

# Do Institutions Reduce Gender Discrimination? Evidence from Labor Market Participation Rate in Some Selected African Countries

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## Abstract

The study investigates the role of social-political institutions on gender discrimination and female employment in five selected African countries, Ghana, Cameroon, Botswana, Kenya and Egypt. The methodology used is the quantile regression analysis, which is based on the premise that estimating the conditional sample median will tend to the distributional median allowing us to obtain consistent estimates. Quantile regressions have some obvious advantages over the ordinary least squares estimation technique they include the fact that they are more robust against outliers in the response measurements, it also allows for the measurement of central tendency and statistical dispersion to obtain a comprehensive analysis and finally the recent quantile regression wrapper (qreg) developed by Machado and Silva (2013) allows for obtaining heteroscedastic errors robust estimates. The results of the study show that institutions matter in improving labor market participation rate for men and women in the countries in the sample. The results of the interactive variable also show that institutions actually do not improve the effect of economic policy effectiveness in promoting labor market participation. School enrollment had a higher significant effect on labor market participation rate for women than for men showing that unskilled men are likely to get hired than unskilled women therefore schooling was probably reducing unemployment more among women than in men.

**Keywords:** Gender discrimination, Institutions, Labor Market Participation, Quantile regression

## 1.0 Introduction

The ongoing debate of the effect of the African institutional structure on gender discrimination has generated a lot of heated arguments. According Ojeaga (2012) "Africa continues to account for one of the highest amount of illiterate adults worldwide and has one of the lowest school enrollment rates in the world. Many studies have already shown that institutions in many developing countries are weak see Ross (2001). Africa also recorded the highest number of children deprived of basic education according to Transparency International World report of 2010 conducted among 8500 educators in seven countries" (see UNESCO World report 2010 for details).

Lots of factors also affect the level of female participation in the labor markets in many developing countries particularly in Africa. For instance the perception that the girl child is a potential bride to be married out of the family often deprive females of the numerous advantages, that arise from attaining basic education since many parents often prefer to educate the male child as a matter of priority instead of the females. Issues of wage structure are also a matter of concern; this is likely to affect the percentage of married women that participate in the labor market of many African countries. If the wage structure is such that it can actually cater to the need of the immediate nuclear family it is also likely to affect the level of female participation in the work place. It is also worthy of note that incidences of work wage gender discrimination have decreased considerable over the years in both developed and in developing countries with issues of wage discrimination still prevalent in the middle east, North Africa and South Asia Cuberes and Teignier (2013) and Klausen, Lamanna (2009).

Other issues that have not been previously addressed are issues of self occupation that are prevalent particularly in developing countries with large informal sectors, owing to the fact that women are likely to be home keepers while their male partners are the principal bread winners therefore many married women are likely to take to numerous kind of self employment schemes to support their nuclear families. It is pertinent to say that institutions alone are not likely to be responsible for female labor market participation rate since individual

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country specific social cultural attitude towards female employment and wage rates were likely to have strong effects on labor market participation particularly for females.

This paper investigates the effect of institutions on gender discrimination in Africa. The estimation method relied on is the quantile regression as improved by Machando and Silva (2013). The rest of the paper is divided into the scope and objective of the study, review of literature, stylized facts on gender, institutions and labor market participation, theory and methodology, data and sources, empirical analysis and results and finally the concluding sections.

## 2.0 Scope and Objective of the Study

The study presents empirical evidence on how institutions affect gender discrimination by studying male and female labor market participation rates in the selected five African countries Botswana, Cameroon, Egypt, Ghana and Kenya. The objectives of the study are

- a.) To determine to what extent do institutions matter, in the reduction of gender discrimination through the promotion of labor market participation rate among women in the countries under question.
- b.) To determine the extent to which country specific economic policy promotes labor market participation among women in the selected African countries.
- c.) To determine institutional quality effectiveness in promoting female participation through schooling and the effective implementation of country specific social policies towards education.
- d.) And finally to determine the role of foreign multinationals in the promotion of labor market participation among women particularly unskilled women in the countries under discussion.

## 3.0 Review of Literature

Lots of papers have posited that institutions in Africa are weak see Karl (1997) and Ross (2001). Others argue that the issue of gender discrimination in the labor market has gained enormous importance and have become strategic to policy makers and the international community, stating that the affected women are often deprived of their rights Sen (1999). Few papers if any have actually studied the effect of institutions on gender discrimination in Africa from a labor market participation centric point of view as we do in this paper.

The papers by Aigner and Cain (1977), Jacobsen (1994), Marromas and Rudolph (1997) and Kaufman (2002) identify two basic issues of gender discrimination as:

a.) wage discrimination and b.) employment discrimination. These two factors establish other clearer cases of gender discrimination which include unemployment rate gap between men and women, sex discrimination in employment by sector, share of part time work employment among men and women, fixed term employment and finally average working hours by sexes. Recent studies also shows the gap in wages have not improved over the years. Kandlopoulos and Mavromaras (2002) study the Greek labor market extensively and found wage gaps between the years 1988 and 1994 for the Greece, were detrimental for women by over 5%.

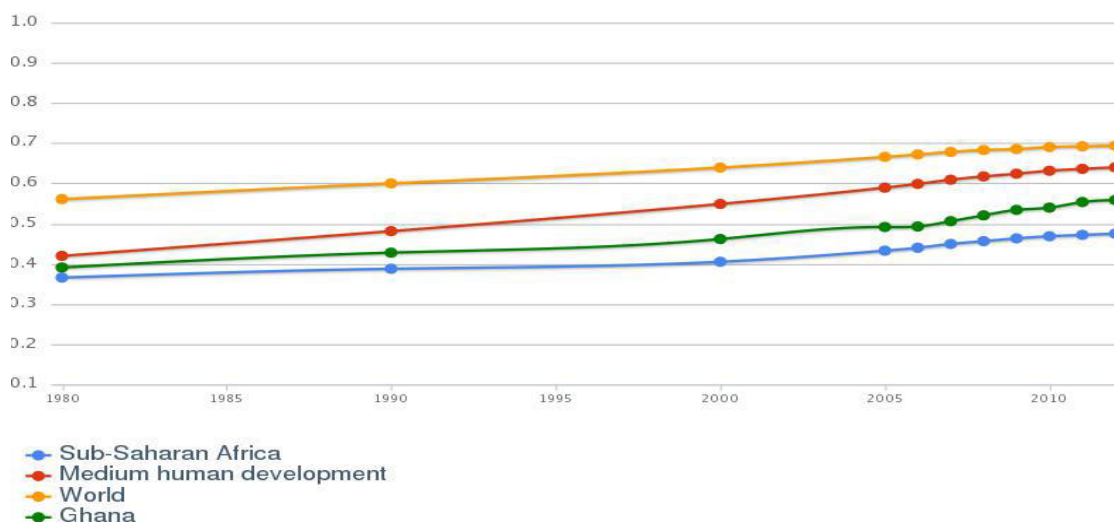
The paper by Dodd, Drakopoulos and Theodossiou (2002) also study gender labor market inequalities in five selected European countries and find improvements in female participation in the labor market. Klasson (1999) reviewed the literature on gender discrimination and find that institutions matter, and that the extent to which institutions affect labor market participation depends on the type of institution under investigation be it social or political.

Cavalcanti and Tavares (2008) study wage gaps after constructing a growth model in which they incorporate male and female labor market contributions to growth and find that a wage gap increase of over 50% leads to a reduction in per capita income and that a huge amount of wage difference in the production output of the United States (US) and other countries was as a result of gender wage discrimination. Esteve and Vogt (2009) after studying occupational choice and talent heterogeneity model extensively find that labor market discrimination leads to lower level of entrepreneurial talent and slow down female human capital accumulation see also Cuberes and Teignier (2013) for a review of the literature on gender discrimination and workplace employment.

#### 4.0 Stylized facts on Gender, Institutions and Labor Market Participation Rate

Recent trends in sub Saharan Africa and the rest of the world suggest that human capital development is steadily on the increase (see figures 1, 2 and 3) except for Egypt in the five countries in our sample( see figure 2 and 3 id 1).

Fig.1. Trends in World, sub Saharan Africa and Ghanaian Medium Human Capital Development.



Source: United Nations and EU statistics 2012

Note: The figure above shows trend in human capital development for Ghana, sub-Saharan Africa and the World. Trends show that human capital has undergone substantial development over years this development involves on the job training for men and women, improvement in basic education worldwide and also provisions for adult education and other remote learning facilities such as on-line learning that has become more accessible to a greater percentage of the World's population.

Global human capital development index has improved quite significantly over the years for females in particular, making the employment of females in general to be more attractive to employers. This has led to an increase in employment rates among females and a reduction in the employment gap between men and women in many African countries. Issues of religion and culture still play significant roles in gender discrimination in many African countries, for example the data for Egypt (attributable to religious disposition of the majority of the population of the country) show that female work place participation is at an all time low. While female participation in the workplace is on the increase it is yet to catch up with the level of male participation in the labor market see figure 2 and 3, therefore the fact that employment discrimination is still strong in many parts of Africa is not in doubt or contention. One of the best ways of reducing the level of employment in many African countries is through the strengthening of institutions. The distributional features of the data used for labor market participation for men, female and total labor market participation in general also show that the distributional characteristics of the data is slightly skewed to the right for men, the left for women and to the left for labor market participation in general see figures 4 to 9 where we include the quantile plots for the study, while the assumption of normality of the distributional characteristics are strong and not in question. This depicts that men have clearly been having a higher participation rate in the labor markets in the countries in our sample. The fact are not farfetched since a host of factors are likely to be responsible for stronger male participation in the workplace some include high wage rates that are likely to make them be able to provide sufficiently for their nuclear families making the females to lack any incentive to take up paid work and most probably a higher level of education among the male population in the countries making it more attractive to hire males than females.

Fig.2.



Fig. 3



Note: The above figures 2 and 3 show the trend in labor market participation rate for men and women over the years. While labor market participation rate continue to remain quite high for men than women, the level for men has experienced substantial decrease in years. Labor market participation rate for women is also steadily on the increase for countries except for women in Egypt (see id 1) and this is affected by country specific effects such as culture and education levels.

Fig 4

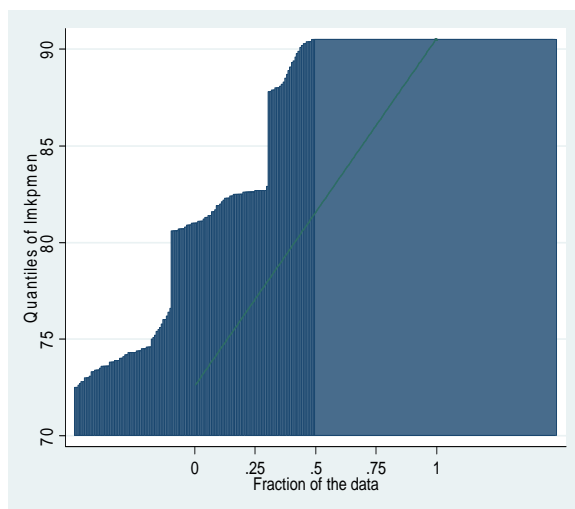
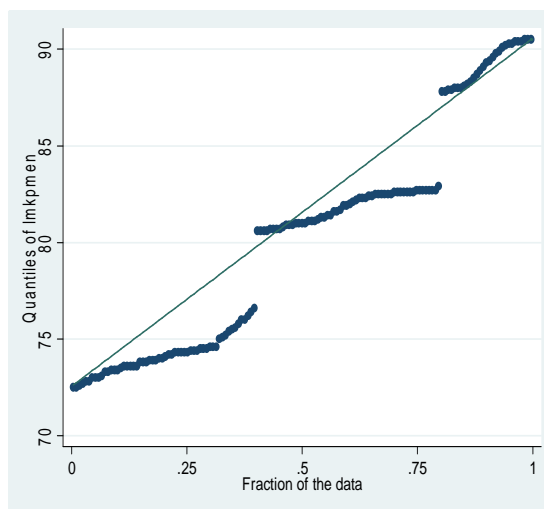


Fig 5



Note: The quantile plots show the apparent skewness in the fraction of the data for labor market participation rate in men. It allows us to explore some of the central tendency effects of the data, it is likely that the relationship between institutions and labor market participation rate will be a positive one if institutions have experienced substantial improvements over years since we experience a slight skewness to the right for the labor market distributional pattern.

Fig 6

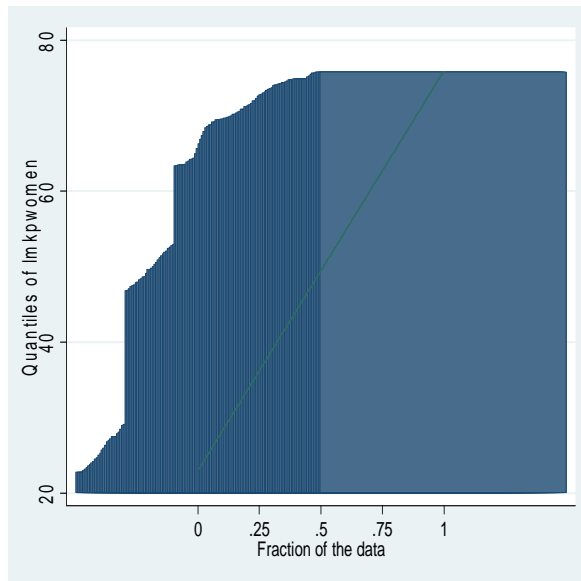
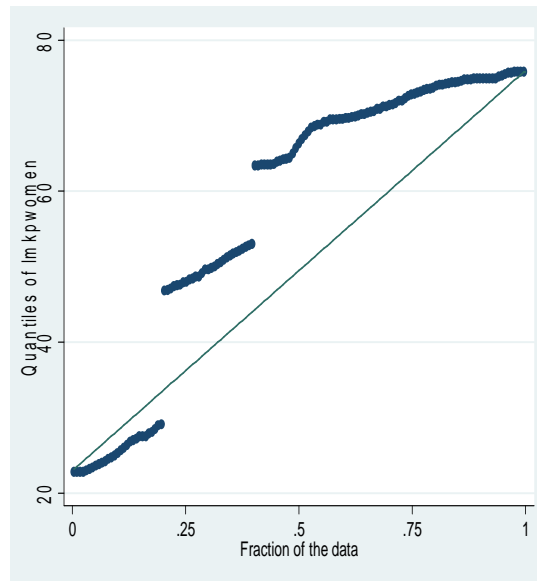


Fig. 7



Note: The quantile plots also show the skewness in the fraction of data for labor market participation rate for women. The data is centrally aligned along quantile line plot although not as close as that for men. It shows that it is likely that institutions will have a positive relationship on labor market participation for women especially since one of the robust qualities of exploiting the quantile estimation method is that it allows for robust estimation against outliers.

Fig.8

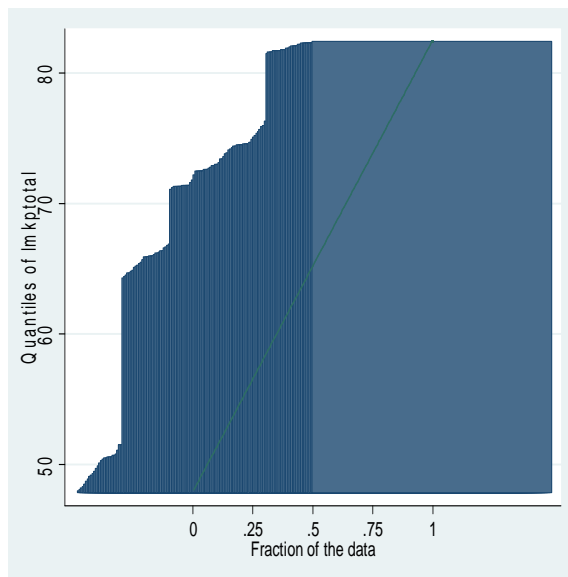
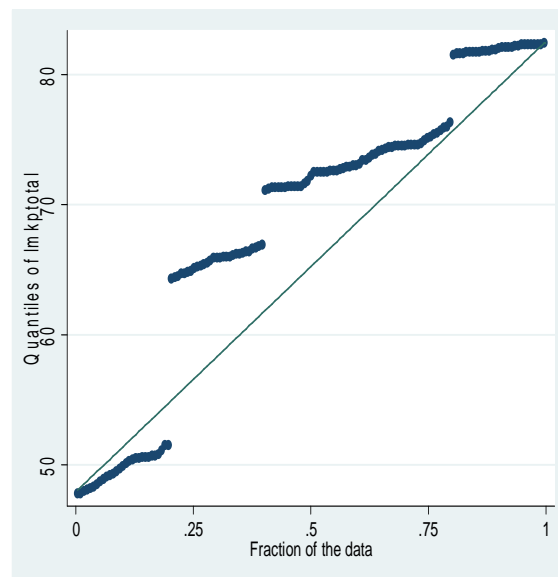


Fig.9



Note: The figure above also show the quantile and quantile line plots for total labor market participation rate in countries. It shows that the data is also centrally aligned along the line plot see fig 9 and there are no substantial outliers. The expectation is also one of a positive relation with institutions over time if institutions have improved.

Institutions on the other hand have seen a significant increase particularly for Ghana see id 5 below in fig 6 and 7. Egypt that has been under constant dictatorship has not seen significant development in its institutions see id 1 fig 10 and 11. Institutions have been on an all time high for African countries like Botswana that have experienced a high level of stability and economic growth over the years. The index for institutions however for

Africa is weak as discussed by past literature the extent of institutional effectiveness in promoting human capital development and growth is one of strong concerns particularly for developing countries where social policies are likely to suffer strong setbacks when implemented through weak institutional structures.

This can be explained in two folds first is the fact that institutions been structures are likely to have no direct effect on gender discrimination without appropriate gender discrimination reduction policies been implemented through national institutions secondly, if there is a high level of corruption in the body polity of a nation leaders are likely to circumvent institutions in the implementation of social polities making institutions to be weak and have virtually no significant effect on social policy implementation.

Fig. 10

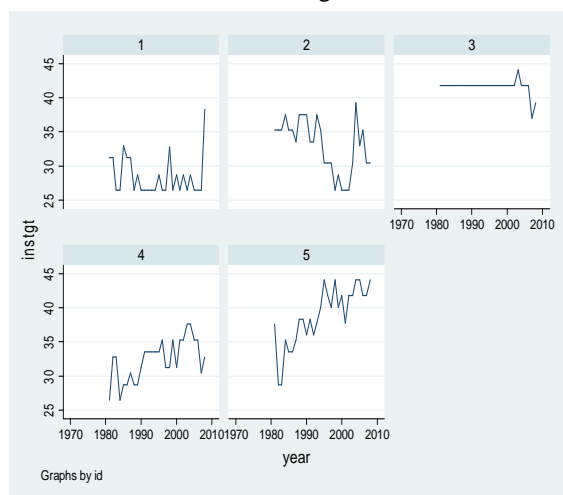
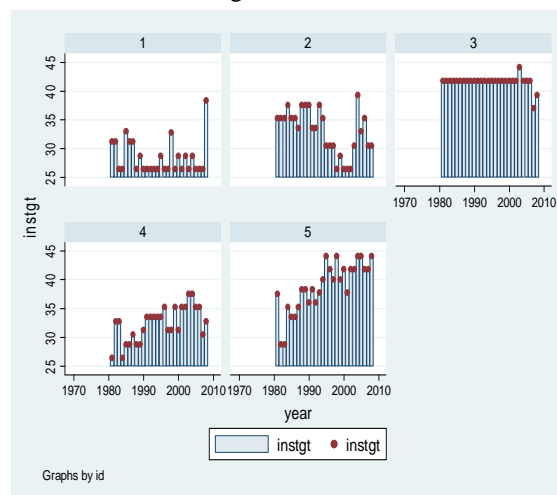


Fig.11



Note: The line graphs and bar plots in figures 10 and 11 shows the trend in institutions in years. It shows there have been significant changes in institutions in years in countries. While this has not be substantial for Egypt see id 1 Botswana has experienced and maintained a high level of institutional quality see id 3. Kenya (see id 2) has not had very good institutional quality owing to political tensions and democratic instability problems while Ghana and Cameroon are experiencing significant improvement in recent years (see id 4 and 5 respectively). With relative improvements in institutions over the years, the expectation is that it will have contributed sufficiently towards gender discrimination reduction. On the other hand it should have also promoted employment conditions in general for workers by protecting workers rights against possible exploitation by employers. The nexus between institutions and labor market participation therefore will be one in which there will be a causal effect either directly or indirectly between institutions and labor market participation which we expect to have special implications for women through the reduction or increase in wages or employment discrimination.

### 5.0 Theory and Methodology

Past scholars have studied the effect of institutions on gender discrimination using the dummy for dominant religion as a measure of social institutions finding that Protestantism led to better education amongst women using OLS see Dollar and Gatti (1999), Ingelhart and Baker (2000), Becker and Woessman (2009, 2010) and Nunn (2011). Dollar and Gatti (1999) and Klasen (2002) also study the impact of political-economic control variables as a measure of institutions on gender discrimination; they find that the logarithm of GDP had a strong significant effect on female employment especially for married women.

Calgary and Ozler (1995), Fontana and Wood (2000), Balliamoune-hutz and McGillvary (2007) used trade openness as a measure of economic policy and find that women are employed in unskilled labor intensive export industries finding a strong significant effect between trade openness and female employment using OLS. In this paper we study the impact of institutions on gender discrimination by considering the institutional effect on male and female employment respectively using a set of social political variables. The method of estimation relied on is the quantile regression, which is based on the premise that the conditional sample median will tend to the distributional median.

The quantile regression estimates have some obvious advantages over the OLS estimates since they are more robust against outliers in the response measurements, it allows us to measure central tendency and statistical dispersion in order to obtain a more comprehensive analysis, it also allows to us to discover more useful and

predictive relationship between two variables since we assume that there is in fact no direct causal relationship between gender discrimination and institutions owing to the likely weak significant effect of institutions on gender discrimination, it is again suitable for estimation of small samples since the bootstrapped quantile regression (bsqreg) wrapper allows for the estimation of resampled regression which allows for the control for misspecification in the regression estimates see Machando and Silva (2013) and finally the estimates are robust in the presence heteroscedastic errors since the quantile regression (qreg2) wrapper implementable in stata 13 allows for the testing of the presence of heteroscedastic errors see Machando and Santos (2013).

The model presented is one in which labor market participation then depends on country specific institutional quality, and other vectors of exogenous variables which include economic policy, foreign direct investment (FDI). GDP per capita, foreign aid (ODA) and school enrollment rates. This can be expressed below as, Labor market participation (LMP) = f (institutions (INS), economic policy (EP), foreign direct investment (FDI), gross domestic product (GDP), foreign aid (ODA) and School enrollment rate (SE))

Based on the aforementioned theory we now make the following proposition

- a.) Institutions are likely to affect labor market participation through the implementation of country specific social economic policy regarding equality in employment in workplaces.
- b.) The extent to which institutions will affect female labor market participation will depend on the quality and type of institutions in questions, be it social or political.
- c.) It is not expected that there will be a direct relationship between institutions and gender discrimination, the only way institutions will affect gender related employment issues is through country specific economic policy and the percentage of educated females in the labor market of the countries in question.
- d.) Domestic firms are more likely to hire unskilled men than women while it is expected that foreign firms are likely to hire more unskilled women in foreign firms with exporting capacities.

Based on the foregoing, the model we estimate can be expressed in equation 1 as one in which, economic policy, school enrollments and foreign direct investment, foreign aid will be potentially lowering gender discrimination which can be expressed as (i.e. increasing labor market participation among women)  $\frac{\partial LMP_{it}}{\partial EP_{it}} \geq 0$ ,  $\frac{\partial LMP_{it}}{\partial SE_{it}} \geq 0$ ,  $\frac{\partial LMP_{it}}{\partial FDI_{it}} \geq 0$ ,  $\frac{\partial LMP_{it}}{\partial ODA_{it}} \geq 0$  and  $\frac{\partial LMP_{it}}{\partial GDP_{it}} \geq 0$ . And institutions will also be decreasing gender discrimination due to institutions promotion of employment equality between men and women in countries this is probably due to its effectiveness in promoting workplace equality. This will however be affected by country specific factors that affect employment. Therefore the institutional variable ability to decrease gender based discrimination will be expressed as, (i.e. as increasing labor market participation among women),  $\frac{\partial LMP_{it}}{\partial INS_{it}} \geq 0$ .

$$(1) \quad \frac{\partial LMP_{it}}{\partial INS_{it}} = \frac{\partial LMP_{it}}{\partial INS_{it}} \frac{\partial INS_{it}}{\partial EP_{it}} + \frac{\partial LMP_{it}}{\partial INS_{it}} \frac{\partial INS_{it}}{\partial SE_{it}} + \frac{\partial LMP_{it}}{\partial INS_{it}} \frac{\partial INS_{it}}{\partial FDI_{it}} + \frac{\partial LMP_{it}}{\partial INS_{it}} \frac{\partial INS_{it}}{\partial ODA_{it}} + \frac{\partial LMP_{it}}{\partial INS_{it}} \frac{\partial INS_{it}}{\partial GDP_{it}}$$

The reduced form model can now be expressed below in equation 2 as

$$(2) \quad LMP_{i,t} = \alpha_0 + \alpha_1 INS_{i,t} + \alpha_2 X_{i,t} + u_{i,t}$$

where labor market participation  $LMP_{i,t}$  is a function of institutions  $INS_{i,t}$  and the vector of exogenous variables  $X_{i,t}$  and all other omitted variables are captured by the error term  $u_{i,t}$  where i is the index for countries and t is the index for time.

## 6.0 Data and Sources

Panel data from five countries, namely Botswana, Cameroon, Egypt, Ghana and Kenya are used in this study, for a period of 31 years i.e. from 1980 to 2010, all data are obtained from the World development indicator of the World Bank unless otherwise stated. Table 1 show the descriptive statistics used in the study.

Table-1 Descriptive Statistics Used in the Study

Variables	Observations	Mean	Std. Dev	Min	Max
Labor market participation men	145	80.23	5.74	72.5	90.5
Labor market participation women	145	57.62	18.39	22.8	75.8
Labor market participation total	145	68.80	10.95	47.8	82.4
Institutional quality	140	34.85	5.73	26.45	44.10
Policy	143	-41.66	801.2	-9555.2	33.90
Foreign direct investment (FDI)	171	1.67	2.60	-10.78	15.59
GDP per capita	195	960901.6	1162073	142258	7200000
Foreign aid	195	0.06	0.04	0.002	0.18
School enrollment rate	183	88.94	15.64	55.15	119.87

*Note: Descriptive statistics is derived from author's dataset obtained from world development indicator*

The dependent variable is labor market participation rate; this was the percentage of the employable labor force that was actually in gainful employment or undertaking some form of self employment. This data was obtained for men and women above the ages of 18 and below the ages of 65. Other explanatory variables include institutional quality which was measured using Bingham University CIRI political variable data set such as freedom of movement, political imprisonment rate, and electoral self determination rate and was constructed using regression component residuals see Ojeaga (2012) and Ojeaga and Ogundipe (2013) for further discussion. Economic policy was also constructed using inflation, trade openness and government spending by the regression residual component analysis approach see Burnside and Dollar (2000) and also Ojeaga (2012). Foreign direct investment was the flow of foreign investment in constant United States dollars (USD) to countries, while school enrollment was the number of males and female between the ages of 0 to 15 years old enrolled in schools in countries, foreign aid was the net inflow of official development assistance to countries in constant USD and GDP per capita was total amount of goods and services produced in countries as percentage of the total population also expressed in constant USD.

## 7.0 Empirical Analysis and Results

### 7.1 Do Institutions Matter In Gender Discrimination Reduction?

In this section an intuitive argument is presented where we try to answer the questions that we posed earlier in this study. We present a scenario where institutions as structures for the implementation of economic policy is likely to have either a positive or negative causative effect on gender discrimination through improving female employment in an economy. The channels through which this can happen include

- a.) Institutions are going to affect gender discrimination through countries specific social and economic policies implementation.
- b.) If employers are prohibited by labor laws through institutions from granting priorities to a particular sex in the recruitment process by promoting a level of transparency in the recruitment process in countries.
- c.) If economic policies are implemented through appropriate institutions then institutions been structures for policy implementation is likely to have a significant effect on gender discrimination depending on their quality and nature of economic policies.
- d.) And finally if social policies such as education policies are implemented through institutions it is likely that institutions are likely to have a significant effect on gender discrimination even though country specific cultural differences is likely to significantly affect institutions ability to reduce workplace gender discrimination.

### 7.2 Results

We present the regression results in tables 2, 3 and 4 below for the regressions for men, women and total labor market participation in countries. We find that institutions have a significant effect on labor market participation for men although the result for women had a stronger effect. The result of the bootstrapped regression appears the same for men and women see table 2 and 3, columns 2 and 3. The results of the interquartile regression was different showing that institutions had no effect on labor market participation for women and a negative significant effect for men see tables 2 and 3 column 5. The results were also the same using total labor market participation. See Table 5 column 5.



Table 2. Regression using Total Labor Market Participation Rate for Men in Countries

Variables	(1) lmpkpmen	(2) Lmpkpmen	(3) lmpkpmen	(4) lmpkpmen	(5) lmpkpmen
Institutions	0.56*** (0.17)	0.56** (0.28)	0.56** (0.22)		-0.43** (0.20)
Policy	0.16 (0.14)	0.16 (0.15)	0.16 (0.13)		-0.15 (0;12)
FDI	-0.59** (0.28)	-0.59 (0.40)	-0.59** (0.26)	-0.62*** (0.24)	-0.63* (0.37)
GDP per capita	-0.25*** (0.86)	-0.25** (0.12)	-0.25* (0.13)	-0.32 (0.72)	0.38 (0.98)
Foreign aid	22.66 (26.72)	22.66 (25.00)	22.66 (27.17)	61.18*** (22.81)	24.23 (29.53)
School enrollment	0.37 (0.19)	0.37* (0.20)	0.37* (0.19)		0.29 (0.20)
Institutions*policy				0.10 (0.27)	
Institutions*sch. Enroll				0.81 (0.52)	
Observations	105	105	105	105	105
R-squared			0.41	0.33	

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.

Table 3. Regression using Labor Market Participation Rate for women in Countries

Variables	(1) lmpkwomen	(2) lmpkwomen	(3) lmpkwomen	(4) lmpkwomen	(5) lmpkwomen
Institutions	2.29*** (0.86)	2.29*** (0.35)	2.29*** (0.49)		-0.94 (0.95)
Policy	0.23 (0.37)	0.23 (0.28)	0.23 (0.36)		0.94 (0.44)
FDI	-0.15* (0.80)	-0.15** (0.61)	-0.15** (0.70)	-0.12 (0.10)	-0.20* (0.11)
GDP per capita	0.20 (0.45)	0.20 (0.18)	0.20 (0.27)	0.41* (0.22)	-0.19 (0.28)
Foreign aid	131.1* (76.44)	131.1** (55.14)	131.1* (77.02)	204.9** (78.98)	69.83 (88.56)
School enrollment	0.66 (0.36)	0.66 (0.41)	0.66 (0.47)		0.60 (0.64)
Institutions*policy				0.12 (0.94)	
Institution*sch enroll				0.64** (0.27)	
Observations	105	105	105	105	105
R-squared			0.51	0.37	

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4. Regression using Total Labor Market Participation Rate in Countries

Variables	(1) lmkptotal	(2) Lmkptotal	(3) lmkptotal	(4) lmkptotal	(5) Lmkptotal
Institutions	1.49*** (0.35)	1.49*** (0.39)	1.49*** (0.39)		-0.74 (0.53)
Policy	0.28 (0.29)	0.28 (0.21)	0.28 (0.31)		0.62 (0.34)
FDI	-0.11* (0.58)	-0.11* (0.60)	-0.11** (0.51)	-0.90 (0.69)	-0.13** (0.51)
GDP per capital	-0.19 (0.18)	-0.19 (0.23)	-0.19 (0.26)	0.23 (0.14)	-0.29 (0.15)
Foreign aid	62.83 (55.11)	62.83 (41.09)	62.83 (56.69)	138.7*** (49.97)	41.38 (60.52)
School enrollment	0.75* (0.41)	0.75* (0.39)	0.75** (0.30)		0.54 (0.57)
Institutions *policy				0.43 (0.60)	
Institutions sch.enroll				0.35** (1.36)	
Observations	105	105	105	105	105
R-squared			0.49	0.35	

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The results of the interactive variables in tables 2 to 4, column 4 depict that institutions were reducing school enrollment effectiveness in promoting labor market participation for men but had a significant effect for women implying that institutions were effective in improving female education in the countries in the sample. Foreign aid had significant effect on labor market participation for women also implying that aid were probably useful in promoting employment among women and reducing gender discrimination in regions. The variable year was included to control for yearly differences in labor market employment due fluctuation in productivity output in years. We also created the *i\_country* dummy to capture country specific effect that affect employment and find that after inserting these controls institutions had no effect on labor market participation for men and a somewhat reduced effect for women see the results in the appendix. The implication of this finding is that several factors such as religion country specific individual income and social cultural background affect labor market participation in general.

The variable FDI which captures the presence of foreign enterprises, affected labor market participation in a negative manner showing that their activity was reducing labor market participation for women but had a stronger negative effect on men. Economic policy was found to exert no significant effect on labor market participation in general.

Based on this result we now try to answer the objective goals of the study

- It was found that institutions do matter in promoting female employment and was reducing employment based discrimination against women since institutions was exerting a positive effect on labor participation for women even after controlling for country specific effect using the *i\_country* dummy and year trend using the variable year.
- Economic policy had no effect on labor market participation for women and for men. Economic policies in many developing countries are weak and were found not to have any effect on employment in general.
- Institutions were also found to be promoting female education and this was effective in improving labor market participation for women. See table 3 column 4.

- d.) The variable FDI which captures foreign multinational firms' activity was found to have a negative effect on female labor market participation rate although this was more for men see tables 2 and 3 columns 3 for FDI's impact on labor market participation.

The implication of the study is that institutions are relevant in reducing gender discrimination wage related issues for females, and that country specific differences in culture and attitude towards female participation in the labor market should also be addressed since increasing female participation in the labor market is likely to have strong benefits for overall output production of many developing African countries. The results support past findings such as Aigner and Cain (1977), Jacobsen (1994), Marromas and Rudolph (1997) and Kaufman (2002) that argue that employment and wage discrimination were probably the basic factors that were largely responsible for gender discrimination in the workplace since institutions were probably improving female wages and creating access for female participation through wage rates attractiveness see results in tables 2 and 3 column 4.

## 8.0 Conclusion

The study investigated the effect of institution on gender discrimination in five selected African countries; it was found that institutions do matter in the workplace gender discrimination reduction question, for the countries in the sample. It was also found that country specific economic policy was probably not having any useful effect in the reduction of gender discrimination and in the promotion of employment in general in the African countries in the sample. Institutions were also effective in promoting female education which was having a significant effect on gender discrimination reduction in the countries. Foreign direct investment was found to have a negative effect on gender discrimination and labor market participation rate in general although the effect was reduced for women and more pronounced for men.

The results in the appendix where we controlled for country specific effect using the  $i\_country$  dummy showed that the results where institutions were having a strong effect on gender discrimination and labor market participation were not robust and that labor market participation rate was probably been affected by individual countries social cultural attitude towards labor market participation. The most singular factor that was key to labor market participation in countries were probably wage rates since the more attractive wages became the more women were willing to relieve themselves of their preferred role of running the home and take up additional employment. The results of the quantile regression in column 1, were not different from that of the bootstrapped quantile regression in column 2 and those of the quantile regression wrapper in columns 3 where we controlled for heteroscedastic errors in the regression estimates in table 2 to 4. However the results of the interquantile regression that involved the division of the regression sample into quantiles for the control for the robustness in the regression results were in fact different showing that institutions had no significant effect on gender discrimination and labor market participation in general except for men where it was found to have a weak significant effect. This showed that the robustness of the quantile regression were however slightly in doubt even if we disregard the interquantile regression results.

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## Appendix

### Appendix i

Table 5 Appendix i Labor Market participation Rate Regression for Men

VARIABLES	(2) lmpkpmen	(3) Lmpkpmen	(4) lmpkpmen	(5) lmpkpmen	(6) lmpkpmen
Institutions	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)		0.05* (0.03)
Policies	0.32 (0.12)	0.32 (0.60)	0.32 (0.83)		0.32 (0.92)
FDI	-0.13 (0.28)	-0.13 (0.17)	-0.13 (0.17)	-0.14 (0.17)	0.95 (0.28)
GDP per capita	0.14 (0.87)	0.14*** (0.43)	0.14*** (0.52)	0.14** (0.55)	0.44 (1.00)
Foreign Aid	6.61*** (2.39)	6.61*** (1.90)	6.61** (2.59)	6.64*** (2.18)	-2.15 (3.12)
School enrollment	-0.14 (0.16)	-0.14 (0.18)	-0.14 (0.23)		0.57 (0.18)
Institutions*policy				0.74 (0.23)	
Institutions*schenroll				-0.33 (0.79)	
_Icountry_2	0.79** (0.33)	0.79*** (0.25)	0.79*** (0.28)	0.69*** (0.19)	0.94*** (0.30)
_Icountry_3	-6.80*** (0.39)	-6.80*** (0.37)	-6.80*** (0.43)	-6.96*** (0.29)	1.59*** (0.43)
_Icountry_4	-4.68*** (0.35)	-4.68** (2.25)	-4.68*** (0.49)	-4.65*** (0.58)	0.31 (0.36)
_Icountry_5	7.78*** (0.34)	7.78*** (0.27)	7.78*** (0.38)	7.71*** (0.26)	0.86*** (0.28)
Year effect	Yes	Yes	Yes	Yes	No
Observations	105	105	105	105	105
R-squared			0.99	0.99	

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Appendix ii

Table 6 Appendix ii Labor Market participation Rate Regression for Women

Variables	(2)	(3)	(4)	(5)	(6)
	lmpkwomen	lmpkwomen	lmpkwomen	lmpkwomen	lmpkwomen
Institutions	0.13* (0.07)	0.13*** (0.05)	0.13* (0.07)		0.08 (0.08)
Policy	0.19 (0.34)	0.19 (0.26)	0.19 (0.33)		0.16 (0.40)
FDI	0.95 (0.96)	0.95* (0.53)	0.95 (0.92)	-0.26 (0.27)	0.12 (0.16)
GDP per capita	0.99*** (0.21)	0.99*** (0.20)	0.99*** (0.22)	1.20*** (0.17)	0.50 (0.57)
Foreign Aid	3.36 (6.55)	3.36 (5.13)	3.36 (8.87)	7.97 (5.56)	-5.00 (7.86)
School enrollment	0.68 (0.58)	0.68* (0.58)	0.68 (0.58)		-0.16 (0.58)
Institutions*policy				0.25 (0.87)	
Institutions*schenroll				0.25 (0.17)	
	(0.03)	(0.02)	(0.04)	(0.02)	(0.03)
_lcountry_2	-13.09*** (0.97)	-13.09*** (0.69)	-13.09*** (0.83)	-13.37*** (0.91)	2.042 (1.29)
_lcountry_3	-37.22*** (2.17)	-37.22*** (0.82)	-37.22*** (1.83)	-37.73*** (1.56)	5.051*** (1.37)
_lcountry_4	8.22** (3.81)	8.22*** (0.75)	8.22*** (1.33)	9.02*** (1.22)	-0.97 (1.72)
_lcountry_5	12.19*** (1.05)	12.19*** (0.73)	12.19*** (0.89)	11.29*** (0.97)	0.475 (1.67)
Year effect	Yes	Yes	Yes	Yes	Yes
Observations	105	105	105	105	105
R-squared			0.99	0.99	

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### Appendix iii

Table 7 Appendix iii Labor Market participation Rate Regression for Men and Women

Variables	(2)	(3)	(4)	(5)	(6)
	lmkpttotal	lmkpttotal	lmkpttotal	lmkpttotal	lmkpttotal
Institutions	0.08** (0.04)	0.08** (0.04)	0.08** (0.04)		0.03 (0.06)
Policy	0.21 (0.20)	0.21 (0.15)	0.21 (0.22)		0.22 (0.20)
FDI	0.50 (0.47)	0.50 (0.11)	0.50 (0.56)	0.23 (0.61)	0.79 (0.70)
GDP per capital	0.76*** (0.17)	0.76*** (0.18)	0.76*** (0.13)	0.76*** (0.11)	0.16 (0.38)
Foreign aid	4.62 (4.26)	4.62 (3.31)	4.62 (4.12)	8.04* (4.15)	-5.17 (4.84)
School enrollment	0.26 (0.29)	0.26 (0.22)	0.26 (0.29)		-0.12 (0.28)
Institutions*policy				1.10 (-.54)	
Institutions*schenroll				0.79 (0.97)	
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
_Icountry_2	-5.43*** (0.57)	-5.43*** (0.60)	-5.43*** (0.46)	-6.38*** (0.46)	0.84 (0.93)
_Icountry_3	-21.15*** (0.66)	-21.15*** (0.92)	-21.15*** (0.72)	-22.11*** (0.59)	1.75* (0.97)
_Icountry_4	2.69*** (0.60)	2.69* (1.38)	2.69*** (0.79)	2.56*** (0.79)	-0.38 (0.86)
_Icountry_5	10.82*** (0.61)	10.82*** (0.67)	10.82*** (0.45)	9.987*** (0.38)	0.332 (0.88)
Year effect	No	No	No	No	No
Observations	105	105	105	105	105
R-squared			0.99	0.99	

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

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