

**LABOUR FORCE PARTICIPATION RATES AND ECONOMIC GROWTH RATE IN  
UGANDA (2005-2015)**


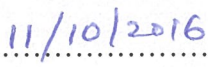
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**A RESEARCH REPORT SUBMITTED TO THE COLLEGE OF ECONOMICS AND  
MANAGEMENT SCIENCE IN PARTIAL FULFILMENT OF THE  
REQUIREMENT FOR THE AWARD OF BACHELOR OF  
ARTS IN ECONOMICS OF KAMPALA  
INTERNATIONAL  
UNIVERSITY**

**SEPTEMBER, 2016**

**DECLARATION**

I, **ANDU FRANCIS** here by truthfully declare to the best of my knowledge that this report is my original work and has never been published and/or submitted before for the award of a degree, diploma or for any equivalent title in any university or any other academic institution of higher learning.

Signature.......... Date..........

**ANDU FRANCIS**

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## **APPROVAL**

This research report has been submitted with my consent and approval.

Signature.....

Date.....

**DR. NAFIU LUKMAN ABIODUN**  
**SUPERVISOR**

## DEDICATION

I dedicate this research project to my beloved family and friends. To my dad **Mr. Benz Elisa Wani** for his financial support, my mum **Mrs. Assunta Jervase** for her moral support, my brothers **Towongo Joseph, Luo Castro, Banja Moses and Abugo Samuel Elly** for their inspiration, and my friends **Amuku Issac, Odoch Sam and Okello Joel** for their continuous encouragement. I also dedicate it to all my lecturers who instilled knowledge in me right from the start of my study at the university.

## **ACKNOWLEDGEMENT**

I am deeply indebted to my supervisor who wholeheartedly assisted me during the preparation of this project. I would also like to express my gratitude to the management of Kampala International University for preparing me to be a good leader and economist in my current field of study. Also, my gratitude goes to my supervisor for the guidance and courage in the accomplishment of this report. Above all, I would like to thank the Almighty God for granting me wisdom, good health and life throughout my study period.

## LIST OF FIGURES

Figure 1: Trend of the LFPR of Uganda (2005-2015).....	22
Figure 2: Trend of the LFPR of Uganda (2005-2015).....	23
Figure 3: Trend of GDP Growth Rate in Uganda (2005-2015).....	24
Figure4: A scatter plot of Labour Force Participation Rate and GDP Growth Rate in Uganda (2005-2015). ....	25

## TABLE OF CONTENTS

DECLARATION .....	ii
APPROVAL.....	iii
DEDICATION.....	iv
ACKNOWLEDGEMENT .....	v
LIST OF FIGURES.....	vi
abstract.....	x
<b>CHAPTER ONE .....</b>	<b>1</b>
<b>1.0 Introduction.....</b>	<b>1</b>
1.1 Background .....	1
1.2 Statement of the Problem.....	3
1.3 Purpose of the Study .....	4
1.4 Research objectives .....	4
1.5 Research Questions .....	4
1.6 Hypothesis of the study.....	4
1.7.0 Scope of the study.....	4
1.7.1 Content scope .....	5
1.7.2 Geographical Scope .....	5
1.7.3 The theoretical scope .....	5
1.7. 4 Time scope .....	5
1.8 Significance of the Study .....	5
1.9 Operational definitions .....	5
<b>CHAPTER TWO .....</b>	<b>7</b>
<b>LITERATURE REVIEW.....</b>	<b>7</b>
2.0 Introduction.....	7

2.1 Labor Force Participation Rate.....	7
2.2 Gross Domestic Product (GDP) .....	8
2.3 Relationship between Labor Force Participation and Economic Growth.....	10
2.4 Conceptual frame work.....	11
2.5 Theoretical Study .....	12
2.6 Related study .....	15
<b>CHAPTER THREE.....</b>	<b>20</b>
<b>RESEARCH METHODOLOGY.....</b>	<b>20</b>
3.0 Introduction.....	20
3.1 Research design.....	20
3.2 Research population .....	20
3.3. Sampling technique .....	20
3.4 Research instruments .....	20
3.5 Data collection procedure and source.....	20
3.6 Time series data analysis .....	21
<b>CHAPTER FOUR.....</b>	<b>22</b>
<b>PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA .....</b>	<b>22</b>
4.0 Introduction.....	22
4.1 The Trend of the LFPR of Uganda (2005-2015).....	22
4.2.1 The trend of the component of the LFPR of Uganda (2005-2015).....	23
4.2 Trend of the GDP Growth Rate in Uganda (2005-2015).....	23
4.2 The relationship between Labour Force Participation Rate and GDP Growth Rate in Uganda (2005-2015).....	24
4.3.1 Correlation analysis of LFPR and GDP Growth Rate of Uganda .....	26
4.3.2 Regression analysis of LFPR and GDP Growth Rate in Uganda. ....	26



**CHAPTER FIVE..... 29**

**DISCUSSION, SUMMARY, CONCLUSION AND RECOMMENDATION..... 29**

5.1 discussion..... 29

5.1.1 The Trend of Labour Force Participation Rate in Uganda. .... 29

5.1.2 The Trend of GDP growth in Uganda..... 29

5.1.3 The relationship between Labour Force Participation Rate and GDP growth rate in Uganda..... 29

5.1. Summary of Findings ..... 29

5.3 Conclusion. .... 30

5.4 Recommendation..... 30

5.5 Suggestions for Further Research..... 30

REFERENCE..... 31

APPENDIX 1..... 35

## ABSTRACT

This study summarizes all five chapters in this report about labor force participation rates and economic growth rate in Uganda (2005-2015) .Chapter one presents the background to the study, problem statement, purpose of study, Research Objectives, and questions, study hypothesis, study scope, significance and operational definitions Labor Force Participation Rate means the number of persons in the labor force expressed as a percentage of the working-age.

Literature on the area of study was done in line with the study objectives to gain deep insight into the concepts under investigation. Chapter three presents the research design, population size, sampling technique, research instrument, data collection procedure and source, and method of data analysis. The research also used to correlate the two variables to find the Pearson coefficient and Coefficient of determination to find the strength of relationship for the labor force participation rate and economic growth (GDP) in Uganda from 2005 to 2015. Chapter four presents' data using figures and graphs based on the research objectives and the corresponding research questions, testing the hypothesis and for implication of the findings. (i) To establish the trend of Labor force participation rate in Uganda (2005-2015), (ii) To establish the trend of GDP Growth Rate in Uganda (2005 to 2015), (iii)To investigate the relationship between Labor force participation rate and GDP Growth Rate in Uganda (2005 to 2015). In the conclusion there fore relationship between Labour Force Participation Rate and GDP growth rate has been significant relationship according to the fitted line. Regression analysis, correlation, the use of parametric test were performed and found that a strong positive correlation between Labour Force Participation Rate and GDP growth rate is statistically significant.

## CHAPTER ONE

### 1.0 Introduction

This chapter presents the background to the study, problem statement, purpose of study, research objectives and questions, study hypothesis, study scope, significance and operational definitions arranged as follows;

### 1.1 Background

Over the past 10 years, New Zealand's economy has benefited from a growing Labour Force Participation Rate, an increasing labour force participation rate and improving labor productivity (GDP per hour worked). (Intergenerational Report 2010, Australian Treasury) New Zealand's economy grew by an average of 3.1 percent per year. Real GDP per capita (our standard of living) grew by an average of 1.9 percent per year, while the remaining third of economic growth was related to Labour Force Participation Rate growth. If participation and productivity are held constant, a growing Labour Force Participation Rate is associated with a growing economy. The majority of the growth (60 percent) in real GDP per capita was due to increases in labour productivity (real GDP per hour worked), which rose by an average of 1.2 percent per year. The rest of the growth (40 percent) was due to the increased labour force participation rate, which rose by 3 percentage points over the 10 years.

Over the period 2009–2029, Australia is projecting average annual growth in real GDP per capita of 1.5 percent meanwhile New Zealand is for growth in real GDP per capita of 1.2 percent (based on the Statistics New Zealand mid-range labor force). Australia is targeting increased inflows of young and skilled migrants to boost its Labour Force Participation Rate (and economic growth), but they do not see this as the long-term solution to the problem of their ageing labor force. Young migrants also get older so this only delays the problem unless immigration is constantly increased. A report on Australia's demographic challenges recommends targeting economic growth through increased productivity and labor force participation (Source: Intergenerational Report 2010, Australian Treasury)

The Ugandan labour force consists of persons aged between 14 to 64 who were either employed (in paid employment, self-employed and unpaid family workers) or unemployed (without work and available for work). Currently the Uganda labor force is estimated to be 9.8 million for persons aged 14-64 years, of which 53 per cent are female. About 85 percent of the labor is in rural areas, a notable percentage of the labor force is illiterate (30 percent). Close to 77 percent of the labor force had either no education or had attained primary education. In addition, about 75 percent of the labor force is below 40 years. This indicates that majority of the individuals entering labour market have no skills considering that the primary schools do not offer vocational working skill training. The current labor force participation rate is 80 percent. Participation levels by selected background characteristics show rural women had higher participation rates than their urban counterparts.

The 2009/2010 Uganda National Household Survey revealed that the unemployment rate was at 4.2 percent in 2009/2010 compared to 1.9 percent in 2005/2006 (UBOS 2012). The survey also used the Labour Force Participation Rate to assess the employment situation in Uganda. Labour Force Participation Rate means the number of persons in the labour force expressed as a percentage of the working-age. The labour force participation rate for youth (International definition, 15-24 years) rose from 44 percent in 2005/2006 to 60 percent in 2009/2010. The Labour Force Participation Rate for the youth as nationally defined, 18-30 years increased from 77 percent in 2005/06 to 86 percent in 2009/10. Consequently Uganda required about 15.6 million jobs for her active Labour Force Participation Rate aged 15-64 years by 2010. But due to the current unemployment rate of over 3.5% and a whopping youth unemployment rate of over 32.2%, then about 4.37 million people have remained jobless. According to a 2011 statistical abstract, the total labour force in Uganda increased from 10.8 million persons in 2005/06 to 13.4 million persons in 2009/10, an increase of 23 percent; by industry, agriculture employed 66 percent of the working Labour Force Participation Rate, while by occupation, 60 percent of the working Labour Force Participation Rate were agriculture and fishery workers; by employment status, 79 percent were self employed in 2009/10.

## **The Labour Force Participation Rate**

(UBOS 2009) defined Labor force participation rate as portion of labour force ages 15 and older that is economically active: all people who supply labor for the production of goods and services during a specified period. Labor Force Participation Rate means the number of persons in the labor force expressed as a percentage of the working-age. The labor force participation rate for youth (International definition, 15-24 years) rose from 44 percent in 2005/2006 to 60 percent in 2009/2010. This will be expressed as the number of persons in the labor force expressed as a percentage of the working-age.

## **Economic growth**

There are so many methods of measuring economic growth that is; Gross National Product, Gross Domestic Product, Net National Product among others. But for this case the study adopted measuring economic growth in term of Gross Domestic Product since it is more reliable.

**Gross Domestic Product:** According to UBOS (2012) Gross Domestic Product (GDP) is the total value of goods and services produced within the economic territory of the country. Jeff Holt (2007) defined Gross Domestic Product as the total market value of all final goods and services produced annually within the boundaries of the country whether by national or foreigner-supplied resources. This was measured in US dollars.

### **1.2 Statement of the Problem**

Most of the developing countries have high growing population of which Uganda is among them. For economic principle, it emphasizes that what is produced should be absorbed for the country to be termed efficient. The labor force participation rate is primarily a function of the age distribution (with older people being less likely to enter the labor market—this distribution will be explored further below), individual preferences, and the economic prospects in the economy. It is possible that the labor force participation rate in the 1990s was artificially inflated; it actually happened, but it was perhaps an anomaly of the times rather than any change in trend. In other words, that time period provided extraordinary economic opportunities, pulling people into the labor market that might not have otherwise entered. Analogously, part of the labor force

participation rate decline was also likely a response to fewer job opportunities as a result of the 2001 low wages (World Bank 2002).

This high rate of Labour Force Participation Rate growth characterized by high level of unemployment has discouraged people from embarking on labor participation at all levels (labour force age +15) therefore increasing the number of labour force. This study will seek to investigate how voluminous labor participation can contribute to Uganda's economic growth.

### **1.3 Purpose of the Study**

The purpose of the study was to investigate the relationship between economic growth measured in terms of Gross Domestic Product (GDP) rate and labor force participation rate within a period of ten years (2005 to 2015) and to show the trend of LFPR and GDP Growth Rate.

### **1.4 Research objectives**

- ❖ To establish the trend of labor force participation rate in Uganda (2005 to 2015)
- ❖ To establish the trend of GDP Growth Rate in Uganda (2005 to 2015)
- ❖ To investigate the relationship between labor force participation rate and GDP Growth Rate in Uganda (2005 to 2015)

### **1.5 Research Questions**

- What is the level of trend of Labor force participation rate in Uganda?
- What is the level of trend of GDP Growth Rate in Uganda?
- What is the relationship between labor force participation rate and GDP Growth Rate in Uganda?

### **1.6 Hypothesis of the study**

Ho: There is no relationship between labor force participation rate and GDP Growth Rate in Uganda (2005 to 2015)

### **1.7.0 Scope of the study**

The scope of this study has been broken down into content, geographical, theoretical and time scope and is presented as follows;

### **1.7.1 Content scope**

The study focused on the establishment of the trend of labor force participation rate in Uganda (2005 to 2015), the trend of GDP Growth Rate in Uganda (2005 to 2015) and the determination of the relationship between LFPR and GDP Growth Rate in Uganda (2005 to 2015).

### **1.7.2 Geographical Scope**

The study was conducted in Uganda (from June to September 2016)

### **1.7.3 The theoretical scope**

Hills (1983) states that the countries on the left side of the U curve represent the share of labor force associated in the agriculture sector and the gross domestic product generated from the agrarian economy while the countries on the right side portion shows that industrial activities are dominant and the share of GDP is high as compared to the GDP from the agriculture sector.

### **1.7.4 Time scope**

The study was conducted for four months and it was used to review the ten-year time series data that is, from 2005 to 2015 in Uganda.

## **1.8 Significance of the Study**

The government/policy makers base on the findings of the study to formulate and implement Labor Force Participation policies which can be a platform for the sustained economic growth and development.

The study is useful to academia especially researchers who may be interested in carrying out empirical studies on labor force participation and GDP Growth in Uganda.

## **1.9 Operational definitions**

### **Gross Domestic Product (GDP)**

Jeff Holt (2007) defined Gross Domestic Product as the total market value of all final goods and services produced annually within the boundaries of the country whether by national or foreigner-supplied resources. This study adopted Jeff Holt's definition and the GDP Growth Rate was measured as a percentage of the annual growth rate.

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### **Labor Force Participation Rate (LFPR)**

Labor Force Participation Rate means the number of persons in the labor force expressed as a percentage of the working-age (World Bank 2009). This study will adopt this definition.



## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

This chapter presents review of scholarly literature on the area of study and this review was done in line with the study objectives to gain deep insight into the concepts under investigation.

#### 2.1 Labor Force Participation Rate.

According to UBOS (2012), Labour Force Participation Rate is the proportion of labour force aged 15 years and older that is economically active. It means all people who supply labor for the production of goods and services during the specified period of time.

Ugandan labour markets like many others in most of Sub-Saharan Africa (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 is 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 one 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 have 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.

## **2.2 Gross Domestic Product (GDP)**

**Gross Domestic Product (GDP)** represents the total market value of the nation's annual final product, or output, produced per year by factors of production within national borders. Hence, it is the market value of final goods and services produced in an economy during a year (Roger et al 2000). Gross domestic product is the market value of final goods and services produced by the resources located in one country regardless of who owns the resources in that country (Jeff Holt 2007).

The overall economic performance of Uganda as measured by Gross Domestic Product (GDP) for the fiscal year 2011/12 reflects a lower growth rate compared to 2010/11. In the fiscal year 2011/12, the preliminary real GDP at market price grew by 3.2 percent compared to the 6.7 percent growth registered in 2010/11. This, therefore, indicates a slow down growth of 3.5 percentage points of the economy between the two fiscal years. Nominal Per Capita GDP

increased by 21.3 percent from 1,206,866 Uganda Shillings in 2010/11 to 1,463,961 Uganda Shillings in 2011/12 (UBOS 2012).

Uganda has experienced strong economic growth over the past decade. Real GDP at market prices has averaged 6.7 percent per annum since 1990/1991. Recently, concerns have been raised that growth has slowed slightly over five years, as the average growth rate between 1998/99 and 2002/03 was 6.1 percent per annum, as compared to 6.8 percent between 1997/98, boosted by three years exceptionally strong growth in the early 1990s, which was driven by reforms implemented in the first half of 1990s and coffee boom (MoFPED 2004). The determinants of growth in Uganda during the 1990s have been identified as improved security, the restoration of macroeconomic stability, the removal of economic distortions and the improvement in the terms of trade, as a result of the mid-nineties coffee price boom. Growth productivity, meaning the efficiency with capital and labor used, made a significant contribution to GDP Growth Rate during the 1990s, reflecting the scale of rehabilitation of production processes after the restoration of peace to most of the country (MoFPED 2004).

On a sectoral basis, industrial production saw the highest rate of growth, averaging 10.4 percent per annum between 1990/91 and 2002/03 as a whole, although it slowed slightly to an average of 7.7 percent per annum in the last five years. Services grew by average of 7.5 percent per annum between 1990/91 and 2002/03, and by 6.9 percent per annum over the past five years. Agriculture had the slowest growth rate amongst the major sectors, averaging 3.8 percent per annum between 1990/91 and 2002/03, although growth was slightly higher in the last five years, at 4.4 percent per annum (MoFPED 2004).

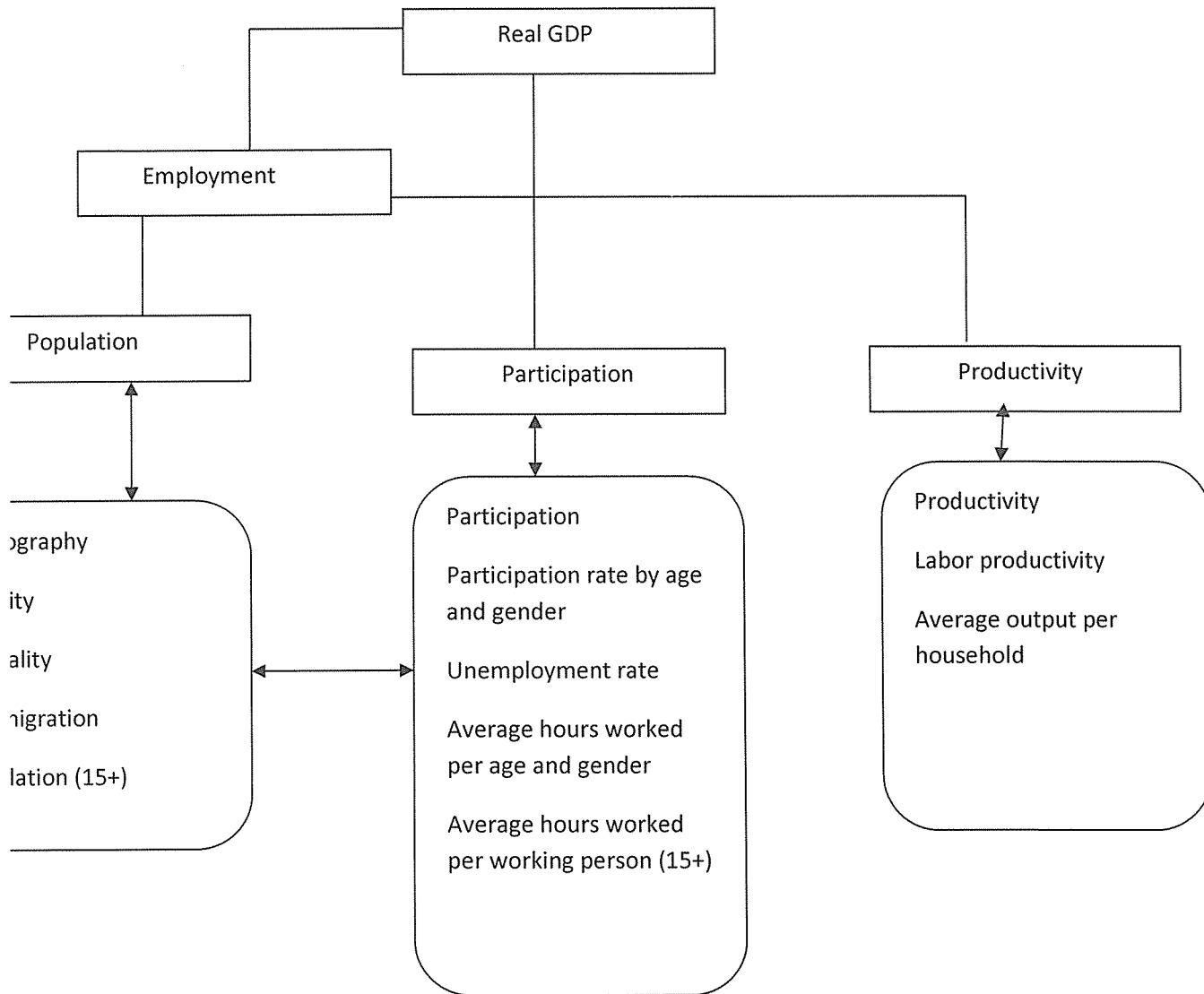
An analysis of sectoral GDP shows that between 1987 and 1996, the contribution of the agricultural sector to GDP declined from 55 percent to about 45 percent while the contribution of the remaining sectors increased from 45 percent to 55 percent (MTED, various years). This is in line with the predictions of structural change models of Lewis and Chenery (Todaro, 1989) which state that development process is a structural transformation from an economy that is dominated by agricultural output and employment to the one in which the share of agricultural output and employment to gross national product (GNP) decreases. However, the transformation

itself is dependent on agricultural progress (Meier, 1984 p.427). Lack of agricultural progress can inhibit industrial development unless the economy can export manufactured goods for LFPR of foodstuffs and raw materials. This will be healthy for the country's economic growth.

### **2.3 Relationship between Labor Force Participation and Economic Growth**

Labour market participation uses 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 market but a growing informal sector. The analysis in this paper indicates that only 46.8 percent of males participate in the labour markets, compared with approximately 53.2 percent 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 Ugandan labor market.

## 2.4 Conceptual frame work



Source: Researcher (2016)

The conceptual frame work shows how labor force participation rate can lead to output productivity which is the key source of economic growth.

## 2.5 Theoretical Study

Demand and Supply are basic economic concepts crucial for understanding a market economy. They have wide-ranging applications, but the focus for this proposal is demand and supply in a labor market; specifically, supply of labor. As previously stated, labor is a factor of production and hence the labor market is of great importance to firms who take labor decisions i.e. select amount of input. Every firm goes through this process which then aids in production of goods/services and collectively affecting GDP at a macro level. In a labor market, firms and workers are the main entities; while wage rate and quantity of labor demanded/supplied is studied. The labor demand curve is downward sloping because at a high wage rate, firms won't demand as much quantity of labor as they would if the wage rate was low. The labor supply curve is upward sloping because an increase in the wage rate would increase the opportunity cost of not working and hence more people would be willing to work, thus increasing supply. The equilibrium is where the two curves interact which determines the market Wage rate,  $W_e$  and Quantity of Labor employed,  $L_e$ .

The U- shaped, also known as U curve hypothesis establishes a long-term relationship between labour force participation and economic development. It has been alluded in voluminous studies; Boserup (1970), Durand (1975), Pampel and Tanaka (1986), Psacharopoulos and Tzannatos (1989), Schultz (1990, 1991), Kottis (1990), Goldin (1995), Mammen & Paxson (2000) and Bloomet.al.(2009) are among such authors.

Hills (1983) states that the countries on the left side of the U curve represent the share of labor force associated in the agriculture sector and the gross domestic product generated from the agrarian economy, while the countries on the right side portion show that industrial activities are dominant and the share of GDP is high as compared to the GDP from the agriculture sector. Psacharopoulos and Tzannatos (1989) stressed the definitions and theories of labor supply of females and examined them with respect to the data of 136 countries including developed and developing nations for the period between 1960 and 1980. The findings of the paper confirmed the U-shaped pattern of female labour supply in the process of economic development. It is evident that during the transition from agrarian subsistence economy to industrial economy, the female employment represents a U-pattern curve. The author found that during the last twenty years, the female labour supply increased by 10% in the industrialized countries while it decreased by 7% in the developing countries. Pampel and Tanaka (1986) postulates that high-income and low-income countries have the highest female participation rate. However, their participation is lowest in the middle-income countries. The authors employed the cross-national data on 70 nations for the periods 1965 and 1970. They used the consumption of energy per capita as a measure of development and concluded that it has a curvilinear impact on female labour supply.

Goldin (1994) revealed that the labor supply of married women is U-shaped as the countries move on the path of development. Initially the female labour supply decreases and then later on it increases. This U-shaped relationship between female labor force participation and economic development is also evident through the histories of recently advanced countries. The author employed the data of more than 100 countries and the history of United States is used to expose the U- shaped female labor supply curve. In the initial stages of development, less educated women are only and mostly work in the house hold, agriculture sector and in the family farm with which a strong social stigma exists. With the overall development, women become more educated and there exist more job opportunities for white-collar jobs for females especially of secondary education level, for which no social stigma exists. With the introduction of new technologies and the expansion of the markets, family income rises so the rate of female participation in the labor market declines while their domestic activities increase. The reduction

in the female labor supply owes to an income effect but ultimately the substitution effect dominates the income effect at some point in time.

Goldin (1995) explores the U-pattern hypothesis by employing data for 180 countries for the period 1985 and takes real GDP per capita as a measure of development. The falling portion of the U-shaped curve shows the existence of the poorest countries of the world while the wealthier nations are on the rising portion and the middle income countries are at the bottom. Mammen and Paxson (2000) explore evidence of the U-shaped curve using the cross country data for 90 countries for the years 1970, 1975, 1980 and 1985. The authors find a U-pattern, the richest and the poorest countries represent more than 50% participation rates and 35% for the middle income countries which is in line with the findings of Goldin (1995). Tansel (2002) affirms the U-shaped hypothesis between economic development and female labor supply for Turkey. The author used the time series data and considers its cross-provincial factors to determine the female participation rate using data for 67 provinces for three different points in time i.e. 1980, 1985 and 1990.

The modernization process is linked with increased demand for labor, a general social acceptance of women's education and employment as well as lower fertility [Heckman (1980); Standing (1981); Bauer and Shin (1987)]. A body of theoretical and empirical literature provides evidence that female labor force participation has a positive and strong relationship with economic growth (Tansel (2002) and Fatima and Sultana (2009)).

Goldin (1995) and Tam (2011) consider the income effects (change in labor supply as household income changes) and substitution effects (income remains constant, but changing wages lead to a change in the labor supply) that contribute to the U-shaped pattern. The declining part of the U-shaped curve suggests that a strong income effect dominates. In the rising part, the substitution effect of higher wages (away from home to market activities) dominates the small income effect (Mincer, 1962; Killingsworth and Heckman, 1986; Goldin, 1995).

According to the theory of time allocation (Becker, 1965 and 1991; Heckman, 1978; Killingsworth, 1983), a decision by a woman to join the labor force is the result of a collective



decision-making process in her household. The household maximizes a combined utility function subject to the constraints it faces in determining the times allocated to home work, paid work and leisure for the individuals. Thus, the time allocated to paid work will depend on a number of personal (education) and household (income) characteristics as well as on overall economic and labour market characteristics (economic growth, unemployment rates, urbanization, social norms).

Education can have an effect on an individual's decision to participate in the labor market and also in deciding how much time to spend on the labor market (Tansel, 2001). In theory, the effect of education on female labor force participation is ambiguous. It depends on the relative strength of two forces: the substitution effect and the income effect. First, education increases the potential earnings and therefore the cost of not working (positive effect). Second, as a result of higher earnings, the income target is achieved sooner. The higher income can then be used to consume more leisure and reduce the need to work (negative effect).

The net effect of education depends on which force prevails. On the question of socio-economic and labor market conditions, the literature suggests that female labor force participation rates are affected by unemployment, urbanization and economic growth. The effects of unemployment on female labor force participation are ambiguous and depend on the relative strengths of the “discouraged-worker effect” and the “added-worker effect” (Tansel, 2001).

## **2.6 Related study**

According to Kuznets (1955), economic progress measured by income per capita, first increases inequality but as the benefit from development is accrued and spread in the society, the disparities start declining. Goldin (1994) and Mammen and Paxson (2000) reveal that there is a U-shape relationship between female labor force and economic growth with the view that developing countries are mostly agrarian in nature where the contribution of females in the fields are dominant. The females in these poor countries are burden laden as they contribute not only in the fields but are also involved in rearing and bearing of children and in domestic chores. Due to industrialization, there is an expansion in the manufacturing sector and with the introduction of

the technologies, the family income rises so that female labour force participation squeezes. This is said to be an unearned income effect that reduces the female labour supply.

Overall, our estimation implies that the increase in years of education accounts for slightly more than 60 percent of output per capita growth, of which 34 percentage points result from the increase in years of education of women. These estimates, however, do not provide a fully satisfactory control of the unobserved but correlated country characteristics that potentially alter the influence of human capital on growth. Although we found evidence that a more equal access to prolonged education raises growth rates, we are not able to explicitly identify the causes. One possibility, as suggested by Knowles *et al.* (2002), is that male and female human capital are both characterized by decreasing returns but are complementary, so that for certain values of the average of human capital stock, years of education of women are more rewarding than men.

Another possibility is that women now perform better and are less likely to lack basic skill than boys and are thus more valuable in the labor market, despite persistent discrimination and professional segregation (OECD, 2012 and, Hanushek and Woessmann, 2010). Other positive externalities of female education on the quality of life and productivity might also be at play, above and beyond their greater integration in the labor market. There is therefore much scope for further research on the subject.

Campbell (1994) and Pakko (2002) reported that a decrease in the growth rate of productivity rate results in increase in employment and output. In several working papers (Kitov, 2006; and Dolinskaya, 2007) we demonstrated that the evolution of real GDP per capita in the USA is driven by the change in the number of 9-year-olds. In turn, Kitov and Kitov (2008) found that the evolution of labor force participation rate is controlled by real GDP per capita as the only driving force. By definition, labor productivity is a ratio of real GDP to the number of employed persons (or the number of worked hours). Hence, the growth in productivity is also driven by the only macroeconomic variable – real GDP per capita (or the change in the specific age Labour Force Participation Rate).

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 labor], a drawback of many of these studies, and one

that we address here, is that they provide only a partial analysis of labor 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 labor force participation in the formal, informal and non participation. Surprisingly, no single extensive study has focused on Ugandan labor markets and more specifically on the socio-economic characteristics of labor force participation. This is all the more surprising in the context of Uganda in particular where employment levels have changed from one sector to another over time.

Karshenas and Moghadam (2001) support the view that female labor participation rates in the southern Mediterranean region are directly influenced by the levels of pay offered as these economies modernize. The preservation of the patriarchal family structures has been attributed to the fact that these are relatively high-wage economies. Households can afford to keep female family members at home and out of paid employment - part of the reason for the relatively lower female labor participation rates.

Empirical studies in a number of countries suggest that the substitution effect is stronger than the income effect and, therefore, that there are more educated females in the labor force. Evidence in the work of Tansel (1994; 1996) and Psacharopoulos and Tzannatos (1991) across a number of different countries shows that education has a positive effect on female labour force participation. Smith and Ward (1985) and Kottis (1990) find that the relationship between education and the female labor participation rate is negative. Nevertheless several researchers argue that the effect of education on female labor force participation depends on the stage of development of the country concerned. As such, the inclusion of education as a determinant of the female labor force participation rate is criticized on the grounds of multicollinearity and endogeneity bias.

Fatima and Sultana (2009) finds the U-pattern relationship between female labor force participation and economic development using cross-sectional data for 4 provinces with respect to regions (urban/rural) are pooled for three periods 1992-93, 1996-97 and 2001-2002 using a fixed effect test and affirms the U shaped existence in Pakistan. The authors used household

expenditure on fuel consumption to measure the level of economic development as the data on GDP are not available at the provincial level.

Sanjukta (2010) revisits the U- shaped hypothesis for 172 countries from 1990 through 2007, with the total observations 3060 for the South Asia and South East Asia. The study concludes that both the regions are on the falling portion of the U-curve. Roughly, the South Asian countries are below the U curve while the South East Asian countries are slightly above the curve with Pakistan having the lowest female labor supply and countries like Cambodia and Vietnam having the highest female participation rates.

Onzur Cakir (2008) focuses the effects of economic development on female labor supply using time series data from 1980-2000 in Turkey. The study incorporates 5 different models to measure different determinants of female labor supply. The study concludes that Turkey is experiencing the declining portion of U shaped curve but it is expected that the country will move to the rising portion of U- shaped curve in the future.

The pattern and amplitude of the U- shaped trend varied between countries and periods of time. The U-shaped curve for the female labor force participation especially during the process of economic development is not agreed upon by all the researchers. Standing (1978) stressed that the factors of female labor supply are too complicated and complex to be explained by the U-shaped hypothesis. Others such as Durand (1975:150)<sup>2</sup> find that in the case of developing countries, the U-shaped phenomenon is not a general trend of female labor supply. Economic development can have positive and negative effect on female labor supply depending on the share of female participation rate employed in the growing and expanding sector. Steel(1981:163)<sup>3</sup> argues that in the 1960s, as Ghana modernized its economy in terms of rapid manufacturing employment but does not experience the U-shaped curve for female participation rate, in fact the female labor supply rose because of industrialization.

Jacob Mincer's work "Labor Force Participation of Married Women: A study of Labor supply (1962)" was a pioneer work in laying emphasis on determining factors affecting women's (particularly married) decision to participate in the labor force. The period of study was 1950, 1955 and 1957. According to Mincer's empirical work, husbands' earnings had a negative effect

on the participation of wives in the labour force. However, wives' earning power was a positive determinant of labor force participation. Mincer proved that wives were more likely to participate in the labor force if husbands' earnings were lower than permanent earnings.

Geeta Kingdom's work "Education and Labor Market Outcomes in India (2001)" aimed to relate the effect of education with labor force participation rates and hence explain wage differential between men and women. Findings suggested that education had a U-shaped relationship with labor force participation. In other words, only when education level exceeds a certain threshold, it starts determining an increase in labor force participation. Education significantly improves the wage offered to women, which is even higher than in case of men. Kingdom also asserted that women in urban India faced high levels of wage discrimination.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.0 Introduction

This chapter presents the research design, population size, sampling technique, research instrument, data collection procedure and source, and method of data analysis.

#### 3.1 Research design

A time series analysis was adopted and the use of quantitative techniques to analyze secondary data scientifically to critically conclude the research objectives. Secondary data was collected from different sources, ministries, and some quantification was necessary because of the need to tabulate data and use of statistical techniques to arrive at a dependable conclusion. Also, an inference was drawn by fitting the regression model and testing for its significance using the t-statistic. The research was also used to correlate the two variables to find the Pearson coefficient and Coefficient of determination to find the strength of relationship for the labor force participation rate and economic growth (GDP) in Uganda from 2005 to 2015.

#### 3.2 Research population

The research took ten years' time series of study that is, from 2005 to 2015. This was the time where the level of Uganda's growth was realized.

#### 3.3. Sampling technique

The technique was judgmental sampling for data collection for the last 10 years (2005 to 2015).

#### 3.4 Research instruments

The record sheet was used to enter the yearly data on labor force participation rate and gross domestic product growth rate in Uganda for 10 years.

#### 3.5 Data collection procedure and source

After the proposal was approved, the researcher got an introductory letter from the Department of Economics and Applied Statistics Kampala International University to introduce him to the respective sources of data and they were informed by the researcher on areas of data to be

collected. Data collection was done by skilled research assistants under close supervision of the researcher to ensure that the information required was collected.

The domestic sources are the annual and quarterly bulletin of Uganda Bureau of Statistics, Ministry of Gender and Labour, IMFs, International Financial Statistics, World Bank and United Bank of Africa. The data was entered into the record sheet and compiled. This was used to analyze the relationship between labor force participation rate and economic growth (GDP) rate with the help of computer-statistical packages.

### 3.6 Time series data analysis

This was analyzed with the help of Ms. Excel and Word, STATA packages were used to derive descriptive statistics and accompanying tables, diagrams and graphs were also relevant for the study prior to the estimation of the regression line. Descriptive analysis was conducted to describe the behavior of individual variables over this duration of the study by plotting each variable against time. It included finding correlation coefficient between the two variables.

The following formulae and computational equations were used;

The correlation is given by 
$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n(\sum x^2 - (\sum x)^2) \{n\sum y^2 - (\sum y)^2\}}}$$

The  $t_c$  computed is: 
$$t_c = \frac{r \sqrt{n-2}}{1-r^2}$$

Reject  $H_0$  if  $t_c \geq t_{\alpha}$  at 0.05 level of significance

The simple linear regression model

$$\text{GDP Growth Rate} = \alpha_0 + (\text{Labor force participation rate})\beta_0$$

$$Y = \alpha_0 + \beta_0 X_0 + e_i$$

Where Y = Economic growth (GDP Growth Rate)

$\alpha_0$  = the GDP Growth Rate when there is no labor force participation rate.

$\beta_0$  = the rate of change of GDP Growth Rate to labor force participation rate.

$e_i$  is called the error terms indicating other variables that determine economic growth apart from labor force participant.

## CHAPTER FOUR

### PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

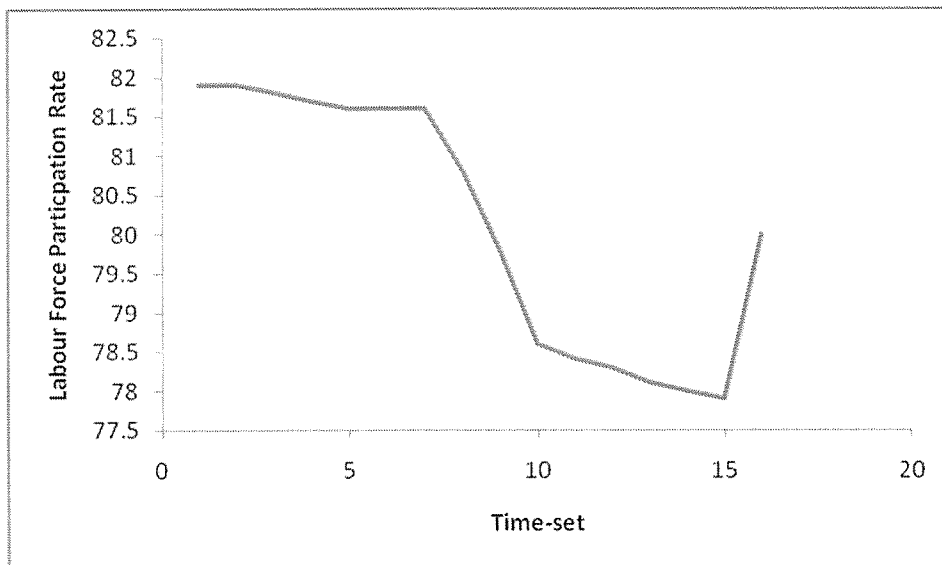
#### 4.0 Introduction

This chapter presents data using figures and graphs based on the research objectives and the corresponding research questions, testing the hypothesis and for implication of the findings. (i) To establish the trend of Labor force participation rate in Uganda (2005-2015), (ii) To establish the trend of GDP Growth Rate in Uganda (2005 to 2015), (iii) To investigate the relationship between Labor force participation rate and GDP Growth Rate in Uganda (2005 to 2015).

#### 4.1 The Trend of the LFPR of Uganda (2005-2015)

Objective one was to show the trend of LFPR in Uganda (2005-2015). Under this, the researcher used the line graph as can be seen below.

**Figure 1: Trend of the LFPR of Uganda (2005-2015)**



*Source: Secondary data, UBOS (2016)*

There is a general decrease in the Labor Force Participation over the period under study. Then it increases from 2009 to 2010. This decrease might be due to discouragement, low wages or job scarcity. Other factors remain constant. The regression model was fitted as Labour Force

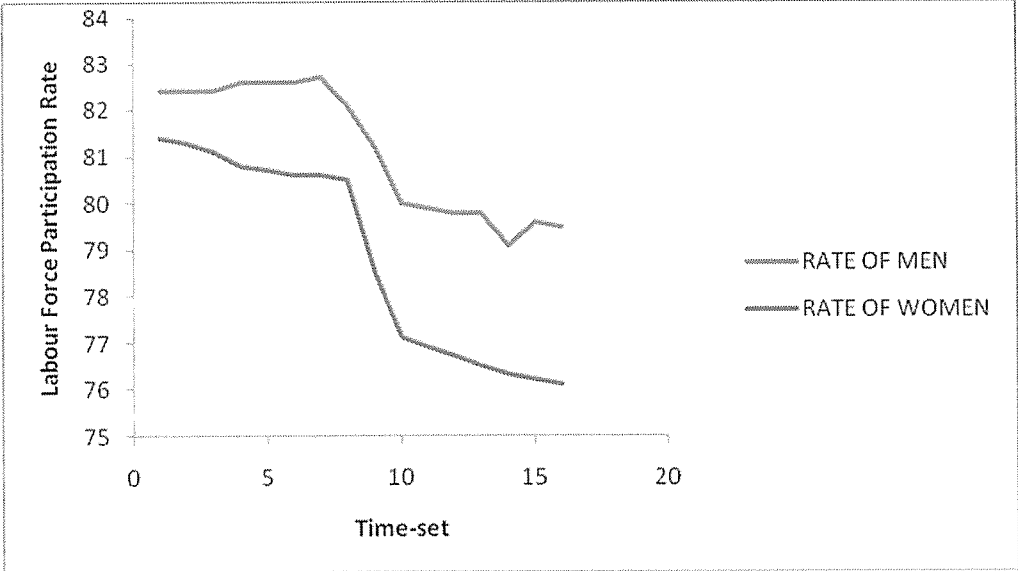


Participation rate= $82.67 - 0.3 \text{ Time}$ . This implies that the LFPR when time is zero =82.67 and a unit change of time in one year reduces LFPR by 0.3 percent.

**4.2.1 The trend of the component of the LFPR of Uganda (2005-2015)**

To distinguish which gender has the highest rate of LFPR, the researcher used a line graph as can be seen below.

**Figure 2: Trend of the LFPR of Uganda (2005-2015)**



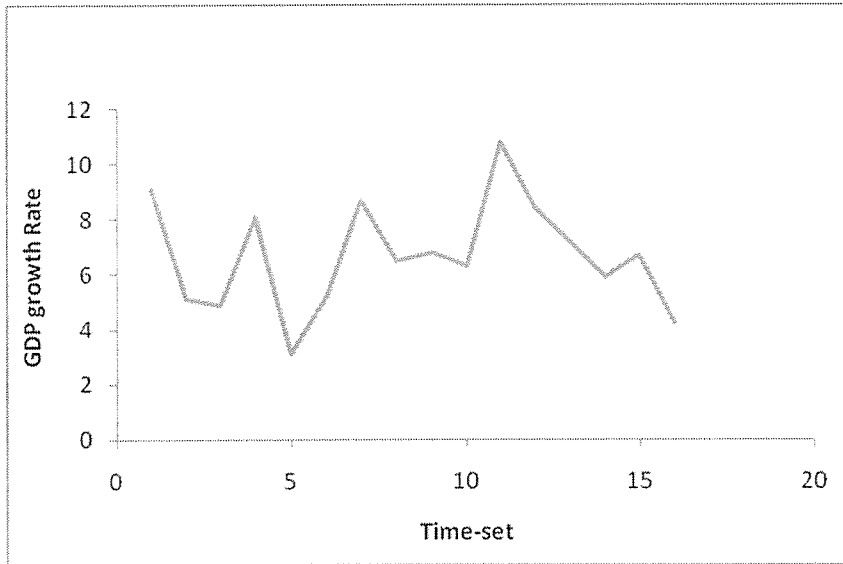
*Source: Secondary data, UBOS (2016)*

The graph shows a general decrease in both sexes over the period under study. But men are seen to be leading. This implies that most of the women have stopped working or because of conditions like their husbands stopping them from work.

**4.2 Trend of the GDP Growth Rate in Uganda (2005-2015)**

Objective two was to show the level of trend of GDP Growth Rate in Uganda. Under this, the researcher used line graph as can be seen below.

**Figure 3: Trend of GDP Growth Rate in Uganda (2005-2015)**



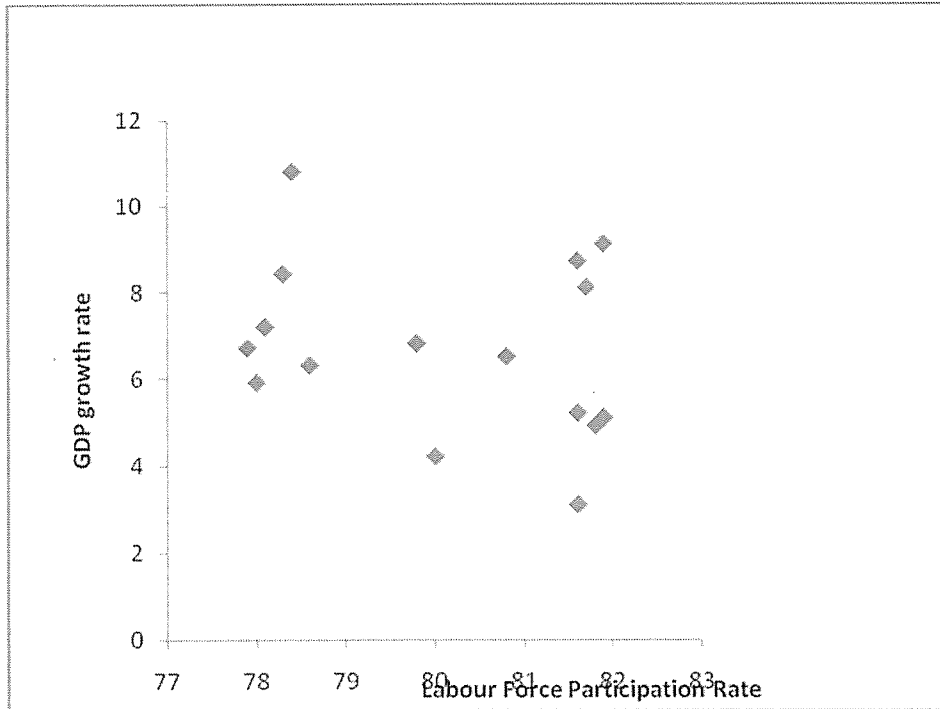
*Source: Secondary data, UBOS (2016)*

The GDP Growth Rate has shown a cyclical fluctuation over period under study. This could be due to low level of output and other factors remain constant. The regression model is GDP Growth Rate= $6.58+0.0124$  Time. This implies that GDP growth rate when the time is zero is 6.58 and a unit change in time per year leads to a change in GDP growth rate by 0.0124 percent.

#### **4.2 The relationship between Labour Force Participation Rate and GDP Growth Rate in Uganda (2005-2015).**

To establish the relationship between LFPR and GDP Growth Rate, the researcher used the scatter plot as can be seen below.

**Figure4: A scatter plot of Labour Force Participation Rate and GDP Growth Rate in Uganda (2005-2015).**



*Source: Secondary data, UBOS (2016)*

Most of the points are scattered apart. This is an indication that GDP Growth Rate and LFPR have a small relationship. This is due to the major factors which determine economic growth but have been omitted such as exports, imports, investment among others.

#### 4.3.1 Correlation analysis of LFPR and GDP Growth Rate of Uganda

The researcher used Pearson's correlation coefficient to establish the strength of relationship between LFPR and GDP Growth Rate in Uganda.

**Table 1: Correlation of LFPR and GDP Growth Rate in Uganda (0.05)**

Variable correlate	R-Value	Sign-value	Interpretation	Decision
LFPR versus GDP Growth Rate	-0.256	0.337	There is no relationship	Accept the null hypothesis

*Source: Secondary data, UBOS (2016)*

There is a weak negative correlation between LFPR and GDP Growth Rate as can be seen from table 1 above ( $r=-0.256$ ). The strength of relationship between LFPR and GDP Growth Rate is determined by the coefficient of determination ( $r^2=0.0655$ ). This implies that the variation in GDP Growth Rate explained by LFPR is 6.5 percent meanwhile the rest is explained by other variables. This reveals that the relationship between these two variables is too weak.

#### 4.3.2 Regression analysis of LFPR and GDP Growth Rate in Uganda.

To establish this relationship, the researcher used bivariate linear regression analysis as can be seen in the table below.

**Table 2: Regression of LFPR and GDP Growth Rate in Uganda (0.05)**

Variable represented	Adj. R <sup>2</sup>	F-Value	Sign-value	Interpretation	Decision
LFPR and GDP	0.0008	0.99	0.000	There is no relationship	Accept the null hypothesis
Coefficient	Beta	T	Sign-value	Interpretation	Decision
Constants	31.564	1.26	0.23	There is no relationship	Accept the null hypothesis
LFPR	-0.3105	-0.99	0.34	There is no relationship	Accept the null hypothesis

*Source: Secondary data, UBOS (2016)*

The researcher fitted the regression model using the information from table 2 above and this is represented by;

$$\text{GDP Growth Rate} = \alpha + \beta(\text{LFPR})$$

The fitted model becomes

$$Y = 31.564 - 0.31(\text{LFPR})$$

This implies that GDP Growth Rate without LFPR results into 31.564 and a unit change in LFPR leads to a reduction of GDP Growth Rate by 0.31 percent.

$$t(0.025, 15) = 2.13$$

The slope  $t_1 = -0.99$ , the decision rule if  $|t| \leq t_\alpha$ , accept  $H_0$ ,  $\alpha = 0.05$  level of significance, since  $t_1 = -0.99$  is less than  $t_\alpha = 2.13$ . We accept  $H_0$  which states that LFPR is not part of the model and conclude that there is no relationship between LFPR and GDP Growth Rate in Uganda for the period under study and other factors remain constant.

**Table 2: Regression of LFPR and Rate of Men and Women in Uganda (0.05)**

<b>Variable represented</b>	<b>Adj. R<sup>2</sup></b>	<b>F-Value</b>	<b>Sign-value</b>	<b>Interpretation</b>	<b>Decision</b>
LFPR, Men and Women	0.0008	57.63	0.000	There is a relationship	Reject the null hypothesis
<b>Coefficient</b>	<b>Beta</b>	<b>T</b>	<b>Sign-value</b>	<b>Interpretation</b>	<b>Decision</b>
Constants	8.35	0.46	0.656	There is no relationship	Accept the null hypothesis
Rate of Men	0.392	1.07	0.306	There is no relationship	Accept the null hypothesis
Rate of Women	0.504	0.89	0.39	There is no relationship	Accept the null hypothesis

Source: Secondary data, UBOS (2016)

$$\text{LFPR} = 8.35 + 0.392(\text{Rate of men}) + 0.504(\text{Rate of women})$$

This implies that the LFPR when other factors are constant is 8.35, a unit change in the rate of men when women are constant leads to a change in LFPR by 0.392 percent and a unit change in the rate of women when men are constant leads to change in LFPR by 0.504 percent.

## CHAPTER FIVE

### DISCUSSION, SUMMARY, CONCLUSION AND RECOMMENDATION

#### 5.1 DISCUSSION

##### 5.1.1 The Trend of Labour Force Participation Rate in Uganda.

The Labor Force Participation Rate has shown a general increase for period under study. This is attributed to high fertility rate, low mortality rate, improved medical facilities among others. Yet when you look at Uganda, there has been war for over twenty years and we expected the Labour Force Participation Rate to decrease because so many people have died especially in Northern Uganda; but this was contrary to the finding.

##### 5.1.2 The Trend of GDP growth in Uganda.

There has been a general increase in GDP growth in Uganda over the period under study that is (2005-2015). An increase in the GDP growth is due to balance in the level of consumption and saving among the labor force. This is because as a result of savings, people are able to invest hence leading to economic growth. Other factors which lead to economic growth apart from Labour Force Participation Rate are high level of technology and favorable government policy which are healthy for economic growth.

##### 5.1.3 The relationship between Labour Force Participation Rate and GDP growth rate in Uganda

The relationship between Labour Force Participation Rate and GDP growth rate has been significant relationship according to the fitted line. Regression analysis, correlation, the use of parametric test were performed and found that a strong positive correlation between Labour Force Participation Rate and GDP growth rate is statistically significant ( $r=0.943$ ). The study has confirmed Kelly et al (1994), Glaser et al (1999), Thornton (2001) who studied the same topic on Labour Force Participation Rate and economic growth significant relationship.

#### 5.1. Summary of Findings

The main objective of this study was to investigate the relationship between Labour Force Participation Rate and GDP growth rate in Uganda. For the relationship between Labour Force Participation Rate and GDP growth rate, the probability of the t-distribution was used based on a

simple linear regression model at **0.05** level of significance. The dependent variable and the independent variables were found to be normally distributed hence implying significant relationship between Labour Force Participation Rate and Economic Growth rate in Uganda.

### **5.3 Conclusion.**

This study has established the trend of Labour Force Participation Rate in Uganda (1994-2012) and found a general increase over the period under study. It has established the trend of GDP growth rate in Uganda (1994-2011) and found cyclic fluctuation due to other factors which determine GDP growth apart from Labour Force Participation Rate. The study has also investigated relationship between Labour Force Participation Rate and GDP growth in Uganda using correlation, regression analysis with the test of hypothesis and found a positive relationship.

### **5.4 Recommendation**

Basing on this finding, I would recommend the government to embark on Labour Force Participation Rate control policies through family planning methods to slow down the level of Labour Force Participation Rate growth.

Ugandan economy which is still a developing one with low level of skilled labor, importation of capital and intermediate goods may lead to economic growth. Therefore I would recommend the government to embark on industrialization, and modern techniques of agricultural production since this area can employ a large labour force resulting into high productivity hence economic growth.

### **5.5 Suggestions for Further Research**

The results presented in this report are very inconclusive and should be treated as being preliminary. Further analysis of the survey data (Labour Force Participation Rate and GDP growth) needs to be done to validate these findings and provide greater confidence in explaining the changes in Labour Force Participation Rate and GDP growth rate.

1. A study should be carried to establish how the Labor force participation can contribute to economic growth.
2. Inflation and cost of living.
3. The relationship between inflation and economic growth.
4. The relationship between household investment and economic growth



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**APPENDIX 1**

<b>YEARS</b>	<b>LABOURE FP RATE</b>	<b>RATE OF MEN</b>	<b>RATE OF WOMEN</b>	<b>GDP growth rate</b>
1996	81.9	82.4	81.4	9.1
1997	81.9	82.4	81.3	5.1
1998	81.8	82.4	81.1	4.9
1999	81.7	82.6	80.8	8.1
2000	81.6	82.6	80.7	3.1
2001	81.6	82.6	80.6	5.2
2002	81.6	82.7	80.6	8.7
2003	80.8	82.1	80.5	6.5
2004	79.8	81.2	78.5	6.8
2005	78.6	80	77.1	6.3
2006	78.4	79.9	76.9	10.8
2007	78.3	79.8	76.7	8.4
2008	78.1	79.8	76.5	7.2
2009	78	79.1	76.3	5.9
2010	77.9	79.6	76.2	6.7
2011	80	79.5	76.1	4.2

UBOS (2012), World Bank (2012) and IMF