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Socio-economic investigation into determinants of labour force participation in labour markets: Evidence from Uganda

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Abstract

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This paper estimates labour force participation for the active individuals between 15-65 years in Uganda. The data used is from the Uganda National Service Delivery Survey. First, we find a significant and strong negative effect on participation in the formal sector for older individuals (aged 55-65). Furthermore, we also find a significant and strong positive effect on participation in work and higher participation rates for relatively medium aged workers (45-54 years). The results further suggest that female individuals face a lower relative probability to participate in formal sector more than their male counterparts. It is also observed that unmarried female individuals tend to be engaged in formal than informal sector activities. Lower Education and age are found to be associated with individuals who are in informal sector and vice versa. The results also suggest that an individual faces a high relative probability to participate in the formal sector if he/she resides in urban and it reduces as an individual moves to rural. The policy implication is that government should focus on addressing the gender relations as well as strengthening the linkage between informal and formal sector. The supply side policies are undoubtedly required to redress some of the other barriers that individuals, and again usually women, face in entering formal employment. These include policies to tackle gender specific issues, such as the provision of suitable childcare arrangements, which would make it easier for females to enter the labour markets.

Keywords: labour force characteristics, formal and informal sector, occupational choice

1. Introduction

Ugandan labour markets like many others in most of Sub-Saharan African (SSA) are often characterized by dualism and there are large and growing regional inequalities in access to formal (non-agricultural) employment (Klasen, 2004). Increasingly therefore, non-standard employment has emerged to represent a major form of labour market activity for a large number of working Ugandans. In many SSA countries, as in many other developing countries, individuals who participate in labour markets are more likely to be in self-employment or, more generally, informal sector employment (Glick and Sahn, 1997). Yet, despite a growing awareness in the literature that low productive labour force participation in formal employment, is seen as a constraint to economic growth and poverty reduction (Klasen, 2004; Blackden *et al.*, 2006), such concerns have yet to be translated into an in-depth analysis of the socio-economic characteristics of labour force participation in the labour markets in SSA and Uganda in particular.

Although there are several explanations and evidence provided to account for labour market choices for SSA [see for example Schultz and Tansel (1997) for Conakry, Guinea; Lokshin *et al.* (2004) and Atieno and Teal (2006) for Kenya; Cling *et al.* (2007) for the youth labour], a drawback of many of these studies, and one that we address here, is that they provide only a partial analysis of labour markets, either focusing on a specific region (as in Glick and Sahn, 1997) or sector of employment (usually wage employment) and none explores the determinants of labour force participation in the formal, informal and non-participation. Surprisingly, no single extensive study has focused on Ugandan labour markets and more specifically on the socio-economic characteristics of labour force participation. This is all the more surprising in the context of Uganda in particular where employment levels have changed from sector to another over time.

In addition, a lack of detailed labour force participation analysis for Uganda means that findings of many of these studies are based on administrative reports from the surveys that have been so far conducted. However, perhaps more than most regions, labour markets in Uganda particularly have undoubtedly changed considerably since then, especially with respect to the labour force participation (occupational choice). But more importantly, the

growing lack of functional health facilities, post-conflict situation the country has witnessed, has meant that the country has been affected and therefore impacting heavily on labour force participation. However, detailed studies focusing on labour force participation has not attracted much attention in Uganda and yet from a policy perspective, understanding its role is critical in the growth process and further reduction in poverty levels.

This paper therefore seeks to address these apparent gaps. Here we examine labour market participation using data from the Uganda National Service Delivery Survey (UNDS), 2008. In doing so, we investigate the determinants of labour force participation with a more focus on the socio-economic characteristics.

Our focus on Uganda is motivated by three main reasons. First, the country is characterized by mixed participation in the labour but a growing informal sector. The analysis in this paper indicates that only 46.8% of males participate in the labour markets, compared with approximately 53.2% for that of females. Also despite being relatively well known, within the development literature, for its strong economic growth performance over the years that has led to a sharp fall in poverty, economic growth and poverty reduction have recently slowed. In reorganization of these factors, the Ugandan government has highlighted in several recent policy documents the importance of generating further economic growth and poverty reduction by creating new jobs through increased private investment. This stance indicates a move to a new phase of development policy focus which this study will contribute through ascertaining the current labour force participation in the Uganda labour market.

The remainder of this paper is organized as follows: Section 2 provides a description of the data. In section 3 and 4, we outline the modeling framework associated with analyzing participation and sector of employment, and outline the main empirical results. Finally section 5 concludes and places the findings into a policy perspective.

2. Insights into Labour Market Participation: The Data Description

2.1 Data Source

The insights into labour market participation can adequately be explained by the set data prepared by Uganda Bureau of Statistics (UBOS) under different objectives. Uganda is therefore particularly rich in micro-data; four national household surveys have been conducted since 1989. This paper uses data from the 2008/09 UNDS, which is a multipurpose study design to elicit information on individual, community, district and households, health service accessibility, agriculture and the economic position of a representative sample of households. Data collected at the individual, household and community level, therefore allowing for individual-level independence of socio-economic characteristics. Given the labour market participation focus of this paper, we restrict our sample to working aged adults, i.e., those aged between 15 and 65 at the date of interview, which leaves us with 13,017 individuals (5,923 females and 7,094 males).

The 2008/09 UNDS is a rich data set for looking at labour participation decisions. Interviews are asked on detailed questions concerning their usual economic activity including, 'what is the [name] employment status?' Here we classify respondents as being in formal sector if they define their usual economic activity as that of a permanent or temporary government or private sector worker, where as respondents are classified as being in informal sector if they define their usual economic status as that of an employer or own account worker or unpaid family worker. Finally, we classify and those who are not usually active as non- participants.

2.2 Variable Specification

The dependent variable is the labour force participation that is defined as the individuals who are choose to be employed in the informal or formal sector or remain inactive (non-participation). Furthermore, the explanatory variables include (1) individual characteristics variables: age, sex, marital status, education, residence, household size, access to infrastructure (various types of road), region. In particular, the main limitation of the UNDS is that no data on earnings or willingness to pay for extension services that

would have enabled us to make analysis into the earning of individuals. As a consequence, access to infrastructure as a proxy for participation in the formal activities has been used.

2.3 Summary Statistics

This study uses the data and variables described above to analyse the labour force participation in Uganda. A full definition of the variables and summary statistics of the sample are given in Table 1 and 2 respectively.

3. Preliminary Results

This section provides a list of the variables used in this paper together with their summary statistics as presented in Table 1. The composition of labour force has remained the same although changing slowly over the years. Currently Uganda is characterized by small gender differences in labour market participation. Only 54.5% of the males participate in the labour market, compared with 45.5% for that of females. Disaggregating participation by economic activity (Table 3), we see that the majority of labour market participants are engaged in own account employment which accounts for 58.1%, while 22.6% for unpaid family worker. For both sexes, private employment takes only 14.1% and only 3.9% accounts for government employment in sample as shown in Table 3. In contrast, the analysis indicates that only 0.8% accounts for those who did not work and yet they had a job. However, on marital status married individuals' participation accounts for 72.9%, 16.3% for singles and 6.5% for the divorced/separated and lastly 4.3% for the widowed.

Table 1: Percentage of Individual in the Labour Market by Employment Sector and Gender

Variable	Percentage(n= 13,017)
Sex	
Male	54.5
Female	45.5
Marital status	
Married	72.9
Single	16.3
Divorced/separated	6.5
Widowed	4.3
Education level	
None	1.8

P1-p4	27.7
P5-p7	42.8
O' level	18.1
A' level	3.3
Tertiary	6.4
Residence	
Urban	10.6
Peri-urban	4.4
Rural	85.0
Region	
Kampala	5.5
Central	24.0
Eastern	26.2
Northern	18.2
Western	26.2
Household size	
1-2	18.2
3-4	24.6
5-6	26.5
7+	30.7
Age	
15-24	25.4
25-34	33.5
35-44	22.6
45-54	12.3
55+	6.2

Disaggregating participation further in employment status (Table 3), we see that informal sector accounts for the biggest share in the sample under study with 81.5%, 18.5% for the formal sector. This signifies that the informal sector is significant plays a vital role in the welfare of the majority people in Ugandan. However, the country is faced with limited access to trunk roads both tarmac and murrum as only 4.5% of the individuals in this study has access to tarmac and 7.4% to murrum. The evidence in table 2 provides an insight into the limited road network in Uganda and this is consistent with other studies on public expenditure tracking in roads (Nyende and Nabiddo, 2010).

Table 2: Access to infrastructure and means of transport frequently used

Variable	Percentage(n=13,017)
Roads	
Trunk road(tarmac)	4.5

Trunk road (murrum)	7.4
Feeder road	23.4
Community road	64.7
Means of transport	
Walking	98.3
Bicycle	1.2
Motorcycle	0.2
Boat	0.2
Other	0.1

The descriptive analysis indicates that the majority of individuals are employed in agriculture and fisheries sector and accounts for 66.5% while service and sales workers take only 15.2%. Surprisingly the professionals account for 1.5% as well as 4.5% for technicians and associate professionals. This broadly indicates that the human capital development is still low and this requires an immediate attention.

Table 3: Employment Status and the Participation Rates in the Various Sectors

Variable	Percentage (n=13,017)
Main activity	
Employer	0.5
Own account worker	58.1
Government employee	3.9
Private employee	14.1
Unpaid family worker	22.6
Has job/enterprise but did not work	0.8
Main employment	
Agriculture, forestry	67.4
Fisheries	1.5
Mining and quarrying	0.4
Manufacturing	2.8
Electricity ,gas and water	0.3
Construction	2.1
Sales and services	14.2
Hotels and restaurants	1.4
Transport, storage and communication	3.0
Public administration	1.0
Education	3.7
Health and social work	1.3
Financial intermediation	0.3
Other	0.7
Current occupation	

Legislators and managers	0.3
Professionals	1.5
Technicians and associate professionals	4.2
Clerks	0.4
Services and sales workers	15.2
Agriculture and fisheries	66.5
Crafts and related workers	2.5
Plant and machinery operators and assemble	1.4
Elementary occupation	7.6
Armed forces	0.4
Sector	
Informal	81.5
Formal	18.5

3.0 Theoretical /Conceptual framework

The major concepts in this research include: informal and formal sector, labour force, and employment status. The conceptualization of these in the existing literature on labour market issues tends to follow a standard approach. Under this conceptual frame work, informal sector is defined as small-scale businesses, usually with self-employment activities, with or without hired labour. They operate with low level of organization, low capital, low technology and often on temporary premises. Usually, they are not supported by formal financing institutions, and are not usually registered in government (ILO, 2002: 12). The distinction between formal/informal has become standard way to characterize labour markets in developing countries. The formal sector is subject to regulation, wages are paid on regular basis, taxes are levied and explicit contracts between employers and workers exist. The informal sector is not subject to government regulation and is dominated by one person firms and small enterprises that employ few apprentices or hired laborers. The exact definition is arbitrary to some extent but depends on the specific research but for this study, ILO, (2002) is adopted.

Labour force refers to economically active population or labour force is defined as persons aged 14-64 years, who are either employed or unemployed during the last seven days. It includes: employers, own account works/self-employed persons/commissioned agents, employees and salaried employees and wage earners, paid family workers, unpaid family workers, members of producers co-operatives and persons not classifiable by status (ILO,

2002: 12). However, in this particular study, the paper considered the age between 15-65 years.

Broadly, employment status refers to the status of an economically active person with respect to his/her position at his/her place of work and his/her mode of enumeration (ILO, 2002: 12). The under-employment, conceptualization involves identifying individuals who are willing and available to work additional hours and who worked less than a threshold (nationally set) relating to working time while for any given working age population, the unemployed are measured by those who have no jobs in a reference period (usually a week or so prior to the labour survey date) but have been actively looking for a job (ILO, 2002).

The theoretical framework adopted in this study is a household production model introduced by Becker (1965) and later developed by De Tray (1973), Rosenzweig and Evenson (1977). In this tradition and motivated by the Becker-type household models, we use a general utility maximizing framework to model the labour force participation and occupational choice. At the heart of the theory, each household or individual is seen as seeking to maximize its utility which is based on the choices made among the alternatives. It further states that the utility an individual derives from a particular occupation depends upon the individual characteristics, the wage he or she receives on the job, and the characteristics of the job:

$$u_{ij} = u(x_i, w_j, z_j) \dots\dots\dots (1)$$

Where, i indexes individuals and j indexes occupations. The wage an individual receives in occupation j is a function of the same (or subset of) individual (x_i) and job (z_j) characteristics as in equation below:

$$w_{ij} = f(x_i, z_j) \dots\dots\dots (2)$$

Substituting the wage equation (i), assuming a linear functional form, and adding an independently and identically distributed with type 1 extreme value distribution disturbance term yields:

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$$u_{ij} = \beta X_i + \alpha z_j + \varepsilon_{ij} \dots\dots\dots(3)$$

An individual will choose among j occupations the one that yields the highest utility.

$$u_{ij} = u_{ik} \forall k \neq j \dots\dots\dots(4)$$

Accordingly, the literature reviewed identifies explanatory variables in the occupational choice equation and include: age, education, area of residence, number of dependants, access to infrastructure, sex, marital status, region, and household size. However, income/wage is eliminated because of its sensitivity as studies with income as a variable have met resistance in Uganda.

Given the multiple nature of responses an easy modeling strategy is to estimate multiple choice models (logit model) to capture the influence of socio-economic variables on household decision. To assess the socio-economic characteristics that are associated with occupational choice, a multinomial logistic regression model was therefore fitted with sex, education level, residence, marital status, region, distance, household size and age as the independents variable and labour force participation as the dependent variable. Labour force participation is defined in two categories: participating in the formal sector and in the informal sector.

The *t* statistic was used to assess the significance of association between each of the socio-economic characteristics and labour force participation. The model takes the following form:

$$\log\left(\frac{p_{ij}}{p_{1j}}\right) = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \dots\dots\dots + b_kx_k + \varepsilon_i \dots\dots\dots(2)$$

Where

b_i coefficients to be estimated for each of the variables.

x_i socio-economic characteristics i.e. age, education level, marital status, sex, residence, household size, access to infrastructure and region.

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p_{ij} Probability of the i^{th} labour sector (i = formal, and informal).

p_{1j} Probability of non-participation in the labour force.

Dummy variable were created for the different levels of categorical variables (sex, marital status, education level, region, and residence). The parameters e^{b_i} were interpreted as the relative probability of participating in the one labour sector rather than no participation for each of the socio-economic factors.

4.0 Estimation Results of Labour Force Participation (Occupational Choice)

We turn to examine the choice that individuals make between the two types of employment that characterize Uganda: formal and informal sector employment. This is of particular interest in the context of Uganda where informal sector is growing and has become a dominant provision of employment, particularly among women. The results of the occupational choice model, separated by the two sectors, are reported in Table 4. Labour activity choice depends on a mix of individual socio-economic characteristics. In our sample, women are much more likely than men to participate in any labour activity. In Uganda the majority of women remain largely employed in informal activities especially the agriculture and fisheries sector. It is now evident that for the welfare of the women to improve, alternative support should be extended to those sectors where women are the majority providers of labour.

The descriptive statistics from Table 1 indicate that Kampala accounts for only 5.5% in the sample of 13,017 under this study, 24.0% for central, 26.2% for Eastern, 18.2% for Northern and 26.2% in Western region. Besides regional labour force distribution in the sample, other individual characteristics are clearly important in the choice of labour activity. The results of the multinomial selection equation used in the estimation of the regression reported in Table 4 considered only those from 15-65 years. The results reported are for formal sector and informal labour participants. The estimation results suggests that age positively affects the probability of participation in formal and informal sector as compared to non-participation, although, as expected, this effect in formal employment decreases as age increases. The average years of schooling of the reference

individual raises his/her probability of working both in formal and informal sectors than remaining non-active.

In terms of marital status, Table 4 reveals that individuals who are never married are more likely to participate in the formal sector employment as compared to those who are married. Once gain the labour market differs significantly especially among the unmarried ones. The disaggregation of the data in Table 4 indicates that single women are in general stand higher chances to work in the formal sector than the married ones and their probability is greater as compared to divorced and widowed. Working in formal sector particularly the singles is considered more compatible as its relative probability is 1.83 in the formal sector as compared to only 1.6 for those separated as well as 1.0 widowed.

While further analysis is needed as to why women are segregated in low paying (informal sector), the first obvious observation is that the activities do not require highly skilled labour. The fact that women do not get equal access to education therefore seems to restrict them to informal sector with low productivity and low wages. As already indicated in the analysis, occupation is one of the most important factors that accounts for the male-female gap. Further information and analysis are needed to identify areas of labour market reform in such a way that barriers against married, widowed or divorced women can be reduced substantially and gradually eliminated.

Table 4: Regression results of the Socio-economic Characteristics of Labour force Participation

Variable	Includes Kampala region		Excludes Kampala region	
	Odds ratios	p-value	Odds ratios	p-value
Sex				
Male	3.08	<0.001**	3.17	<0.001**
^R Female	1.00		1.00	
Marital status				
Married	1.00	0.983	1.01	0.970
Single	1.83	0.002**	1.85	0.003**
Divorced/separated	1.65	0.011**	1.61	0.026**
^R Widowed	1.00		1.00	
Education level				
^R None	1.00		1.00	
P1-p4	0.66	0.036**	0.71	0.105
P5-p7	0.68	0.047**	0.71	0.099
O' level	1.08	0.705	1.12	0.606
A' level	3.11	<0.001**	3.80	<0.001**
Tertiary	12.90	<0.001**	15.98	<0.001**
Residence				

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^R Urban	1.00		1.00	
Peri-urban	0.67	0.004**	0.67	0.004**
Rural	0.29	<0.001**	0.29	<0.001**
Region				
^R Kampala	1.00			
Central	1.32	0.041**		
Eastern	0.73	0.024**	0.55	<0.001**
Northern	0.61	<0.001**	0.45	<0.001**
Western	1.56	0.001**	1.19	0.018**
Household size				
^R 1-2	1.00			
3-4	0.90	0.177	0.90	0.212
5-6	0.91	0.230	0.90	0.224
7+	1.01	0.930	1.04	0.621
Age				
^R 15-24	1.00			
25-34	1.02	0.779	1.06	0.450
35-44	0.91	0.270	0.95	0.547
45-54	0.72	0.003**	0.77	0.018**
55+	0.60	<0.001**	0.59	<0.001**
Distance to nearest road				
^R <=2km	1.00		1.00	
2.1-5km	0.75	<0.001**	0.75	<0.001**
5+km	0.55	<0.001**	0.55	<0.001**

Age which could reflect the effects of human capital investment therefore has a positive effect on labour force participation with greater effect in the formal sector. The effect of age indicates that older workers are more experienced and thus more likely to obtain a job in the formal sector. In terms of the effect of education on sectoral choice, both A' level and tertiary exert a statistically significant effect on the probability of finding employment in the formal sector (at 1% level of significance) while their effect is low in the formal sector for lower and upper primary category. The level of education therefore significantly influences the likelihood of labour force participation and the higher the level of education, the more likely the person is likely to participate in the formal sector activities.

It is also evident that residence in peri-urban puts an individual in a better position to participate in a formal sector than the informal one. This means that individuals residing in urban areas have lower relative probability of participating in informal employment than those in peri-urban. In support of this argument is also a fact that most women who are employed in the informal sector need more support to make them compete favorably with males where the majority is actively involved. Besides, the household size is not significant in influencing occupational choice.

Labour markets in the four regions are different in many respects. In Table 4, the reference category is Kampala in the first analysis and central in the second one. The idea is to determine whether there is any effect of Kampala on the overall analysis. The results indicate that formal employment is low in the Northern and Eastern as compared to Western where the probability is as high 1.56. The Northern region is far behind the Eastern in terms of employment chances in the formal sector and this is true more particularly in the observed poverty and income inequality levels in the two regions.

Conclusion and Policy Implications

This paper has examined the main socio-economic characteristics associated with formal and informal sector employment during a phase of tremendous increase in the female participation, improved education attainment and a significant shift from formal to informal sector employment. In the analysis, conditional on labour force, the paper has examined the role played various factors (human capital and individual characteristics) in influencing the sorting of individuals into different sectors of employment in Uganda's labour market.

It has also examined whether factors influencing the location of individuals in different sectors change over time and differences across marital status as well as males and females and thus adds knowledge to an understanding of differences in job attainment in Uganda labour market. The paper further shed light also on the factors important for job attainment among married individuals as the increase in female participation is due to influx into the labour market and policies that have been put in place to emancipate women into development. This paper, in an attempt to add to this growing literature, sought to model labour force participation (occupational choice) in Uganda with a focus on socio-economic characteristics using demographically enriched Uganda national service delivery survey data set 2008/09.

The Ugandan labour force has a low level of human capital with most people having completed only elementary schooling. It is evident that experience and education are therefore highly valued in the formal sector-results highlights an enormous magnitude of education in particular although its outcome across marital status and sectors is mixed. A

comparison of samples reveals a rising positive effect of education particularly A' level and tertiary and its outstanding bearing on informal sector employment. A further important finding is that formal sector appears much more important for males than females. However, education had clearly an important findings in the changes of women's level of employment although it is slightly lower than males.

Given the current concerns about the plight of women in the country, it can be argued that providing them with further education would be a useful investment and good mechanism for realization of their empowerment. With an enhancement in their human capital, they will be better equipped to participate in a more productive way in the labour market. This process appears to be in motion, and the gender gap in education is closing as evidenced from regression results. The implication of this is that as more females get education and acquire more skills, they will increase their employability in the formal labour markets, with favorable impacts on their perceptions of ideal family size and fertility preference. It is important, however, to ensure that educational gains are sustained.

In conclusion, this paper clearly continues to highlight the need to focus on education and gender as a priority for achieving economic growth and ensuring that individuals (and especially women) enter the labour market. However, other supply side policies are undoubtedly required to redress some of the other barriers that individuals, and again usually women, face in entering formal employment. These include policies to tackle gender specific issues, such as the provision of suitable childcare arrangements, which would make it easier for females to enter the labour markets.

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