Baseline Survey of the Informal Economy and Livelihoods System in Kaduna State, Nigeria

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Abstract

Over the years, the states of Nigeria have had some of the worse socio-economic and demographic statistics in the country. Effective development planning and implementation in those states are often hampered by not only the lack of good quality, consistent, and reliable data but the failure of state machinery to recognize and integrate activities of the informal economy in policy design, programming, and execution. Using survey and statistical methods, this study profiles the informal economy and investigates how activities in the sector connect with livelihood systems, patterns, and choices in the state. The findings of the study indicate that the sector is active and vibrant in the state. About two-thirds of household activities in the state fall within the purview of the informal economy in addition to providing a source of livelihood for more than a quarter of a million people. The analysis also demonstrated a close connection between household prosperity and food security, or lack of it, with informal agro-allied and industrial activities as well as the unemployment status of the household. It is recommended that further interrogation of the patterns, magnitude, and direction of the causal relationship between the variables be undertaken with policy design, programming, and execution in the state in mind.

Keywords: informal economy, livelihoods system, prosperity, food security and Kaduna state

1. Introduction

In the 2016 budget, about N6 billion was set aside as special fund for cash transfer or intervention fund to assist the unemployed, the poorest of the poor and most vulnerables in the society. This came against the backdrop of disturbing unemployment and poverty statistics which put the percentage of the unemployed at 10.04% (NBS, 2014) and of the poor at 115.6 million or 68% of the population (OPHDI, 2015). It was also in addition to the fact that about 60 % of Nigerians reside in the rural areas and employed by the agrarian economy characterized by crude technology, low productivity, heavy dependence on natural resources and the dominance of the informal economy.

Several countries which found themselves in this vicious cycle have had to use outright or conditional cash transfer programmes to reduce poverty and unemployment but varying degree of success. Others had resorted to deliberately getting involved through the provision of incentives such as entrepreneurial and managerial skill training and making available start-up capital for graduates, after a proper census of individuals and groups within the target brackets. Needless to say, these concepts are critical to the discussion on poverty reduction, rural development and environmental deterioration with the latter focusing on fundamental issues such as access to a range

of livelihood resources, the drive after varying livelihood strategies, livelihood diversification and migration, and institutional processes which are critical to enabling or constraining the achievement of sustainable livelihoods for different groups of people.

Quite a number of local studies on the informal economy and livelihoods system in Nigeria can be found in the literature. Such studies include Yusuf (2007), Olademeji and Ojibo (2012), Adama (2012), Meagher (2016), Oyinbo and Olaleye (2016), Adulrahman, Yusuf, Abdulazeez and Binuyo (2016) and Waziri and Abdullahi (2018). However, in spite of the established theoretical link between livelihoods system and informal activity, none or very few of such studies had considered it expedient to integrate such concerns in the enduring policy debate over poverty reduction in the Third World. This seeming neglect provides the rationale for undertaking a study that examines the informal economy and sustainable livelihoods system concurrently in one of the states in northern Nigeria worse-hit by the twin problem of poverty and unemployment.

In view of the above, the study set out to explore the following: Nature and characteristics of the informal economy in Kaduna state; Profiling of existing sustainable livelihoods in the state; Factors within the informal structures that mediate to influence livelihood outcomes of households in the state. The remaining part of this discourse is divided into three sections. The next section develops the model used to examine the relationship between the informal economy, household characteristics, and livelihood outcomes. The third section discusses the methodology used for the study. While analysis of the data generated through the survey and discussion of results are the focus of the fourth section, the concluding remarks are contained in the last part of the essay.

2. METHODOLOGY

2.1 Model Specification

In livelihoods system studies, livelihood outcomes are modeled to be a function of a mix of individual and household survival strategies developed over a given period and which seek to mobilize available resources and opportunities (Chambers and Conway, 1992). Livelihood strategies comprise paid and unpaid work not captured in the formal sector of the economy and especially those socio-economic activities carried out by the economically vulnerable groups in the society. Some of these activities include accumulation and investments, borrowing, food production, income enterprise, social networking, community management and cooperation, and consumption and sharing of goods and services (Engberg, 1996; Thompson, 1995).

Depending on individual circumstances, exposure to and types of stress and shock, and availability as well as access to household assets (human, natural, financial, social, and physical capitals), the ultimate objective for getting involved as far as livelihoods system outcomes are

concerned is survival or access to life chances, the essence of which is often encapsulated in the phrase "wellbeing of the household" (WELL). Sustenance or improvement in WELL is however subject to constraints such as the nature and characteristics of the informal activity (HHX), the household's socio-economic characteristics (endowments, physical and non-physical limitations), and exogenous variables such as location (LOC), and geopolitical factors (S-GEO). The relationship between these factors can be formally expressed as:

$$WELL = f(INF, HHX, S-GEO) \quad (1)$$

Where WELL is a vector of variables explaining the state of affair or condition of the household regarding its level of prosperity or wealth [WELL] and security against hunger and disease [FSEC] leading to a good state of wellbeing, better understood in public parlance by the trio-concept, prosperity, good health and happiness; INF is somewhat a vector of informal economy characteristics such as nature of activity [NAT] and level of investment [INV]; HHX is a collection of key household characteristics that pertain to the informal economy such as household size [SIZE] or ratio of members engaged in any informal economy activity to those not engaged in any form [EMPL], household consumption level/expenditure [CON] and household income not consumed (or better put, savings) [SAV]; S-GEO is a vector of factors capturing spatial and geopolitical influences on informal activity, of which the most relevant to the study area include location of residence/operation (urban or rural) [LOC] and regional differentials [REG].

Estimating eq. (1) poses two conceptual problems. One, the trouble with estimating well-being as an independent variable in empirical studies is that it is not directly observable as it is a composite variable with numerous manifestations and dimensions. In particular, the use of the so-called wealth index alternatively referred to as the Morris Score Index (MSI), rather than income and expenditure is preferred as the perfect proxy; while the coping strategies index (CSI) is used to measure the exposure of the household to food insecurity (Morris, Carletto, Hoddinott and Christiaensen, 1999; Mazaruna, Marshak, Opio and Gordon, 2014).

Though wellbeing is a latent variable - not directly observable - livelihood studies have demonstrated that its response to or effect on other factors can be detected (Fernando and Moonesinghe, 2012; Levine 2014; Maxwell, Mazurana, Wagner and Slater, 2017; Denney, Mallett and Benson, 2017). This may suggest that WELL and FSEC can be assumed to be directly related to the above vectors of factors:

$$WELL = \beta_{10} + \sum_{i=1}^{n} \beta_{1i} \Pi_i^{INF} + \sum_{j=1}^{m} \beta_{1j} \Pi_{1j}^{HH} + \sum_{k=1}^{o} \beta_{1k} \Pi_{1k}^{EXT} + \varepsilon_1$$
$$FSEC = \beta_{20} + \sum_{i=1}^{n} \beta_{2i} \Pi_i^{INF} + \sum_{j=1}^{m} \beta_{2j} \Pi_{2j}^{HH} + \sum_{k=1}^{o} \beta_{2k} \Pi_{1k}^{EXT} + \varepsilon_2 \quad (2)$$

The error terms, ε_1 and ε_2 serve to indicate that the hypothesized relationships may not be exact. Given eq. (2), our objective would be (1) to identify the underlying influential variables (factors) within the vectors that best describe WELL and FSEC; (2) to aid our interpretation of data generated on the informal economy and livelihoods in the study area due to absence of any specific theory to explain their close connection; and (3) identify the appropriate number of variables to include in the terminal model through some method of factor reduction. If the following two conditions can in a way be met, then a simple factor analysis can be used to solve eq. (2):

1. The error terms ε_1 and ε_2 are independent of one another, and such that $E(\varepsilon_1 / \varepsilon_2) = 0$; and $E(\varepsilon_1 / \varepsilon_2) = \sigma^2_{1/2}$.
2. The unobservable factors in vectors INF, HH, and EXT are independent of one another and the error terms, such that their expected values are equal to zero, and their variances are equal to one.

Another look at eq. (1) will reveal two fascinating relationships among the explanatory variables and between the dependent and explanatory variables. One, it is to be expected that variables in the household vectors will have a close affinity with informal sector characteristics and external factors. In other words, chances are that the variables on the right-hand side (RHS) of eq. (1) may be severally correlated with one another. Two, the explanatory variables are likely to influence some 'patterning' of response on the dependent variables. In the presence of the two circumstances, the use of the multivariate analysis of variance (MANOVA) to estimate eq. (1) becomes appealing.

3.2 Population, Sample, and Sampling

An informal economy is defined as comprising those commercial activities undertaken by individuals or establishments that are not fully registered, protected, and tracked by government and public authorities. Phillips Consulting (2014) cites subsistence farming, casual farm labor (agriculture); thrift cooperative society, money lenders and accountants (financial services); street vendors, road-side sellers, hawkers, caterers (retail); private and informal schools (education); private-hire taxi drivers, motorcycle and tricycle operators (transport); make-up artists, photographers, fashion designers, event planners and technicians (other service providers) as examples of informal activity.

A field survey was carried out between late May 2018 and mid-August 2018 throughout the three Senatorial districts covering 400 households out of a household population of 1,139,684 in the State. The breakdown of the household population and sample is shown in Table 1.

Table 1: Population and sample of the study

LOCAL GOVT.	SAMPLE SIZE							
	POPULATION ESTIMATES		WARDS		HOUSEHOLD SIZE			
	2006*	2017**	2017†	Sample‡	2017ℓ	Ratio¤	Sample for LG^{v}	Number of village/suburban Area≠
NORTHERN SENATORIAL DISTRICT								
Kubau	282,045	381,025	11	7	71,892	0.046	25	3.6 ≈ 4
Kudan	138,992	188,618	10	6	35,588	0.023	12	1.5 ≈ 2
Sabon-Gari	286,871	395,487	11	7	74,620	0.048	26	3.7 ≈ 4
Soba	293,270	395,235	11	7	74,573	0.048	26	3.7 ≈ 4
Zaria	408,198	552,444	13	8	104,235	0.067	37	4.6 ≈ 5
Sub-total	1,409,376	1,912,809	56	35	360,908	0.32	127	
CENTRAL SENATORIAL DISTRICT								
Birnin-Gwari	252,363	350,495	11	7	66,255	0.061	23	3.3 ≈ 3
Giwa	286,871	396,879	11	7	74,883	0.048	26	3.7 ≈ 4
Kaduna North	357,694	494,871	12	7	93,372	0.060	33	4.7 ≈ 5
Kaduna South	402,390	546,663	13	8	103,144	0.066	36	4.5 ≈ 5
Chikun	368,250	505,318	12	7	95,343	0.061	33	4.7 ≈ 5
Kajuru	110,868	149,055	10	6	28,124	0.081	10	1.4 ≈ 1
Sub-total	1,778,436	2,443,281	69	42	461,121	0.40	162	
SOUTHERN SENATORIAL DISTRICT								
Jema'a	278,735	377,629	12	7	71,251	0.046	25	3.6 ≈ 4
Kachia	244,274	342,833	12	7	64,685	0.041	23	3.3 ≈ 3
Kagarko	240,943	324,495	10	6	61,225	0.039	21	3.5 ≈ 4
Sanga	149,333	205,624	11	7	38,797	0.025	14	1.5 ≈ 2
Zangon-Kataf	316,370	432,996	11	7	81,697	0.052	29	4.1 ≈ 4
Sub-total	1,229,655	1,683,577	56	34	317,655	0.28	111	
TOTAL	**4,417,467**	**6,039,667**	**181**	**111**	**1,139,684**	**1**	**399.9**	

The fieldwork commenced with a pilot survey (representing 30 percent of the entire survey) conducted between mid-May 2018 and early July 2018, covering nine settlements of four local government areas within the three Senatorial Districts of the State namely, Zaria City (Chikun, Kaduna North and Kaduna South local government areas of the state. The livelihood status outcome indicators of household wealth, MSI, and food security, CSI, were computed. Out of a total of 367 of those interviewed, 386 of them provided data covering 1,930 persons. The responses were then sorted into household well-being and informal sector characteristics. The Statistical Package for Social Sciences (SPSS) version 22 application was used to analyze the empirical data for this study.

4. DATA PRESENTATION AND ANALYSIS

Nature and characteristics of the informal economy

Separating the activities of the informal sector from those of the formal sector empirically is often not a straightforward matter. Certain criteria are often used to do so. Key among them are: 1) invisibility of operation to public authorities; 2) fluidity in location of operation; 3) lack of worker protection schemes; and 4) potential to evade tax. In this particular study, effort was made to distinguish household members operating in the informal economy from those employed by the formal sector. Out of the 537 household members who were reported to be in one form of employment or the other, 392 indicated the business entities they either owned or worked for were not officially registered with the authorities, meaning that about 73 percent of operators in the State may be classified as belonging to the informal economy.

Only 25 percent of them indicated their employers were formally registered with the authority, meaning that 75 percent of the working household members were employed by the informal sector enterprises. Also, 48 percent of those business entities were not registered with officially recognized trade unions. While Table 2 shows the distribution of household members who were engaged in the informal sector by local government and zone, Table 3 breaks down the number by sector and local government.

Table 2: Distribution of informal employment by local government and zone in Kaduna State

Location/region	Household members in the engaged in informal sector activity*	Total number of households by local government**	Projected total number of persons employed in the informal economy
Local government			
Birnin Gwari	21	778	19,719
Chikun	30	952	23,340
Giwa	23	822	21,896
Jema'a	22	859	18,084
Kachia	21	879	18,039
Kaduna North	31	912	27,249
Kaduna Soutrh	32	854	29,184
Kagarko	19	803	16,226
Kajuru	23	1083	18,469
Kubau	13	761	14,079
Kudan	24	914	18,264
Sabon Gari	26	697	23,764
Sanga	27	989	18,819
Soba	23	917	22,747
Zangon Kataf	26	778	23,842
Zaria	21	952	19,719
Total	**392**	**14,503**	**355,385**
Senatorial district			
Northern	117	5,091	**120,518**
Central	160	5,263	**139,857**
Southern	115	4,149	**95,010**

Source: Field survey (2018)
Note:
***** Computations based on field survey, 2018
****** KSBS, 2016

Table 3 demonstrates that in the northern zone, the biggest employers of labor were agriculture, transport, storage and communication, artisanal services, fabrication, mechanic, and engineering work. Catering, entertainment, building and décor sale and services, fabrication, mechanic and engineering work as well as financial services were the dominant activities and main employers of labour in the central zone. The southern zone has three sectors as the biggest employers – wholesale and retail, fabrication, mechanic and engineering work, and agriculture.

Table 3: Distribution of informal employment by sector and zone in Kaduna State

Local govt.	Subsistence farming, forestry harvest and animal rearing	Food, beverage and entertainment	Fabrication, mechanic and engineering work	Electrical, oil, gas and water supply	Wholesale and retail	Building and decor sale and services	Transport, storage and communications	Savings and thrift	Artisanal, educational and other service providers
B/Gwari	9.9	2.5	8.3	7.7	2.6	5.4	3.2	0.0	5.9
Chikun	8.8	12.5	6.3	7.7	6.6	5.4	6.5	15.8	8.8
Giwa	6.6	7.5	8.3	11.5	3.9	10.8	3.2	0.0	5.9
Jemaa	7.7	5.0	8.3	3.8	6.6	5.4	3.2	5.3	5.9
Kachia	5.5	7.5	2.1	3.8	9.2	10.8	3.2	5.3	0.0
K/North	3.3	10.0	12.5	11.5	10.5	10.8	12.9	15.8	0.0
K/Soutrh	2.2	15.0	14.6	11.5	6.6	10.8	6.5	10.5	14.7
Kagarko	4.4	2.5	8.3	3.8	3.9	5.4	12.9	5.3	2.9
Kajuru	5.5	2.5	0.0	0.0	3.9	5.4	0.0	5.3	0.0
Kubau	8.8	7.5	2.1	3.8	3.9	8.1	9.7	5.3	5.9
Kudan	4.4	2.5	2.1	0.0	5.3	0.0	0.0	0.0	5.9
Sabon Gari	6.6	5.0	4.2	3.8	6.6	5.4	9.7	10.5	8.8
Sanga	3.3	5.0	2.1	3.8	3.9	2.7	3.2	0.0	5.9
Soba	7.7	5.0	4.2	7.7	6.6	8.1	16.1	5.3	0.0
Z/Kataf	7.7	2.5	8.3	11.5	9.2	0.0	3.2	10.5	11.8
Zaria	7.7	7.5	8.3	7.7	10.5	5.4	6.5	5.3	17.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Senatorial district									
Northern	7.0	5.5	4.2	4.6	6.6	5.4	8.4	5.3	7.6
Central	6.1	8.3	8.3	8.3	5.7	8.1	5.4	7.9	5.9
Southern	5.7	4.5	5.8	5.3	6.6	4.9	5.1	5.3	5.3

Source: Field survey (2018)

A classification of operators in terms of the number of employees in their payrolls in the informal economy in the State was carried out. About 13 percent of the operators employed between 1 and 2 employees, while one-fourth of them engaged between 6 and 10 workers. Almost half of the total operators in the sector employed between 3 and 5 persons.

Household wealth and food insecurity status

The survey gathered data on MSI, an indicator developed as a proxy for both household wealth and expenditures using data-limited asset ownership. This index has been shown by studies in rural Africa and in conurbation settings globally to be a good proxy (Morris et al., 1999; Mazurana et al., 2014, Dahal, 2017). Most productive assets were found not to be correlated with the wealth indicator, and so were dropped. The MSI computed only took into account households' un-commercialized (the so-called 'unproductive') assets/items. Computing CSI is a way of measuring current food security at the household level by gathering data on the forms of coping strategies households engage in to cushion against food insecurity (Wolfe and Frongillo, 2001; Maxwell, Watkins, Wheeler, and Collins, 2003; Barrett, 2010). In this study, seven coping strategies and five internationally applicable 'severity' weightings were used (Table 4).

Table 4: Household coping strategies index (CSI) scores for Kaduna State, 2018

S/No.	Strategy	Raw scores	Severity weight	Weighted scores
1.	Rely on less preferred and less expensive foods	2	1	2
2.	Borrow food, or rely on help from a friend or relative	3	2	6
3.	Limit portion size at mealtime	6	1	6
4.	Restrict consumption by some members for other members to eat	10.3	3	31
5.	Reduce the number of meals eaten a day	17	1	17
6.	Purchase food on credit	21	2	42
7.	Send members (women and children) to serve at restaurants and homes for money/food	2.3	3	7
Total household score				**111**

Source: Field survey (2018)

It was found that the majority of households in the State restricted consumption by some members in order for others to eat a day as the ultimate strategy was to cope with food insecurity. However, the first line of defense was often to purchase food on credit. It was also found that the Southern zone had the highest computed household CSI in the State, followed by the Central Zone. Northern and Central zones were found to be considerably worse off on the MSI score chart than their Southern counterparts. The outcome of the survey showed that the worst hit zones were central and southern senatorial districts, while six out of the sixteen local governments in the sample did not have food security. Table 5 shows that the two respective zones scored 113.8 and 114.8 on the scale, and local governments with higher than average CSI were Chikun, Jema'a, Kachia, Kagarko, Kudan, and Sanga.

Table 5: Household Coping Strategies Index (CSI) scores by local government and district in Kaduna State

Location/region	MSI	Average MSI scores	Average CSI scores
Local government			
Birnin Gwari	4.0	108	21
Chikun	3.6	144	30
Giwa	2.3	97	23
Jema'a	4.8	120	22
Kachia	4.0	128	21
Kaduna North	4.7	86	31
Kaduna Soutrh	3.7	92	32
Kagarko	3.7	102	19
Kajuru	4.7	122	23
Kubau	0.6	106	13
Kudan	0.7	127	24
Sabon Gari	3.3	93	26
Sanga	4.8	125	27
K Soba	4.1	112	23
Zangon Kataf	4.2	97	26
Zaria	2.0	110	21
State average	**3.5**	**111**	**392**
Senatorial district			
Northern	*2.1*	*107.8*	117
Central	*3.8*	*113.8*	160
Southern	*4.3*	*114.8*	115

Source: Field survey (2018)

The State average MSI score was 3.1. It is clear from Table 5 that households in the central and northern zones were worse off than their counterparts in the southern zone. An analysis of CSI and MSI based on reported primary livelihood activity in the informal sector was conducted. As would be expected those households engaged in subsistence agriculture fell below the state average of 3.5. As for food security, only those in the savings and thrift activity were better off as those in all others had an index higher than the state average of 111 (Table 6).

Table 6: Mean MSI and CSI scores by type of household informal livelihood in Kaduna State

Reported primary informal livelihood activity	Average MSI scores	Average CSI scores	Sample frequency
Subsistence farming, forestry harvesting and animal rearing	2.6	118.9	89
Food, beverage and entertainment	2.8	123.5	39
Fabrication, mechanic and engineering works	4.0	119.4	47
Electrical, oil, gas and water supply	3.5	117.3	25
Wholesale and retail	4.4	117.6	74
Building, décor sale and service	3.7	111.5	36
Transport, storage and communications	4.6	132.3	30
Savings and thrift	4.4	26.3	18
Artisanal, educational and other services	4.6	120.2	34
State average	**3.5**	**111**	**392**

Source: Field survey (2018)

Relationship between informal economy activity, livelihoods, and household wellbeing

Table 7 shows that that though the coefficients of determination (R^2) for both MSI and CSI were reasonably high enough, signifying a close relationship between household prosperity and food security with activities in the informal economy and other factors. The Durbin-Watson test indicates traces of autocorrelation in the residuals (prediction error). While the value of the statistic for MSI (1.136) indicates the presence of positive cross-correlation, the result for the CSI (2.246) suggests negative cross-correlation (Table 7).

Table 7: Ordinary least squares regression results

Variable	Wealth Index (MSI)				Coping Strategies (CSI)			
	Standardized coefficient	Unstand.'d coefficient	Sig. value	VIF	Standardized coefficient	Unstand.'d coefficient	Sig. value	VIF
Nature of informal activity- agro-allied	0.068	0.127	0.082	9.364	5.010	0.308	0.000	9.364
Nature of informal activity – industrial	0.075	0.150	0.017	6.911	-0.1669	-0.110	0.003	6.911
Nature of informal activity – commerce	0.052	0.093	0.055	4.155	0.777	0.046	0.105	4.155
Nature of informal activity – services	-0.105	-0.193	0.039	15.217	0.056	0.003	0.950	15.217
Household size	0.161	0.122	0.006	3.480	3.124	0.186	0.001	16.517
Unemployment	0.030	0.055	0.571	16.517	2.589	0.065	0.012	3.480
Consumption expenditure	3.746E-6	0.099	0.003	1.911	7.217E-5	0.063	0.001	1.911
Savings	0.006	0.054	0.228	3.560	0.273	0.086	0.001	3.560
Location of residence	1.021	0.468	0.000	6.064	25.474	0.385	0.000	6.064
R^2	0.886				0.963			
Durbin-Watson	1.136				2.246			

Source: Based on field survey (2018)

The fifth and ninth columns of Table 7 show that the range of values for the computed variance inflated factor (VIF) values for all the dependent variables are between 1 and 17. The presence of multicollinearity in eq. (1) and the fact that its left side (LHS) has two variables required explaining. The lower section of the Table 8 indicates the values for the test of sampling adequacy (SMA) and the test of sphericity (existence of some relationships between variables). These tests are often used to confirm the appropriateness of the use of FA on a set of data. The Kaiser-Meyer-Oikin MSA value of 0.724 is close to 1, indicating that patterns of correlations were relatively compact so FA should yield distinct and reliable factors (Kaiser, 1974). The value of Bartlett's test for sphericity of 0.000 indicates that it is highly significant (at ρ = 0.001), further buttressing that FA was adequate to provide reliable analysis. The first section of the table shows how individual variables loaded on first four factors were extracted through the method of rotation. Informal economy characteristics, unemployment, and location are loaded highly onto the first factor.

Table 8: Results of factor analysis (rotated component matrix)

	Component			
Variable	1	2	3	4
Wealth index	-0.187	**0.441**	0.017	**0.669**
Coping strategies index	0.027	**0.864**	0.005	0.000
Agro-allied	**0.670**	0.346	0.054	-0.242
Industrial	**0.730**	-0.241	0.091	0.320
Commerce	**0.471**	0.067	**-0.450**	0.077
Services	**0.870**	0.024	-0.013	-0.058
Household size	0.166	-0.140	-0.026	**0.687**
Unemployment	**0.815**	-0.103	-0.007	0.110
Consumption expenditure	0.000	0.180	**0.641**	0.140
Savings	0.013	-0.235	**0.557**	-0.101
Location	**-0.439**	-0.178	**-0.475**	0.060
Kaiser-Meyer-Olkin Measure of Sampling Adequacy			0.724	
Bartlett's Test of Sphericity		Approx. Chi-Square	783.834	
		Df	55	
		Sig.	0.000	

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization
Rotation converged in 5 iterations
Source: Based on field survey (2018)

Table 9 summarizes the results of the multivariate and homogeneity of covariance across groups test. The second section of the table shows there was no serious concern regarding the test of covariance matrices using $p < 0.001$ as a criterion, as *Box's M* (10.93) was not significant, p (0.013) $> \alpha$ (0.001), indicating that there are no significant differences between the covariance matrices.

Table 9: Results of the multivariate test

Multivariate Tests (Wilk's Lambda)						
Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	0.516	176.605	2.000	377.000	0.000	0.084
Agro-allied	0.921	16.087	2.000	377.000	0.000	0.279
Industrial	0.937	12.639	2.000	377.000	0.000	0.063
Commerce	0.998	0.434	2.000	377.000	0.048	0.202
Household size	0.994	1.206	2.000	377.000	0.301	0.066
Unemployment	0.981	3.597	2.000	377.000	0.028	0.089
Cons. expenditure	0.992	1.526	2.000	377.000	0.019	0.008
Household savings	0.993	1.285	2.000	377.000	0.278	0.007
Location	0.995	0.866	2.000	377.000	0.421	0.005
Box' test of equality of covariance matrices						
Box's M		10.927				
F		3.619				
df1		3				
df2		1862353.68				
Sig.		0.013				

Source: Field survey (2018)

The first part of the Table 9 indicates the multivariate results using the Wilk's Lambda test. Using an alpha level of 0.05, it is easy to see that this test was only significant for the three variables in the informal economy characteristics, and two in the household characteristics vector. The last column indicates that approximately 27.9%, 6%, 20%, 9%, and 1% of multivariate variances (η^2's) of agro-allied, industrial, and commerce activities in the informal economy, as well as the household levels of unemployment and consumption habit, were associated with their prosperity and food security, respectively.

In Table 10, both ANOVAs for agro-allied and commerce activities in the informal economy were significant at the 0.025 adjusted alpha level ($p < 0.001$ for both); while only that of unemployment was significant for household prosperity. ANOVA values for household characteristics of consumption expenditure and industrial activity in the informal economy were significant for food security at an adjusted 0.025 level.

Table 10: Tests of between-subject effects

Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Wealth index	52.249	8	6.531	2.42	.015	.049
	Coping strategies index	27848.437	8	3481.055	5.15	.000	.098
Intercept	Wealth index	328.178	1	328.178	121.39	.000	.243
	Coping strategies index	209225.966	1	209225.966	309.52	.000	.450
Household size	Wealth index	6.201	1	6.201	2.29	.131	.006
	Coping strategies index	363.094	1	363.094	0.54	.464	.001
Unemployment	Wealth index	16.503	1	16.503	6.10	.014	.016
	Coping strategies index	95.404	1	95.404	0.14	.707	.000
Household savings	Wealth index	6.551	1	6.551	2.42	.120	.006
	Coping strategies index	413.224	1	413.224	0.61	.435	.002
Agro-allied	Wealth index	11.637	1	11.637	4.30	.039	.011
	Coping strategies index	14102.682	1	14102.682	20.86	.000	.052
Industrial	Wealth index	9.544	1	9.544	3.53	.061	.009
	Coping strategies index	10939.450	1	10939.450	16.18	.000	.041
Commerce	Wealth index	1.922	1	1.922	0.71	.400	.002
	Coping strategies index	246.433	1	246.433	.37	.546	.001
Cons. expenditure	Wealth index	6.142	1	6.142	2.27	.133	.006
	Coping strategies index	1053.181	1	1053.181	1.56	.213	.004
Location	Wealth index	1.015	1	1.015	.38	.540	.001
	Coping strategies index	1117.685	1	1117.685	1.65	.199	.004

Levene's test of equality of error variances

	F	df1	df2	Sig.
Wealth index	3.501	1	385	0.091
Coping strategies index	2.450	1	386	0.118

Source: Field survey (2018)

5. CONCLUSION AND RECOMMENDATIONS

The informal sector of Kaduna state's local economy is active and vibrant. This study has shown that about two-thirds of a household's economic activity falls within the purview of the informal economy. This is in addition to providing a source of livelihood for almost a quarter of a million persons in the state. The study also showed that the majority of the identified activities in the informal sector are conducted within the institutional and operational framework of livelihood strategies adopted by households to subsist, diversify their sources of income, or cushion against risks and uncertainties associated with their economic survival. Preliminary findings from the study show a close association between informal economic activities, household characteristics, household prosperity, and food security. However, further interrogation of the pattern, magnitude, and direction of the causal relationship between the variables is required for the purpose of development policy design, programming, and implementation in the state.

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