

SOCIAL AND MACROECONOMIC DETERMINANTS OF YOUTH SELF-EMPLOYMENT IN SUB-SAHARAN AFRICA

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Abstract

Youths in sub-Saharan African (SSA) countries have found it increasingly difficult to transit into decent employment due to binding constraints in the labour markets, among other challenges. Using data from the School-to-Work Transition Survey (SWTS) of the International Labour Organization, for 9 SSA countries and the principal component analysis, the study examined the leading drivers of youth self-employment and success of self-employed youth, estimated using the logit regression model. The findings reveal that, while individual characteristics, and social and economic factors are critical to youths' entry into self-employment, macroeconomic and policy factors play significant role in their success in self-employment. Skills, rather than general education, is also found to be relevant in enhancing success in youth self-employment. This implies that the success of youths in self-employment requires more policy interventions and attention than the general employment segment. Strategies to enhance the condition of youths in self-employment (promoting youth entrepreneurs) therefore require attention to the basics in terms of macroeconomic stability and promoting adequate financial and physical infrastructure.

Keywords: Education, Employer, Gender, Macroeconomic stability, Self-employment, Skills, sub-Saharan Africa, Youth.

JEL Classification: I38, J21, J24, J71, O17

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1. Introduction

Limited opportunities for younger participants in the labour market constitutes a major employment problem for countries in sub-Saharan Africa (SSA). For instance, youth employment rate in the region was 43.9 percent in 2020 compared to 62.6 percent for the entire labour market. In spite of this, youth entry into the labour force has been on the increase in the region (Fox, Senbet and Simbanegavi, 2016; Datta et al., 2018). In addition to decreasing demand for labour, the condition of youth labour force has contributed to a demographically segmented labour market in the region that is unfavourable to the youths. A visible consequence is the high and rising proportion of youths in the self-employment, relative to other population group. As noted by the International Labour Organisation (ILO, 2020), while self-employment constitutes 68 percent of all employment, the proportion was 77 percent for youth employment. This shows that more youths are entry self-employment than other demographic groups in labour markets of SSA countries.

Although the definition of self-employment by the ILO (2020) captures all aspects of work that does not involve direct institutional variations of work-life and government interventions, there are differences in the patterns and description of self-employment in advanced and developing economies. These differences are better appreciated when the composition of self-employment is considered across countries and regions. The share of employers (which is considered as the most decent and productive segment of self-employment) in total self-employed workers was 67 percent in Europe and 74 percent in the US in 2020, compared with 3 percent in sub-Saharan Africa in the same period (Simoes et al., 2015; ILO, 2020). Thus, while self-employment has been considered a strong basis for economic growth and prosperity in advanced and other emerging economies (Kelley et al., 2013), in developing countries, it is characterized by high informality, low-wage and vulnerability (Getinet, 2009; Gindling & Newhouse, 2014; Burchell *et al.*, 2017). Under such circumstances, self-employment does not necessary guarantee a decent living (ILO, 2019).

Thus, by embracing self-employment, there is the risk that many youths in SSA countries are entering into work poverty and not into decent jobs. Despite these obvious challenges and tight conditions, youths in the region are increasingly embracing entrepreneurship and self-employment. This makes it critical to understand the underlying factors that drive young people into this segment of the labour market. Although the literature identifies labour market segmentation, demographics, technology, policies, and social and institutional factors as significant considerations by young labour market participants in choosing self-employment, there are peculiarities across countries and regions (Yamada, 1996; Jacobs, 2008; Fox and Gandhi 2021; Nguimkeu, 2022).

Although several studies have examined the determinants of self-employment entry, especially among SSA countries (Fields 2019; Morrar, Amara and Zwick, 2022; Melak and Derbe, 2022; Belay, 2023), most of the studies focus on the entire labour market. Moreover, given that a large proportion of labour market entrants are in self-employment in SSA countries, previous research has paid little attention to factors that drive success in this segment of the employment structure. This study therefore examines the factors that influence the decision of youths to pursue self-employment in SSA. It delineates the peculiar drivers of self-employment in SSA countries into the social and economic factors, using micro-based datasets. Moreover, in consideration of the ILO's (2020) classification of self-employment into successful or non-vulnerable (employers) and others that are less successful, this study argues that the factors that drive the youths into self-employment could be different from those that influence their success as self-employed. Thus, this study attempts to explain the factors that drive entry of youths into self-employment and those that ensure success in youth self-

employment in SSA using the logit regression framework. The study found evidence that while social factors are predominantly relevant in explaining youth entry into self-employment, macroeconomic factors explain success of youth in self-employment. Following this introductory section, is the review of the literature in section two, while the methodology of the study is outlined in section three. Section four presents and discusses the results, while section five concludes with relevant recommendations.

2. Brief Literature Review

In general, theories of self-employment distinguish between two underlying issues regarding entry into self-employment in the labour market. On the one hand, there is the argument that self-employment is a conscious choice and entry decision is made intentionally after rational considerations have been made. Models of self-employment as an occupational choice propound that self-employment is founded on entrepreneurial abilities (Lucas, 1978; Nguimkeu, 2022), level of risk aversion (Kihlstrom & Laffont, 1979), initial wealth distribution (Banerjee & Newman 1993), or income maximization decisions (Van der Sluis, Van Praag & Vijverberg 2005). Conversely there is argument that self-employment is forced on individuals. This argument resonates more with developing countries with dualistic labour markets. These theories are mostly disequilibrium analysis of the labour market where the existence of self-employment is explained by lack of opportunities arising from either social (population and migration) or demand-side factors (Harris & Todaro 1969; Fields 1975).

Yamada (1996) however formulated a model that suggests that self-employment can be layered in the labour markets of developing countries due to deep segmentation. In this structure, certain segments of the labour market entry are considered to be more intentional than others. In particular, Jacobs (2008) extended the Yamada theory by showing that while the level of economic activities can explain non-choice entry into the self-employment, more specific factors like financial and physical capital tend to be the underlying factor for intentionally choosing self-employment. Also, Simoes et al. (2015) provided a theoretical evaluation of the leading determinants of self-employment entry of individuals and found that social and personal traits influenced self-employment in selected advanced economies. In this study, we extend this theoretical argument by stating that general entry into self-employment is different from success in self-employment both in terms of characteristics and determinants. While general entry relates to overall participation in self-employment, success in self-employment is defined as individuals in the employer or entrepreneur segment in self-employment.

The foundations to the empirical research on the self-employment segment of youths in the labour rests on the issues of crippling unemployment that is prevalent in this labour force group as well as the special characteristics of youth unemployment in developing countries. For instance, Olubusoye et al. (2023) found that youth unemployment in Nigeria does not follow the business cycle. This implies that the category of unemployment may not require traditional demand-side and macroeconomic policies to address. As Fox et al. (2016) have found, self-employment is one of the innovative responses of youths in SSA to respond to the deepening absence of formal wage jobs. Thus, the causes of youth unemployment are indirectly linked to those of self-employment. Fox and Gandhi (2021) found that rising economic development and structural transformation that involve improvement in educational quality lead enhance youth opportunity in the economy and lessens the burden of unemployment while the high rate of labour force growth and declining productivity in the informal sector increase the burden of youth unemployment. They also found the current labour laws in many SSA countries are discriminatory and further limits chances of youth employment. Anyanwu (2013) however found that it is at high levels of economic growth that the youth unemployment issue can be addressed in SSA coun-

tries. The study also found that while domestic investment rate, access to credit, ICT infrastructure, and education positively affects youth employment, government consumption expenditures, inflation, and demographic factors increases unemployment for youths in SSA. Similarly, Ogbonna (2023) found that ICT infrastructure and application as well as ICT education significantly reduce youth unemployment in African countries.

At the micro-level of analysis, Fakih et al. (2020) evaluated the determinants of youth unemployment in the MENA region in recent years. The found that social and demographic factors like gender equality, social rights, increased economic inclusion of the youths, education, and reduction in corruption all improve the chances of youths in securing employment. Msigwa and Kipesha (2013) also employed Multinomial logistic regression to examine the determinants of youth unemployment in Tanzania. Similar to other research, their study showed that gender, urban residence, education, skill level, and marital status were the dominant factors that explain youth unemployment in the country. Thus, demographic factors, especially in relation to rising share of youth in the labour force, explain a large proportion of the failure of youths to access a larger share of the labour market (Fox et al. 2016). In the same vein, David et al (2019) demand-side policies that reduce constraints to business development and job creation are more important in reducing youth unemployment than supply-side policies that focus on training and skills.

A prominent feature in the empirical literature on the determinants of self-employment is the definitions of the concepts which differentiate between advanced economies and developing countries (Monga et al. 2019; ILO 2020). In a broad review of literature on the determinants of self-employment among advanced economies, Le (1999, 381) highlighted that “individual abilities, family background, occupational status, liquidity constraints and ethnic enclaves” were the most critical factors that researchers located as predominant in explaining self-employment. Similarly, Hiromi (2002) examined factors influencing women’s decision to be self-employed using a longitudinal survey of individuals born between 1957 and 1964 in the US and by differentiating between Hispanic, African-American and white women. There was evidence that the spouses, work experience, and race considerations played significant roles in influencing self-employment. Furthermore, Tubadji, et al. (2019) examined how the prevalent psychological and cultural factors affected the choice of self-employment using cross-sectional data from 2003-2010 for Greece and Germany. Using the probit model, they found that fear of failure, cultural persistence and the level of inclusiveness in the community greatly influenced the choice of self-employment of individuals in the 15-24 years age group.

In terms of determinants of self-employment among developing countries, Getinet (2008) found that the weakening structure of the economy (especially in terms of de-industrialisation) and high rates of unemployment were the main drivers of self-employment in the SSA countries. In a more intensive study of the determining factors of self-employment in both developing and developed economies, Gindling and Newhouse (2014) found that the social and personal characteristics are the prevalent factors that explain the willingness to join the self-employed group. They demonstrated that policy interventions were less effective in explaining entry into self-employed among developing countries. This outcome was confirmed by Melak and Derbe (2022) who found that sex and skill development were predictors of youth self-employment. Morrar et al. (2022) found similar evidence for Palestinian youths and also indicated that specific training after formal education also increases the likelihood of youths to be self-employed. On the other hand, Belay (2023) showed that self-employment in the services sector in Ethiopian was driven largely by the social capital factor of trust in government institutions (including labour markets and financial system).

The outlined literature provides evidence on the factors that drive self-employment among advanced and developing economies. However, an essential aspect of the literature on advanced economies is the focus on the definition of self-employment that relates more to productive employment or the whole labour market. This is however not the case for many SSA countries – where self-employment is more vulnerable (Fields 2019) – nor the case for youth sphere of the labour market. For instance, ILO (2018) found that individuals pushed out of agriculture as a result of the low productivity and poor social protection, have a higher tendency to move into more vulnerable aspects of self-employment which is prevalent among the youths. Getinet (2009) also found that for Ethiopian urban youths, self-employment is only a route out of unemployment rather than being a path to a decent job. While studies in advanced economies consider self-employment mainly in relation to being an employer, the reality in SSA is that a huge proportion of self-employed are in vulnerable employment. This makes it cumbersome to include some determining factors from studies in advanced economies in research for SSA. For instance, rural-urban discrepancies are vital for explaining youth self-employment in developing countries. This outcome is confirmed by Gindling and Newhouse (2014) who demonstrated that jobs exhibited a clear pecking order among developing countries and within the self-employed.

Thus, studies in developing countries tend to isolate factors that enhance the success of youths in self-employment. Success in this regard refers to youths employed in the most productive segment of “employers” (ILO 2020; Fox and Gandhi 2021). Thus, both theory and empirical evaluations suggest that factors that drive youths in SSA into self-employment are generally not the same as those that ensure success in this employment category. For instance, Adegboye and Ojo (2021) examined the roles of education and innovation on reducing vulnerable youth employment – the segment that relates to unsuccessful participation in self-employment. They found that education only matters for relieving vulnerable employment when it relates more to enhancing innovation. On the other hand, innovation had strong capacity to reduce vulnerable employment, especially when such innovation is driven by government. Hence, there is evidence that reasonable government policy involvement is required to ensure higher success of youths in self-employment. In the same vein, Odewale et al (2019) examined factors that ensure success of youth entrepreneurs and found that more technical skills (not related to general education) and capacity to adopt strategies are the most important factors.

Fox and Gandhi (2021) also found that for SSA countries, the level of economic development and transformation are the pivotal elements that improve youth self-employment outcomes. This provides evidence of the role of macroeconomic factors (which drive the business environment) as critical for enhancing success of youths in self-employment. Sumberg et al. (2019) found similar results and noted that structures provided by governments are more important than the social characteristics of youths in gaining advantages as self-employed individuals. Bridges et al. (2017) tends to confirm these earlier findings by deploying historical labour market datasets for Tanzania and estimating the impacts of social characteristics on future self-employment success of youths. They found clear evidence that factors that drive the youths into self-employment do not matter for the nature of final earnings.

For the SSA countries therefore, there are unique characteristics of self-employment that require strong consideration. First, the place of age consideration in self-employment is important. For instance, many studies on SSA have found that younger labour market participants are more likely to be self-employed than older

participants (Getinet 2008; Margolis 2014; Gaetsewe 2018; Datta et al. 2018; Morrar et al. 2022). This suggests that the major demographic considerations are important in examining the determinants of self-employment among SSA countries. Second, “employers” category is considered as non-vulnerable, while other groups (including own-account owners) are vulnerable (ILO 2020; Fields 2019). Thus, in explaining the determinants of self-employment, there needs to be two stages of analysis, including (i) determinants of initial entry into self-employment, and (ii) determinants of success in self-employment (i.e., entrepreneurs or employers). This is a critical area where this study contributes to literature.

3 Methodology

The survey approach is employed in this study using a micro-data framework. Both descriptive and inferential statistics were used in evaluating relationships and drawing conclusions in this study. Two techniques were used in the estimation - the Principal Component Analysis (PCA) and logit regression. The PCA was used to determine the most relevant factors that explain the decision of the youth to enter into self-employment, and the success in self-employment; and the logit regression was employed to estimate the impact of the selected variables on either self-employment or on the success of youth in self-employment.

3.1 The Principal Components Analysis (PCA)

The PCA analysis involves the demonstration of the level importance of a group of variables in explaining a central component or variable. In order to obtain a mature model, 25 variables were included. These variables were obtained based on extant literature and data quality. The same set of variables were selected for explaining both self-employment determination and success in self-employment. The summary of the PCA results for the variable importance estimation for self-employment (PC1) and success in self-employment (PC2) are reported in Table 1. It should be noted that the relevance of the principal components is measured on a scale of quantity ranging from 0 to 1 in the rescaled factor loadings. The benchmark for the inclusion of variable importance is 0.5 or 50 percent contribution (see Manage & Scariano, 2013). The variables examined for self-employment are modeled by principal components 1 (PC1) while the variables selected for determining success of self-employed are modeled by principal component 2 (PC2). From the Table, it can be seen that 11 out of the 25 selected factors considered have proportion of Eigenvalue that are greater than 0.5 for the determinants of self-employment, while 10 variables are selected as relevant determinants of success in self-employment. These are the factors included in the models specified in this study. Interestingly, the leading factors for the determination of youth self-employment are related to social and personal characteristics of the individuals, while the factors selected as relevant in explaining success in self-employment are more macroeconomic and policy-related.

Table 1: PCA result for the important variables to self-employment

Variable	PC 1 = youth self-employment		PC 2 = success in self-employment (employer or entrepreneur group)	
	power	rating	power	rating
Downturn in economy	0.93	1	0.55	7
Rate of national unemployment	0.91	2	0.45	12
Parents' status (employed)	0.88	3	0.444	13
Level of education	0.80	4	0.48	10
Period of unemployment	0.75	5	0.262	14
Urban residence	0.71	6	0.241	15
Participation in service sector	0.69	7	0.17	16
Female gender	0.66	8	0.11	17
Experience with entrepreneurship	0.60	9	0.83	3
Satisfaction with self-employment	0.53	10	0.60	6
Level of skill	0.51	11	0.53	9
Electricity	0.39	12	0.97	1
Access to finance	0.25	13	0.91	2
Exchange rate	0.17	14	0.74	4
Inflation	0.11	15	0.62	5
Availability of internet infrastructure	0.07	16	0.51	8
Attitude towards work	0.07	17	0.05	22
Health challenge	0.06	18	0.00	25
Physically challenged	0.05	19	0.01	24
Recently migrated	0.02	20	0.06	20
Religion	0.001	21	0.06	21
Taxation	0.00	22	0.54	8
Migration	0.00	23	0.04	23
Age	0.00	24	0.09	18
Marital status	0.00	25	0.07	19

Source: Author's computations

3.2 Model specification

The model specified in this study are in two stages. The first stage is to explain the determinants of entry into self-employment and the second stage is to explain success within self-employment. These models are derived from the theory and empirical standpoint in terms of differences in the factors that drive youths into self-employment, and those that determine successful self-employment (Yamada, 1996; Jacobs, 2008; Gindling & Newhouse 2014; Simoes et al., 2015). From the PCA analysis, 11 factors were highlighted as the leading factors that drive youth entry into self-employment with specific focus on SSA countries. Based on this outcome, the first model is specified for determinants of self-employment using a logit regression model:

$$\begin{aligned}
 self_employ_i = & \alpha_0 + \alpha_1 gender_i + \alpha_2 parent_status_i + \alpha_3 education_i + \alpha_4 skill_i + \alpha_5 urban_i \\
 & + \alpha_6 unemployment_i + \alpha_7 economy_i + \alpha_8 experience_i + \alpha_9 service_i \\
 & + \alpha_{10} satisfaction_i + \alpha_{11} unemploy_period_i + u_i
 \end{aligned} \tag{1}$$

Where *self-employ* is the measure of self-employment. This variable is a dummy variable that captures whether an individual is self-employed or not. For an individual that is self-employed the variable takes 1 and it takes 0 for an individual that is not self-employed. Self-employment is based on the ILO (2020) definition of individual that is an employer, own account, member of producers or helping household. The *gender* variable takes the value of 1 for females and 0 for males. This implies that we seek to observe the role of being a female on the decision to enter into self-employment. The parent status measures whether a parent or both parents are in formal employment, while *education* represents the level of formal education or training by the individual. The level of skill acquired is measured by the item “Do you feel your education/training qualifications are relevant in performing your present job?” in the survey questionnaire. The *urban* variable measures the residence of an individual with those in urban centres taking a value of 1 and those in rural centres taking a value of 0. Both *unemployment* and *economy* measure the degree of economic environment to represent the rate of unemployment in the economy and the measure of downturn in the economy respectively. Specifically, *economic downturn* is measured by a dummy variable that takes the value of 1 if an economy experienced decline in GDP growth rate in the two preceding years before 2015, but takes 0 otherwise. The level of experience of the individual as an entrepreneur is also included, while service represents whether the individual works in the services sector. The level of satisfaction of individuals in self-employment as well as the length of time for which an individual was unemployed are also included in the model. Period of unemployment (*unemploy_period*) refers to the length of time that the individual has been without work and actively looking for a job.

The logit form of the model is specified as:

$$\Pr\left(Y_i = \frac{1}{X_i}\right) = \frac{1}{1 + \exp(X' \beta)} \quad (2)$$

Where Y is the binary that takes 0 for non-self-employment and 1 for self-employment, X is a vector of explanatory variables. While the left-hand-side of (2) is the probability scale, the right-hand-side is the non-linear function of predictors.

As demonstrated in the literature and contribution of this study, the factors that explain decision to enter into the self-employment segment of the labour market may be different from those that enforce success. Moreover, the direction of impacts of same variables may be different for either segment of self-employment. Based on the PCA, the model for the determination of success in self-employment is specified based on the framework by Gindling and Newhouse (2014) as:

$$\begin{aligned} success_i = & \beta_0 + \beta_1 economy_i + \beta_2 electricity_i + \beta_3 fin_access_i + \beta_4 skill_i + \beta_5 inflation_i \\ & + \beta_6 exchange_rat_i + \beta_7 internet_i + \beta_8 education_i + \beta_9 experience_i + v_i \end{aligned} \quad (3)$$

Where *success* represents whether an individual is successful in self-employment. Success in self-employment takes the value 1 if an individual is an employer or entrepreneur and non-success in self-employment takes the value 0 if an individual is not in the employer or entrepreneur category. This variable is based on the finding that the *employers* or entrepreneur group are the only productive and non-vulnerable group in self-employment among SSA countries (Fields 2019). Moreover, this is the segment of self-employment in which entry is mostly by choice (Jacobs 2008) and ensures more stability (Yamada 1996). The

perception of the individuals regarding the level of availability of electricity is captured by the *electricity* variable, while *fin_access* measures the level of access to finance. This variable is measured from the item on “What financial services do you personally use?” in the School-to-Work Transition Survey (SWTS) survey questionnaire. The *inflation*, *internet access*, and *exchange rate* are also included based on the PCA and they measure strong policy-related variables in the model. The economy, skill, education, and experience variable are as defined above.

The logit form of (3) is also written as:

$$\Pr\left(Y_i = \frac{1}{X_i}\right) = \frac{1}{1 + \exp(X'\beta)} \quad (4)$$

Where Y is the binary with 1 for success in self-employment and 0 for non-success and X is the vector of explanatory variables in (4).

3.3 Data and Estimation Procedure

The data used in the study are obtained from the SWTS by the ILO (2016) for nine (9) SSA countries (Benin, Congo DR, Liberia, Madagascar, Malawi, Tanzania, Togo, Uganda and Zambia) which generates relevant labour participation and transition market information on young people aged 15 to 29 years. The latest survey for the countries in the study was conducted in 2015 and the outcome of this survey is used for the data analysis of the study. In estimating the model, the type of dependent variable is taken into cognizance. The dependent variables in Equation (1) are entry into self-employment and success in self-employment (i.e., being an employer or entrepreneur). Both variables are measured by binary dummies that take the value of 1 for positive response and 0 for negative response. Estimating this model therefore requires a qualitative response framework. In the study the logit estimation procedure is adopted. This technique helps to estimate the binary dependent variable in relation to the explanatory variables. The main advantage of the logit model over other binomial models is that the probability distribution functions are transformed as log-odds which efficiently prevents any probability estimates to fall outside the binomial range (0, 1).

The logit estimates are also augmented by the marginal effects and odd ratio estimates. The marginal effect estimates from the logit estimates help to show the elasticities or proportional effects of the independent variables on the probability that the required outcome on the dependent variable will occur. Thus, while the coefficients of the logit estimates are interpreted as probability of changes in dependent variable arising from the independent variables, the coefficients of marginal effects are interpreted as elasticity of the dependent variable arising from proportional changes in the independent variables. On the other hand, the odds ratios are used to compare the relative odds of an individual entering into self-employment and joining the employer category of self-employment. Specifically, an odd ratio greater than one implies that an increase in the independent variable is more likely to lead to increased inflow of youths into self-employment and vice versa.

4. Empirical Analysis

In this section, the data used for the study are presented and analysed. The analysis involves the presentation and evaluation of the estimated models that were specified in the previous section.

4.1 Descriptive Statistics

The basic background information about the respondents in the SWTS survey for the seven SSA countries is presented in Table 2. It is seen that the ages of the participants in the survey is between 15 and 30 years, which are prime years in the definition of youths. The age grade between 15 and 18 years however dominates within the youth age structure. There are also more females (54.4 percent) in the survey than are males. The proportion of rural residents is higher than that of urban residence, which shows that more of the respondents are in rural areas. Only 5.7 percent of the participants did not have some form of formal training or education, which shows that even the rural dwellers are relatively educated. In terms of the type of education, more of the respondents (51 percent) have primary school as their highest level of education. This shows that although many respondents are educated, the level of education is very low among them which may translate to lower skill levels among the participants.

Table 2: Summary of Background Information

Item	Response	Frequency	Percent
Age	15-18	9,696	35.1
	19-22	7,763	28.4
	23-26	5,829	21.1
	27-30	4,254	15.4
Sex	Male	12,597	45.6
	Female	15,028	54.4
Residence	Urban	10,498	38.2
	Rural	17,127	61.8
Formal school/training programme	Yes	26,050	94.3
	No	1,575	5.7
Currently attending school/training programme?	Yes	9,310	33.7
	No, I have completed my education	2,486	9.0
	No, I left before graduation or completion of training programme	14,227	51.5
highest level of formal education/training completed	None	1,575	5.7
	Primary level	14,091	51.0
	O-Level	7,543	27.3
	A-Level	2,167	7.8
	Professional Certificate	411	1.5
	Diploma	798	2.9
	First Degree	1,023	3.7
	Post Graduate Certificate	17	0.0

Source: Author's computation from the School-to-Work Transition Survey (SWTS), ILO

Table 3 shows the type of employment among the youths included in the survey. It can be seen that the largest share of the youths is made up of own-account workers which makes up 46.7 percent. This confirms the observation that own-account owners make up the largest proportion of youth employment among SSA countries. These own-account workers are a strong characteristic of self-employment in the SSA countries which differentiates this region from more advanced economies. Indeed, the own-account workers are mostly involved in less formal and less productive jobs. Also, 14.5 percent of the youths are considered as employees within the self-employment framework, while 20.7 percent are involved as helping family workers. Only 13 percent of the youths surveyed are clearly not in self-employed. When this proportion is added to those who are employees in the formal sector, there would be generally about 87.0 percent of the youths in self-employment.

Table 3: Types of Employment of Youths

Type of employment	Frequency	Percent
Employee (working for someone else for pay in cash or in kind)	4013	14.5
Employer (employing one or more employees)	741	2.7
Own-account worker (not employing any employee)	12904	46.7
Member of a producers' Cooperative	190	0.7
Helping without pay in the business or farm of another household/family member	5706	20.7
Other	470	1.7
Non- self-employment	3601	13.0
Total	27625	100

Source: Author's computation from the School-to-Work Transition Survey (SWTS), ILO

4.2 Analysis of Regression Results

The result of the model for determinants of entry into self-employment is presented in Table 4. The focus of the analysis is on the marginal effects estimates which show by how much a change in the independent variable will influence the chance of an individual entering into self-employment. The coefficients of all the explanatory variables are significant, except for level of skills and urban residence. This shows that the skillset of the youths does not affect their decision to enter into self-employment. This may explain why a large proportion of self-employed youths are in the working poor category (Fields, 2019; UNDESA, 2018). The result also shows that urban residence does not significantly affect their decision to enter into self-employment. Self-employment thus appears to be prominent for both urban and rural youth dwellers.

From the results, the coefficient of female gender is positive and significant at the 1 percent level. The odd ratio greater than one indicates that being a female increases the probability of a youth entering into self-employment compared to male youths. This outcome is generally similar for other developing countries in SSA and Ethiopia (see Mueller, 2019; Melak and Derbe 2022) but it is not in line with findings for advanced economies like the US and the UK (Hiromi, 2002; Tubadji et al., 2019). Indeed, the odd ratio suggests that a female labour market entrant is 5 times more likely to enter into self-employment than her male counterpart. This is the highest odd ratio among the explanatory variable, suggesting that gender plays a very strong role in explaining self-employment entry of youths in SSA countries. Parent's employment status (whether they are formally employed) has a negative coefficient and an odd ratio lesser than 1, indicating that that children of parents that are formally employed are less likely to be self-employed. The marginal effect estimates shows that such children are 7 percent less likely to be self-employed than children of parents that are not formally employed. This outcome corresponds with studies for more advanced economies (e.g., Simoes et al., 2015). The coefficient of the level of education is significant and also negative. In particular, the odd ratio (that is less than 1) indicates that more education tends to reduce the probability of entering into self-employment in SSA. The odd ratio for *experience* is also less than one, indicating that youths with more experience in the labour market are less likely to be involved in self-employment. Thus, as Melak and Derbe (2022) also found it is the specific experience in self-employment intensity, rather than general work experience, that increases the likelihood of youths joining self-employment. In general, the main characteristics of labour market participants that are expected to enhance participation are all shown to either be irrelevant or tend to discourage youths from entering into self-employment. This may explain the vulnerable nature of self-employment among SSA countries.

Table 4: Results for the determinants of self-employment

Variable	Logit		Marginal effects		Odd Ratios
	Coef.	P> z	dy/dx	P> z	
Female gender	1.671*** (0.324)	0.000	0.195*** (0.036)	0.000	5.317 [3.956 7.004]
Parents' status (employed)	-0.616** (0.272)	0.024	-0.072** (0.031)	0.023	0.540 [0.243 0.718]
Level of education	-0.349** (0.116)	0.029	-0.041** (0.037)	0.026	0.705 [0.489 0.837]
Level of skills	-1.248 (1.299)	0.337	-0.146 (0.152)	0.337	0.287 [0.033 1.030]
Urban residence	0.004 (0.047)	0.936	0.0004 (0.006)	0.936	1.004 [-0.867 1.933]
Rate of national unemployment	0.606** (0.257)	0.018	0.071** (0.025)	0.020	1.832 [1.480 2.266]
Downturn in economy	0.438*** (0.106)	0.003	0.051** (0.024)	0.033	1.549 [1.335 1.740]
Experience	-0.263*** (0.066)	0.000	-0.0307* (0.011)	0.010	0.768 [0.586 0.905]
Participation in service sector	1.388*** (0.402)	0.001	0.261** (0.084)	0.001	4.005 [3.819 4.370]
Satisfaction with self-employment	0.031** (0.016)	0.048	0.008* (0.002)	0.008	1.049 [0.870 1.204]
Period of unemployment	0.920*** (0.135)	0.000	0.147** (0.035)	0.000	2.509 [2.353 2.711]
Constant	-1.484 (1.897)	0.434	-1.592 (2.164)	0.452	0.227 [-0.617 1.005]
<i>LR chi² (prob)</i>	56.22 (0.00)				56.22 (0.00)
<i>Pseudo R²</i>	0.406				0.406
<i>sigma_u</i>			0.266 (0.243)		
<i>Rho</i>			0.088 (0.069)		
Hosmer-Lemeshow chi ² (prob)	2.91 (0.186)				
<i>Observations</i>	13,554				

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Source: Author's computation from the School-to-Work Transition

The coefficients of the rate of unemployment and downturn in the economy are both positive and significant at the 5 percent level. Moreover, the odd ratios for both variables are greater than one, indicating that rising unemployment levels as well as instability or uncertainty in the economy increase the tendency of youths to go into self-employment. The marginal effect estimates also show that while a one percent rise in unemployment rate leads to rise in the likelihood of youth self-employment by 0.071 percent a one percent negative shock to the economy leads to a 0.051 percent rise in the probability of youths going into self-employment. Thus, economic performance is seen to be a very important factor in explaining youth self-employment in SSA. This outcome is similar to the findings of Le (1999), Burchell et al. (2017) and Fox and

Gandhi (2021). In the same vein, the odd ratios show that youths who have remained unemployed for long are also more likely to go into self-employment: a unit increase in the duration of unemployment increases the probability of youth self-employment. Thus, while the occurrence of unemployment pushes the youth into self-employment, prolonged unemployment status also matters for youth self-unemployment in SSA. As Getinet (2008) and Morrar et al. (2022) noted, youth self-employment is a veritable means of escaping unemployment in SSA.

The second round of the analysis involves the estimation of the determinants of success in youth self-employment. As reported in Table 5, only education failed the significance test at the 5 percent level, suggesting the level of education is not an important factor in explaining the success of self-employed youths among SSA countries. On the other hand, the coefficient of skills is significant at the 5 percent level and the odd ratio is greater than 1. This shows that increased skill level of youths significantly increases the likelihood of youth success in self-employment. This implies that while education is important for reducing general entry into self-employment, it is skillset that is relevant in succeeding in self-employment for the youths. The result therefore shows that although skills do not matter for entry into self-employment, it is a critical factor for success in self-employment. This finding agrees with theoretical arguments (Lucas 1978; Jacobs 2008). Empirically, Odewale et al. (2019) also found that certain skillsets, especially communication skills, are important for success in self-employment for Nigerian youths.

All the other coefficients in the model pass the significance test at the 1 percent level. In particular, the coefficient of economic downturn is negative and shows that a shock in the economy has the capacity of reducing the success of youth in self-employment by 0.65 percentage points among SSA countries. Thus, like the odd ratio shows, poor economic performance has the capacity to push youths into self-employment and also to hinder the youths from succeeding in self-employment. This makes the nature of the economy a critical factor in youth labour market participation among SSA countries. Indeed, other studies in SSA countries have also confirmed that weak growth and shocks in the economy steadily constrains youth in effectively participating in the labour market (UNDESA 2018; Adegboye and Ojo 2021). The result also shows that other macroeconomic factors that are policy-directed have significant negative impacts on youth self-employment success. In particular, the coefficients of exchange rate and inflation are both negative, which show that rising exchange rate and inflationary pressures tend to reduce the chances of success for youth in self-employment. Overall, the study finds that macroeconomic factors are very important in explaining the success of youth self-employment among SSA countries.

Table 5: Determinants of success in self-employment

Variable	Logit		Marginal effects		Odd Ratios
	Coef.	P> z	dy/dx	P> z	
Economic downturn	-2.746*** (0.538)	0.000	-0.649*** (0.036)	0.000	0.064 [0.031 0.873]
Availability of internet infrastructure	1.039** (0.392)	0.021	0.302*** (0.111)	0.020	2.826 [2.173 3.366]
Inflation	-0.349*** (0.062)	0.000	-0.098*** (0.027)	0.000	0.706 [0.531 0.859]
Exchange rate	-3.039*** (0.896)	0.000	-0.363*** (0.074)	0.000	0.048 [0.003 0.073]
Electricity	2.837*** (0.283)	0.000	0.827*** (0.190)	0.000	17.064 [15.150 18.392]
Access to finance	0.827** (0.357)	0.021	0.0927** (0.045)	0.038	2.286 [1.601 2.862]
Education	0.352 (0.372)	0.302	0.037 (0.024)	0.334	1.422 [0.660 1.931]
Skill	1.237** (0.601)	0.018	0.062** (0.031)	0.010	3.449 [2.816 3.917]
Constant	-2.109** (0.932)	0.030	-1.983** (0.609)	0.032	0.121 [0.001 0.468]
LR χ^2 (prob)	113.5 (0.000)				113.5 (0.000)
Nagelkerke R^2	0.497				0.497
σ_u			0.135 (0.372)		
ρ			0.036 (0.010)		
Hosmer-Lemeshow χ^2 (prob)	1.66 (0.396)				
Observations	7,848				

*** p<0.01, ** p<0.05, * p<0.1 indicates. Source: Author's computation from the School-to-Work Transition Survey (SWTS), ILO

The coefficients of infrastructure (including internet and electricity) are both positive, although the odds for entry into self-employment is more intense with better electricity than with more internet access. This shows that increase in improvement in electricity has the highest probability of enhancing youth success in self-employment. It is seen that increasing electricity supply by 1 percent raises the probability of success of the youths in self-employment by as much as 0.84 percent, while a 1 percent increase in internet infrastructure raises the chances of success of youths in self-employment by 0.30 percent. This also shows that factors that are out of control of the youths, but are more easily in control of the governments are more important in determining the success of youth employment among SSA countries. Access to finance is also significant and has an odd ratio greater than 1, suggesting that greater access to finance has a high probability of improving the chances of youth success in self-employment. This outcome aligns with findings of both advanced and developing countries (e.g., Crespo and Moreira, 2015; Monga *et al.*, 2019; ILO, 2020). The result of the Hosmer and Lemeshow's goodness-of-fit tests are also reported in each of the Tables. This test considers the condition that the predicted frequency and observed frequency should match closely in order to ensure a good fit

for the model. It is expected that a well fitted logit model should exhibit a large p-value (greater than 0.1) for the Hosmer and Lemeshow's statistic. The p-values for both Equations are higher than 0.1, which are sufficiently large and indicate a good fit of the data used in the study.

5 Conclusion

In this study, the social and macroeconomic determinants of youth entry into self-employment were examined for SSA countries. Given the nature of self-employment in SSA, the study emphasized that any analysis of self-employment determinants among youths in SSA should consider the drivers of self-employment on the one hand, and the factors that promote or inhibit success in self-employment, on the other. Micro-level survey data from the SWTS was employed in the empirical analysis and the principal component analysis (PCA) was used to capture the leading factors that drive self-employment and its success among SSA youths. It was found that youth self-employment in the region is driven mainly by individual characteristics as well as social and economic factors; while economic and policy factors are the leading determinants of youth success in self-employment.. This suggests that strategies to reduce work poverty and promote self-employment among youths in SSA should prioritize stabilization of the economy (tame negative shocks, lower inflation; reduce unemployment, and stabilize the exchange rate) as well as enhance access to finance and expansion of physical infrastructure.

Moreover, it was found that increased youth education is only relevant in shaping entry into self-employment among SSA countries, while skill development is the requisite factor that promotes success and productivity in self-employment among the youths. Thus, education and training aimed at improving demand and supply-driven skills for the youths needs to be increased and intensified. In particular, skill development has been found to be crucial for sustainable youth self-employment in SSA. In view of the importance of skill level to success in youth self-employment, social and welfare policies should prioritize enhancing the skill levels of the youths in the region. The curriculum of schools needs to focus more on enhancing skill-set of pupils since this has been shown to be the relevant supply-side factor that promotes success of youths in self-employment. Moreover, financial interventions in forms of credit schemes and subsidized credits should be targeted at the youths to enhance adequate establishment as self-employed individuals. The overall financial system needs to be upgraded to facilitate more efficient and enhanced access to financial resources by young people.

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