was discontinued when the product of two higher factor loadings exceeded the value of  $\frac{2}{\sqrt{n}}$

## 3. RESULTS

The results of factor analysis of the intercorrelations among microfinance, economic growth and development indicators have been presented in Tables 1, 2, 3, 4 and 5 for extracting factors which influenced the contribution of microfinance to economic growth and development in Nigeria.

**Table 1. Correlation Matrix (10x10) of Microfinance, Economic Growth and Development**

S/No	Variable Code	1	2	3	4	5	6	7	8	9	10
1	MIC	X									
2	EII	.821	X								
3	PCI	.016	.069	X							
4	LTR	.933	.945	.109	X						
5	DRT	-.408	-.381	-.849	.252	X					
6	LIE	.150	.228	.975	-.270	-.912	X				
7	FER	-.089	-.269	-.954	.557	.879	-.967	X			
8	IOP	-.659	.516	-.163	.979	-.029	-.091	.163	X		
9	GDP	.948	.913	.157	.979	-.508	.305	-.284	.638	X	
10	TOP	.093	.331	.617	.215	-.398	.651	-.634	.225	.323	X

- NB:**
- |                                  |                                   |
|----------------------------------|-----------------------------------|
| 1. MIC = Microfinance            | 2. EII = Employment in Industries |
| 3. PCI = Per Capita Income.      | 4. LIR = Literacy Rate            |
| 5. DRT = Death Rate              | 6. LIE = Life Expectancy.         |
| 7. FER = Fertility Rate.         | 8. IOP = Industrial Output        |
| 9. GDP = Gross Domestic Product. | 10. TOP = Total Output.           |

Table 1 shows the intercorrelations among GDP (dependent variable) and the independent variables including microfinance and economic development indicators.

**Table 2. Principal Axes (Original) Factor Matrix of MIC, GDP and PQLI**

S/No	Variable codes	Factors		h2
		1	2	
1	MIC	.719	.635	.920
2	EII	.771	.514	.859
3	PCI	.645	-.744	.970
4	LIR	.813	.539	.951
5	DRT	.835	.403	.860
6	LIE	.755	-.647	.988
7	FER	-.736	.656	.972
8	IOP	.409	.649	.588
9	GDP	.848	.515	.984
10	TOP	.602	-.341	.478

Table 2 shows the original factor matrix of MIC, GDP and PQLI along with their communalities ( $h^2$ ) which have been revealed in the last column. The 'principal axes' matrix contains unrotated factors.

**Table 3. Varimax Rotated Factor Matrix For MIC, GDP and PQLI**

S/No	Variable Codes	Factors		$h^2$	$U^2$ ( $1-h^2$ )
		1	2		
1	MIC	7.170E-02	.956	.920	.080
2	EII	.194	.906	.859	.141
3	PCI	.981	-8.294E-02	.970	.030
4	LIR	.206	.953	.951	.049
5	DRT	.880	-.294	.860	.140
6	LIE	.992	6.328E-02	.988	.012
7	FER	.985	-4.384E-02	.977	.028
8	IOP	-.160	.750	.588	.412
9	GDP	.248	.961	.984	.016
10	TOP	.669	.176	.478	.522
SUM OF SQUARES		43.10	42.50		
PERCENTAGE OF TOTAL VARIANCE		4.31	4.20		
PERCENTAGE OF COMMON VARIANCE		43.10	42.50		

Table 3 shows the rotated Varimax factors matrix along with the communalities and uniqueness of the variables. The total variance of any variable comprises of common variance ( $h^2$ ) as well as specific variance and error variance. Now, since it is usually difficult to separate specific variance from error variance, both are always combined and denoted by unique variance ( $U^2$ ). This has been revealed in the last column of this table. At the end of each column of the factor, percentages of total variance and common variance contributed by the factor were entered.

Table 3 was further split into two subtables – Table 3.1 and Table 3.2 to facilitate discussion on the significant factor loadings of each of the rotated factors.

### Factor 1

Table 3.1 presents the factor loadings of Factor 1 in descending order.

**Table 3.1. Varimax Factor 1**

S/No	Description of Variables	Variable Code	Factor Loadings
6	Life Expectancy	LIE	.992
7	Fertility Rate	FER	-.985
3	Per Capita Income	PCI	.981
5	Death Rate	DRT	-.880
10	Total Output	TOP	.669
9	Gross Domestic Product	GDP (CRN)	.248

As can be seen in Table 3.1 Factor 1 was characterized by very high loadings on economic development variables of LIE (.992), FER (-.985), PCI (.981) and DRT (-.880). High loading on economic development variable of TOP (.669) also characterized the factor. TOP was the only variable which came in conjunction with this cluster of economic development variables, indicating, thereby that sustainable economic development would usually be propelled by rising aggregate output in the economy. This factor represents mainly a cluster of 'Economic Empowerment' and therefore, has been labelled as such. Positive, though nonsignificant loading of .248 on GDP implies that economic empowerment usually has a positive valence for economic growth.

The common factor variance accounted for by economic empowerment was 43.10 per cent which is 4.31 per cent of the total variance explained by both factors.



## Factor 2

Table 3.2 presents the significant loadings on Factor 2 in their descending order.

**Table 3.2. Varimax Factor 2**

S/No	Description of Variables	Variable codes	Factor Loadings
1	Microfinance	MIC	.956
4	Literacy Rate	LIR	.953
2	Employment in Industries	EII	.906
8	Industrial Output	IOP	.750
5	Death Rate	DRT	-.294
9	Gross Domestic Product	GDP (CRN)	.961

Table 3.2 shows that Factor 2 had its highest loading on MIC (.956) followed by very high loadings on economic subvariables, LIR (.953) and EII (.906). High loading for economic growth subvariable of IOP (.750) also characterized this factor. The factor had negative low loading on economic development subvariable, DRT (-.294). A cluster of different dimensions of economic development added independently to the common variance of this factor. Loadings indicate that microfinancing in Nigeria had been effective for providing advisory services and enhancing the employability of the operators of SMEs. Positive high loading on IOP implies that microfinance in Nigeria impacted positively on output in the industrial sector. Thus, Factor 2 has been identified as 'Entrepreneurship Training'. It shared a very high factor loading with GDP (.961) indicating thereby that entrepreneurship training for SMEs operators contributed sizeably to economic growth in Nigeria.

The common factor variance accounted for by Factor 2 was 42.50 per cent which is 4.20 per cent of the total variance explained by both factors.

## SUMMARY OF MAJOR FINDINGS

The major findings which have crystallized from this study include the following:

1. The two potent factors which affected the impact of microfinance on economic growth and development are economic empowerment and entrepreneurship training of operators of SMEs in Nigeria.

2. Aggregate output was an active variable which propelled economic development in Nigeria.
3. Microfinancing was effective for providing advisory services and enhancing the employability of the operators of SMEs in Nigeria.
4. Microfinance impacted positively on output in the industrial sector.
5. Entrepreneurship training for operators of SMEs in Nigeria contributed sizeably to economic growth.

#### **4. DISCUSSION OF FINDINGS, RECOMMENDATIONS AND CONCLUSION**

##### **Discussion of Findings:**

One important finding of the study is that economic empowerment and entrepreneurship training were potent factors affecting the contribution of microfinance to economic growth and development in Nigeria. This has not come as a surprise considering that the efforts of successive governments in Nigeria had been directed toward the economic empowerment of the citizenry through provision of functional education revolving around skill acquisition. FG economic empowerment programme had adopted different strategies including national economic empowerment and development strategy (NEEDS), state economic empowerment and development strategy (SEEDS), small and medium enterprises equity investment scheme (SMEIS) and center for entrepreneurship and development research (CEDR). This finding is in agreement with those reported by NEEDS and SEEDS (2004).

Another finding is that aggregate output was an active variable which propelled economic development in Nigeria. This has come much in expectation since microfinance in Nigeria had the potentials to increase productivity through economic empowerment and enhanced employability of the operators of SMEs. Economic empowerment is comprised of a cluster of economic development subvariables. Therefore, it follows as a corollary that as microfinance impacted positively on economic growth and development, aggregate output would also drive economic development. This is a new addition to knowledge.

One other important finding of the study is that microfinancing was effective for providing advisory services and enhancing employability of the operators of SMEs in Nigeria. This is not surprising. After all, MFIs in Nigeria have, as their major goals, the provision of business advisory services and the creation of employment opportunities to the operators of SMEs (Oladeji, 2005). Thus, this finding is only a testimony of effective implementation of microfinance policy in Nigeria.

Moreover, there is the finding that microfinance impacted positively on output in the

industrial sector. Also, this finding has come as expected. Microfinance is a cheap source of fund to SMEs which contribute sizeably to the output in the country's industrial sector. This finding confirms the findings reported by Anyanwu (1996) and Adeleja (2005).

Finally, there is the finding that entrepreneurship training for the operators of SMEs in Nigeria contributed sizeably to economic growth. This finding is as expected. Since microfinance impacted positively on industrial output and employment, then it had the potency to contribute sizeably to the country's economic growth. It is a matter of fact that the higher the rate of employment, the higher would be the contribution of labour to the country's economic growth. In the same vein, higher industrial output is implicit in high rate of growth. The finding is in consonance with the findings reported by Ogunleye (2000) and Iheduru (2002).

## **RECOMMENDATIONS**

Based on the above-stated findings and the accompanying discussion, the researchers have made the following recommendations:

1. Federal Government should pursue more vigorously the economic empowerment of the operators of SMEs by providing massive financial support to MFIs.
2. Federal Government should set up units of SMEIS at local government headquarters to provide business advisory services to the operators of SMEs at the grassroots.
3. CBN should issue directive to MFIs declaring farming as 'preferred subsector' for the purpose of channelling resources to this subsector in order to enhance aggregate output and so achieve a faster pace of economic development.
4. Ministry of Finance should place greater emphasis on MFIs by assigning greater financial responsibilities to them in the implementation of the country's nascent industrial policy.

## **CONCLUSION**

The major inference which was drawn from this article is that even though microfinance was not yet fully adapted to the managerial and financial needs of SMEs, they still hold the prospects for Nigeria's industrialization and economic development.

The slow pace of growth of MFIs in Nigeria could be solely attributable to lack of awareness among the country's policy-makers that the path toward Nigeria's industrialization and economic development could be traced along the recognition of the role of MFIs. No industrial policy, no matter how ambitious can be expected to be effective without emphasis on the supportive role of MFIs. There is, therefore, no gainsaying that the

failure of various Five-Year plans and subsequent rolling plans was the result of this. Indeed, nothing can be truer than this.

Fast pace of industrialization and economic development in Nigeria can only be possible with economic empowerment strategy which would revolve essentially around skill acquisition by beneficiaries of microfinance in Nigeria.

### **References**

- Adeleja, M. (2005, March 30). Microfinance as elixir to poverty alleviation, *Guardian Newspaper*, p.5
- Akinteye, S. (2008, Oct.17) Microfinancing Panacea for Economic Development. *Guardian*:10
- Anyanwu, C.M. (1996) Efficient Administration of Credit for Small Scale Industrial Development in Nigeria. *Bullion*, 20(3).
- Beck, T., Demirgüç-Kunt, A. & Maksimovic, V. (2006). Financial Pattern around the World: Are Small Firms Different? *World Bank Mimeo*
- Central Bank of Nigeria (2006). *Microfinance Policy, Regulatory Supervisory Framework for Nigeria*: Abuja: CBN press.
- Demirgüç-Kunt, A. (2006). Finance & Economic Development: Policy Choice for Developing Countries. World Bank Development Research Group. *Policy Research Working Paper No. 3955*.
- Frick, J.W. (1959). A Factor Analytical Study of Flexibility in Thinking. *Journal of Education Psychological Measurement*, 19
- Guilford, J.P. (1959) *Personality*. New York: McGraw Hill.
- Guiso, L. Sapienza, P., & Zingales, L. (2002). Does Local Financial Development Matter? *National Bureau of Economic Research Working Paper, No. 8922*
- Iheduru, N.G. (2002). *Women Entrepreneurship & Development: The Gendering of Microfinance in Nigeria*. Paper presented at the 8<sup>th</sup> International Interdisciplinary Congress on Women, July 21- 26.
- Kilby, P. (1988). Breaking the Entrepreneurial Bottleneck in Late- Developing Countries. Is There a Useful Role for Government? *Journal of Developing Planning*, 18
- Madubueze, J. (2006, Sept. 25-Oct. 1) Microfinance Takes Front Burner in Poverty Eradication, *Business Times*: 9.

- Nunnally, J.C. (1967). *Psychometric Theory*. New York: McGraw Hill.
- Nwosu, E. (2008, Oct.4). Reducing Cost of Finance for SMEs: Innovative Microfinance Approach. *Guardian*, p.15
- Obitayo, K.M. (2001). Creating an Enabling Environment for Small-Scale Industries. *Bullion*, 25 (3)
- Ogunleye, G.A. (2000). Small & Medium Scale Enterprises as Foundation for Rapid Economic Development in Nigeria. *Nigeria Deposit Insurance Corporation*, 10 (4)
- Oladeji, S. I. (2005). An Appraisal of Poverty Reduction Strategies in Nigeria, *Central Bank of Nigeria Economic and Financial Review*, 39 (4)
- Olarewaju, O., Kalawole, O., Babatunde, A. & Seminu, A. (2004). Evaluation of programmes & policies for supporting small- scale enterprises in Nigeria, *Development Policy Centre Research Report*, 34
- Popham, W.J. (1967). *Educational Statistics*. New York: Harper & Row Publisher, Inc.
- Sanusi, J.O. (2001). Deregulating the Nigerian Economy: Achievement & Prospects. *CBN Bullion*, 23 (1)
- Yaron, I. (2002). *Women Entrepreneurship and Development: The Gendering of Microfinance in Nigeria*. Paper presented at the 8<sup>th</sup> International Interdisciplinary Congress on Women, July 21-26.