



## Gender, Regulation Efficiency and Informal Employment in Sub-Saharan Africa

Rashidat Sumbola Akande<sup>1</sup>, Hauwa K. K. Abdul Kareem<sup>2</sup>, Taofeekat T. Sulaimon<sup>3</sup>

<sup>1</sup> Kwara State University, Malete, Nigeria  
Email: [sumbolakande@gmail.com](mailto:sumbolakande@gmail.com)

<sup>2</sup> Kwara State University, Malete, Nigeria  
Email: [hkay.kay@gmail.com](mailto:hkay.kay@gmail.com)

<sup>3</sup> Kwara State University, Malete, Nigeria  
Email: [staofeekat@yahoo.com](mailto:staofeekat@yahoo.com)

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### ABSTRACT

Regulation efficiency is essential in addressing the growing informal sector in developing countries because informality thrives with an inefficient legal and regulatory framework of an economy. This paper, therefore, seeks to explore the effect of regulations on informal employment across a panel of 36 sub-Saharan Africa from 2005 to 2018. The study includes both the business and labour aspect of regulation to analyse the effect. The fixed effect and GMM method of panel regression analysis was adopted to achieve the objective of the study. The result suggests that an increase in labour regulation efficiency is associated with a reduction in informal employment while there exists no significant relationship between efficient business regulation and informal employment. The study further investigates how the effect affects both genders, and the output suggests that efficient labour regulation is gender-specific, as the result is only consistent for the male. It is therefore imperative to incorporate more female gender-specific incentives in the social and labour regulations to compensate for the imbalance social roles of women that may affect their choice to work in the formal or informal sector.

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Corresponding Author's Email: [sumbolakande@gmail.com](mailto:sumbolakande@gmail.com)

## 1. Introduction

Regulation efficiency continues to be a vital issue of debate regarding the origins and means of confronting the growing informal economy. This highly debatable contest arises from distinct strands of thought as to the benefits of regulation and deregulation. While it is commonly argued that regulation is required to correct some imperfection and achieve redistribution, economic efficiency may be hindered due to the extra cost on firms, which eventually fuels informality. Volchik and Maslyukova(2019) therefore, regard informality as distinct employment settings arising from institutional and regulatory concerns. According to Loayza, Oviedo, & Servén(2005), the absence of close monitoring and compliance increases the incentive for firms to operate outside the regulatory framework of the economy. This issue is especially common in developing economies without the necessary institutions that will ensure adequate compliance of a corrective regulation. Informality can, therefore, arise as a result of rigidity caused by the regulatory process, which increases the incentive for firms to evade regulation in the absence of perfect monitoring.

The regulations affecting informality can be viewed from the labour and business perspective, labour regulations can increase the cost of labour and hence, the cost of production. In Schneider and Enste(2000), the associated cost of labour regulation to firms can be shifted to the employees, thereby providing an incentive for firms to operate informally in order to avoid such cost. Similarly, Business regulation can increase the cost of entry for firms,

especially in the case of corruption and bureaucracy in the registration and entry process. Such bureaucracies can discourage small businesses, trying to startup and would rather operate informally. It is important to note that a targeted regulation may be used to correct market failure if compliance is encouraged and monitored. In other words, the quality of regulation is as important as its presence for its effectiveness. Better institutions plays a crucial role in the formation of the informal sector because they monitor the regulatory systems and ensure compliance (Alhola, 2020). A lack of political will or absence of political institutions to support the efficient functioning of the market would lead to inefficient allocation of resources among economic agents.

Furthermore, excessive and inefficient regulation can widen the gender gap in the labour market participation in the disfavour of women (Malta, Kolovich, Leyva & Tavares, 2019; Newton, 2018), given women's disadvantaged position in access to productive resources and less participation in paid employment (Ogando et al., 2017). According to Chen (2001), the percentage of women working in the informal sector is more significant than that of the men in developing countries and most of them are either self-employed or contributing family workers. A reason may be because the traditional role of women as home keepers limits their participation in formal jobs that would require sacrificing that role, so they would rather work informally when necessary. Excessive and unmonitored regulation can influence the gender composition of informal sector participation, as women are more vulnerable to the incidence of informality (Chen, 2014).

This study, therefore, seeks to examine the effects of regulation on informality in Sub-Saharan Africa. As a contribution to existing studies, the study explored the business and labour aspects of regulation to understand their impact on the size of informality. The study further breaks informality into its gender components to establish the magnitude of these effects on the genders. The rest of the paper is organized as follows - Section two gives the literature review, section three presents the methodology, section four presents the results and discussion, and the last section presents the conclusion and recommendations.

## **2. Literature Review**

Several theories have been put forward to hypothesize the reasons, scale and variations of the informal economy of which four competing perspectives can be identified. These are the Modernisation Theory (low governance quality and economic underdevelopment), the Neo-Liberal Theory (high interference by the government), Political Economy Theory (too little intervention by the government) and Institutional Theory (formal institutions' inconsistent rules and regulations as well as informal institutions' norms, beliefs and values).

Starting with the Modernisation theory, it postulates that while the formal sector is huge and expanding, the informal sector is shrinking and disappearing. This theory was the leading hypothesis for the informal economy in the twentieth century as the existences of entrepreneurs in the informal sector are regarded as remainders of a pre-modern system (Williams & Kedir, 2018). Therefore, the existence of the informal sector in a country is seen as an indicator of economic underdevelopment and the fact that the governance system is not modernized (Lewis, 1959). The theory, therefore, posits that the informal sector will be larger in less developed economies and in nations where they have less modern bureaucracies. While the former is measured in terms of GDP per capita, the latter uses the prevalence of corruption in the public sector.

The central thesis of the neo-liberal theory is that high government interference in the market pushes entrepreneurs to leave formal employment given the efforts, costs and time it takes to follow the bureaucratic procedures imposed by the government on private businesses (London & Hart, 2004). This transition from formal to informal sector is, therefore, regarded as a rational economic decision. By non-registration, entrepreneurs can circumvent the usually onerous laws, over-regulation and high taxes imposed by the government (Williams & Kedir, 2018). Hence, high non-registration of business ventures at start-up is hypothesized to be dominant in countries with high government interference and high taxes.

The third theory, which is the political economy theory, however, goes contrary to the neo-liberal theory as it regards high rate of non-registration of business ventures as a consequence of too little government intervention in the economy, in social transfer and protection systems. In this situation, subcontracting and outsourcing will become the method adopted to reduce cost in an open economy that is highly deregulated (Aliyev, 2015). Hence, the model hypothesized that the informal sector exists as a result of unregulated market and the emergence of perilous jobs which are low waged, survival-driven and has no place within the formal sector (Dibbenet *al.*, 2015). Thus, the level of informality in a country will be higher the lower the level of state regulations aimed at protecting citizens and employees (Slavnic, 2010).

The above theories are, however criticised for not putting agency into consideration, which is what accounts for the reason some entrepreneurs set up businesses in the informal economy of a country while others do not (Williams & Kedir, 2018). This area is an aspect the institutional theory sought to address by positing that every country has both formal and informal institutions, which constitute the rules of the game and guide and inform societal attitudes. The formal institutions encompass the rules and regulations and are the formal regulations while the informal institutions are the social customs, beliefs and norms guiding what is considered right and appropriate (Helmke & Levitsky, 2004). Thus, informal entrepreneurship operates in the informal institutions, although outside the formal regulations but within the informal 'rules'.

Empirically, Malta, et al., (2019) in their cross-country analysis of gender gaps and female involvement in informal employment using probit models found legal framework barriers among other factors to influence female involvement in informal employment. The probability of working in the informal sector had 8.5% incremental impact with being a woman. A similar result was obtained by Newton (2018) who examined the influencing factors for higher female participation in the informal labour market. The study revealed legal regulations as a major culprit alongside societal factors and fertility rates. Contrastingly, the gender sensitivity of the regulatory impact assessment was investigated by Staronova, Hejzlarova and Hondlikova (2017) in the Czech Republic and Slovakia. The study, therefore, analysed data from 671 Regulatory Impact Assessment (RIAs) for the period between 2007 and 2015. The findings indicated that regulations were gender 'blind' as gender invisibility persisted.

Similarly, Jamleck, Kerre, Kalei and Irungu (2015) attempted to study the effect of labour laws in Kenya on gender inequalities in selected Kenyan industries and trade unions. The study adopted a descriptive survey approach by gathering data from a sample of 360 operational management and union through the use of questionnaires and interviews. Secondary data from organisational records were also used to augment the primary data. With the help of descriptive analysis, the study analysed data collected through ratios, simple percentages and frequency. Results showed that gender inequalities are still prevalent in Kenyan organisations as labour laws lack the capacity of creating gender equality in Kenyan organisations and unions.

The effect of labour market regulation on employment and gender in Low-Income Countries (LICs) was examined by Nataraj, Perez-Arce, Srinivasan and Kumar (2011). Regulations on minimum wage, unionization, employment protection, dispute resolution, firing policies, unemployment benefits, among others were considered in the study. The study did a systematic review of literature in the subject area on LICs, which had to be augmented with LICs' lessons from experience given the scant literature available. The experience uncovered and data gathered from there were analysed using a synthesised framework and a meta-regression analysis, respectively. Conclusions of the study were that there exists a negative association between regulations and formal sector employment as can be observed with minimum wage and employment. A positive effect was, however, found between regulations and informal sector employment while the relationship with gender is unclear.

Hampel-Milagrosa (2011) assessed the role of regulation, gender and culture in doing business with a case study of Ghana. The study employed World Bank's four major areas of regulation which comprises starting business regulation, property registration, accessing finance and tax payment as well as worker's employment. Starting an enterprise, running an enterprise and finding formal employment were the women's capacities indicators considered

in the study. Using both cross-sectional and case study approach, 303 entrepreneurs were sampled for the former while 21 female entrepreneurs and 14 entrepreneurs and labour experts were selected for the latter. It was revealed that regulations within the 'running an enterprise' category are not gender-specific while difficulty in access to finance affects both genders with women having more significant challenges than the men because they do not have their names on assets. Tax regulation was also seen not to discriminate against women while formal employers are not usually disposed to employing women given their childbearing and household responsibilities.

Away from the gender analysis, exploring the position that corruption, government intervention and taxes high rate of taxation are responsible for informal employment, Williams(2015) found that this position not hold true. Informal employment was rather seen to be directly related to increased regulation. Using cross section data of 1,027 samples Windebank and Horodnic(2016) explain informal employment as the resulting consequences of deviations between social morality and state morality. Cooke (2008) examined the extent to which workers are protected in relation to labour market regulations and informal employment in China. Adopting an exploratory approach, the study assessed how labour market regulations help to shape different employment arrangement and organisation, regulations, representation, outcome and implications in the informal economy. In this light, the study argued that the primary source of employment in China is the informal sector; a trend which appears to hold for the foreseeable future. The author concluded from the exploratory analysis that the informal sector would continue to be worse off due to the prevailing inefficiency in enforcing labour market regulations.

Furthermore, Fagernäs (2007) investigated the effect of labour law and judicial efficiency on informal employment. The study employed the pro-worker court award, court efficiency as well as amendments to the Industrial Disputes Act (IDA) in India states, which are under the category of pro-employer and enforcement improving. To achieve the objectives set out in the research, three approaches were adopted to collect data namely quasi panel household survey data from 1983 to 1999, a formal industry panel data from 1980 to 1990 and lastly, a cross-sectional survey data from the informal economy for 2000/2001. The data gathered was analysed using Probit analysis, the results of which indicated that judicial efficiency is more consistent with the formal sector. The study concluded that policies to promote the formal economy should also consider education, social position, and personal background as these factors were found to be significant with the type of employment.

From the foregoing review, it can be observed that while the effect of labour laws and regulations on the informal sector have been reasonably explored in the literature, the efficiency of these regulations has received little or no attention. Also, even though studies such as Staronova, Hejzlarova and Hondlikova (2017) and Jamleck, Kerre, Kalei and Irungu (2015) have affirmed that regulations affect both genders differently, the magnitude of the difference has not been established. These are the two essential gaps this study attempts to fill by examining the effects of regulation efficiency on informal employment and gender in SSA countries. This study, therefore, extends the scope of existing literature on labour market regulation and informal employment by considering regulation efficiency in terms of business freedom and labour freedom. More so, a comparative analysis will also be done to investigate how these regulation efficiency components affect both genders.

### **3. Methodology**

#### **3.1 Model Specification**

Given the literature presented in the previous section, the study is based on the theoretical foundations of institutional theory that explains the links between the formal and informal rules and regulations. Thus, the model of how formal regulations affects the informal employment is specified below.

$$Inf_{it} = \beta_1 BReg + \beta_2 LReg + \beta_3 \ln GDPpc + \beta_4 TaxB + \beta_5 Trade + \beta_6 Unemp + \alpha_i + \varepsilon_{it}$$

Where, *Inf* is the size of informal employment, *BReg* is business regulation, *LReg* is labour regulation, *lnGDPpc* is the log of Gross Domestic Product, per capita, *Trade* is trade openness, and *Unemp* is unemployment rate. The subscript *i* and *t* denotes country and time

respectively,  $\alpha_i$  is the country fixed effect while  $\varepsilon_{it}$  is the error term. The Betas are the coefficient of the explanatory variables. The variables of interest are the measures of regulatory efficiency, that is, labour and business regulations. The other variables included serve as a control for other factors that can affect the size of the informality, and their inclusion is motivated by existing literature on the size of the informal economy. The model for gender disaggregation is given as follows.

$$MInf_{it} = \beta_1 BReg + \beta_2 LReg + \beta_3 \ln GDPpc + \beta_4 TaxB + \beta_5 Trade + \beta_6 Unemp + \alpha_i + \varepsilon_{it}$$

$$FInf_{it} = \beta_1 BReg + \beta_2 LReg + \beta_3 \ln GDPpc + \beta_4 TaxB + \beta_5 Trade + \beta_6 Unemp + \alpha_i + \varepsilon_{it}$$

Where,  $MInf_{it}$  is the male percentage of informal employment, and  $FInf_{it}$  is the female percentage of informal employment. Model two and three seek to check the magnitude of the effects of regulations on the gender percentages of informality. The study adopts the panel regression analysis. It is expected that the two measures of regulation efficiency will have a negative effect on the size of informal employment. The level of output is also expected to have a negative effect, while, tax burden, trade openness and unemployment is expected to have a positive effect on the size of informal employment. For most of the models, the study adopts the fixed and random effect regression model as determined by the Hausmann test. The dynamic panel GMM estimator is also adopted to address possible endogeneity in the size of informal employment. The GMM estimation is done by introducing a one-period lag of the dependent variable.

### 3.2 Data

The dataset is a yearly cross-country panel covering 34 countries in Sub-Saharan Africa for 2005-2019. The countries and year included are selected based on data availability for the variables of interest. The region is selected because available data shows that informality is large in the area and countries in the region have similar socioeconomic issues. Informal employment is measured using the international labour organization (ILO)'s estimate of self-employment as a percentage of total employment. This estimate is commonly used in literature as a measure of informality because it captures the most common form of informal sector activity persisting in developing countries. Data on self-employment is sourced from the World Bank's World Development Indicators (WDI) database.

Regulation efficiency data is sourced from the Heritage Foundation's index of economic freedom. Business regulation measures the efficiency of government in the regulation of business in terms of the procedure, time and cost of starting a business, obtaining a license and closing a business. Labour regulation measures the legal and regulatory framework of a country's labour market. This includes regulations on minimum wages, hiring and firing policies, severance pay and hours of work. The data for the control variables which includes per capita GDP, unemployment and trade openness are sourced from the WDI database, while the data for tax burden is from the Heritage Foundation's index of economic freedom.

### 4. Result and Discussion

Table 1 presents the descriptive statistics of the variables included in the models. The average percentage of informal employment is large in the region, as shown on the table. Although both genders have a high percentage, the male percentage is higher than that of the female for the countries used in the study. Labour and business freedom are 56.1 and 52.7 respectively while tax burden is very large for the region at 72.7% of the GDP.

The result for the first model on the effect of regulation on informal employment is reported in Table 2. The first five columns present the result of the fixed effect regression, while the last column reports the GMM result. The result of the Hausman test for selecting between fixed or random effect is given in Appendix B. The control variables are added one by one into the models to check for the consistency of the effects of regulation on informal employment. For all the models, the coefficient of labour regulation was consistently negative and significant. This result implies that an increase in labour market regulation efficiency is associated with a decrease in the size of informal employment.

**Table 1: Descriptive Statistics**

Variables	Description	Obs.	Mean	Std.dev	Min	Max
<b>Inf</b>	Self-employment (% of employment)	442	70.80	22.29	14.13	94.63
<b>Minf</b>	Male informal employment (% of male employment)	476	78.65	20.96	11.82	99.08
<b>Finf</b>	Female informal employment (% of female employment)	476	66.36	20.42	15.81	92.12
<b>Breg</b>	Business freedom index	476	52.47	12.30	23.4	85
<b>Lreg</b>	Labour freedom index	476	56.11	14.22	21.9	91.4
<b>InGDPpc</b>	Log of real GDP per capita	476	1.96	6.65	-6.74	15.93
<b>Taxbur</b>	Tax burden (% of GDP)	476	72.72	9.78	44.1	92.7
<b>Trade</b>	Trade percentage (% of GDP)	460	73.75	28.80	20.72	165.65
<b>Unemp</b>	Unemployment (% of the labour force)	476	8.11	7.28	0.27	31.92

Similarly, the economic condition, as measured by the level of GDP per capita, is consistently negatively related to the size of informal employment. An increase in per capita output leads to a decrease in the size of informal employment. The coefficient of business regulation produced a conflicting result in terms of signs and significance. It showed a negative effect for some of the outputs and positive for others. Moreover, most of the coefficients are significant at 10%. The relationship between efficient business regulation and informal employment is, therefore, not robust to the inclusion of other variables.

**Table 2: Regression results on the effect of regulations on informal employment**

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	GMM
<b>Breg</b>	-0.03** (-2.39)	-0.02*** (1.83)	0.02*** (1.75)	0.02*** (1.66)	0.02 (1.46)	-0.01 (1.60)
<b>Lreg</b>	-0.10* (-6.59)	-0.09* (6.24)	-0.09* (6.24)	-0.09* (6.01)	-0.08* (5.76)	-0.01** (2.37)
<b>InGDPpc</b>		-4.46* (5.10)	-4.47* (5.11)	-4.33* (4.89)	-4.66* (5.32)	-1.43* (4.44)
<b>Taxbur</b>			-0.01 (0.37)	-0.01 (0.40)	-0.01 (0.40)	0.01 (0.88)
<b>Trade</b>				-0.01 (1.21)	0.01 (1.21)	-0.01** (2.58)
<b>Unemp</b>					-0.22* (3.84)	-0.01 (0.26)
<b>Linf</b>						0.79* (50.85)
<b>R-squared</b>	0.36	0.40	0.40	0.40	0.42	
<b>Obs.</b>	442	442	442	439	439	
<b>F-Test</b>	0.00	0.00	0.00	0.00	0.00	
<b>AR test</b>						0.23

Note: Explanatory note: Column 1 to 5 reports the fixed effect regression as determined by the Hausman test (see Appendix B) while the last column reports the dynamic panel GMM estimator. All regressions include year dummies. The absolute values of the t-statistics are reported in parenthesis. \*, \*\* and \*\*\* denotes 1, 5 and 10% significant levels respectively. Linf is the lag of informal employment

**Table 3: Regression results on the effect of regulations on gender disaggregation of informal employment**

Variables	Male	Male	Female	Female
<b>Breg</b>	0.01 (0.57)	-0.003 (0.19)	0.02 (0.69)	0.02 (0.66)
<b>Lreg</b>	-0.10* (4.39)	-0.09* (3.60)	-0.05 (1.86)	-0.04 (1.32)
<b>InGDPpc</b>		-2.09** (2.37)		-1.78*** (1.95)
<b>Taxbur</b>		0.006 (0.21)		0.04 (1.15)
<b>Trade</b>		-0.02** (2.11)		0.01 (0.64)
<b>Unemp</b>		-0.29* (3.12)		-0.51* (4.93)
<b>R-squared</b>	0.26	0.29	0.20	0.40
<b>Obs.</b>	476	460	476	439
<b>F-Test</b>	0.00	0.00	0.00	0.00

Note: Explanatory note: This table presents the fixed effect regression as determined by the Hausman test (see appendix C). The absolute values of the t-statistics are reported in parenthesis. \*, \*\* and \*\*\* denotes 1, 5 and 10% significant levels respectively

Table 3 presents the result of the fixed effect regression of the effect of gender disaggregation as determined by the Hausman tests in Appendix C. The coefficient of labour regulation efficiency is negative and significant for the male informality as in the first model as

well as the GDP per capita. The result for the female informal employment is, however, different as the two measures of regulation are both insignificant. As a result, regulation efficiency, particularly labour regulation, is gender-specific as it only affects the male. This result is in line with Staronova, Hejzlarova and Hondlikova (2017), which posits that regulation has different effects on the genders.

## 5. Conclusion and Recommendations

This study explores the effect of regulations on informal employment in sub-Saharan Africa for the period of 2005-2018. The study uses both the labour and business regulation efficiency to estimate this effect. The result suggests that improvement in labour regulation is associated with a small size of informal employment, and the result is robust for all the regression reported. The result of the gender analysis suggests that efficient labour regulation is gender-specific as the result is only consistent for the male percentage of informal employment.

The policy implication would mean that policymakers should improve on the efficiency of labour regulation as it discourages people from engaging in informal employment on the aggregate. This may mean that labour protection law, regulations concerning minimum wage, severance pay and hours of work can be improved on to encourage more formal engagement. Regulation on business has no serious effect on informal employment and should not be a focus for policymaker as regards informal employment. Furthermore, other more specific incentives such as maternity leaves, childcare services and flexible work hours can be incorporated into labour and social protection strategy to encourage more women engagement informal jobs. A possible reason for the ineffectiveness of labour regulation on women employment may be because women are indifferent to these regulations; so far, they do not address the family and housekeeping issues. More so, these incentives are important as compensation for the imbalance social roles of women that may affect their choice to work in the formal or informal sector. Finally, all the other factors included in the model for female informal employment were not specific to female; this may be a source of bias in the result. Future research can explore these female-specific factors.

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## Appendix

### A. Countries

Countries included are; Benin, Burkina-Faso, Cape verde, Cameroon, Central African Republic, Chad, Cote d'ivoire, Equatorial Guinea, Estwani, Gambia, Gabon, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Republic of Congo, Rwanda, Senegal, Sierra Leone, South Africa, Tanzania, Togo, Uganda, Zambia and Zimbabwe.

### B. Hausman Tests for the Regressions on the Effect of Regulations on Informal Employment

Model	Statistics	P-value	Decision	Implication
1	20.40	0.000	Reject	Use fixed effect
2	103.00	0.000	Reject	Use fixed effect
3	85.75	0.000	Reject	Use fixed effect
4	86.82	0.000	Reject	Use fixed effect
5	119.09	0.000	Reject	Use fixed effect

Note: Ho: Random effect is consistent

### C. Hausman Tests for the Regressions on the Effect of Regulations on the Gender Disaggregation of Informal Employment

Model	Statistics	P-value	Decision	Implication
1	14.75	0.000	Reject	Use fixed effect
2	57.47	0.000	Reject	Use fixed effect
3	15.70	0.000	Reject	Use fixed effect
4	37.14	0.000	Reject	Use fixed effect

Note: Ho: Random effect is consistent