

AIAE RESEARCH PAPER 3

Measurement and Explanation of Informal Sector of the Nigerian Economy



AFRICAN INSTITUTE FOR APPLIED ECONOMICS

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Eric Eboh

Series Editor

Abstract

This study was carried out with the goal to improve understanding of the size, character and dynamics of the informal sector of the Nigerian economy in order to provide evidence-based insights for overall economic planning, policy targeting and program design. It is expected that the results and findings from the study would lead to clearer identification, better explanation and greater comprehension of the potential impacts of informal sector on overall economic prospects.

The study adopted both macro-economic and micro-economic analyses. Macroeconomic modelling using the *multiple-indicator multiple-cause (MIMIC)* model was applied to estimate the determinants and size of the informal sector in relation to the Gross Domestic Product. A survey methodology designed to obtain data on enterprise level characteristics, production patterns, investment practices and business conditions was applied to collect data from four thousand, four hundred and fifty five (4,455) informal sector enterprises in eleven (11) states in the South-South and South-East zones of the country. The survey data were analyzed using a combination of techniques including the Ordered Multinomial Logit model and the Cobb-Douglass Production Function.

The findings indicate that declining income, high tax burden, high black market premiums, and government control of the economy are some of the most important drivers of informality in Nigeria. In terms of structure whole sale, retail trade and personal services dominate the informal sector while financial intermediation is the least in terms of number of enterprises. The influence of ICT in the sector has grown rapidly in the last five years. Enterprise ownership is dominated by youth aged between 20 and 39 who own about 60% of all the enterprises. Most of the employees and apprentices have not attended any formal schooling and only about 5% of the employees of the sector attended post-secondary educational institutions. Over 70% of the enterprise owners perceive their business to have grown in any of the following forms: employing more labour, capital, revenue, new products, and additional branches. About 96% of respondents complained that lack of fund is the most important determinant of mortality among enterprises. The study reveals a low level of linkage between the informal and formal/ external sectors of the economy. The informal sector obtains its raw materials, produces and sells largely to other informal consumers of the products. Parameter estimates of production function in the informal sector suggest that the production process is labour intensive sector and the use of obsolete equipment may hinder technological diffusion within the sector. The incremental capital output ratio (ICOR) is very high while returns to labour are very low, implying that wages in the sector are low. The micro-level determinants of informality were identified to include size of enterprise revenue, enterprises prospects of continuing in the future, family size of the owner, existence of written contract, and the level of salaries of employees.

These results in general indicate policy direction to enhance the development and formalization of the informal sector. The recommended policies include the disaggregating of data on Nigeria's GDP in order to enable deeper analysis of the informal sector; the inculcation of entrepreneurial skills even at lower levels of education since most of the operators in the informal sector are young people; expansion of access to financial services for the poor; deliberate policies such as sub-contracting, to facilitate the linkage of the formal and informal sectors and promotion of favorable business environment for micro-enterprises.

Chapter One

Introduction

1.1 Study objectives

One of the major constraints to economic management in Nigeria is the paucity of credible statistics and systematic evidence on the informal sector. Despite the wide range of informal sector economic processes and activities, current knowledge of the characteristics, behaviour, magnitude and dynamics of the informal sector remains very inadequate. Yet, there is tacit acknowledgement that developments in the informal economy could be important reflections of overall trends in economic indicators such as income, employment and outputs. Improved knowledge and understanding of the character, content, behaviour and dynamics of the informal sector will therefore provide salient evidence base for better targeting of economic policy and more effective planning and control of the macro-economy.

In Nigeria, several questions remain unanswered regarding the nature and performance of the informal sector. While the questions may be academic, they have significant policy import and providing answers to them through scientific analysis represents a viable approach to supporting economic policies for integrating formal and informal sectors and eliminating dualistic markets. Accordingly, in order to address this knowledge gap, the overall goal of the study was to provide comprehensive information on the Nigerian informal sector to guide the planning and management of the national economy. The specific objectives were to:

- (a) Measure the magnitude of employment generation in the informal sector and its contribution to the Gross Domestic Product;
- (b) Characterize the Nigerian informal sector and factors promoting the operations and activities of its operators;
- (c) Undertake a trend analysis of the Nigerian informal sector;
- (d) Provide a detailed analysis of the core and non-core determinants of informal sector activities;
- (e) Provide estimates and quantify the size of the informal sector in Nigeria;
- (f) Compare the informal sector in Nigeria with those of other African countries and emerging market economies;
- (g) Examine possible links between the formal and informal sectors of the Nigerian economy and the implication for growth and development; and
- (h) Establish supporting mechanisms that can lead to the formalization of the informal sector.

While studies have been carried out on the Nigerian informal sector, for example, the collaborative study in 2001 by Central Bank of Nigeria (CBN), Nigerian Institute for Social and Economic Research (NISER) and Federal Office of Statistics (FOS), now the National Bureau of Statistics (NBS), there remains a large scope to advance basic understanding of the Nigerian informal sector. It is against this background that this study was undertaken by the AFRICAN INSTITUTE FOR APPLIED ECONOMICS, ENUGU for the National Planning Commission (NPC), under the auspices of the USAID REFORMS project being implemented by Development Alternatives Incorporated (DAI), Washington, DC.

Chapter Two

Review of Conceptual and Empirical Literature

2.1 Informal Economy: Conceptual Framework

The informal economy came into economic prominence in the 1950s and the 1960s and subsequently became an area of research and investigation (Gërxhani, 2004). Early studies involving the informal sector saw it as a marginal, small or residual activity while current research in the area considers this sector as a central phenomenon of economic and social dynamics of any country (Gërxhani, 2004). One of the early pioneers in this area of research was Keith Hart who studied the informal economy in Accra, Ghana. Since then, the study of the informal sector has witnessed a formidable revolution both in terms of theoretical analysis and empirical research. The major conceptual issue in the study of the informal economy is the question of what constitutes the informal sector, how it is measured and what policy instruments to apply. Clear conceptual understanding of informal sector has been a major challenge in economics research. A review of some definitions is crucial to lay the theoretical foundations of this study.

Generally, the informal sector has been defined in the literature from three dominant perspectives, namely: contractual status of employment, social security, and the number of people employed in an enterprise [(International Conference of Labor Statisticians (ICLS), 1993]. From the contractual status, Ajakaiye and Akerele, (1996) define an informal enterprise as one which “operates without regulations prescribed by the public authority to govern its organization behavior”. This definition suggests that informal economic units operate without the constraints of behavior prescribed by public authorities that may include the regulation of prices of inputs, control of entry in the sector, disclosure of production process information, safety and health standards. However, an informal economic unit may have its internal rules and regulations which may not be available to the public, yet the existence of such internal rules of behavior does not confer on it the status of a formal enterprise.

In some countries like Brazil, the informal economy is defined from the perspective of whether or not the enterprise or a worker is registered with the public social security. An enterprise is formal if the economic unit makes social security contributions. It is informal, otherwise (Henley et al., 2006). On the other hand, Schneider (2002) notes that a common perspective to the definition of informality is whether or not the activity is captured in the estimation of the Gross National Product (GNP). Activities that are unreported and therefore not captured in the measurement of the GNP are considered to be informal, whether they are legal or illegal activities.

Structurally, informal enterprises are often classified in terms of number of employees, capital base or rate of output turnover. Arne Bigsten et al. (2000) characterized informality in terms of size. They regarded economic activities whose employees were less than a certain numerical threshold as informal. In this case, a threshold size of less than 10 employees who work in the enterprise on continuous basis or within a reference period was specified. However, there is no universally agreed upper limit to the size as the number varies from country to country. On the basis of size, for example, an enterprise with five or less employees is regarded as informal in Brazil, while in Nigeria, the threshold is ten employees.

Theoretically, informal activities are market-based production that escapes detection in the official estimates of GDP (Savasan, 2002). This definition includes both underground economy and other structural informal activities. Loayza (1997) takes informal sector from the dimension of legal framework. Informal sector was defined as a process of income-generation that has a specific trait. "It is unregulated by the institutions of society, in a legal and social environment in which similar activities are regulated. That is, regulation and informality has a direct relationship with informal sector activities.

Informal enterprises are usually characterized by limited physical and human capital per worker (low wage sector). According to (UNESCAP, 2002), "informal activities are the way of doing things, characterized by ease of entry; reliance on indigenous resources; family ownership of enterprises; small scale of operation; labour-intensive and adapted technology; skills acquired outside the formal school system; unregulated and competitive markets." Galli and Kucera (2003) also adopted this qualitative approach as defined by ILO's Programa regional del empleo para America Latina y el Caribe (PREALC). The difference here is the number of employees. They defined informal sector as a firm that employs less than five or ten workers. This definition though, quantitative, is an open-ended definition. This is because the range between less than five or ten depends on country's conditions. The important factor here is the empirical sense, rather the theoretical definition of informality in quantitative manner as to measure the size of informal sector from labour dimension.

These definitions are very important because one of the characteristics of informal sector is the relative distribution of factors of production (labour and capital). Most informal sector activities are characterized by labour intensive production although this depends on the economy under consideration. Ghosh and Saumik (2006), argue that the informal sector itself has labor-intensive and capital-intensive sub-segments. If economic reforms hurt the capital-intensive formal sector, it also leads to a contraction in the capital-intensive informal segment while employment and real wages rise in labor intensive part of the informal sector. Sher Verick (2006) besides labour-capital intensity considers high proportion of women, self-employment, education levels, wages (and hence, poverty) as prominent features in the determination of informality.

Schneider and Savasan (2006) differ in the approach to the conceptualization of informal sector. Informal sector is defined in terms of its determinants, for example, by looking at the characteristics of informal sector and their determinants. The approach emphasizes the fact that labour size could be used to determine the definition of shadow economy, and goes further to look at the determinants of hiring this labour. It identifies competition, lower wage rates (as a result of excess labour supply in the formal sector), labour intensive mode of production and low skilled labour and tax avoidance, high insurance premium (pension on health care) and the probability of detection and penalty. These factors constitute the possible determinants of informality.

There are two dominant debates of what constitutes the informal sector in developing countries. These are mainly conceptual issues of the *composition of informality* and *informal-formal sector relationship*. The concept of composition of informality associates the phenomenon with unregistered and unregulated small-scale business activities, while the dualism approach alludes to the "marginal informal poor" of the economy that produces goods for the poorest poor (Bernabe,

2002). On the other hand, the debate on informal sector in developed economies centers more on the measurement of informal sector, not merely the question of what constitute the informal sector.

This study considers that one of the main features of Nigerian informal enterprises is that they are not legally independent from the households that own/manage them. Also, they are characterized by small number of employees (less than 10 employees) and typically operate outside the regulatory capture (that is, not registered with the Corporate Affairs Commission as a separate legal entity and so do not subscribe to both corporate income tax and PAYE tax).

2.2 Empirical Literature

Broadly, three different approaches have been employed by researchers for studying the informal sector. They are the microeconomic, macroeconomic and the use of econometric models.

Microeconomic approaches employ sample surveys based on voluntary replies or tax auditing and other compliance methods. Generally, they are known as direct approaches because they involve direct administration of questionnaires to obtain data about informal sector operators using enterprise owners/managers as respondents. Sample surveys designed for estimation of the informal economy are widely used, but the reliability depends on a number of factors which range from methodology of sample designs, to instruments of carrying out the survey. This approach has its advantages and weaknesses. The disadvantages are connected with normal flaws that are associated with generating survey data including the precision of the questions, the respondent's willingness and disposition to provide appropriate and reliable responses and measurement errors (Schneider, 2002). Respondents can mislead the researchers either by hiding information about the amount they pay to tax or confess to tax payment with the intension that the question obtained from them might be used for penalty against tax defaulters. However, some of the inherent characteristics of informality such as low education and lack of record keeping pose constraints to the credibility of data collected in informal sector surveys.

The macroeconomic approaches, also called 'indicator or indirect' approaches, make use of various economic and social indicators that provide information about the development of the informal economy over time (Schneider, 2002). In contemporary literature, there are five indicators for gauging trends of the informal economy, namely:

- 1). gap between national expenditure and income statistics;
- 2). discrepancy between the official and actual labor force;
- 3). currency demand or the ratio of currency to demand deposits;
- 4). transaction approach; and
- 5). Electricity consumption method.

These indicators have been employed in studying the informal sector with interesting results. For instance, based on a rigorous scrutiny of published employment/unemployment statistics in Nigeria, Eboh (2001) underscored data discrepancies that can be interpreted as indicative of the size and impact of informal sector. The unemployment statistics in the country reveals a curious development that can only be reasonably explained by the non-reporting of an expansive informal sector. The

impression gathered from Nigeria's employment and unemployment statistics was that a large portion of the able-bodied, working age population was not captured in official labour statistics.

Cagan (1958) computed a correlation of currency demand and the tax pressure (as one cause of the informal economy) for the United States over the period 1919 to 1955. Gutmann (1977) used the same approach, (the ratio of currency to demand deposits over the period 1937 to 1976) but did not make use of the correlation procedures. Gutmann assumed a base period when, according to him, there was no informal activity and likened the changes in informal activity to changes in the ratio of currency to demand deposits. Researchers who apply this approach have further developed it by applying econometrically estimated currency demand functions (see Tanzi, 1980, 1983). This approach assumes that there is a high correlation between cash transactions and informal sector. An increase in the size of the informal economy will therefore increase the demand for currency (Schnieder, 2002).

Eboh (2001) applied several indicators based on the monetary aggregates for the measurement of the trends of informal sector in Nigeria. The method of monetary aggregates is a family of techniques that are premised on the amount of currency-outside-banks, as a reflection of the preference of cash payments/transactions among informal sector operators. Four variants of the monetary-aggregate method were used in a complementary fashion to elicit trend of the informal economy. They include:

- a. The currency-outside-banks growth trend;
- b. The ratio of currency-outside-banks to demand deposits;
- c. The ratio of currency-outside-banks to currency in circulation; and
- d. The ratio of currency-outside-banks to money supply.

Estimations based on these monetary aggregates revealed comparable trend of the growth of the informal sector, especially since the 1990s.

The econometric or modelling approach incorporates multiple determinants to evaluate the size and impact of informal sector. The unknown coefficients are estimated in a set of structural equations. Savasan and Schneider (2002) used direct – microeconomic method (survey) to estimate the determinants of informal hiring in Turkey textile industry. It employed discriminant analysis and ordered and logistic regression models. The study revealed that skill structure of employees, perceived penalty, competition and sizes of firms in the sector were the important determinants of hiring in the Turkish informal sector.

Ghosh and Paul (2006) used modelling approach to estimate the impact of trade liberalization from formal job transition to informal job by applying a panel regression on 18 Central European countries (CEE) and Former Soviet Union countries (FSU). Informal sector as the regress and (informal sector share of GDP) was obtained by taking informal sector output as share of GDP. The finding shows that trade liberalization tended to increase the size of informal sector as share of GDP.

Dabla-Norris and Feltenstein (2003) used GCE model to estimate the impact of the underground economy and its macroeconomic consequences. It was concluded that in the absence of budgetary flexibility to adjust expenditures, raising tax rates too high drive firms into the underground economy,

which in turn reduces the tax base. This is a confirmation that regulation drive firms from the formal to informal economy, and the quest for tax avoidance is an inducement for firms to remain in the informal sector.

Bigsten et al. (2000) used a probit model with a threshold of 1-12 employees as determinant of an informal sector, to test if there is difference between formal and informal sector in Kenya. He concluded that, informal sector labour structure was different from the formal sector.

Applying cross-sectional and time series data, Galli and Kucera (2003), argued that countries with a stronger civic rights have lower shares of informal employment and higher shares of formal employment. This tends to suggest that when there are laws to protect individual rights and freedom, the labour market tends towards organized employment.

One growing fact about the measurement and the size of the informal economy is that methods and data availability determine its level of accuracy. In this study, the variables were selected having in mind data constraints and the need to compare findings with the previous informal sector studies. In justifying this argument (Anno, 2003) argued that “the meaning of the latent variable depends completely on how correctly, precisely and comprehensively the causal and indicator variables correspond to the intended semantic content of the latent variable”.

The *MIMIC (mimic multiple-indicators multiple-causes)* model which in general consists of two parts is used for this study. The model links the unobserved variables to observed indicators. This will be a guide to the development of informal sector impact on the Nigerian economy. The choice of the variables will be based on the micro and macroeconomic environment peculiar to the Nigerian economy.

Chapter Three Methodology

The study applied two complementary approaches to the study of the informal sector. One approach is direct while the other is indirect. The direct approach involves survey of informal sector enterprises to collect primary data for assessing the nature, structure, characteristics, performance and conditions of informal sector. The indirect approach comprises methods based on macroeconomic modeling and estimation. The macroeconomic or indirect method used macroeconomic variables to trace the link between the formal and the informal economy using a multiple indicator multiple cause (MIMIC) model.

3.1 Building the Macroeconometric Analytical Framework

3.1.1: Theoretical model

This work is interested in the impact analysis or the relative contribution of the informal sector to the overall economy measured by the gross domestic product (GDP). Generally, modeling informal sector requires understanding and complete knowledge of what constitutes informal sector, their indicators and causes. The study used the conceptual understanding of informal sector as shown in Figure 1.

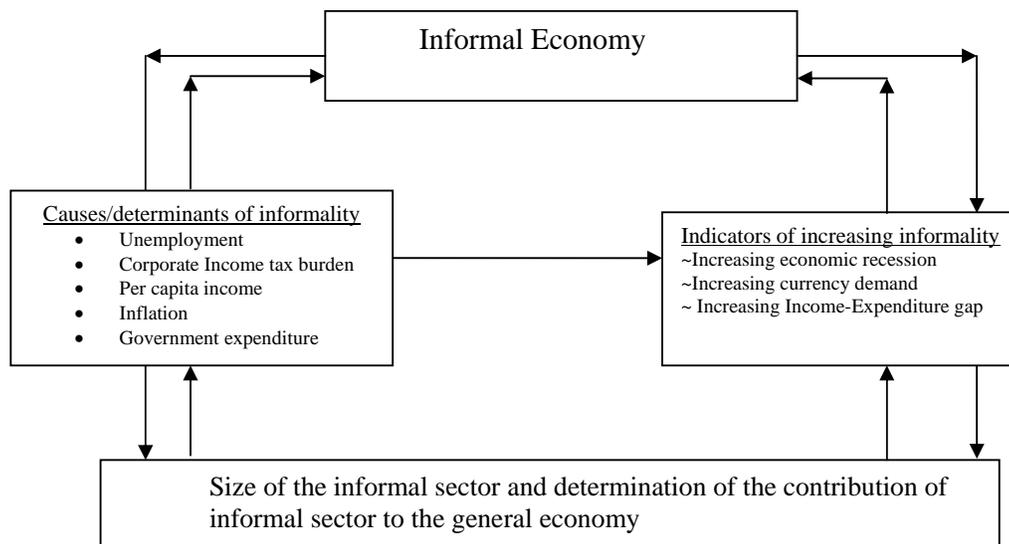


Figure 1: Flow Chart of Informal Economy model specification and Transmission

Six major steps were involved in building the structural model:

- Identification of Causal variables - set of factors that influence the size of the informal sector in Nigeria;
- Identification of structures or indicators of informality;
- These two factors (causal and indicator variables) are connected by a simple index, which measures the size of the informal sector;
- The unobserved variable, the size of the informal sector was modelled as a latent variable;
- The MIMIC² model is then, specified as a reduced form equation whose error terms are jointly distributed; and
- Finally, the reduced form coefficients are computed and used for calibration.

Building on these six stages, the model was derived from a flow chart of the interaction of the causes, determinants and indicators (measures) of informal sector in Nigeria (Figure 2). This model is a *Multiple-Indicator, Multiple-Cause (MIMIC)*³. The basic understanding here is that the unobserved (size of informal sector) is linked to observed macroeconomic variables (empirically measured through its causal and indicator variables).

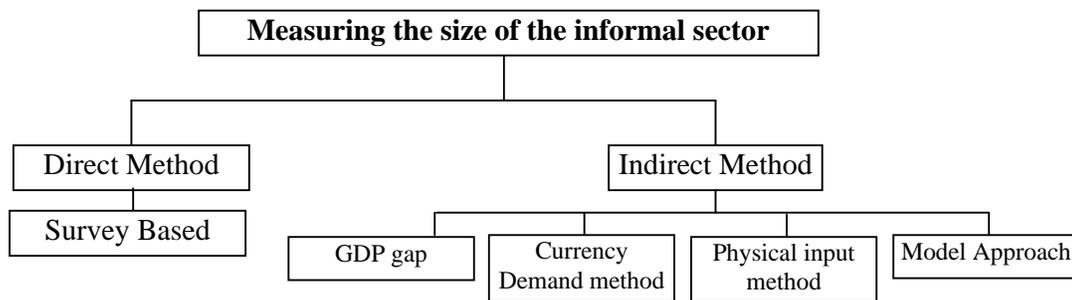


Figure 2: Interaction of the applied model

3.1.2 Variable Definitions and Model Specification

The symbols and set definition used for the study are summarized as shown in Table 1.

² The method has its origins in the factor analysis literature of psychometrics now espoused in economic thought the latent (unobserved) models of Zellner (1970) and Goldberger (1972).

³ Loayza (1997) used MIMIC approach to compute the determinants of informal sector in Latin American countries and its impact on provision of services and economic growth.

Table 1: Symbols and Set definition

Symbol	Definition
Rgdp	Real Gross domestic product-Indicator (scale factor)
Ccr	Currency demand ratio – Indicator $\left[\frac{\text{Currency demand}}{\text{Money supply } M_2} \right]$
Uer	Unemployment rate – Causal variable
Citxb	Corporate income tax burden – causal variable $\left[\frac{\text{Corporate income tax}}{\text{Gross domestic product}_{cp}} \right]$
Pci	Income per capita (nominal) –causal variable
Gce	Government consumption expenditure
leg	Income-expenditure gap

In the modelling process we first, used the definition of informal sector to generate its causal and indicator variables. The link between the indicator and the causal variables was then used to construct the functional relationship between the informal sector as a latent variable and the observed causal variables. The function was specified as:

$$\text{inf} = f(\text{citbx}, \text{uer}, \text{pci}, \text{gce}) \quad (1)$$

In the second stage, we developed an interaction between the informal economy latent variable and its indicators.

$$\text{inv} = f(\text{inf}) \quad (2)$$

Where: “inv” is a vector of $[2 \times 1]$ indicator variables, and substituting equation 1 in 2.

$$\text{inv} = f(\text{citbx}, \text{uer}, \text{pci}, \text{gce}) \quad (3)$$

The two functional forms or interactions in equations (1) and (3) are very important functions for analysis. Equation 2 suggests that the indicator variables are functions of the level of informality which in turn is the function of causal factors. Equation 3 suggests that the macroeconomic indicator variables are determined by the causal factors. This is important in two respects. It is a test of the determinant(s) of the shadow economy in Nigeria. Secondly, it will be a guide to policy direction on the relative influence of informal sector by some macroeconomic indicators. This is consistent with Norman (1997) who demonstrated that all the indicators of informal sector are correlated with economic growth.

Drawing from the set of determinants of the size of informal sector, the model was specified as:

$$\text{inf} = \beta \text{cav} + \nu$$

(4)

And

$$\text{inv} = \alpha \text{inf} + \mu$$

(5)

Where “cav”⁴ is a vector of the causal variables defined in sets of symbols or in equations 1 and 2. The reduced form of equations 4 and 5 was specified as

$$\text{inv} = \pi \text{inf} + \varepsilon$$

(6)

Normalizing equation 5 is done by setting the first element of sets of parameters α to 1. That is, $\alpha_1 = 1$. Different possible methods of estimating this structural equation have been proposed which include the use of maximum likelihood estimation procedure, the seemingly unrelated regression procedure, but the study uses the seemingly unrelated regression⁵ (SUR) model, implemented using STATATM 9.2 econometric software.

π , is $\alpha\beta$. The restriction is now imposed on π the parameter of the reduced form equation in equation (6) by normalizing the equation and setting $\alpha_1 = 1$. The use of SUR facilitated the use of currency demand ratio as an auxiliary model for the calibration of the informal sector which is often called “benchmarking”.

$$\alpha = \begin{bmatrix} 1 \\ \alpha_2 \end{bmatrix}$$

(7)

and

$$\pi = \alpha\beta = \begin{bmatrix} \beta_1 \\ \alpha_2\beta_2 \end{bmatrix}$$

(8)

The restricted reduced form equations are specified as:

$$\text{inv}_1 = \beta \text{cav} + \nu_1$$

(9)

$$\text{inv}_2 = \alpha_2 \beta \text{inv}_1 + \nu_2$$

(10)

Specifying the equations in the standard econometric form of simultaneous equation model we have:

⁴ The vector “cav” is weakly exogenous. That is, all the distributional impacts are conditional on “cav”.

⁵ The assumption is that the two random variables, ν and μ are jointly normally distributed and independent over time.

$$[[inv_2] - \alpha_2 [inv_1] = v]$$

(11)

$$inv_1 = \beta cav_t + \nu_1$$

$$inv_2 = \alpha_2 inv_{1t} + v_t$$

(12)

(13)

$$[ccr = \beta_1 citxb + \beta_2 uer + \beta_3 pci + \beta_4 gce + \nu_1]$$

(14)

$$[ieg = \alpha_2 ccr + v_t]$$

(15)

Equations (12) and (13) specify that indicator and causal variables of the MIMIC model are jointly determined. The magnitude of the informal sector is, therefore, obtained through the estimation of the latent variable as the predicted value of the first indicator (the normalized indicator with parameter ' $\alpha_1 = 1$ '). That is,

$$[E(inv_t | cav_t) = E(inv_t | cav_t) = \beta]$$

(16)

The estimation of latent variable inv is based on the predicted value of the normalized parameter in equation (15).

It has to be noted that there is ambiguity in estimating the latent variable. Latent variable is an "index" and can only be determined by a process of calibration called benchmarking. This is not strange because all index variables (e.g. price index) are computed by allowing the parameter of interest to pass through a selected value at a particular time. The MIMIC model that was applied generated the absolute value used for the benchmarking; and to preserve the proportional relationship between the latent variable and the series that generated it, the calibration was multiplicative, with 2002⁶ as the base period.

3.2 Survey Methodology

The survey covered two geopolitical zones comprising eleven states, or about one-third of the thirty-six states in Nigeria. The states covered were Anambra, Enugu, Imo, Abia and Ebonyi in the South East; and Akwa-Ibom, Bayelsa, Rivers, Delta, Edo and Cross River in the South-South Zone.

The sampling frame was determined through enterprises listing conducted by the interviewers after which the questionnaires were administered on the respondents or enterprise owners

The appropriate sample size for any particular study is determined among other criteria, by the desired level of precision, confidence interval and degree of variability in the attribute to be measured among the population. Yamane (1967) provides a well known formula for calculating the sample size (n) from a given population (N). The formula is specified as: $n = N / [1 + N(e)^2]$, where e

⁶ The benchmark was set at 2002 using Shneider world informal sector study (Nigeria inclusive).

is the desired level of precision or sampling error. This formula presupposes the knowledge of the level of variability in the population. The higher the variability in the distribution of the particular characteristic in the population, the larger the sample size required to achieve the level of precision. In calculating the sample size for this study, two assumptions were made: (i) we assumed maximum variability (which is 5%) (ii) that the population of informal enterprises in each state is very large (100,000). Assuming a sampling error $e = \pm 5\%$, and $N > 100,000$, the Taro Yamen formula gives a value of approximately 400 informal enterprise for each state. In view of this, a total of 405 enterprises were selected per state from 10 identified informal activity sectors.

To implement this sample size, three local government areas were selected per state on the basis of one local government area per senatorial district of the state. All the states in Nigeria have three senatorial districts each except the Federal Capital Territory (FCT), Abuja that has only one. Each senatorial district comprises a group of local government areas. Using the population proportional to size (PPS) approach the urban – rural ratio of 2:1 was employed to obtain 275 informal enterprises from urban local government areas and 135 informal enterprises for rural local government areas. Thus, the sample size for the entire study was 4,455 informal enterprises.

The last phase of the sample selection looks at the contribution of the formal sectors to the GDP. As those sectors that contribute highly to the GDP have potentials for high informal activities. Hence allocation of samples to each economic activity (sector) in each selected local government area is done with knowledge of previous national study (NBS/CBN/NISER, 2001). This survey is a follow up to the 2001 survey.

The survey instrument administered to the respondents covered information on the following areas: Socioeconomic characteristics of enterprise owners; enterprise characteristics; employment and work conditions; production, markets and cost; enterprise growth, linkages and diversification; equipment and Investment; and business environment issues.

The enumerators that were engaged were experienced field staff of the National Bureau of Statistics (NBS). However, to ensure data quality, the selected enumerators were specifically trained about the administration of the survey questionnaires. The field data collection lasted for three weeks.

Chapter Four Results and Discussion

4.1 Performance of variables in the Macro-economic Model

4.1.1 Causal variables.

Some of the time series data applied to the model were discovered to be time variant. Specifically, some of the variable were of the I(1) process at both 5% and 1% level of significance using the Augmented Dickey Fuller (ADF) test of stationarity i.e. $[\Delta_1, \dots, \Delta_n \sim I(1)]$. However, unemployment rate was stationary of order zero at 5% level of significance. There was no indication of cointegration (long run relationship) among the variables hence, the equation converges to individual variable level of stationarity.

Applying the seemingly unrelated regression SUR, model consistency was indicated by a high correlation between the two indicators of informality– Income-expenditure gap (IEG) and currency demand ratio (CDR) (table 2).

Table 2: Regression equation of the informal sector latent variable using the SUR model

Seemingly unrelated Regression model				
Variable	Equation one – lieg		Equation two - lpci	
	Coefficient	Std. error	Coefficient	Std. error
Lccr	-7.5886	0.0425***		
Luer			0.0918	0.0564*
Lrgce			0.1028	0.0255***
Lpci			-0.0577	0.0104***
Lcitbx			0.1311	0.0426***
Chi – squared	319.36***		1972.27***	
R – squared	0.8915		0.9780	

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%; the variables are prefixed by 'l' signifying that they are in the natural logarithmic forms.

In terms of unemployment rate (*luer*), the model results indicate a direct relationship between unemployment and the informal sector. An increase in unemployment results in a less than proportionate increase in the number of people moving to the Nigerian informal sector by 0.09 %. The transformed parameter (returning the parameter to absolute value) indicated a 1.10 % increase in the size of labour supply to the shadow. This is theoretically appealing because the unemployed have a high tendency to supply labour to the informal setting and engage in informal activities. The movement to informal sector is a transition whose length depends on the informal sector labour regulations and laws and the tendency for the unemployed to gain employment. Apart from the formal economy labour spill over effect, Schneider and Savasan (2006) also estimated the determinant of informal hiring and concluded that high competition and the skill structure of the employees increases the labour supply to informal hiring.

One important implication of this result is that increase in the size of the informal economy following increased labour supply is an indication that resources have shifted from the formal to the informal sectors. This displacement effect will tend to shrink the growth rate of the official economy and reinforce unemployment. The economy will then experience an unemployment trap – transfer of labour resources from the formal to the informal economy and subsequent decrease in output of the formal sector and a decrease in formal economy labour demand. The resources transfer will slow down output growth.

The model identified income as the strongest positive force that drive people to the shadow economy and as such is of policy relevance in checkmating informal activities. An increase in per capita income (*lpc*) reduces the level of informal activities by 0.06 % (absolute value of 1.06 %). This is in conformity with Salisu (2001) who estimated the influence of income per capita on the Nigerian informal sector to be -0.32. The study indicated a direct relationship between the shadow economy and poverty and observed that when disposable income falls, people have strong incentives to hold multiple jobs and pay taxes only on the first job. This suggests that increase in per capita income increases the supply of labour to the hidden economy.

Tax burden is one of the operational determinants of informal sector in Nigeria and the rest of the world. It was identified as a strong positive variable that drives people to the informal sector. The empirical result shows a 0.13 % response (absolute value of 1.14 %) to a unit change in corporate income tax rate. This perhaps supports the characterization of the informal sector as a sector that tries to avoid tax and falls outside the control of the formal tax burden. The positive link between the burden of tax measured as corporate income tax to GDP ratio is an indication of aversive tendencies of the underground economy. An Increase in the tax burden increases the number of firms that go underground. Salisu (2001) estimated tax burden as a causal factor and the *a priori* finding (0.46%) is in conformity with the present study.

The implication is that where there is weak enforcement of tax laws like in Nigeria, the size of the informal economy tend to increase. The identification of the informal sector as a non-tax compliance sector has revenue implication for the Public sector. Netting-out the 2005 output value of the formal sector by corporate tax rate of 30% shows a revenue loss of about N2924.1bn or 20% of GDP in 2005.

Real government consumption expenditure (*lrgce*) was introduced as a proxy for all public sector activities. The result shows that an increase in government intervention in the economy significantly increases the level of informal activities by 0.1 percent (or absolute value of 1.11 percent). Therefore, policies designed to improve output growth in the economy need to be consistent with economic liberalization and privatization policies of government. This will reduce the public sector's share of major economic activities thus, reducing the size of the public sector in the formal economy. Anno (2003) was of the opinion that a rise in state activities and regulations is an incentive to enter into informal activities.

4.1.2 Indicator variables

The growth rate of currency with the public was used for the auxiliary model and entered the main model as an exogenous variable. The *a priori* definition between currency demand and the second indicator variable is negative with a coefficient of -7.59 and chi-square of 319.4. Thus, there is strong correlation between the two indicators. This is significant because increase in currency with the public tends to increase the gap between the official recorded income and cash transaction of the shadow economy.

Income expenditure gap was the second indicator used in the model. We did not use GDP because we set it aside as a variable of scale and to avoid its explosion with income per capita which derived from GDP/population ratio. It was used as the major indicator (note that alternating the two indicators leaves the size of informal economy unchanged). This link can be traced to the national income identity which specifies income as a mirror image of expenditure. If authorities calculate these two accounts accurately, income will equate expenditure. But a deviation will suggest that transactions (expenditure) and income are not similar thus, part of the deviation could be traced to the unrecorded income of expenditures of the shadow economy.

Generally, *a priori* relationship between the size of informal sector and economic growth rate is ambiguous. Several studies indicated that this ambiguity depends on the country of study, the macroeconomic environment and changing structure of the shadow economy (see Roberto, 2002 for list of studies and countries). Most literature used real GDP as the second indicator variable ignoring income per capita as a causal variable. The study finds a fairly strong positive relationship between the size of Nigeria's informal sector and the growth rate of the formal economy⁷.

This positive relationship suggests that a decrease in official GDP reduces peoples' purchasing power which, in turn reduces demand for underground products. This outcome offsets the negative relationship between the shadow economy and official GDP. The negative relationship was traced from the labour market effect that economic recession leads to loss of jobs which drives people to informality.

4.2 Estimation of the size of the Informal sector

Informal sector as a latent variable was measured as an index. This index was used for calibration of the size of the informal sector. The implication is that every index passes through a chosen base period which determines the magnitude of the index. The SUR model applied in this study used standardized parameters. The standardization becomes necessary because it is difficult to interpret the impact of multiple parameters with different units of measurement on the same dependent variable.

The index of informal economy was calculated as a ratio of the log of latent variable at time 't' and the log latent variable in a chosen base period, 2002. Based on this index, we estimated the informal economy through a calibration using 2002 as base period. Thus, the size of informal sector was calibrated as:

⁷ The magnitude of the relationship between the formal and informal sectors is 54.23% and 89.63% of real and nominal GDP growth rates respectively.

$$\left[\text{inf}_t = \text{calibration benchmark} * \left[\frac{\text{fitted Log value of latent variable}_t}{\text{fitted log value of latent variable}_{2002}} \right] \right]$$

(17)

Where $t = 1970, 1971, \dots, 2005$. The base year was chosen because it was the year of the most recent country-wide study of the informal sector in Nigeria. The accuracy of the study of informal sector depends on the choice of variables and the availability of data. A cross sectional analysis has a higher pool of reliable and detailed variables than specific country time series analysis. Based on our model, we estimated the size of Nigeria's informal sector from 1970 (Table 3).

Table 3: SUR model estimates of the size of the informal economy in Nigeria

Year	GDP (Nm)	Informal sector (Nm)	Informal sector % GDP
1970	8961.5	3946.87	44.04
1971	10375.4	4695.65	45.26
1972	11034.7	5273.09	47.79
1973	12251.6	6182.15	50.46
1974	19604	11039.86	56.31
1975	22945.4	12228.89	53.30
1976	28611.4	16566.00	57.90
1977	33585	18398.07	54.78
1978	36053	19750.05	54.78
1979	42912	26280.34	61.24
1980	50270	32596.14	64.84
1981	50749.1	30216.72	59.54
1982	51953	29256.98	56.31
1983	57142.2	34995.26	61.24
1984	63608.1	41244.85	64.84
1985	72325.4	49718.12	68.74
1986	73063.9	48771.31	66.75
1987	108896.3	79491.42	73.00
1988	145558.4	97162.53	66.75
1989	224796.9	154530.48	68.74
1990	260636.7	169002.41	64.84
1991	323989.7	187590.04	57.90
1992	549808.8	301188.61	54.78
1993	701472.9	373854.16	53.30
1994	914938.7	461677.88	50.46
1995	1977739	945091.13	47.79
1996	2823934	1424956.52	50.46
1997	2939651	1483347.29	50.46
1998	2881307	1535609.72	53.30
1999	3320311	1869810.81	56.31

Year	GDP (Nm)	Informal sector (Nm)	Informal sector % GDP
2000	4980943	3424012.92	68.74
2001	5639865	3089552.38	54.78
2002	5904897	3418935.36	57.90
2003	6255470	4056180.47	64.84
2004	8553300	5709463.03	66.75
**2005	14600000	9745730.91	66.75

** Formal economy data is from NBS provisional estimate, 2006

The findings are consistent with existing studies on the Nigerian informal sector. The present study has a more filtered and comprehensive data that are carefully documented for future replication. A study by Salisu (2001) on the incentive structure, civil service efficiency and hidden economy estimated the size of the informal sector in Nigeria in 1997 as 58.76% of GDP. Though, the study had some fundamental and structural problems, it corroborates the changing and increasing structure of informal sector in Nigeria.

4.3 Trends in the informal sector

The changing structure of the informal sector is characterized into two transitional periods namely, institutional and enforcement periods. The institutional factor is concerned with institutional change between democratic and non-democratic institutions which is highly correlated with economic policies while the enforcement factor deals with the public sector or state activities, in terms of choice of economic policy. The trends in Nigerian informal sector as shown by our analysis is illustrated in Fig. 3.

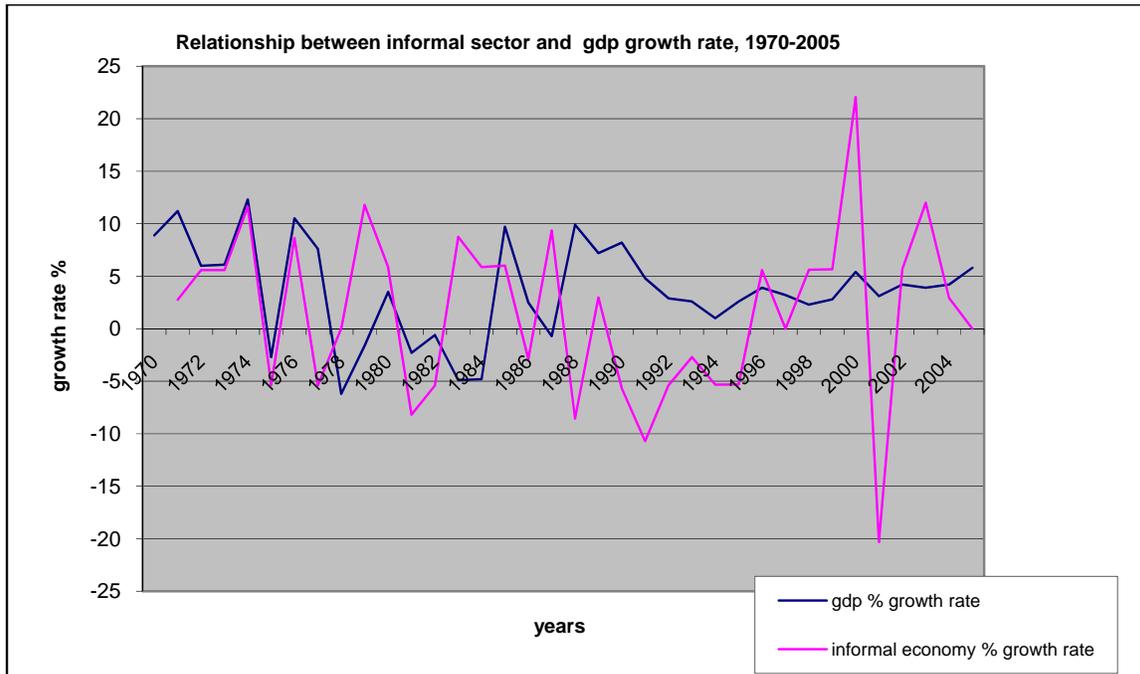


Figure 3: Interaction of the applied model

The political transitional points are characterized by what could be termed *regime break points*, that is, between “hand-over” and take-over periods. Examination of trends in the size of informal sector suggests changes between transitions periods. The period between 1978, 1983 and 1999/2000 witnessed a dramatic growth in the informal economy with average growth rate of 11.80 %, 8.75% and 22.07% respectively. These were three different political transitional points. The Nigerian informal sector could therefore be said to be transitional variant. That is, the informal economy in Nigeria has two determinant factors, economic factors and socio-political factors which are dependent on democratic forces. The interpretation is that during transitional points informal activities tends to change depending on the perception of the operators about the incoming regime.

Apart from the operators’ perception, changes in economic policies determine the changing structure and size of the informal economy. This suggests that economic policies that negatively affect the macroeconomic environment will lead to resource transfers from the formal to the informal economy. This accounts for the negative relationship between the shadow economy and the growth rate of the formal economy.

Nigeria’s informal sector is also characterized by unstable and unpredictable features. The period between 1970 and 1974 witnessed a rapid increase in the size of the informal sector from 2% in 1971 to 11.80% in 1974. The period preceding the Nigeria’s civil war would likely be associated with a displacement effect in consonance with public finance theory. The post-war periods tend to be characterized by gradual picking up of economic activities and increase in public expenditure. The increase in public expenditure arises because of two reasons. Repayment for public borrowing used in financing the wars and expenditure to reconstruct the economy. These forces combine to increase public expenditure which has a positive relationship with the size of informal sector.

From 1970-1974, Nigeria’s second development plan concentrated efforts in the urban areas and aggravated the income gap between the urban and the rural dwellers. This tended to create a temporary change in the size of the informal sector. The trend witnessed in the informal sector was reversed in 1975 decreasing by -5%. This period coincided with the 1975 Udoji minimum wage award, during which Nigeria’s per capita income increased by 12.41% reflecting the inverse relationship between income and the size of informal economy. The increase in the size of informal sector between 1983 and 1989 could also be linked to minimum wage freeze during this period and the resultant unemployment rate of about 7.3%.

The SAP period which was an experiment period slowed down informal activities temporarily. There was an attempt to encourage small and medium scale industries. This policy relaxed state activities in terms of formal regulation. This resulted in serious unemployment especially, among the urban dwellers. Urban unemployment rate was estimated at 8.7 % between 9.1% in 1986. The periods between 1983 and 1985 witnessed a steady decline in the size of informal activities perhaps due to the Idiagbo-Buhari war against indiscipline. The period was characterized by a reenactment of capital punishment for some informal activities. This regulation enforced by the administration eroded the expected increase in the size of informal sector as a result of the unemployment generated by the SAP policy.

In 1996, the trend picked up again after more than five years of economic stagnation caused by the crisis associated with the annulment of the 1993 elections. Average GDP growth rate was 2.02 %, putting an upward pressure of about 5.59% on the size of informal economy.

Recent upsurge in National Agency for Food Drug Regulation and Control (NAFDAC) regulation has two implications that lead to upward trend in the size of informal sector. Theoretically, increased enforcement amidst high incidence of poverty could bring about net increase in informal activities. This probably accounted for increase in the size of the informal sector despite increase in the rate of enforcement. This scenario was as a result of poverty rate offsetting the enforcement rate. The average growth rate was about 6.88 % between 2002 and 2004 and eventually stagnated in 2005. The trend in the informal economy during this period is also partly attributable to the liberalization of the communication sector which increased the number of call centers in Nigeria.

The present study is the first detailed estimation of Nigeria's informal sector using an indirect approach that is consistent with time series econometrics and therefore hampered by absence of comparable studies. Existing studies mainly used direct methods (microeconomic or survey methods). Using a MIMC model of SUR, this present study estimates the size of the informal sector to be 50.46% of GDP in 1997, about -8.30 % deviation from estimates by Salusi (2001).

4.4 Characteristics of the Enterprises

In terms of sectoral spread, ten activity categories of enterprises were predefined for the study. The distribution of the enterprises according to the activity groups is presented in Table 4

Table 4: Distribution of sample according to Enterprise Categories

Enterprise Category	Frequency	Percentage
Manufacturing	631	14.17
Agribusiness	225	5.07
Transport	229	5.16
Building & Construction	291	6.56
Wholesale & retail trade	1,052	23.65
Financial Intermediation	85	1.91
Health, Education & Community Service	198	4.46
Personal Services	815	18.36
ICT	486	10.95
Hospitality	433	9.72
Total	4,439	100

The informal sector enterprises were dominated by wholesale and retail trade (24%), followed by personal services (including barbing, hairdressing, dry cleaning, photography, etc) (18%), with the financial intermediation category recording the least proportion of enterprises. Informal financial intermediation seems to be a neglected activity among informal enterprise owners.

The location of enterprises is vital to understanding the factors driving the establishment and operations of informal sector enterprises. It helps to explain the relative capacities of the urban and rural areas to absorb excess labour. About 79% of informal enterprises are located in the urban areas/ city while only 21% are rural-based.

In terms of the age of the enterprises, table 5 shows that information and communication category constitutes the largest share of enterprises below one year old, followed by wholesale and retail trade. On the other hand, manufacturing category constitutes the largest share of enterprises above 20 years old. This implies that manufacturing enterprises were the oldest enterprises in the sample.

Table 5: Enterprise by main activity

Enterprise main activity	Less than 1 yr.	1-5 yrs.	6-10 yrs.	11-15 yrs.	16-20 yrs.	More than 20 yrs.
Manufacturing	5.49	10.65	17.26	24.75	21.28	23.85
Agribusiness	3.58	4.83	5.70	6.19	3.19	7.69
Transport	4.77	5.72	4.89	4.70	2.66	4.62
building and construction	0.95	5.87	9.04	9.65	4.79	7.69
wholesale and retail	28.40	23.00	23.53	22.77	25.00	21.54
financial intermediation	0.95	1.99	2.36	2.23	0.53	0.77
health, education and	3.82	3.83	4.80	5.94	4.79	8.46
personal services	13.13	19.66	18.65	15.84	21.28	15.38
information and communication	29.36	15.08	3.01	2.23	0.53	3.08
hospitality	9.55	9.36	10.75	5.69	15.96	6.92
Total	100	100	100	100	100	100

Age distribution of informal enterprise owners is an important variable that provides information about the human infrastructure base of informal sector participants. The study showed that most of the informal enterprise owners are aged between 20 – 39 years, representing about 60% of the total, while only about 3% of the owners are either less than 20 years or above 60 years. The preponderance of younger aged persons in informal sector is indicative of the increased resort to informal employment by younger persons.

Table 6: Distribution of Enterprise by Owner's age

Age Range (years)	Frequency	Percentage
Less than 20	149	3.36
20 – 39	2644	59.56
40 - 59	1496	33.7
60 and above	150	3.38
Total	4439	100

Table 7: Distribution of age of enterprise owner and age of enterprise

Enterprise Owner's age	Enterprise age					
	Less than 1 yr	1-5 yrs	6-10 yrs	11-15 yrs	16-20 yrs	more than 20 yrs
below 20 yrs	7.45	1.49	0.25	0.00	0.00	0.78
20-30 yrs	55.05	43.60	15.55	5.49	6.42	3.91
31-40 yrs	23.56	38.08	45.58	31.92	22.46	10.16
41-50 yrs	10.34	12.94	30.44	43.64	36.36	29.69
51-60 yrs	3.13	3.53	7.20	16.96	29.41	38.28
more than 60 yrs	0.48	0.35	0.98	2.00	5.35	17.19
Total	100	100	100	100	100	100

Table 7 shows the correlation between age of enterprises and age of enterprise owners. Younger persons dominate enterprises that are less than one year, while older persons dominate enterprises that are more than 16 years old. About 98% of the enterprises aged 0-5 years were operated by entrepreneurs of 30 years and below indicating that younger people are increasingly falling back on self and wage employment in the informal sector.

About 62% of the enterprises owners are married, while 34% were single. Most informal entrepreneurs marry in order to have a helping hand in the running of their enterprises. Analysis of the gender of entrepreneurs shows 73% were males, while females own the remaining 27%. The dominance of males in informal activities especially in the South-East is not surprising as young males in this area sometimes abandon schools to engage in business activities.

Table 8 shows that at 4.53 the average family size for entrepreneurs in agribusiness is highest while the lowest family size is found among entrepreneurs in information and communication technology. Family size may indicate the number of people in the family living together sharing common household facilities and also participating in the family business usually by providing unpaid family labour.

Table 8: Enterprise category by average family size of Enterprise Owner

Enterprise main activity	Average Family size
manufacturing	4.20
agribusiness	4.53
transport	3.68
building and construction	4.15
wholesale and retail trade	3.79
financial intermediation	4.49
health, education and community service	4.27
personal services	3.20
information and communication technology	2.45
hospitality	4.76

Education is crucial to the quality and performance of entrepreneurship. It is often postulated that people in informal sector have limited education and this tend to affect the management and hence survival of the enterprises adversely (Table 9).

Table 9: Distribution of Enterprises according to Education Level

Level of Education Attained	Frequency	Percentage
No education	75	1.75
Primary education	1,265	29.56
Secondary education	2,210	51.64
Tertiary education	730	17.06
Total	4,280	100.00

About 2% of the enterprise owners had no formal education while up to 52% attained secondary education. Also 30% had only primary education while 17% attained tertiary education. Entrepreneurs with maximum of secondary education constitute the largest share of the informal sector enterprise owners. This is instructive, and reveals the tendency of secondary school leavers to find employment in the informal sector.

The wholesale and retail trade category constitutes the largest share of entrepreneurs without any formal schooling (table 10). On the other hand, information and communication technology enterprises constitute the largest share of entrepreneurs with tertiary education. This pattern suggests an important correspondence between the educational attainment of the entrepreneur and the kind of enterprise category. It implies that education can be a powerful tool in entrepreneurship improvements and dynamism in enterprise choices.

Table 10: Enterprise category by educational attainment of owners

Enterprise main activity	No schooling	Primary school	Secondary school	Tertiary school
Manufacturing	12.12	20.40	13.44	5.65
Agribusiness	6.06	7.91	3.53	2.48
Transport	9.09	7.11	5.25	1.24
Building and construction	4.55	6.72	7.47	3.58
Wholesale and retail	31.82	21.90	24.76	23.97
Financial intermediation	0.00	1.74	2.54	0.83
Health, education and	9.09	2.37	1.81	15.56
Personal services	10.61	19.92	20.01	13.64
Information and communication	10.61	1.74	12.00	24.24
Hospitality	6.06	10.20	9.19	8.82
Total	100	100	100	100

Analysis of the main occupation of enterprise owners show that about 69% of them are self-employed in the informal business chosen while 3% were are public servants who take the informal activity as a supplementary source of income. About 1% is students, who are found sundry activities as photography, barbing saloons and selling of telecommunication materials.

4.5 Employment and Work Conditions

The issues relating to conditions of employment in the informal enterprises such as employment contract, contribution to pension fund in favour of the workers, annual leave benefits, sick leave benefits, steps taken before dismissal and freedom to join trade association or union were examined (Table 11).

Table 11: Conditions for Employment in the Informal Sector

Issues/Questions	Yes	No	Don't Know
	Percentage	Percentage	Percentage
Are you employed on written contract	27.91	72.09	0.00
Does your employer pay your pension fund contribution	3.86	83.17	12.96
Do you receive annual leave benefits	8.21	83.17	8.68
Do you receive sick leave benefits	13.66	71.92	14.42
Can you be dismissed without notice	18.34	56.71	24.95
Are you a member of any trade union/association	7.13	92.87	0.00

About 72% of the workers indicated that there was no written contract relating to their employment, while 28% agreed there had. About 83% do not benefit from the pension fund contribution, 83% do not receive annual leave benefit, as 71% do not enjoy sick leave benefit. About 57% indicated that they can be dismissed without notice, while 18% said they may be given notice, before dismissal. Up to 93% of the informal workers do not belong to any trade union or association, while only 7% belong to such union. These issues have important implications for the informal sector operations.

4.6 Enterprise Growth, Linkage and Diversification

4.6.1 Enterprise Growth

Growth is a critical factor in the assessment of the informal sector. Growth in the sector will not only contribute to national economic growth, but more importantly would signal a fairer distribution of the benefits of growth. In this study, growth is measured using several parameters. These include acquisition of more or improved machines, hiring of more labour, opening of more branches, injection of more capital, and diversification of product lines. The pattern of growth in the informal sector is as shown in Table 12. A majority (72.15 percent) of enterprises has grown since they started.

Table 12: Distribution of Enterprises by growth patterns

Growth Patterns	Yes (%)	No (%)
Has your enterprise grown since inception?	72.15	27.15
acquiring more or improved machines or equipment	28.98	71.02
hiring more labour	9.11	90.89
opening of more branches	7.86	92.14
injection of more capital	52.82	47.18
diversifying its products	6.26	93.74

A greater proportion of the enterprises (53 percent) had grown by the volume of capital injected into the enterprises. This was followed by growth in the acquisition of more or improved machines/equipment (28.98 percent). Other areas of growth include hiring of more labour (9.11 percent), opening of more branches (7.86 percent) and diversifying of products (6.26 percent).

However, 40 percent, 33 percent and 33 percent each of the manufacturing, personal services and information and communication technology enterprises, respectively indicated acquisition of improved machines as the major source of growth (Table 12). Also, significant proportions (10.11 percent, 12.69 percent and 19.32 percent) of the manufacturing, building and construction and health, education and community services enterprises indicated that their major pattern of growth was by hiring more labour. About 12.73 percent of business enterprises engaged in financial intermediation indicated opening of more branches as their major pattern of growth.

Table 13: Major patterns of growth by activity sector

Sector Main Activity	growth by acquiring more improved machines	growth by hiring more labour	growth by opening more branches	growth by injecting more capital	growth by diversifying into more products	growth by other means	Total
Manufacturing	39.53	10.11	4.69	40.25	3.79	1.62	100.00
Agribusiness	13.61	8.88	3.55	65.09	5.33	3.55	100.00
Transport	26.85	6.71	4.03	53.02	4.03	5.37	100.00
Building and construction	24.25	12.69	8.96	44.78	4.85	4.48	100.00
Wholesale and retail trade	16.31	4.56	8.55	62.14	6.27	2.17	100.00
Financial intermediation	5.45	5.45	12.73	54.55	5.45	16.36	100.00
Health, education and community services	25.00	19.32	6.82	36.93	6.82	5.11	100.00
Personal services	32.62	7.58	6.29	42.63	6.15	4.72	100.00
Information and communication technology	32.69	5.81	8.72	44.79	4.84	3.15	100.00
Hospitality	22.56	9.74	6.67	52.05	6.41	2.56	100.00
Total	26.35	8.19	6.99	49.55	5.52	3.41	100.00

The study also examined the factors affecting the growth of informal enterprises. Table 4.13 shows that high demand for products/services (38.37 percent), access to input market (33.35 percent), easy access to output market (20.70 percent) and improved skills through training (15.23 percent) were the major factor affecting the growth of the enterprises.

Table 14: Major patterns

Factors Affecting Growth	YES (%)	NO (%)
Easy access to input market	33.35	66.62
Easy access to output market	20.70	79.30
Easy access to cheap capital	11.70	88.30
Cheap labour supply	7.63	92.37
High demand for product/services	38.37	61.63
Low input cost	9.53	90.47
Improved skills through training	15.23	84.77
Improved technology	10.90	89.10

Other factors indicated by less than 12 percent of the respondents as factors affecting enterprise growth include easy access to cheap capital (11.70 percent), improved technology (10.90 percent), low input cost (9.53 percent) and cheap labour supply (7.63 percent).

4.6.2 Growth Monitoring Mechanisms

Monitoring is an essential part of successful business operations. Table 15 indicates a high incidence of very poor monitoring culture within the informal sector across various monitoring mechanisms.

Table 15: Monitoring Mechanisms used by Operators of Informal Business Enterprises

Monitoring Mechanisms	YES (%)	NO (%)
Records of orders and payment	22.79	77.21
Income and expenditure records	64.23	35.78
Records of credits and debits to customers	17.15	82.85
Stock control	15.64	84.36
Records of loan repayment	3.04	96.96
No records are kept	9.01	90.99
Monitoring by other means	1.33	98.67

The major mechanism used for monitoring growth of enterprises in the informal sector is the income and expenditure record (64.23 percent). Other major mechanisms include records of orders and payments (22.79 percent), records of credits and deposits to customers (17.15 percent) and stock control (15.64 percent). The survey data also show that about nine percent of the private investors did not keep records of their transactions. This implies that monitoring the growth performance of

such investors will be difficult and calls for concerted efforts towards creation of awareness of the need for record keeping among these groups.

4.6.3 Causes of Enterprise Stagnation

A number of enterprise operators opined that their business enterprises has not grown since inception and attributed these to a number of factors (Table 16).

Table 16: Factors causing Stagnation of Informal Enterprises

Factors causing stagnation	Yes (%)	No (%)
High cost of raw materials	24.92	75.09
Low demand of products/services	17.25	82.75
Multiple taxation from local government areas	8.57	91.43
High labour cost	3.23	96.77
Malfunctioning of amenities used for production	3.85	96.15
Low capital outlay	13.22	86.74
Lack of skills for new production methods	1.61	98.31
Competition arising from modern products	12.14	87.86
General poor infrastructure	2.36	97.60
Other factors	1.25	98.63

The analysis shows that the major factors causing stagnation of informal enterprises in the area include high cost of raw materials (24.92 percent), low demand of products/services (17.25 percent), low capital outlay (13.22 percent), competition arising from modern products (12.14 percent) and multiple taxation by local government councils (8.57 percent). The need for access to short /long term institutional credit to private investors cannot be overemphasized.

4.6.4 Perceived Causes of Mortality of Informal Business Enterprises

A total of 1,274 respondents indicated having knowledge of enterprises that have ceased operations. The reasons adduced for enterprise mortality were analyzed. Table 17 show that a majority of the respondents, (98.36 percent) who indicated knowledge of enterprises that had ceased operations attributed it to lack of funds. Other perceived causes of mortality include low demands of products/services (19.26 percent), multiple taxation from local governments (6.97 percent), low capital outlay (6.97 percent), lack of skills for new production (4.51 percent), competition arising from modern products (4.59 percent) and high cost of labour (4.84 percent).

Table 17: Perceived Causes of Mortality of Informal Enterprises

Perceived causes of Enterprise Mortality	Yes (%)	No (%)
Lack of funds	98.36	1.64
Low demand of products/services	19.26	80.74
Multiple taxation from local government areas	6.97	93.03
High labour cost	4.84	95.16
Malfunctioning of amenities used for production	4.10	95.90
Low capital outlay	6.97	95.90
Lack of skills for new production methods	6.97	95.49
Competition arising from modern products	6.97	95.49
General poor infrastructure	1.64	98.36
Other factors	0.82	99.18

4.7 Enterprise Linkages

Table 18 reflects the distribution of informal business enterprises by types of products /services.

Table 18: Distribution of Informal Enterprises by Major Products/Services

Types of Enterprise Product/Service	Frequency	Percent
Finished (consumer)	3854	91.31
Semi-finished (intermediate)	270	6.40
Raw (unprocessed)	96	2.27
Others	1	0.02

The table shows that enterprises producing finished (consumer) products/services accounted for over 91 percent of all firms the informal sector, semi-finished (intermediate) products enterprises accounted for 6.40 percent, while raw (unprocessed) products/services enterprises accounted for less than three percent. The preponderance of finished products enterprises indicates that enterprise linkages in the informal sector would be mostly for output or market-related services.

When the data were disaggregated by category of enterprises, the wholesale and retail enterprises accounted for the highest volume (23.95 percent) of the finished products / services followed by personal services (18.64 percent). (Table19). The manufacturing enterprises (24.35 percent) dominated in the provision of semi-finished products / services, while agribusiness accounted for the highest percentage (30.21 percent) of the raw/unprocessed products/ services.

Table 19: Distribution of Enterprise activity by type of product or service

<i>Enterprise main activity</i>	<i>Finished</i>	<i>Semi-finished</i>	<i>Raw/unprocessed</i>
Manufacturing	13.43	24.35	14.58
Agribusiness	3.91	10.7	30.21
Transport	5.11	2.21	10.42
building and construction	6.14	11.81	4.17
wholesale and retail trade	23.95	21.4	18.75
financial intermediation	1.92	1.85	1.04
health, education and community services	4.51	2.21	8.33
personal services	18.64	20.3	7.29
information and communication technology	11.77	3.69	3.13
Hospitality	10.63	1.48	2.08
Total	100	100	100

4.8 Structure of market for products of informal enterprises

Table 20 shows the market structure facing informal enterprises both in the input and output markets. In the input market, the enterprises face basically the same market structure, namely, the competitive market. This however, varies from activity to activity. For example, wholesale and retail trade which basically involve buying and reselling face high level of competition both in the input and output markets. Enterprises engaged in financial intermediation are relatively very few.

Table 20: Market structure in the Informal Sector

<i>Enterprise Main Activity</i>	<i>Nature of Input Market</i>			<i>Nature of Output Market</i>		
	<i>Competitive</i>	<i>Oligopoly</i>	<i>Monopoly</i>	<i>Competitive</i>	<i>Oligopoly</i>	<i>Monopoly</i>
Manufacturing	87.02	11.30	1.69	82.46	13.15	4.38
Agribusiness	81.36	16.36	2.27	79.91	16.89	3.20
Transport	93.03	4.98	1.99	90.82	5.31	3.86
Building & Construction	82.31	15.88	1.81	80.00	17.45	2.55
Wholesale & Retail Trade	92.44	6.39	1.18	89.88	7.96	2.16
Financial Intermediation	70.13	27.27	2.60	63.29	29.11	7.59
Health, Education & Community Service	77.72	20.11	2.17	72.97	21.08	5.95
Personal Services	83.92	13.29	2.78	91.61	7.31	1.08
ICT	89.18	9.52	1.30	86.34	10.15	3.51
Hospitality	90.24	8.33	1.43	89.50	9.31	1.19

It is therefore understandable that they face less competition than others both in the input and output markets. It is however, important to note that the fewness of enterprises in this aspect of informal activity is a major set-back for the development of the sector since most informal operators have severely constrained access to formal financial houses. In other, words, informal operators have to rely on their own savings in order to begin or expand their business.

Very few firms in the informal sector enjoy monopoly both in the input and output markets. This is not unexpected as many of the enterprises use finished goods or semi-processed goods in their production activities. This implies that there is usually little value added by these enterprises in the production process. In that context, it is not surprising that the competition is very high and monopoly power very low.

4.9 Enterprise Expansion

Respondents were asked to state their views on enterprise expansion. Analysis of the responses show that majority of all the owners/operators of the different enterprise categories have future expansion plans (table 21). The disaggregated data show that the highest proportion enterprises with future expansion plans (68.67 percent) were operators of wholesale and retail trade, followed by information and communication technology operators (65.66 percent) and personal services firms (62.36 percent).

Table 21: Distribution of Enterprise by future expansion plans

Enterprise main activity	Expansion plans in the future?		
	Yes (%)	No (%)	Total (%)
Manufacturing	61.72	38.28	100
Agribusiness	57.35	42.65	100
Transport	55.96	44.04	100
building and construction	58.45	41.55	100
wholesale and retail trade	68.67	31.33	100
financial intermediation	60.24	39.76	100
health, education and community services	60.32	39.68	100
personal services	62.36	37.64	100
information and communication technology	65.66	34.34	100
Hospitality	57.66	42.34	100

4.10 Output by Enterprise Categories

The size of the various enterprises in terms of contribution to output varies across enterprises. As shown in Table 22, the wholesale and retail enterprise category ranks top, contributing about 22% to the total output of sampled enterprises. Manufacturing sector comprising mainly handicrafts and light industries contributes about 16% of the volume of output in the informal sector. Hospitality and personal services contributes about 11.5% and 10.5% of the volume of output respectively. Agribusiness and financial intermediation rank the lowest in terms of aggregate contribution to the volume of output in the informal sector.

Table 22: Distribution of Output in the Informal Sector across various Enterprises (2006)

Enterprise Category	Enterprise as a % of output in the informal sector
Wholesale and retail trade	22.3
Manufacturing	15.6
hospitality	11.5
personal services	10.5
building and construction	9.3
Transport	9.1
Health, education and community services	8.1
Information and communication technology	7.4
agribusiness	4.4
financial intermediation	1.8

Telecommunication subsector which make up about 11% of the total size of the informal sector only accounts for about 7% of the volume of output generated in this sector.

4.11 Distribution of Output per Worker

The total revenue from the output of the enterprise in 2006 was about ₦177, 484,798.50 (in current prices). This gives average output per worker of ₦17, 915.00 (\$137.81). This is very low compared to the estimated output per worker in some of the more productive sectors of the formal sector in Nigeria. For example, it is estimated that the oil sector has output per worker of about ₦520000 (\$4000.00) while the more highly productive and competitive private sectors have productivity per work of about ₦40000.00 (\$3000.00) [World Bank 2006], Report No. 36483 – NG: Nigeria Competitiveness and Growth]. In general the per capita output in Nigeria is estimated to be between \$3000 and \$500). In other words, the informal sector is generally less productive than the rest of the sectors of the economy. The dualism in the distribution of output per worker in the formal and informal sector of the economy may point to the obvious lack of production linkages between the two sectors in of the Nigerian economy. This is an issue of great importance and we consider this in a subsequent part of this study. When the aggregate figure for the sector is further disaggregated, it is found that some sectors perform slightly better than others. Table 23 shows the distribution of output per worker by quintile and enterprise main activity.

Table 23: Mean Output per Worker by Enterprise Activity

Enterprise Activity	Mean Output Per Worker				
	Q1	Q2	Q3	Q4	Q5
Manufacturing	3483.96	13283.84	22400.46	38650.00	137362.90
Agribusiness	3626.61	12666.25	22655.95	39011.54	146371.40
Transportation	3742.77	13137.50	23081.40	40245.45	334315.80
Building & Construction.	3014.33	12714.58	23086.79	38731.58	166754.50
Wholesale & Retail Trade	3255.11	13211.80	23046.63	39103.69	142172.10
Financial Intermediation	4800.00	13284.21	23411.76	39583.33	159061.50
Education, Health and Community Services	3231.07	12637.50	22366.67	38459.46	249795.70
Personal Serv.	3823.59	13307.77	227144.4	36957.75	92278.79
ICT	4404.77	13158.08	22369.41	36538.36	98731.81
Hospitality	3534.04	13243.48	22998.61	38834.04	145367.70

It can be seen that financial intermediation and ICT have the highest output per worker in the informal sector at the lowest quintile. On the other hand Building and Construction, Education and Health and Wholesale and Retail Trade have the lowest output per worker at the lowest quintile. At the highest quintile, we find that Transportation, Education and Health have the highest returns per worker. The distribution is also informative from the perspective of the level of inequality that is engendered by the sector. We find for example, that the highest income quintile in the transport sector earns about 90 times the income of the person in the lowest output quintile.

4.12 Linkages with the formal Economy

In many economies, both in the developed and developing countries, conscious policies are designed to link the formal and informal economies in order to avoid the problem of dualism which arise when there are separate non-interrelated economies within the same economy. The essence is to build a synergy between all the different parts of the economy. In particular, the linkage between the formal and informal sectors of the economy serves very important purpose. For one thing, it acts a safety valve when the formal economy is heated. During economic recessions for example, there is usually overflow of unemployment from the formal to the informal sector. Similarly, it is argued that when there is a boom in the formal sector, direct and indirect demand for goods and services produced in the informal sector stimulate activities in the latter (Lubell, 1991). A recent study, Gerxhani (2004), shows that in Germany and Australia, about two-thirds of the income earned in the informal sector is usually spent in the formal economy. To what extent are the production processes in the formal and informal sectors of the Nigerian economy linked? Table 4.22 shows the kinds of goods and services that are produced by the informal sector. A large part of the output consists of finished products.

Table 24: Output of the Informal Enterprises

Enterprise Main Activity	Finished	Semi-finished	Unprocessed
Manufacturing	86.62	11.04	2.34
Agribusiness	72.25	13.88	13.88
Transport	92.49	2.82	4.69
Building & Construction	86.81	11.72	1.47
Wholesale & Retail Trade	92.40	5.80	1.80
Financial Intermediation	92.50	6.25	1.25
Health, Education & Community Service	92.55	3.19	4.26
Personal Services	91.94	7.03	0.90
ICT	97.22	2.14	0.64
Hospitality	98.56	0.96	0.48

Semi finished goods and services are relatively small while unprocessed goods and services constitute very negligible proportion of the out of the sector. This is rather surprising as one would have expected that the goods and services produced by the informal sector would be largely unprocessed and semi processed goods and services which are to serve as inputs into the production processes of the technologically advanced formal sector. Such vertical integration would ensure that there is a linkage between the formal and informal sectors.

A related linkage issue is to examine where informal enterprises source their inputs. Table 8.4 shows that a very large percentage of the input materials used by informal enterprises come from other informal enterprises. On the average, only about 15% of the inputs into the production process come from the formal sector while about 4% of such inputs are imported (4.23). Also, a large proportion of the goods and services produced by informal enterprises are purchased by other informal enterprises. This may suggest that a horizontal rather than vertical relationship dominates the production process.

Table 25: Distribution of Enterprise by Source of Raw Material

Enterprise Main Activity	Source of Raw Material			Major Buyers of Output		
	<i>Imported</i>	<i>Formal Sector</i>	<i>Informal Sector</i>	<i>Export</i>	<i>Formal Sector</i>	<i>Informal Sector</i>
Manufacturing	2.56	14.70	82.74	0.88	13.05	86.07
Agribusiness	1.80	14.41	83.78	0.46	11.01	88.53
Transport	8.74	14.08	77.18	1.46	9.27	89.27
Building & Construction	5.00	15.71	79.29	1.43	11.07	87.50
Wholesale & Retail Trade	3.69	17.85	78.47	0.68	7.40	91.92
Financial Intermediation	2.44	12.20	85.37	1.30	5.19	93.51
Health, Education & Community Service	3.16	17.89	78.95	0.00	11.17	88.83
Personal Services	6.46	20.12	73.42	0.76	10.32	88.92
ICT	8.21	22.25	69.55	1.13	13.06	85.81
Hospitality	4.00	15.06	80.94	0.25	7.92	91.83

Together, the tables indicate the absence of clear and substantial linkages between the formal and informal sectors. This reinforces the impression that the Nigerian economy is characterised by dualism. Under this kind of arrangement it is difficult to see how meaningful technology can diffuse from the formal to the informal sector. It is also difficult to see how skills acquired from the informal sector can be meaningfully utilized in the formal sector. Addressing this weakness would require clear policies that would consciously pay attention to the factors that promote links between the formal and informal sectors. Such factors include mobility of factors such a labour between the formal and informal sectors. For example laws that constrain private practice or consultancy service by those employed in the formal sector of the economy should be reviewed. This will enable the transfer of production technology from the formal to the informal sectors. It will also require policies that provide incentives for firms in the formal sector to purchase inputs from the informal sectors. Policy may also create incentives for subcontracting from the formal to the informal sectors so as to facilitate the diffusion of technology from the formal to the informal sector. Without addressing this problem productivity in the informal sector will continue to be low.

4.13 Micro determinants of the size of the informal sector in Nigeria

In obtaining the determinants of the size of the informal sector enterprises, an ordered probit regression was employed. At the 5% level of significance, the results show that revenue of the enterprise, continuity in future, family size of owner, employment status are significant factors determining the probability that an enterprise will have a larger size in terms of number of paid employees.

Enterprises that yield a higher level of revenue or output are likely to expand in the future and have a larger size than those with a low level of returns. This is also supported from the correlation

between stated plans for expansion in the future and the level of revenue of the enterprises⁸. Similarly, enterprises that expressed interest in continuing in the chosen line of business into the future are more probable to have a larger size than those who are less willing to continue into the future. As shown in Table 8.10, this variable is very significant. This implies that perceived need to continue in the chosen line of business of the enterprise to a great extent increases the need to expand in the future and increase the size of the labour force. This is very crucial if one takes a look at the nature of the production activities in the informal sector in Nigeria. Labour accounts for the bulk of the inputs into the production process and capital accounts for a relatively small portion of the inputs. Expansion of the sector or enterprises will mean an increase in the total amount of labourers employed or used in the production process. Similar to the perceived need to continue in the line of business is the plans such enterprises have into expanding its production activities in the future. Enterprises that expressed an increased interest in expanding into the future are more likely to have a larger enterprise size than those that expressed scepticism in expansion plans. Intuitively, this sends a signal about the behavioural interactions that come to play in determining the relative size of the informal sector. This is so because enterprises that make plans to expand into the future also makes plans of increasing the number of employees and the level of output produced.

The location of the enterprises also to a great extent, determine the probability of obtaining a higher enterprise size. As shown in Table 26, informal enterprises located in the urban areas are less likely to increase in size than those located in the rural areas. This shows that enterprises that face rigid competitions in the urban areas are less likely to expand given the small scale nature of their production and the higher cost of hiring factor inputs.

Gender-wise, female owned enterprises are more likely to have a higher enterprise size than male owned enterprises and this is rather puzzling. With regards to the family size of the owner, enterprise owners with larger family sizes are more probably to expand than enterprise owners with a relatively lower family size. In actual sense, this shows the long standing relationship between informality and family ties. Most of the informal sector activities and enterprises are largely owned by family members hence families with larger sizes are more likely to have larger workforce that can be engaged in the production process. This shows that families with larger sizes are more likely to expand its employment base and output through the use of its members.

The marital status of the enterprise owner is also a major factor that predicts the probability of a higher size of the enterprise. Enterprise owners that are married are more likely to have a larger enterprise size than those owners that are single.

Enterprises with employees that are employed on the basis of a contract are more likely to have a larger enterprise size than those who have more of their employees employed without any written agreement or contract. Similarly, enterprises that pay a relatively higher level of remuneration are more probable to have a larger enterprise size than those that pay relatively lower. This is as a result of the incentives and motivation to work.

⁸ The level of correlation between the expressed plans to expand in the future and the level of revenue has a significant positive correlation at 2% level of significance.

The size of permanently and temporarily employed staff members affects the probability a larger enterprise size. Enterprises with relatively larger permanently employed members are less likely to have a larger size than those with relatively larger temporary staff members. This can also be correlated with the result obtained with respect to the use of family members and larger family sizes. Enterprises that operate at the informal level employ or engage family members in the production process than permanent staff members.

Table 26: Ordered probit regression using number of employees (2006) as the dependent variable

Variable	Coefficient	Standard error
Revenue of enterprise	0.000004	0.0000***
Continuity in future	0.0068	0.0032**
Expansion plans	0.2165	0.1594
Enterprise location	-0.2778	0.1730*
Gender of owner	-0.2629	0.1517*
Family size of owner	0.0851	0.0335**
Marital status of owner	0.0859	0.0482*
Employment based on a written contract	0.6466	0.1858***
Salaries of employees	0.000005	0.0000***
Nature of employment (perm. vs. temp.)	-0.2731	0.1426*

Note: * significant at 10%; ** significant at 5%; *** significant at 1%

4.14 Production Function

The general definitions of a production function to comprise the factors such as labour and capital adopted earlier could be seen as lacking in some regards. Economists are often interested in the opportunity cost or the economic cost of factors as opposed to the financial cost. Therefore, in valuing the labour and capital costs, it is important to value them at their opportunity cost. One of the major problems faced in the production process of the informal sector that makes it relatively difficult to value both capital and labour costs are as a result of the use of family members who are oftentimes not remunerated and the use of apprentices and other part-time workers who are not remunerated according to the value of their marginal productivity. Similarly, some of these activities are conducted without the payment of 'rent' either on the space used for the production or on some equipment used because they could be shared by various enterprises engaged in the production of similar goods. The issue of use of space without any or adequate payments could be seen in enterprises such as those into the information and telecommunications that make use of the open space in transacting businesses. Also, some of the enterprises involved in financial intermediation make use of their home building as official place for business. This is not only limited to these few mentioned but it is almost the case that these enterprises are operated by family members within their place of domicile. Due to some of these observed difficulty in measuring the 'true' cost of these factors, the results obtained earlier showed a large deviation from the constant returns-to-scale assumption for the Cobb-Douglas production function adopted.

There is need therefore for all factors of production to be valued at their market price or opportunity cost. The space used by mobile telephone operators could be rented out to a farmer for the cultivation of crops and rent will be paid. It could also be used as a place for erecting a building which yields rent. Similarly, the family labour or unpaid apprentice used during production that is under-paid could have been employed elsewhere and be paid a specified amount of money. These are however not captured and it becomes erroneous to accept the results from the estimation on only observed financial or stated financial data.

From this, a residual variable⁹ was created which is called 'rent' and this measures the value of the factors that were not captured by the obtained financial data on labour and capital. Treating this variable as another variable in a similar fashion in the Cobb-Douglas production function, the following results were obtained. This time around, even though the results indicate decreasing returns to scale technology, it is quite close to constant returns to scale technology.

Table 27: Production Function of the Nigerian Informal Sector Enterprises (2006)

Variable[#]	Coefficient	Standard error
labour	0.3476	0.0110***
capital	0.0787	0.0071***
rent	0.4465	0.0076***
constant	2.7209	0.1344***

Note: Variables are given in their natural logarithmic forms; * significant at 10%; ** significant at 5%; *** significant at 1%

As seen before, capital's share of output is low with an elasticity value of 0.08 while labour's share of output has an elasticity of about 0.35 which has been explained in the context of the informal sector where labour is the predominant form of factor inputs. The imputed 'rent' variable also has a high level of output elasticity value of about 0.45. This will be mainly composed of the imputation from the labour hours of the employees that are not adequately remunerated.

In terms of the measure of returns to scale, the value of 0.87 shows decreasing returns to scale technology but higher than the earlier value of 0.56 which imply that doubling the level of input of all factors will less than double the size of output for enterprises operating in the informal sector and this suggests that investing in the informal sector yields a lower level of marginal returns than a similar investment elsewhere. This can be corroborated by the low level of capital-labour ratio. Production processes that engage more of capital relative to the level of labour are more likely to exhibit the nature of returns to scale technology shown, as technology greatly enhances production and reduces the unit cost of production in the long-run.

4.15 Major Problems Faced by Informal Enterprises

The opinions of the respondents with respect to the problems experienced in operating informal business enterprises are shown in Table 28.

⁹ This residual variable was obtained simply by subtracting the value of both labour and capital from the stated revenue of the enterprises.

Table 28: Problems experienced in Operating Informal Business Enterprises

Problems	Very Serious	Serious	Slightly Serious	Not Serious	Not a Problem at all
Business problem of declining sales	21.78	19.17	29.99	15.26	13.79
Problem of competition	31.09	31.92	18.76	11.06	7.17
Inability to meet customers demand	12.33	12.80	17.80	31.80	25.27
Problem of lack of funds / credit to expand business	43.97	30.42	12.37	7.18	6.06
Scarcity of raw materials	13.14	13.66	20.22	21.51	31.46
Lack of skilled labour	11.80	9.91	13.74	22.12	42.43
Poor availability of infrastructure (water, electricity, telephones, etc)	41.06	23.22	13.80	10.43	11.49
High cost of infrastructure (water, electricity, telephones, etc	41.53	26.20	12.59	8.68	11.01
High cost of public transportation	43.04	26.01	15.22	8.07	7.66
Problem of increasing rate of rents	39.81	24.25	15.56	7.88	12.50
Inadequate business space	19.12	22.64	23.55	16.55	18.14
Problem of tenure insecurity	13.24	25.28	21.45	17.47	22.56
Problem of theft/general insecurity	16.12	23.86	20.94	19.94	19.14
Discrimination against political affiliation, tribe, religions, etc	6.56	12.42	7.52	17.08	56.42
Problem of discrimination against women	6.12	9.19	8.97	17.03	58.69
Problem of tax collectors harassment/demand for gratification	24.45	21.76	14.96	14.02	24.81
Problem of too many taxes/high taxes	31.48	21.77	14.43	11.89	20.42

Overall the analysis shows that majority (74.39 percent, 69.05 percent and 67.73 percent) of the respondents were of the opinion that lack of funds /credit for business expansion, high cost of public transportation, and high cost/ poor availability of infrastructure (water, electricity, telephones, etc) respectively were serious problems encountered in the operation of their enterprises. Other serious problems experienced by majority of the enterprises include competition within the informal sector (64.06 percent), increasing rate of rental charges (63.01 percent) and too many taxes/ high taxes (53.25 percent).

4.16 Improving Informal Sector Business Environment

The result of the perceptions of the respondents on important issues with significant positive impact on business environment is shown in Table 29.

Table 29: Issues with Significant and Positive Impact on Business Environment

Important Issues	Very Great Extent	Great Extent	Moderate Extent	Small Extent	Very Small Extent
Improvement on the safety and security in the streets	46.45	34.81	10.52	4.59	3.64
Improvement on the quality of infrastructure (road maintenance, road network development, electricity, water, etc)	45.10	32.77	10.73	5.97	5.44
Provision of vocational training opportunities for small scale entrepreneurs	26.95	29.54	15.13	12.65	15.74
Improvement in the attitude of local officials towards local residents and business owners	22.96	29.76	21.84	11.31	14.13
Creation of industrial estates for small entrepreneurs	26.39	22.01	21.60	13.07	16.93
Reduction of taxes	41.63	24.37	14.28	7.40	12.33
Improvement in public transport services	40.73	27.62	14.10	10.35	8.37
Provision of permanent market stores	28.50	24.12	19.33	16.99	12.46
Improvement in the performance of NDE, NAPEP, etc	27.91	24.38	15.85	10.03	21.82
Creation of friendly access to credit	41.02	23.76	12.25	11.02	11.95

The result shows that over 40 percent of respondents indicated that improvements on safety and security in the streets, the quality of infrastructure (road maintenance, road network electricity, water, etc), reduction of taxes, creation of friendly access to credit, and improvement in public transport services were important issues with significant positive impact on business environment. Also, about one-third of the respondents recommended the provision of permanent market stores, vocational training opportunities for small scale entrepreneurs and improvement in the attitude of local officials.

Chapter Five Summary and Conclusion

5.1 Summary of Findings

The goal of this study has been to provide comprehensive information on the Nigerian informal sector that will guide the planning and management of the national economy. Following the analyses of the collected data, the following findings were made:

- i. The widening gap between labour supply and labour demanding a having significant impact on the size of the informal sector. The results support a direct relationship between increasing unemployment and the size of the informal sector;

- ii. Declining income, high tax burden, and high black market premiums are some of the most important drivers of the Nigerian informal sector;
- iii. The macroeconometric results further show that increase in government control of the economy increases the tendency towards informality. Also high black market premia were associated with increase in informality;
- iv. Whole sale and retail trade and personal services relatively dominate the informal sector while financial intermediation is the least in term of number of enterprises that are engaged in it. The ICT influence in the sector has grown very rapidly in the last five years;
- v. One prominent feature of informal sector in Nigeria is that enterprise ownership is dominated by youth aged between 20 and 39 who own about 60% of all the enterprises and over 55% of such enterprises operated by this age category are less than 5 years old;
- vi. Size distribution of informal enterprises shows that the distribution is skewed in favour of one-man business or self employment. The median size of employment is 2 employees. About half the population employed in the sector is either full time or part-time. The rest are either apprentices (over 78% of who are males) or unpaid workers among whom women are the majority;
- vii. It is also instructive that people without schooling dominate the informal labour market. Most of the employees and apprentices have not attended any formal schooling. Only about 5% of the employees of the sector attended post-secondary educational institutions;
- viii. Over 65% of the employees of informal enterprises are related to their owners in one way or the other. This may explain why over 70% of the employees are employed without any form of written contract, job security, and union membership and social security benefits;
- ix. Although over 70% of the enterprise owners perceive their business to have grown in any of the following forms: employing more labour, capital, revenue, new products, additional branches, however, over 96% of respondents complained that lack of fund is the single most important determinant of mortality among enterprises;
- x. The main source of capital investment for most of the informal enterprises is their family saving. This source accounts for about 63% of all sources of investment in the informal sector. About 26% and 8% of initial capital for beginning business in the sector comes from relations and friends respectively while only about 1% comes from the banks;
- xi. In terms of linkage with the formal sector and productivity in the informal sector, the study reveals that the sector has very low level of linkage with the formal and external sectors of the economy. The informal sector obtains its raw materials, produces and sells to other informal consumers of the products. This poor linkage is basically due to dualism which seems to prevail in almost all sectors of the economy;

- xii. In spite of gaps in information, the study was able to estimate the production elasticities of the informal sector using the Cobb-Douglass production function. The parameters suggest that the production process is very labour intensive and the use of obsolete equipment may hinder technological diffusion within the informal sector. This study finds evidence that the incremental capital output ratio (ICOR) is very high while returns to labour are very low, implying that wages in the sector are low;
- xiii. The micro-level determinants of informality were identified to include size of enterprise revenue, enterprises prospects of continuing in the future, family size of the owner, existence of written contract, and the level of salaries of employees. These results in general indicate policy direction to enhance the development and formalization of the informal sector; and
- xiv. Some of the most severe problems experienced by informal sector operators include inadequate funds, poor infrastructure, transportation, increasing cost of rents, and multiple taxes.

5.2 Policy Implications

These results suggest some of the policies that are needed in order to address the problems of the informal sector in the country. These policy implications are highlighted as follows:

- i. **Statistics and database on Gross Domestic Product:** There is need for disaggregated data on Nigeria's GDP in order to enable deeper analysis of the informal sector. Deeper statistical analysis requires disaggregating the national GDP into state level GDP. This will make it possible to investigate the level of association between the informal sector and the state GDP.
- ii. **Macroeconomic policies affecting informal sector:** The influence of macroeconomic policies on the informal sector seems to be mainly through the channels of labour market, corporate Income tax burden, per capita income, inflation, and government expenditure. Economic recession and reform policies such as downsizing of the public sector, impact on the informal sector by expanding its size as those affected by these policies and economic down turns migrate to the informal sector.
- iii. **Entrepreneurship development and promotion:** There is need for the development of entrepreneurial skills even at lower levels of education since most of the operators in the informal sector are young people with very limited formal education.
- iv. **Gender targeting:** The informal sector represents a window of opportunity for women to participate in economic activity in the country. However, this study shows that even in this sector women are also marginalized generally through limited access to capital. There is need to increase the participation of women in economic activities in the country. Policies directed at enhancing access to credit and financial assets are required in order to empower women economically.

- v. **Promoting productivity and incomes of enterprises:** Low productivity in the economy is largely due to the near absence of capital to augment the existing surplus labour in the economy. This tends to increase the labour-capital ratio and retards the growth of marginal product of labour in the informal sector. Policies aimed at releasing the constraints faced in capital acquisition such as duty-free importation of productive capital will improve the availability of capital and labour productivity as well as facilitate the diffusion of technology.
- vi. **Promoting investments of informal sector enterprises:** One of the major problems facing the operators in the informal sector identified by this study is raising capital either to start-up business or for business expansion. There is need for expansion of access to financial services for the poor, including establishment of micro-finance institutions. Most businesses cannot expand because they lack access to prevailing means of finance including formal banking system, and this accounts for the severely limited capacity of the informal sector to absorb labour.
- vii. **Promoting the business favourable environment:** Targeting the constraints faced by informal sector operators such as improving security in the streets, provision of basic infrastructure (water electricity, roads etc), reduction of multiple taxation, and friendly access to credit are critical to the expansion of informal enterprises and their subsequent formalization
- viii. **Promoting linkages between formal and informal enterprises:** This study suggests the need for deliberate policies that facilitate the linking of formal and informal sectors. Such linkage policies may include policies of sub-contracting to firms in the informal sector, and sourcing of primary and intermediate goods from the informal sector.
- ix. **Further Research:** A major limitation of this study is its limited geographical coverage. There is need to extend the coverage of this study to the entire country in order to increase the generalizability and to enable comparison with other developing countries.

5.3 Conclusion

This study has attempted to widen and deepen the level of information about Nigeria's informal sector which is consistent with promoting evidence-based policy making in the sector. The has promoted a better understanding of the behaviour of the Nigerian informal sector, its potentials for contributing to national output as well as its weaknesses and constraints.

The findings of both the macro and micro analyses provide important policy lessons for the reforming the sector. It is believed that this study provides important guidelines for policy-makers. Policy interventions based on the findings would greatly improve the performance and contributions of the informal sector to the overall economy. It also highlights the important lesson that the study of

the Nigerian informal sector has just started and there are still a lot to be done in this important area where majority of Nigerian earn their living.

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