

## Evaluating the Informal Sector Micro, Small and Medium Enterprises Sources of Finance for Entrepreneurship Development in Ondo State

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### Abstract:

This study is charting a different approach to assessing sources of finance of micro, small, and medium enterprises (MSMEs) especially in Ondo State. A demonstrative data reflecting the characteristics of entrepreneurs in the state was used as a template. Simulated data items were 500 using major integrated sources of finance (MISF) as the dependent variable. This variable has four ((4) categories: 1. Government intervention which includes various empowerment and poverty alleviation programmes, giving direct financial assistance to farmers, artisans and market women; 2. Contribution/Cooperative Society includes: age grade traditional financial assistance, local and daily contribution by accredited agents, cooperative loans; 3. Personal/Business Savings includes personal savings, assistance from parents, assistance from other relatives, plough back business profits; 4. Micro credit/Bank loans includes credit facilities from retailers and wholesalers, traditional money lending, micro credit loans, bank overdrafts, deposit bank loans. The independent variables (predictors) are of two types based on the multinomial logistic regression model used. Three predictors are factors used in constructing the model and four predictors are covariates used to define the subpopulations only. Any independent variables (predictors) not treated as factors are under subpopulations. Factors are business experience (EXP), educational qualification (EDQ), and gender (GDR). Covariates are age of respondents (AGE), access to finance (FIN), adequacy of accounting and financial records (AFR), and type of business (BTP). Each of the predictors has different levels/categories. Findings revealed that personal/business savings was most accessed of the four categories of financial sources with 153 out of 500 and a target of 30.6%. Factors that are significant in determining sources of finance are business experience (EXP) and educational qualification (EDQ) both at 5% each. Other significant covariates are access to finance (FIN), adequacy of accounting and financial records (AFR), and the type of business (BTP) at either 1% or 5%. It can be concluded that the traditional trend in MSMEs financing has not changed. Unemployment, especially among youths, is a time bomb that the country should not take for granted. It has been recommended that state governments should establish a fund to which certain amount should be transferred every year for four or five years and loan to entrepreneurs at 3% to 5% interest rates.

### Keywords:

Factors and Covariates, Major Integrated Sources of Finance, Micro, Small and Medium Enterprises Multinomial Logistic Regression Model.

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## 1. INTRODUCTION

The importance of Small Scale Enterprises (SSEs) in the promotion of economic development has always been at the forefront of development strategies of the various governments. More importantly, SSEs have the further advantage of offering opportunities for a considerable number of persons in geographical location that are varied and diverse. In the case of developing countries like Nigeria, where multinational corporations have tended to monopolise productive activities (Ogundipe, 1987), the need for SSEs owned and managed by Nigerians is too evident. It is only by the active encouragement given to such enterprises that the nation can begin to diversify its productive activities.

The Federal Government has been very conscious of the unique role of SMEs in the national economy. It was felt that through the promotion of SMEs, it would be possible to generate subsistent employment for thousands of unemployed youths, as well as to stimulate indigenous entrepreneurship, facilitate effective mobilisation of local resources, capital and skill and reduce regional disparities. It is estimated that SMEs employ 22.0 percent of the adult population in developing countries and account for about 70.0 percent of industrial employment (World bank, 1995). As at today, the statistics still toe the line of the World Bank reports of 1995. The dysfunction of SSEs varies from one country to the other as different indicators are usually used. While some are on labour size, some based size on capital. Therefore the European Commission (EC) defined SSEs as firms with 10 to 99 employees. The National Council on Industry (1992) as quoted by Ukeje (2003) described SSEs as enterprises having a labour size of between 11 and 100 workers or a total cost (including working capital but excluding cost of land) not more than N50.0 million. Definitions are actually diverse and varied with time. Despite the importance of SSEs in Nigeria, there are some attendant problems that needed to be looked into. The first on the list is problem of finance which is the consequence of inability to employ highly skilled manpower. It needs medium and long-term finances to acquire fixed assets such as land, building, plant and machinery and short term loans as working capital. The entrepreneurs' own capital (which may be the only guarantee source of finance) is very meager. This made growth to be difficult. Various incentives have always been suggested for the SSEs. Adebusuyi (1997) classified these as strategies and policies, which include those on fiscal and export and tariff regimes, financial support and the Technical Assistance Programmes (FTAS). The government at both federal and state have not been entirely insensitive in solving the unemployment problem but the various programmes which had been set up have benefited only a fraction of the unemployed youths and graduates (Adejumobi, 1991). Several of those yet to benefit still roam the streets. While this study is not really on the employment of youths and graduates, it worth its salt to branch on them but specifically the study is interested in finding the sources of finance of existing micro, small and medium entrepreneurs in the informal sector.

### **Statement of the Problem.**

There has been much concern for MSMEs by the government at the federal level and at various states and especially the Ondo State government since the past four or five years. Micro-credit scheme was arranged for MSMEs at single digit interest rates, cheques were distributed to artisans, farmers and market women, various poverty alleviation and other empowerment programmes were not left out. Has these beneficiaries actually made judicious use of these opportunities to change the trend of the age long traditional sources of finance for MSMEs in Ondo State?

### **Objectives of the Study**

The objectives of the study include:

1. Evaluation of the sources of finance of the MSMEs whether the traditional status-quo has changed in Ondo State,
2. Assessing the effects gender level of educational qualification, and business experience as predictors [factors] on the sources of finance.

3. Analysing other predictors [covariates] not used in constructing the model but used to define subpopulations.

## **2. Review of Related Literature**

The informal sector of the economy is severally referred to as the informal economy, grey economy, underground economy characterized by activities that are neither taxed nor monitored, by tax evasion and lack of monitoring. It is also called “system D” (Omoruyi, 2014) and “the hard to tax group” in tax parlance, (CITN, 2014). Lack of statistics on the activities of the informal sector that are not registered, a black market system, is devoid of the inclusion in the GDP. In defining the informal sector, it has a conceptual clarification and historic metamorphosis. According to Peattie (1987, the concept is fuzzy but popular because it encompasses the interests of a wide variety of groups. This comment has been about 15 years ago. Keith (1973) has previously premised that the sector is conceive as the employment outside the concept of formal labour markets. At the beginning, employment of labour was the determining factor: the idea was to distinguish businesses on their „degree of rationalisation, or embodiment of impersonal principles of social organisation“ (Kenyon, 2007; Hart, 2005). In the 1970s the International Labour Organisation (ILO) contributed to the concept but proposed also on some previous ideas mainly on small and micro enterprises that were outside the purview of government regulation and taxation (ILO, 1972). These were businesses in the subsistence economy. The term was reinterpreted when de Soto (1989) identified the informal sector as a source of dynamism and growth, held back only by inappropriate government regulation. Later the legal definition emerged and link formality to whether registered and complying with relevant legislation. It is this legal definition that has widespread use today (Gerxhani, 2004; Kenyon, 2007). In this usage, firms in the informal sector are there because some preferred to be there or the cost of formalization is high or there is nothing to attract the informal sector because some formal businesses behaviourally prefer to go informal. They want to contravene – or are not subject to – some of a variety of rules and regulations regarding labour and environmental laws, registration and taxation.

### **The concept of Self Reliance**

Self-reliance as a concept is synonymous with such titles as self-employed, small scale enterprise or one-man business. If one is self-employed, one is self-reliant. The concept has occupied a significant place in the economic policies of most countries. As rightly argued by Ogundipe (1987), self-reliance does not mean absolute self- sufficiency, neither is it synonymous with autarky-a total absence of commercial intercourse with the external environment. Self-reliance is the ability to take initiatives, develop it and sustain it to the level of attaining economic subsistence and growth within the environment of operation Self-reliance guarantee self-management, self-sourcing for set up capital, location in local environment and so small in size when compared with the biggest unit in its field, and should meet desired income and their employee’s needs (Adebayo, 2005; Osadi, 2007). Self-reliance will promote small scale enterprises which can generate substantial employment for thousands of unemployed youths as well employing others. Adejumbi (1991) was lamenting the consequences of unemployment among youth which includes deviance behaviours and disruption of the social order; Olayiwola and Busari (2001:1) also decried young able-bodied men looking for the so called “white collar” jobs, being employed rather than being employers. Self-reliance has been threatened by such factors as political instability/insecurity, pronouncement of excellent policies and guidelines with poor implementation, and corruption, which has become the norm rather than exemption (Hambagda, 2012). The rate of unemployment is alarming and outrageous. Insecurity is a serious signal of political instability posed by Boko Haram (Izedonmi, ,2012). Many programmes have been floated for micro, small and medium enterprises in Nigeria and at most of the states“ levels but to no avail. The government has no other option to providing enabling environment for entrepreneurship development which will engender a multiplier effects on gainful employment of youths in the country to avoid the impending time bomb.

### **The contemporary concept of Entrepreneurship**

The concept of an entrepreneur is further refined when principles and terms from a business, managerial and personal perspective are considered. It is a concept which is contingent and adaptive to the environment. The concept of entrepreneurship from a personal perspective has been explored on our contemporary time. In almost all the definitions of entrepreneur as observed by Shapeto (1975), there is the agreement that we are talking about behaviour that includes:

- Initiative taking
- The organising and reorganizing of social and economic mechanisms to turn resource and situations to practical account.
- The acceptance of risk or failure.

In their definitions Hisrich and Peters (2004) contend that entrepreneurship involves the process of creating something new, devoting every effort and receiving the resulting rewards of monetary and personal satisfaction, and independence. This paper simplifies the definition as much as possible to be operational; that an entrepreneur is someone who carried on a business at his own risk. Whoever wants to start a business is an entrepreneur and running the business involves entrepreneurial skills.

**Micro, Small and Medium Enterprises.**

The classification of MSMEs by Small and Medium Enterprises Development Agency of Nigeria(SMEDAN, 2007), summarised in Table 1 below, has been cited by many authors.

**Table 1 Classification of Enterprises.**

<b>Size/Category</b>	<b>Employment</b>	<b>Assets (NMILLION) Excluding Land and Building</b>
<b>Micro Enterprises</b>	<b>Less than 10</b>	<b>Less than 5</b>
<b>Small Enterprises</b>	<b>10 – 49</b>	<b>5 – 50</b>
<b>Medium Enterprises</b>	<b>5 – 199</b>	<b>50 – 500</b>

A conceptual view of MSMEs for the purpose of this study is as in Table 2 below:

**Table 2: Classification Used for this Study.**

<b>Scale/Category</b>	<b>Description</b>	<b>Employment</b>	<b>Assets (Excluding Land and Building)</b>
<b>Micro Scale</b>	all one man businesses, from the simple hawkers to petty and roadside traders etc.	<b>One Man Business</b>	<b>Lees than N50,000</b>

<b>Small Scale</b>	All artisans, motor cycle riders for transportation, peasants farmers, identified shop owners where they can display their wares, restaurants, domestic crèche and nursery school operators etc	<b>Two to less than Ten</b>	<b>N50000 &lt; N1Milliom</b>
<b>Medium Scale</b>	all others businesses that are not registered with the corporate affairs commission (CAC) in Abuja, irrespective of the volume of businesses.	<b>Ten and Above</b>	<b>N1Million &lt; N500 Million</b>

The lists under each of the enterprises are for pointers only since the lists in each case are relatively inexhaustible.

### Research Questions.

The following research questions are formulated to ensure the achievement of the objectives of this study.

1. Which of these sources of finance is mostly accessed?
2. How are the sources of finance ranked, based on the frequency of preference?
3. Are the sources of finance being influenced by gender, experience or educational qualification?

### 3. Methodology

#### Data Collection

This is a demonstrative data simulated based on the exhibited characteristics of micro, small and medium enterprises in Ondo State. Total samples of 500 data items were used for the analysis and model estimation in Tables A-1 to Table A-10. Data in Table 1 have been classified into dependent and independent variables with their respective value categories in Nominal or Ordinal scales. Dependent variable is „major integrated sources of finance“ [MISF]. Independent variables are divided into „factors“ or „covariates. Factors are used in constructing the model and these are business experience [EXP], educational qualification [EDQ], and gender [GDR]. Covariates are only used to define the subpopulations and these are age [AGE], adequacy of accounting and financial records [AFR], access to finance [FIN], and business type [BTP]. Classifications are in categories, values and frequencies. A typical sample data of 15 responses out of 500 data item summarized in Table 4 is in Table 3.

Table 3 Typical Data on the Dependent and Independent Variables.

MISF	EXP	FIN	AFR	EDQ	GDR	AGE	BTP
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4.00	2.00	3.00	1.00	3.00	2.00	1	1.00
3.00	1.00	1.00	2.00	3.00	1.00	2	1.00
1.00	2.00	2.00	3.00	1.00	1.00	1	1.00
2.00	1.00	1.00	1.00	1.00	2.00	3	2.00
4.00	2.00	2.00	3.00	2.00	2.00	3	2.00
4.00	1.00	3.00	2.00	2.00	1.00	2	2.00
2.00	1.00	1.00	2.00	3.00	2.00	1	1.00
3.00	2.00	2.00	3.00	1.00	2.00	2	1.00
3.00	2.00	1.00	1.00	1.00	2.00	3	2.00
4.00	2.00	2.00	1.00	3.00	1.00	2	2.00
1.00	1.00	3.00	3.00	1.00	1.00	1	1.00
1.00	1.00	1.00	1.00	2.00	1.00	1	1.00
3.00	2.00	2.00	2.00	1.00	2.00	2	2.00
3.00	1.00	3.00	2.00	1.00	1.00	2	2.00
4.00	1.00	1.00	2.00	1.00	1.00	1	2.00

**Table 4 Variables' Classifications in Categories, Values and Response Frequencies**

Variables	Levels/ Categories	Values	N
Major Integrated Sources of Fin [MISF]	Govt Intervention	1	100
	Contribution/ Coop Soc.	2	108
	Personal/ Bus Sav.	3	153
	Micro credit/ Bank loans	4	139
business experience[EXP]	< 1 0yrs	1	132
	[10-20]yrs	2	243
	> 20yrs	3	125
educational qualification[EDQ]	up to sec schl	1	211
	ND/NCE/Equivalence	2	163
	hnd/degree & above	3	126
Gender [GDR]	MALE	1	250
	FEMALE	2	250

Age [AGE]	Less 25yrs	1	74
	[25-50]yrs	2	223
	More than 50yrs	3	203
accounting and financial records[AFR]	not adequate	1	128
	fairly adequate	2	163
	Adequate	3	209
access to finance [FIN]	Little	1	128
	Averagely Fair	2	209
	Good	3	163
business type [BTP]	Micro	1	220
	Small	2	180
	Medium	3	100

All the variables are nominal except AFR and FIN which are ordinal.

### Model Description

Multinomial Logistic Regression was used for this analysis. It is useful in classifying subjects based on values of a set of predictors which are either FACTORS or COVARIATES. For example, in this study, micro, small and medium scale entrepreneurs were to identify which of the four sources of finance best describe their financial options. An entrepreneur can select one best option. Since there is the absence of natural ordering to the value of the dependent variable, linear regression is not appropriate. The dependent variable MISF has K [4] categories with an

unobserved continuous variable  $Z_1, \dots, Z_k$  each of which can be government intervention, contribution/cooperative society, personal/business savings and micro credit/bank loans each of which can be chosen. Therefore,  $Z_k$  represents selecting  $k^{\text{th}}$  option, with larger value of  $Z_k$  corresponding to greater probability of choosing that financial option. (IBM SPSS, 2012)

### Model Specification

A multinomial logistic regression model shows mathematically the relationship between the  $Z^{\text{'s}}$  and the probability of a particular outcome:

$$\pi_{ik} = (e^{z_{ik}}) / (e^{z_{i1}} + e^{z_{i2}} + \dots + e^{z_{ik}}) \text{ where}$$

$P_{ik}$  = probability of the  $i^{\text{th}}$  case fall in category k

$Z_{ik}$  = value of the  $k^{\text{th}}$  unobserved continuous variable for the  $i^{\text{th}}$  case

$Z_k$  is also assumed to be linearly related to the predictors. +

so that

$$Z_{ik} = \beta_{k0} + \beta_{k1}X_{i1} + \beta_{k2}X_{i2} + \dots + \beta_{kj}X_{ij} \text{ where}$$

$X_{ij}$  = the  $j^{\text{th}}$  predictor for the  $i^{\text{th}}$  case

$B_{kj}$  = the  $j^{\text{th}}$  coefficient for the  $k^{\text{th}}$  unobserved variable

$j$  = the number of predictors. Applying to the study:

$$MISF_{ik} = \alpha k0 + \alpha k1EXP_{i1} + \alpha k2EDQ_{i2} + \alpha k3GDR_{i3} + \alpha k4AGE_{i4} + \alpha k5FIN_{i5} + \alpha k6AFR_{i6} + \alpha k7BTP_{i7} + u_{ij}$$

where

$MISF_{ik}$  = the major integrated sources of finance. „integrated“ is used because there are other sub-sources in each option.

1. Government Intervention includes: empowerment programmes, poverty alleviation projects, world bank Fadama programmes, transportation assisted programmes, direct financial assistance to farmers, artisans and market women.
2. Contribution/Cooperative Society includes : age grade traditional financial assistance, local and daily contribution by accredited agents, cooperative loans.
3. Personal/Business Savings includes : personal savings , assistance from parents ,assistance from other relatives, plough back business profits.
4. Micro credit/Bank loans include: credit facilities from retailers and wholesalers, traditional money lending, micro credit loans, bank overdrafts, deposit bank loans.

$\alpha k1 - \alpha k7$  = the coefficients of the independent variables, [both factors and covariates] estimated through an iterative maximum likelihood method.

$\alpha k0$  = the intercept

$u_{ij}$  = the error term

All other variables are as earlier defined and set at default at their respective levels as nominal or ordinal in Table 4 above.

#### 4. Results and Discussion

**Summaries** .Tables A-1 to Table A-10 are the estimated output of the multinomial logistic regression model. Most of the discussions were noted under each of the tables. Notwithstanding, the following are worth mentioning here.

At least 42.7% and at most 73.8% of the variation in MISF are explained by the predictors [factors and covariates] as in Table A-4 which are equivalence of R Square [ $R^2$ ]. Table A-3, with goodness of fit, is a test to show whether the model adequately fits the data, but the existence of covariates rendered goodness of fit generally not useful. There are other compensatory controls to take care of the gap to be likely created by this problem. We have the classification in Table A-6 which showed 61% of MISF categories to be classified correctly. Likewise in Table A-5, since the predictors are significant, [less than 0.05], EXP and EDQ contribute significantly to the model.

Table 8a and 8b show the observed and predicted frequencies. The residuals are measures of the difference between the observed and predicted values. Large residuals can indicate cell that are not well fit by the model. If the percentage of the residual over predicted values in any cell is more than 25%, the cell is not well fit by the model. Therefore, cells 2-2, 2-4, 6-2, 6-3, 8-2, 8-4, 9-2, 11-2, 12-2 and 12-3 are not well fit by the model. Out of 48 cells, 10 cells were not well fit; representing 20.8 percent, and conversely, 79.2 percent are well fit by the model.

The output under accounting and financial records [AFR] in Table 8b seems to violate “a priori” expectation. While 92 entrepreneurs without adequate accounting records were able to secure micro credit/bank loans, those with adequate accounting records could not secure any. Probably maintaining adequate accounting



records is not one of the criteria for granting loans [or probably a sampling error !]

### **Research Questions**

Research Questions One: Which of these sources of finance is mostly accessed? Table A-1 showed Personal/Business savings as the mostly accessed with 153 out of 500 representing 30.6%. This was in line with Olayiwola and Busari (2001) where personal savings and family source accounted for the highest percentage. Likewise, this agrees with the findings of Oloidi and Akinniyi as personal saving with business profit plough back took the highest percentage.

Research Questions Two: How are the sources of finance ranked based on the frequency of preferences?

Table A-1 ranked the sources as Personal/Business saving [1<sup>st</sup>], Micro credit/Bank loans [2<sup>nd</sup>], Contribution /Cooperative society [3<sup>rd</sup>] and Government intervention [4<sup>th</sup>]. This ranking was in tandem with earlier report of USAID (2005), Evbuomwan et al (2013) where MSMEs access funds to operate their businesses lists personal savings for working capital; informal sources, friends, families and “merry-go-rounds” for new investments; 30 percent access financing from cooperatives.

Research Questions Three: Are the sources of finance being influenced by gender, experience or educational background?

Table A-5 showed that since the factor [ predictors] are significant, [less than 0.05], the effects contribute to the model. While EXP and EDQ significantly influenced the financial sources, Gender (GDR) did not.

### **Research Hypothesis:**

Ho : there will be no significant relationship between the main integrated sources of finance and the predictors

Table A-7 analysed the significant factors and covariates at levels. A variable is said to be significant when it exerts fundamental effect on the dependent variable. Apart from redundant cells, EXP, EDQ, BTP, FIN and AFR are significant 1% or 5%. AGE and GDR are not significant. This means that gender and age of entrepreneurs are not important in determining their sources of finance.

## **5. Conclusion and Recommendations**

### **Conclusion**

The classification in Table A-1 shows the percentage of the entrepreneurs on the most accessed respective categories of the major integrated sources of finance. Entrepreneurs have to tick one out of the four integrated sources of finance. Government intervention has 100 [20%] Contribution/Cooperative Society loans has 106 [21.6%], Personal/Business Savings attracts 153 [30.6%] and Micro credit/Bank loans settles at 139 [27.8%]. As usual, personal saving, with assistance from parents and relative and plough back of business profits take the lion share. One interesting area of note is the micro credit/bank loans. The government was indirectly involved by helping interested entrepreneurs to access loans at single digit rate of interest. Finally, government intervention was the least despite the various encouragements and motivation by the government. It is likely that whatever one did not really suffer for, one may not value it. Empirical evidence shows that finance contributes about 25% to the success of SMEs. (Ogujuiba, et al, 2004). A World Bank (2001 report) showed that 39% of small scale firms and 37% of medium scale firms in Nigeria are financially constrained. Many SMEs in Nigeria lack the capital to continue their business and they are forced to close shop because they are unable to access the required funds. Something new for MSMEs should be ventured by each state government for entrepreneurs and entrepreneurship development in Nigeria.

### **Recommendations.**

The state governments should consider alternative strategies to give incentives to entrepreneurs rather than distributing cheques or engaging in any form of “father Christmas” jumbo. The resident cards should be free so that all and sundry can be identified, traced and captured.

Government should create a fund to which certain amount would be transferred every year for say, four or five years and made available to all genuine and interested entrepreneurs at about 3% to 5% interest rate.

This would generate a multiplier effect in the economy. Beneficiaries should produce about two guarantors resident in the state to reduce financial risks. The fund should be revolving within four year terminal payment. A board, preferably with experienced technocrats, should be established to manage the fund.

#### **Future Research Area**

This study limits entrepreneurs to choosing the most accessible source of finance out of each of the integrated sources of finance. Future study should be extended to allowing respondents make multiple choices in sources of finance.

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## Appendix\*

**Table A-1 Case Processing Summary**

variables <sup>a</sup>		N	Marginal Percentage
Major Integrated Sources of Fin [MISF] <sup>b</sup>	Govt Intervention	100	20.0%
	Contribution/ Coop Soc.	108	21.6%
	Personal/ Bus Sav.	153	30.6%
	Micro credit/ Bank loans	139	27.8%
business experience[EXP] <sup>c</sup>	< 10yrs	132	26.4%
	[10-20]yrs	243	48.6%
	> 20yrs	125	25.0%
educational qualification[EDQ] <sup>c</sup>	up to sec schl	211	42.2%
	ND/NCE/Equivalence	163	32.6%
	hnd/degree & above	126	25.2%
Gender [GDR] <sup>c</sup>	MALE	250	50.0%
	FEMALE	250	50.0%

Age [AGE] <sup>d</sup>	Less 25yrs	74	14.8%
	[25-50]yrs	223	44.6%
	More than 50yrs	203	40.6%
accounting and financial records[AFR] <sup>d</sup>	not adequate	128	25.6%
	fairly adequate	163	32.6%
	Adequate	209	41.8%
access to finance [FIN] <sup>d</sup>	Little	128	25.6%
	Averagely fair	209	41.8%
	Good	163	32.6%
business type [BTP] <sup>d</sup>	Micro	220	44.0%
	Small	180	36.0%
	Medium	100	20.0%
Valid		500	100.0%
Missing		0	
Total		500	
Subpopulation		97 <sup>a</sup>	

- The dependent variable has only one value observed in 78 (80.4%) subpopulations.
- The dependent variable of the model
- The factors [independent variables] used to construct the model.
- The covariates [independent variables] not used in constructing the model but used to define Subpopulations.

This table is a perfect first hand statistics on the dependent variable [MISF], factors [BEP, EDQ and GDR] and the cofactors [AGE, AFR, FIN and BTP] together with the corresponding percentages.

**Table A-2 Model Fitting Information**

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	728.375			
Final	142.571	585.804	12	.000

The chi-square statistics is the difference between the -2 log-likelihood of the Null and Final models. A significance of less than 0.05 implies that the final model is outperforming the Null.

**Table A-3 Goodness-of-Fit**

	Chi-Square	df	Sig.
Pearson	89.889	21	.000
Deviance	83.939	21	.000

The goodness of fit is a test to show whether the model adequately fits the data especially when the

significant of the effects are greater than 0.10. When subpopulations are based on covariates [as in the case of this model], goodness of fit generally are not useful because there will be many cells with 0 frequencies in the “Observed and Predicted Frequencies” Table

**Table A-4 Pseudo R-Square**

Cox and Snell	.690
Nagelkerke	.738
McFadden	.427

The Pseudo R-Square statistics measure the variability in the dependent variable explained by the predictors. This statistics are designed to have similar properties to the true r square statistics in linear regression. The highest of the statistics [e.g. Nagekerke] is normally assumed. At least 42.7% and at most 73.8% of the variation in MISF are explained by the predictors [factors and covariates]

**Table A-5 Likelihood Ratio Tests**

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	Df	Sig.
Intercept	142.571 <sup>a</sup>	.000	0	.
EXP	332.512	189.941	6	.000
EDQ	435.693	293.122	6	.000

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degree of freedom.

Since the predictors are significant, [less than 0.05], the effects contribute to the model.

**Table A-6 Classification**

Observed	Predicted				
	Govt Intervention	Contribution/ Coop Soc.	Personal/ Bus Sav.	Micro credit/ Bank loans	Percent Correct
Govt Intervention	<u>40</u>	0	60	0	40.0%
Contribution/ Coop Soc.	5	<u>59</u>	6	38	54.6%
Personal/ Bus Sav.	0	21	<u>80</u>	52	52.3%
Micro credit/ Bank loans	0	0	14	<u>125</u>	89.9%
Overall Percentage	9.0%	16.0%	32.0%	43.0%	<u>60.8%</u>

This table shows the efficiency of each source of finance which is the practical result of using multinomial logistic regression. Only the cells [underlined] on the diagonal are correct predictions.

- Govt. Intervention- 40 of 100 of this source of finance are classified correctly.
- Contribution/Coop Soc.- 59 of 106 of this source of finance are classified correctly.
- Personal/Bus. Sav. – 80 of 153 of this source of finance are classified correctly.
- Micro credit/Bank loans – 125 of 139 of this source of finance are classified correctly.
- Overall – 60.8 of the cases are classified correctly.

**TABLE A-7 Parameter Estimates<sup>c</sup>**

Dependent Variable: Major Integrated Sources of Fin

Parameter	B	Std. Error	T	Sig.	95% Confidence Interval		Partial Eta Squared	Noncent. Parameter	Observed Power <sup>b</sup>
					Lower Bound	Upper Bound			
Intercept	.956	.081	11.851	.000	.797	1.114	.224	11.851	1.000
[EXP=1.00]	.827	.143	5.801	.000	.547	1.107	.065	5.801	1.000
[EXP=2.00]	.708	.090	7.861	.000	.531	.885	.113	7.861	1.000
[EXP=3.00]	0 <sup>a</sup>	.	.	.	.	.	.	.	.
[EDQ=1.00]	-.629	.099	-6.365	.000	-.823	-.435	.077	6.365	1.000
[EDQ=2.00]	-.119	.094	-1.272	.204	-.304	.065	.003	1.272	.245
[EDQ=3.00]	0 <sup>a</sup>	.	.	.	.	.	.	.	.
[AGE=1.00]	-.022	.075	-.289	.773	-.168	.125	.000	.289	.060
[AGE=2.00]	.189	.055	3.457	.001	.082	.296	.024	3.457	.932
[AGE=3.00]	0 <sup>a</sup>	.	.	.	.	.	.	.	.
[GDR=1.00]	-.003	.049	-.068	.945	-.099	.092	.000	.068	.051
[GDR=2.00]	0 <sup>a</sup>	.	.	.	.	.	.	.	.
[BTP=1.00]	.131	.066	2.000	.046	.002	.260	.008	2.000	.514
[BTP=2.00]	.195	.069	2.828	.005	.059	.330	.016	2.828	.806
[BTP=3.00]	0 <sup>a</sup>	.	.	.	.	.	.	.	.
[FIN=1.00]	1.072	.115	9.319	.000	.846	1.299	.152	9.319	1.000
[FIN=2.00]	.607	.074	8.194	.000	.461	.752	.121	8.194	1.000
[FIN=3.00]	0 <sup>a</sup>	.	.	.	.	.	.	.	.
[AFR=1.00]	1.649	.098	16.891	.000	1.457	1.841	.370	16.891	1.000
[AFR=2.00]	.892	.105	8.493	.000	.686	1.099	.129	8.493	1.000
[AFR=3.00]	0 <sup>a</sup>	.	.	.	.	.	.	.	.

a. This parameter is set to zero because it is redundant.

b. Computed using alpha = .05

c. A general linear univariate model was superimposed on multinomial logistic regression for the output of Table A-7 above. The table shows the significance of each of either the nominal or the ordinal factors or covariates. Out of the non-redundant cells, only those with ND/NCE/Equivalence [EDQ=2], those of less than 25 years [AGE=1], and males [GDR=1] are not significant. That is, they are not important in determining predictors of sources of finance for the entrepreneurs.

Table A-8a Implications of Gender, Educational Qualification and Business Experience on the Major

Integrated Sources of Finance in the Observed and Predicted Frequencies.

Gender	educational qualification	Business experience	Cells	Major Integrated Sources of Fin	Frequency		
					Observed	Predicted	Pearson Residual
MALE	up to Sec Schl	< 10yrs	1	1Govt Intervention	0	.000	.000
				2Contribution/ Coop Soc.	0	.000	.000
				3Personal/ Bus Sav.	25	24.886	.028
				4Micro credit/ Bank loans	48	48.114	-.028
		[10-20]yrs	2	1Govt Intervention	20	14.886	1.650
				2Contribution/ Coop Soc.	6	3.190	1.637
				3Personal/ Bus Sav.	16	16.481	-.152
				4Micro credit/ Bank loans	0	7.443	-3.008
ND/NCE/Equivalence	[10-20]yrs	3		1Govt Intervention	0	.000	.000
				2Contribution/ Coop Soc.	19	22.652	-.994
				3Personal/ Bus Sav.	4	7.710	-1.439
				4Micro credit/ Bank loans	33	25.639	1.974
		> 20yrs	4	1Govt Intervention	0	.000	.000
				2Contribution/ Coop Soc.	33	33.299	-.114
				3Personal/ Bus Sav.	9	8.701	.114
				4Micro credit/ Bank loans	0	.000	.000
Hnd/Degree & above		[10-20]yrs	5	1Govt Intervention	8	5.531	1.350
				2Contribution/ Coop Soc.	0	.765	-.900
				3Personal/ Bus Sav.	6	7.704	-.915
				4Micro credit/ Bank loans	0	.000	.000
				1Govt Intervention	20	20.444	-.295
				2Contribution/ Coop Soc.	3	.293	5.035

> 20yrs	6	3Personal/ Bus Sav.	0	2.263	-1.584
		4Micro credit/ Bank loans	0	.000	.000

Table A-8b Implications of Gender, Educational Qualification and Business Experience on the Major Integrated Sources of Finance in the Observed and Predicted Frequencies.

Gender	educational qualification	business experience	Major Integrated Sources of Fin	Frequency			
				Observed	Predicted	Pearson Residual	
FEMALE	up to sec schl	< 10yrs	7	1Govt Intervention	0	.000	.000
				2Contribution/ Coop Soc.	0	.000	.000
				3Personal/ Bus Sav.	20	20.114	-.031
				4Micro credit/ Bank loans	39	38.886	.031
		[10-20]yrs	8	1Govt Intervention	8	13.114	-1.758
				2Contribution/ Coop Soc.	0	2.810	-1.744
				3Personal/ Bus Sav.	15	14.519	.162
				4Micro credit/ Bank loans	14	6.557	3.204
	ND/NCE/Equivalence	[10-20]yrs	9	1Govt Intervention	0	.000	.000
				2Contribution/ Coop Soc.	19	10.921	3.168
				3Personal/ Bus Sav.	3	3.717	-.401
				4Micro credit/ Bank loans	5	12.361	-2.844
	> 20yrs	10	1Govt Intervention	0	.000	.000	
			2Contribution/ Coop Soc.	26	30.128	-1.652	
			3Personal/ Bus Sav.	12	7.872	1.652	
			4Micro credit/ Bank loans	0	.000	.000	
	[10-20]yrs	11	1Govt Intervention	24	26.469	-.617	
			2Contribution/ Coop Soc.	0	3.662	-1.968	
			3Personal/ Bus Sav.	43	36.869	1.506	
			4Micro credit/ Bank	0	.000	-.001	



hnd/degree & above			loans			
	> 20yrs	12	1Govt Intervention	20	19.556	.302
			2Contribution/ Coop Soc.	2	.280	3.271
			3Personal/ Bus Sav.	0	2.164	-1.549
			4Micro credit/ Bank loans	0	.000	.000

**\*SPSS 21 OUTPUT**

The Analysis of Table A-8 revealed further the effects of the Gender, Educational Qualification and Business Experience on each cell. For example:

Cell one consists of a male respondent with up to secondary school education and less than 10 years business experience got their sources of finance with 23 from personal savings and 48 from micro credit/bank loans.

The last cell are females with HND/DEGREE and more than 20 years of business experience got their sources of finance with 20 from government intervention and 2 from contribution/cooperative societies.

Factors and cofactors [independent variables] cell analyses are in Table A-9 and Table A-10 below. Each Table shows the frequencies of the variables' nominal of ordinal values to the major integrated sources of finance [MISF].

**Table A-9 Analysis of Frequency of Factors**

MISF	Business Experience			Educational Qualification[EDQ]			Gender	
	[EXP]						[GDR]	
	<10yrs	[10-20]yrs	>20yrs	Up to Sec Schl	ND/NCE/Equivalence	HND/Degree & above	Male	Female
[1] Govt Intervention	0	60	40	28	0	72	48	52
[2] Contribution/coop Soc.	0	44	64	6	97	5	61	47
[3] Personal/Business Sav.	45	87	21	76	28	49	60	93
[4] Micr	87	52	0	107	38	0	81	58

o credit/Bank loans												
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**Table A-10 Analysis of Frequency of Cofactors**

MI SF	AGE			Access to Finance [FIN]			Adequacy of Accounting/Fin Rec.  [AFR ]			Type of Business [BTP]		
	<25y rs	[25- 50]y rs	>50y rs	Litt le	Avera gely Fair	Go od	Not Adeq uate	Fairly Adeq uate	Adeq uate	Mic ro	Sm all	Medi um
[1]	23	24	53	0	0	100	0	0	100	34	31	35
[2]	10	49	49	0	68	40	0	59	49	52	23	33
[3]	19	93	41	36	94	23	36	57	60	57	87	10
[4]	22	57	60	92	47	0	92	47	0	78	39	22

Tables A-9 and A-10 are compiled by the authors based on the observed frequencies in Table A-8a and A-8b and the test of the subpopulations.

Factors are the major independent variable used in constructing the model. Covariates are other independent variables only used to define the Subpopulations. Any of the nominal or ordinal values that failed to match at least three out of the four categories of the dependent variable can be assumed not to have performed very well. It can be inferred that EXP “less than 10 years”, FIN with “little” access to finance and AFR “not adequate” accounting records do not meet the condition.