CHAPTER 9

Nonfarm Enterprises in Rural Africa

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Overview

Common wisdom: *Nonfarm enterprises in rural Sub-Saharan Africa are most often operated for economic necessity and survival. Consequently, they tend to have low productivity, do not create many jobs, and do not drive structural transformation in Africa.*

Findings:

- *Among rural households in the six countries covered by the study, 42 percent operate a nonfarm enterprise. These enterprises contribute between 8 percent (Malawi) and 36 percent (Niger) of total household income.*
- *Most households operate businesses in easier-to-enter activities.*
- *Most are informal, often operating only seasonally and creating few jobs.*
- *Their productivity is low, and most nonfarm enterprises perform poorly. But a few perform well. Nonfarm enterprises are less productive when operated by women, located in rural areas, or operated in response to a shock (drought, flood, or illness).*
- *Being unable to cope with shocks, reacting to seasonality in agriculture, or trying to provide jobs for household members can force households into operating an enterprise. The extent and frequency of these factors vary across countries.*
- *In many instances, especially for households living closer to denser markets (such as a capital or secondary city), business opportunities pull rural households into operating enterprises. Access to human and physical capital may matter in these cases, as the better educated and those who can acquire credit are more likely to become entrepreneurial.*
- *Rural enterprises most often cease operations due to a lack of profitability, a lack of finance, and/or idiosyncratic shocks such as illness or the death of a family member.*

Policy message: *Nonfarm enterprises will benefit from policies that improve the business environment, assist rural households to manage and cope with risk, and*

strengthen the capabilities of individuals to be entrepreneurial. Policy making will benefit from improvements in data collection on rural enterprises.

The Issue: Survival or Opportunity?

Nonfarm enterprises (NFEs) are ubiquitous in rural Sub-Saharan Africa. Fox et al. (2013) estimate that 15 percent of Africa's labor force works in the nonfarm sector. Such enterprises tend to be small, informal businesses that provide a wide range of goods and services in or nearby the household residence, or in a village market. Many are linked to agriculture and can be located on a farm. The conventional wisdom is that these enterprises are generally operated for purposes of economic survival (Ellis 2000). Hence, their productivity is low. They do not create many jobs, nor do they drive structural transformation in Africa—at least, this is the conventional view.

The conventional wisdom has two corollaries, namely, that rural nonfarm enterprises have low productivity and low survival rates. However, the conventional wisdom is largely based on limited survey data. Comparable cross-country and panel data analyses that cover a representative geographical area of Sub-Saharan Africa have so far been lacking. The recent rounds of the World Bank Living Standards Measurement Study–Integrated Surveys on Agriculture (LSMS-ISA) provide a rich set of data on the rural nonfarm sector in Africa, including entrepreneurial household activities. This study uses this data set to review the conventional wisdom about NFEs and assess whether the current knowledge is a myth or a fact (Nagler and Naudé 2017).

The Analysis: Combining Description with Analysis

The study presents an array of descriptive material documenting the prevalence and characteristics of NFEs in rural Africa. This is combined with an in-depth analysis using multivariate econometric techniques (Nagler and Naudé 2017).

Over 40 percent of the rural households surveyed in the LSMS-ISA operate such an enterprise (table 9.1). Overall, the sample comprises 11,064 individual enterprises in 8,115 rural households, resulting in an average of 1.36 enterprises per entrepreneurial household. The shares vary widely across countries, from a relatively low share of 17 percent entrepreneurial households in rural Malawi, to almost 62 percent in rural Niger.

Having established the prevalence of NFEs, the study seeks to answer three important questions:

- First, what factors determine the establishment of an NFE? The study estimates a probit model in which the probability of a household operating an NFE depends on the characteristics of the household head and the household, and the household's geographical location. (Box 9.1 provides more detail on the multivariate techniques.)

Table 9.1 NFEs Are Common in the Study Countries, Especially Niger and Nigeria

Country	*Households surveyed*	*Households with NFEs*	*Weighted share (%)*	*NFEs*	*Mean NFEs per household*
Ethiopia	3,466	919	22.87	1,112	1.21
Malawi	10,038	1,755	16.88	1,872	1.07
Niger	2,430	1,427	61.73	2,188	1.53
Nigeria	3,380	1,707	52.62	2,688	1.57
Tanzania	2,629	1,061	38.65	1,363	1.26
Uganda	2,105	953	42.24	1,471	1.54
Total	24,551	8,115	41.63	11,064	1.36

Source: Compilation based on LSMS-ISA data.
Note: NFEs = nonfarm enterprises.

Box 9.1 The Issues Raised Call for Different Econometric Approaches

Understanding a Household's Decision to Operate a Nonfarm Enterprise

To identify the determinants of a rural household's decision to operate a nonfarm enterprise (NFE), the study uses a discrete-choice estimator, a probit model (for an antecedent, see Abdulai and Delgado 1999). Formally, the study estimates

$$\Pr(Y_i | v_i, w_i, x_i, z_i) = \Phi(v_i' \alpha + w_i' \beta + x_i' \gamma + z_i' \delta) \quad \text{(B9.1.1)}$$

where the dependent variable Y_i is a binary variable equal to 1 if the household operates an NFE, and 0 if not. The term v_i' is a vector of individual characteristics, including a constant, and comprises the variables gender, age, marital status, and education (proxied by the ability to read and write) of the household head. The term w_i' is a vector of household characteristics, including the number of adult household members, annual net household income, number of rooms in the dwelling, and a binary variable for whether a household member has taken out credit over the past 12 months, indicating the possibility of accessing financial support. The variable land size (in acres) per adult household member is also added, where land can be owned or rented. The term x_i' records whether the household has experienced a food shortage or shock over the past 12 months. Finally, z_i' is a set of location variables, including a household's distance to the next population center and annual precipitation. The model is estimated for each country.

Determinants of Productivity

To estimate the determinants of labor productivity in rural enterprises, the study utilizes a Heckman selection model. The variables are selected from the Living Standards Measurement Study–Integrated Surveys on Agriculture database. Formally, the study estimates

$$z_i^* = w_i \gamma + u_i \quad \text{(B9.1.2)}$$

representing the selection stage of the model, where z_i^* determines whether an enterprise is operated. Thus, $z_i = 1$ if $z_i^* > 0$ and $z_i = 0$ if $z_i^* \leq 0$. w_i is a vector containing the possible

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Box 9.1 The Issues Raised Call for Different Econometric Approaches *(continued)*

determinants of enterprise operation. Once z_i is known, the outcome stage with the dependent variable "log of labor productivity" can be modeled as

$$y_i^* = x_i\beta + \varepsilon_i \tag{B9.1.3}$$

with $y_i = y_i^*$ if $z_i = 1$, and y_i not observed if $z_i = 0$. x_i is a vector containing the possible determinants of labor productivity.

In the selection stage, the analysis takes the individual characteristics of the household head, and includes the variables gender, age, and education. As household characteristics, it uses access to credit, experience of shocks, and land size (in acres) per adult household member, as well as the location characteristics distance to the next population center, rural, and agroecological zone. As the selection variable, it uses the number of adult household members, since larger households have surplus labor available to allocate to entrepreneurial activities.

In the outcome stage, the analysis takes the individual characteristics of the enterprise owner (instead of the household head), and otherwise includes the same variables as in the selection stage. Information about the enterprise, such as months in operation, is also included.

For the probit and the Heckman selection models, the analysis uses a cross-section sample, which includes data from the six countries (with variations, depending on the regression), and takes the most recent rounds available as of the fall of 2013.

- Second, how productive are these enterprises? If NFEs are mainly operated for survival, there is an expectation that their productivity will be low. The study uses a Heckmann selection model, with explanatory variables again including individual, household, and location characteristics (box 9.1).
- Third, do rural NFEs typically operate for shorter periods (another manifestation of a survival orientation)? The study examines the continuity of NFEs in more detail—the extent to which they operate throughout the year compared with more seasonal activities.

The Results: The Conventional View Is Confirmed

Four features of rural entrepreneurship support the conventional view:

- *Rural enterprises contribute relatively little to total income.* NFEs contribute between 8 percent in rural Malawi and 36 percent in rural Niger to household income. Household income generated by self-employment is less in rural than in urban areas across all the countries covered by the LSMS-ISA. This finding suggests that there are fewer rural opportunities and more constraints on entering the business sector compared with an urban setting.

- *NFEs are unproductive.* The study shows that productivity levels are low in NFEs, especially when they are motivated by survival. Productivity is typically lower in rural NFEs than in their urban counterparts.
- *Enterprises are small.* Most of the NFEs are small household enterprises. Over 80 percent do not employ nonhousehold workers. Less than 3 percent employ five or more nonhousehold workers. Most of the enterprises operate from the household's residence or the immediate surroundings. This profile is consistent with a survivalist type of entrepreneurship.
- *Enterprises operate for only a portion of the year.* Many enterprises operate only seasonally (between 36 percent in rural Nigeria and 58 percent in rural Ethiopia), and rural enterprises show this intermittent pattern more frequently than urban enterprises do.

The necessity to cope with and manage risks can push households into operating an enterprise. This situation is due to the lack of social protection and insurance schemes, risky environment, shocks, surplus household labor, and seasonality. The "necessity" motivation is reflected in the nature of the enterprises as small, informal, and low-productivity household enterprises, operating for only a portion of the year.

However, Some Households Are Responding to Opportunities

Despite the empirical confirmation that rural enterprises are operated "in survival mode," the study also finds evidence that households respond to opportunities when markets beckon. The evidence suggests that the focus on the household and the individual level is appropriate for rural entrepreneurship. The character of these enterprises as household enterprises implies that decisions are made collectively at the household level. Household heads with higher education and who are older, the household's wealth, and access to credit are associated with a higher likelihood to exploit opportunities for enterprise operation.

The Motivation Influences the Type of Business Activity

The study further finds that the determinants of enterprise operation influence the type of businesses households operate. Credit and education are closely associated with agribusiness and trade, as well as bars and restaurants. Businesses whose physical and human capital requirements make them "easier to enter," such as sales, are more likely to be operated by households that have experienced a shock. Distance to a population center is less important for professional services or bars and restaurants, since these businesses cater to clients in the immediate surroundings. Although gender is not found to be a significant constraint for operating an enterprise, women are less likely to operate certain types of businesses, a finding that is consistent with expectations from nonunitary household decision-making models. Women are less likely to engage in transport businesses, professional services, and nonagricultural businesses. The latter are among the most frequently operated types of business in the sample (table 9.2).

Table 9.2 Trade and Sales Is the Most Prevalent Nonfarm Activity

Activity	*Ethiopia* (%)	*Malawi* (%)	*Niger* (%)
Trade and sales	31.5	35.6	35.4
Agribusiness	26.3	20.1	26.6
Nonagricultural business	25.7	18.1	7.4
Professional services	1.1	0.5	4.3
Bar or restaurant	0.5	2.4	1.1
Transport	1.2	2.6	1.4
Other	13.7	20.7	23.8
Total	100	100	100

Source: Compilation based on LSMS-ISA data.
Note: Weighted shares; rural areas only.

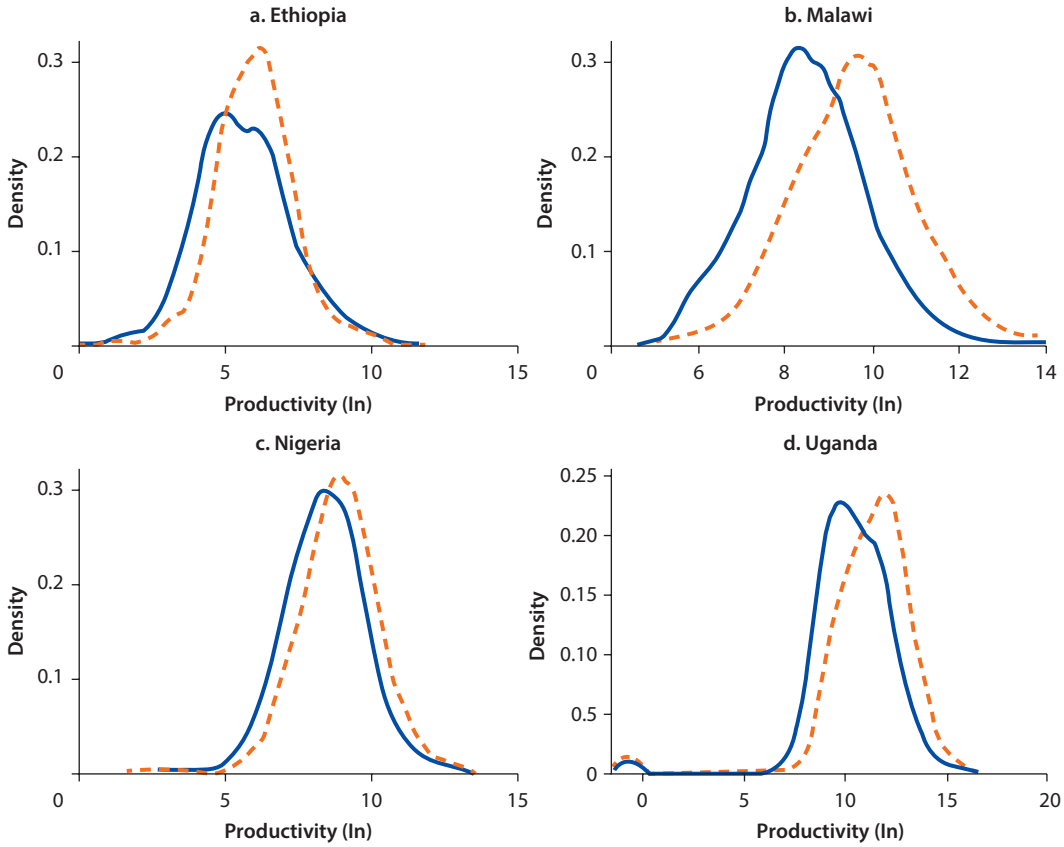
This finding suggests that female entrepreneurs may face important barriers to entry in certain types of business activity.

Enterprises Motivated by Necessity Are Less Productive Than Those Responding to Opportunity

The results suggest a link between a household's motivation to operate an NFE and its subsequent productivity. Enterprises that are operated by necessity—for example, due to shocks—are more likely to be less productive than enterprises that are operated because the household is utilizing an opportunity. Households with the latter motivation not only attain better capacity utilization by operating all year long but may also seek credit or have better-educated enterprise owners. Perhaps because of the greater risk and more prevalent market failures in rural areas, the study finds that rural enterprises are on average less productive than their urban counterparts (figure 9.1). Moreover, enterprises located in regions with a history of violent conflict (for example, northern Uganda) report lower productivity levels.

Urban-rural productivity differences reveal little about the factors underpinning productivity outcomes in African NFEs. The study therefore explores productivity outcomes in greater empirical depth. It finds that female-owned enterprises are less productive than male-owned enterprises. However, the productivity of female-owned enterprises may be underestimated because of women's time-use constraints. In Malawi, where information on the time use of workers is available, the study indeed finds that productivity differences almost disappear between male and female enterprise owners. The effect of education on labor productivity is positive and significant. Surprisingly, access to credit is not significant (or only marginally so). The effect of rural location is negative in Malawi and Nigeria. Firm size is associated with lower productivity in these two countries. Shocks (reflecting risk) have a negative impact in most cases. Although distance from a population center lowers the probability of households entering

Figure 9.1 Rural Enterprises Are Less Productive



Source: Compilation based on LSMS-ISA data.
Note: The continuous lines represent the productivity of enterprises located in rural areas; the dashed lines the productivity of urban enterprises.

entrepreneurship, it is associated with higher labor productivity in Malawi, but lower productivity in Nigeria and Uganda.

Increases in Agricultural Productivity Do Not Necessarily Lead to Increases in Nonfarm Enterprise Productivity in the Same Region

Using georeferenced household data from rural Ethiopia and Nigeria, Owoo and Naudé (2017) find that high (low) productivity NFEs were surrounded by other high (low) productivity enterprises. This finding confirms the existence and benefits of local agglomeration. Furthermore, the study finds a negative relationship between rural NFE performance and agricultural activity in Ethiopia and Nigeria, implying that increases in farm productivity are not necessarily associated with increases in NFE productivity in the same region. Thus, it may be that in areas with high agricultural productivity, higher wages reduce the competitiveness of NFEs. This result runs counter to the "most prominent view amongst development practitioners" (Deichmann, Shilpi, and Vakis 2008, 1), and calls for more

research—for instance, to establish whether the result is due to the type of business activity, wages in agriculture, or some other, unexplained characteristic of rural NFEs in Africa.

Nonfarm Enterprises Have Intermittent Patterns of Operation

The survey data tell us that many NFEs do not operate throughout the year. In most countries (the exception is Nigeria), about a fifth of rural enterprises operate for less than six months. This evidence of seasonal operation suggests that many NFEs are motivated by survival, for instance, for risk diversification purposes in a high-risk agricultural setting.

Understanding the Dynamics: The Factors behind Entries and Exits

The Uganda survey asked respondents about the reasons why NFEs stopped operation. Two reasons stand out in their responses: a lack of profitability and a lack of finance (table 9.3).

Rural enterprises often exit the market; they are more likely to cease operations due to idiosyncratic shocks in Uganda, reflecting the risky environment in which they operate. Although rural enterprises have low survival rates, the ease of entry means they can readily be restarted. The LSMS-ISA data for Uganda show that a small share of enterprise owners who exited the market considered restarting their business activities: 73 percent did not plan a restart, 25 percent considered it a possibility, and the remaining 2 percent were certain about reviving operations (survey year 2011/12).

Table 9.3 Enterprises in Uganda Mostly Cease Operating Because of Economic Factors and a Lack of Finance

	Enterprises, 2010–11 (%)		*Enterprises, 2011–12 (%)*	
Reason	*Urban*	*Rural*	*Urban*	*Rural*
Insecurity or theft	2.95	4.10	3.28	0.19
Lack of supply (inputs or raw materials)	9.00	7.52	4.74	7.43
Lack of demand	5.14	6.04	5.84	1.50
Economic factors (profitability)	**27.59**	**32.93**	**19.09**	**15.72**
Technical issues	0.46	0.62	0.89	0.76
Labor related (death or illness)	5.57	9.00	5.68	7.07
Government regulation	—	—	—	0.89
Competition	1.79	1.67	—	3.30
Lack of electricity	—	0.15	—	—
Lack of space or premises	0.55	0.29	0.43	1.47
Lack of transport	2.97	0.81	—	1.11
Lack of finance	**29.33**	**23.59**	**34.63**	**31.37**
Other	14.65	13.30	25.41	29.16
Total	100	100	100	100
Number of observations	97	314	84	273

Source: Compilation based on LSMS-ISA data for Uganda.
Note: Survey weights included. — = not available.

The Implications

The NFE sector is characterized by a great deal of heterogeneity across African countries. Its contribution to household income is proportionately lower in rural than in urban areas. The great heterogeneity in the NFE sector reflects different motivations for enterprise operation, as well as different country contexts and economic geographies. Overall, the findings paint a picture of rural enterprises as "small businesses on a big continent."

The common perception that Africa's rural household enterprises operate mainly in survival mode is generally valid, although some businesses are also operated due to perceived opportunities and are more productive. There is much scope for policy and further research to contribute to the development of rural entrepreneurship in Africa.

However, there is no simple solution to the weak dynamics of the nonfarm sector. On the one hand, the challenges are deep-seated and characterized by market and government failures. On the other hand, there is considerable heterogeneity among the various countries, which makes a one-size-fits-all prescription neither possible nor desirable. Still, five broad sets of policy takeaways that have the potential to add value in all countries, irrespective of the social and economic framework, are suggested by the study.

Improving the business climate in rural Africa. First, the study recommends a set of policies that could improve business conditions, including policies that have the potential to increase labor productivity, such as access to credit to expand business activities, and the development of local infrastructure. Such policies are already part of most entrepreneurship development programs in Sub-Saharan Africa. Perhaps it is time to be more critical of these programs and gain a better understanding of why they seem to have been ineffective so far.

Improving the conditions for taking and managing risks. Second, the study recommends policies that encourage risk taking if individuals find a promising opportunity to start a business. Such measures could play a useful role in expanding the nonfarm sector, and would consequently lead to a more productive sector. Furthermore, attention should be given to providing more concentrated support for enterprises with high growth potential, due to the large heterogeneity in enterprise performance. Hence, it is crucial to identify and support highly talented entrepreneurs who have the potential to take on riskier, but also more productive, types of businesses, and who will locate their activities where positive spillovers can best be generated.

Improving individual competencies. Third, policies that expand education, as well as individual competencies and skills, are highlighted. Based on the finding that young people are less likely to enter the entrepreneurship sector, or, once they become entrepreneurs, operate less productive enterprises, additional support for young enterprise owners is recommended. Given that Africa is the continent with the most youthful population, and has millions of young job seekers entering rural labor markets annually, support in this area is of utmost importance.

Improving risk-mitigating policies. Fourth, what may be missing or inadequate in enterprise policies is measures that can cushion shocks and protect households from negative external events, such as (micro)insurance or social protection schemes. Such policies can help households to avoid operating unsustainable types of businesses, such as selling seeds or livestock, or prevent well-functioning enterprises from closing operations.

Improving data collection. Fifth and finally, the study makes recommendations for improving data collection on rural entrepreneurship. The LSMS-ISA data collection has some weaknesses. For example, a comprehensive analysis of enterprise survival and failure is constrained by a lack of information on failed enterprises, and it is not possible in most countries to match enterprises over time and survey rounds.

Additional Reading

This chapter draws on:

Nagler, P., and W. Naudé. 2017. "Non-Farm Enterprises in Rural Sub-Saharan Africa: New Empirical Evidence." *Food Policy* 67: 175–91. https://doi.org/10.1016/j.foodpol.2016.09.019

Other key references:

Abdulai, A., and C. Delgado. 1999. "Determinants of Nonfarm Earnings of Farm-Based Husbands and Wives in Northern Ghana." *American Journal of Agricultural Economics* 81 (1): 117–30.

Deichmann, U., F. Shilpi, and R. Vakis. 2008. "Spatial Specialization and Farm-Nonfarm Linkages." Policy Research Working Paper 4611, World Bank, Washington, DC.

Ellis, F. 2000. "The Determinants of Rural Livelihood Diversification in Developing Countries." *Journal of Agricultural Economics* 51 (2): 289–302.

Fox, L., G. Haines, J. Muñoz, and A. Thomas. 2013. "Africa's Got Work to Do: Employment Prospects in the New Century." IMF Working Paper 13, International Monetary Fund, Washington, DC.

Owoo, N., and W. Naudé. 2017. "Spatial Proximity and Firm Performance: Evidence from Non-Farm Rural Enterprises in Ethiopia and Nigeria." *Regional Studies* 51 (5): 688–700.