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Youth Unemployment in Mauritius: The Ticking Bomb

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1. Introduction

Today almost one person in five is between the ages of 15 and 24 years. Altogether, there are over 1.2 billion youth in the world. The majority of young people, about 90 per cent live in developing countries, with 60 per cent in Asia and 17 per cent in Africa. The current population of young people in developing countries is the largest; around 1 billion and is expected to reach a maximum of 1.1 billion in 2060 (ILO, 2012).

Youth unemployment has become a major challenge in recent years. Youth unemployment is not a new phenomenon; what is new are the staggering proportions it has reached (ILO, 2012). The global youth unemployment showed a declining trend since 2002 up until the financial and economic crisis which has hit young people particularly hard. The global economic crisis has created a new cause of concern for the youth. The youth employment crisis is a major aspect of the global jobs crisis. Its gravity is linked not only to the levels and the duration of unemployment, but increasingly to the declining quality of jobs available to youth. The main fear, however, is that the youth employment crisis, is not merely a transitory development related to sluggish economic growth, but that it may become a structural trend if no significant policy changes are put in place (ILO, 2012). This is why the issue acquires a critical new dimension.

Africa is no exception to the problem of youth unemployment as presently 3 in 5 of the total unemployed in the African region are the youth and on average 72 per cent of the youth population live on less than \$2 a day. Youth unemployment is also a major challenge for the Mauritian economy which so far has been seen as an example in the African region in terms of economic performance and social and political stability. Though education is free in Mauritius and Government has been investing massively in the education system and encouraging both full-time education and vocational training, the problem of youth unemployment remains a real problem for the Mauritian country. Young people in Mauritius, aged between 16 to 29 years, represent 13 per cent of the Mauritian labour force; yet they face the highest unemployment rate. Youth unemployment is currently 21 per cent which is around three times the overall unemployment rate estimated at 7.8 per cent, indicating the difficulty of new entrants to secure a job. Further, there is a disparity between young males and females. The additional concern is the wide disparity between young males and females. In 2011, the unemployment rate among young women was above 25 per cent compared to around 18 per cent for

young men. This is a puzzling situation as girls perform better than boys at all levels of education namely primary and secondary levels and even at university, whilst they face difficulties in entering the labour market.

Young people out of employment without adequate education, training and skills are at high risk of economic marginalisation and social exclusion and represent a challenge to growth as well as economic and social stability. Persistent youth unemployment leads to growing frustration and foregone national productivity. It is thus, an economic and social imperative to address the youth unemployment challenge – especially at a time of economic slowdown. By defining a specific target through the Millennium Development Goal concerning youth employment (Target 16) the international community has recognised the seriousness of the situation. However, in spite of the dramatic economic, social and political consequences (on poverty, social cohesion, migrations, etc.) of youth employment problems, the literature on African labour markets provides only very few studies focusing on this population (DIAL, 2007). Thus, this paper analyses the problem of overall youth unemployment in the small island economy. To our knowledge, there has been no study dealing with youth unemployment in Mauritius.

Thus, the first aim of the paper is to investigate in a specific way at the youth unemployment issue, analysing the microeconomic determinants of employment. In other words, we explore the main variables that influence the young probability of finding wage employment. Our second objective considers the role of gender in the labour market and differentiates between unemployment across young males and females. Third, we focus on the duration of youngsters being out of the labour market. For those experiencing long and frequent periods of unemployment, their chances of obtaining secure and stable employment (much less careers) are substantially diminished. They become disillusioned with their job prospects and thus either make less effort in their search for jobs or employers judge their time unemployed as indicative of poor skills and abilities. Some may opt out of the labour market altogether. Prior economic research has also shown that people who see spells of joblessness early in their careers tend to see persistently lower wages for years afterward – an effect known as “scarring.”

Our methodology rests on two surveys, undertaken on young people under 29 years, who are either unemployed or actually got a job. The first survey of 410 individuals focuses on young people who are either out or in the labour market. The second survey of 374 individuals covers young people who are unemployed and actively looking for a job. We use random sampling technique where characteristics such as location, gender, age, education among others will be considered to devise a representative sample. To examine the spell of youth unemployment, we adopt multinomial logistic estimation, to differentiate between short-term, medium term and long run unemployment. In addition, logistic techniques are also applied to analyse the probability of falling in and out unemployment during that age structure.

The paper is structured as follows. Section 2 reviews the literature on youth unemployment. Section 3 analyses the data on youth unemployment in Mauritius over the last decade. Section 4 sets out the methodology used including the sample size and sampling strategy adopted. Section 5 analyses the survey data and section 6 presents the findings. We finally conclude in Section 7 with policy recommendations.

2. Literature Review

Globalisation, technological advances and the millennium economic crises have had a profound impact on labour markets in many countries, and young people, in particular, have faced many challenges associated with these developments. The ILO and UN define a youth as an individual aged 15-24 years. High rates of joblessness among young people have been explained in two different ways. The traditional view holds that the youth unemployment plague results from job availability. Youth and females are bearing the brunt of the lack of job opportunities (Verick, 2009). A general shortage of opportunities makes it very difficult for workers to find jobs. It takes the unemployed a long time to find a job. Much of the problem with the traditional view is traceable to those individual who are out of work a large part of the time. The “new” view sees employment instability as the crux of the joblessness problem. The central difference between the traditional and new views of youth unemployment lies in their conception of turnover (Clark and Summers, 1982). The former

emphasizes the infrequency of job finding and the consequent lengthy duration of unemployment, while the latter focuses on the brevity and frequency of unemployment spells. Both views concentrate on flows between unemployment and employment. Less attention is devoted to movements into and out of the labour force.

During the last two decades, there has been a growing concern over youth unemployment and the transition from school to work as more and more young people experience a period of unemployment when first looking for work. The literature on youth unemployment, (Blanchflower and Freeman, 1999, Freeman and Wise, 1984, O'Higgins, 2001 and Rees, 1986) focuses on its nature, causes and consequences, often following a macroeconomic perspective whereas, the literature on transition from school to work adopts a microeconomic and longitudinal approach to study the individual process of finding a job (Dolton *et al.*, 1994, Ryan, 2001, Wolpin, 1987, Giret, 2001 and Vernières, 1997). The main causes of youth unemployment have thus been classified in the economic literature, in two groups, that is whether they are analysed from a macroeconomic or microeconomic perspective.

Following the macroeconomic approach, the determinants of youth unemployment are aggregate demand, youth wages, size of the youth labour force and lack of skills among youth (O'Higgins, 2001). Aggregate demand affects youth unemployment in the same way that it affects the overall level of unemployment. A fall in aggregate demand will lead to a fall in the demand for labour in general and consequently for young labour as well as for adult workers. However, unemployment of young people seems to be more sensitive to changes in aggregate demand than adult unemployment, for a number of reasons. First, young people are more likely than older workers to leave their jobs voluntarily, so youth unemployment rates are typically higher and more cyclically variable than adult rates. Their initial experiences in the labour market often involve a certain amount of "shopping around", to find the appropriate job. The opportunity cost of "shopping around" is lower for young people; they tend to have fewer skills and lower wages, and are less likely to "need" a job to support a family. Youth are more vulnerable than adults in difficult economic times. Assuming that employers seek employees with past experience, the youth who is entering the labour force for the first time will be at a disadvantage and have a harder time finding employment vis-à-vis an adult with a longer history of work experience. In times of surplus labour competing for a limited amount of jobs, the youth will be the "last in". Similarly, because a younger worker is likely to have less tenure than an adult worker, less company funds invested in them for training purposes and to have a temporary contract, it will be considered cheaper to let the younger worker go in times of economic downturns. Thus, young workers will be the "first out" (ILO, 2012). Young people will continue to move in and out of the labour market, albeit to a lesser extent during a recession and will thus be disproportionately affected by recession-induced reductions in new openings.

Demand-side considerations are not the only explanations for the greater sensitivity of youth to unemployment. From the firm perspective, it is cheaper to fire young people than older workers. Having fewer skills, young people represent lower firm level investment in training and subsequently involve a smaller loss to firms making them redundant. Besides, they are less likely to be subject to employment protection legislation (O'Higgins, 2001). Research has also shown that the first reaction of firms to a recession is to stop recruitment before starting on the more expensive procedure of redundancies. Young people, who comprise a disproportionate segment of jobseekers, are more heavily affected by a freeze in recruitment.

Turning to the argument of wages, the higher the relative wages of young workers with respect to those of adults, the greater the firms' incentives to employ adults as opposed to young people. In this case, we assume that young workers are close substitutes for their adult counterparts. In many cases, this may not hold, particularly as regards to skilled adult workers. If young people and adults are complementary in the workplace, reflecting different skills requirements, the wages of young people with respect to adults should have no influence. In such a scenario, both youth wages and adult wages with respect to other input costs will have a negative effect. Blanchflower (1999) observe that in industrialised countries, the young are not being priced out of jobs by wages that are too high. However, the effect of minimum wages on youth employment is often found to be significant (Neumark and Wascher, 1999). Another major contributory factor to youth unemployment is the size of the youth cohort. With the rapidly growing youth populations in developing countries, there will be obviously more young people in the labour market and more jobs will be needed to accommodate

them. Korenman and Neumark (1997) observe that across 15 OECD countries, for young men, the relative cohort size has no significant effect on youth unemployment, while for young women; the cohort size is of substantial importance, with an elasticity of 0.9. This might be explained by the fact that, while the labour force participation rates of young men are more sensitive to economic conditions in terms of wages and employment prospects (both of which are likely to be adversely affected by increases in the relative cohort size), there is a general trend towards increased labour force participation on the part of young women, which may reduce the negative influences on labour force.

The microeconomic theory puts forward other explanations to youth unemployment, however, not specific to the young generation. The theory of human capital (Schultz, 1961, Becker, 1964, Mincer, 1974) differentiates the individuals by their schooling and training investment and accounts for some of the differences in productivities between young people. Young people with low education and experience go through more difficulties to find employment (Giret, 2001). Unemployment may also result from imperfect information on the labour market. Indeed, following this assumption, the theory of job search (Stigler, 1962, Mac Call, 1970) explains the different strategies of job seeking and durations of unemployment by the youth preferences and constraints (reflected in the reservation wage). The theory of job shopping (Johnson, 1978) stipulates that a young work seeker must first try a job before deciding if he is going to keep this employment or start a new search. Unlike the previous theory, models of job matching (Jovanovic, 1979) explain youth joblessness by decisions from both the employee and the employer, based on the individual's productivity.

It should be emphasized that youth unemployment is only the tip of the iceberg and that the insecurity and vulnerability of many more young people who have some form of work are integral parts of the youth employment crisis. Young people suffer disproportionately from decent work deficits and low-quality jobs, measured in terms of working poverty, low pay and/or employment status, including the incidence of informality. In developing economies, where 90 per cent of young people live, the vast majority of young people cannot survive without working. In these countries young workers are especially vulnerable to underemployment and poverty. Evidence shows that young people are more likely than adults to be among the working poor. According to the latest ILO estimates on working poverty, young people make up a disproportionate large share of the world's working poor. In the 52 countries for which data is available, youth accounted for 23.5 per cent of the total working poor, but only 18.6 per cent of non-poor workers. Higher labour force participation rates of the young working poor, most of whom are engaged in the agricultural sector, reflect lost opportunities for many of the young people who might otherwise attend school and acquire skills and education that could raise their future productivity and earnings. Many young working poor lack a primary-level education.

Trends in the youth labour market tend to reflect changes in the adult labour market, although the effects of any shifts that may occur are often magnified in the employment situation of the young. The decline in skilled jobs in the manufacturing sector, together with the increased demand for professional specialists and unskilled labour in the growing service industries, has led to a "hollowing out" of the youth labour market. New opportunities tend to cluster at the top end, in the professional and advanced technical sector, and at the bottom end, in the low-tier service industries. An increasing number of young people are also finding work in the informal economy, where jobs are usually characterized by insecurity and poor wages and working conditions.

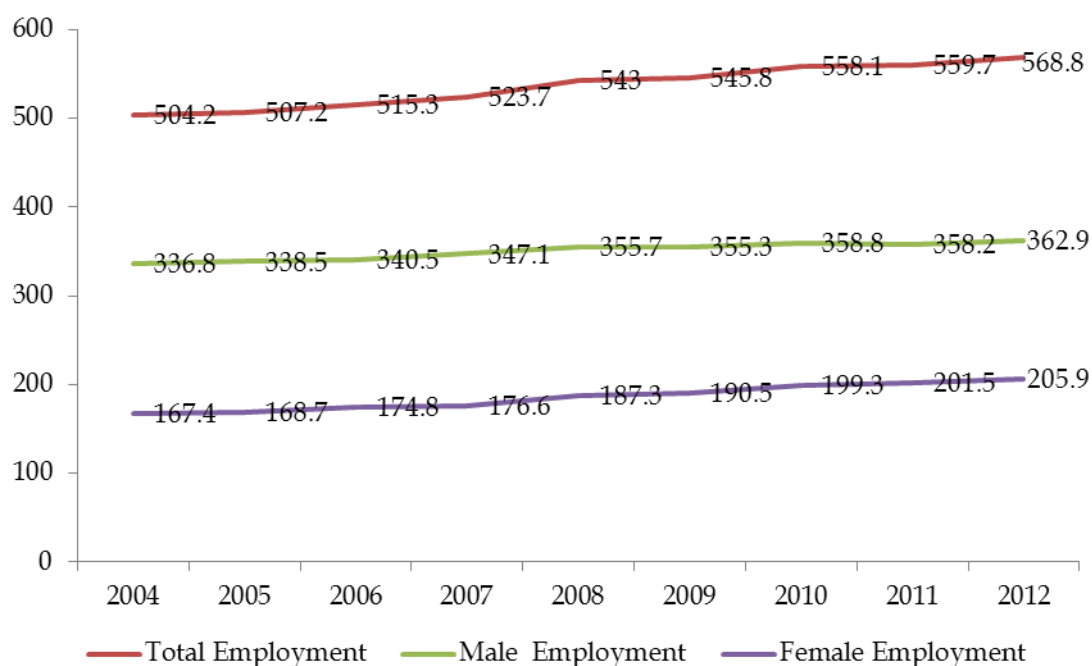
3. Youth Unemployment in Mauritius

3.1. Situational Analysis of Employment in Mauritius

Mauritius has achieved remarkable economic success over the past four decades. Back in 1968 the country was entirely dependent on sugar exports and showed little scope for sustained economic progress and prosperity. It has since evolved into an upper middle income economy and is today one of the strongest economies in Africa. This turnaround has to a large extent been built on the development strategies adopted at distinct phases of the country's economic history. Structural economic change over the past four decades has led to changing patterns of employment. Agriculture and Government were the main sources of employment during the 1960s and 1970s. EPZ, Tourism,

Financial and Business Services and ICT have since emerged as the major engines of job creation. Figure 1 below shows the female and male employment trend from 2004 to 2012.

Figure-1. Male and Female Employment from 2004-2012 (in 000's)



Source: Statistics, Mauritius

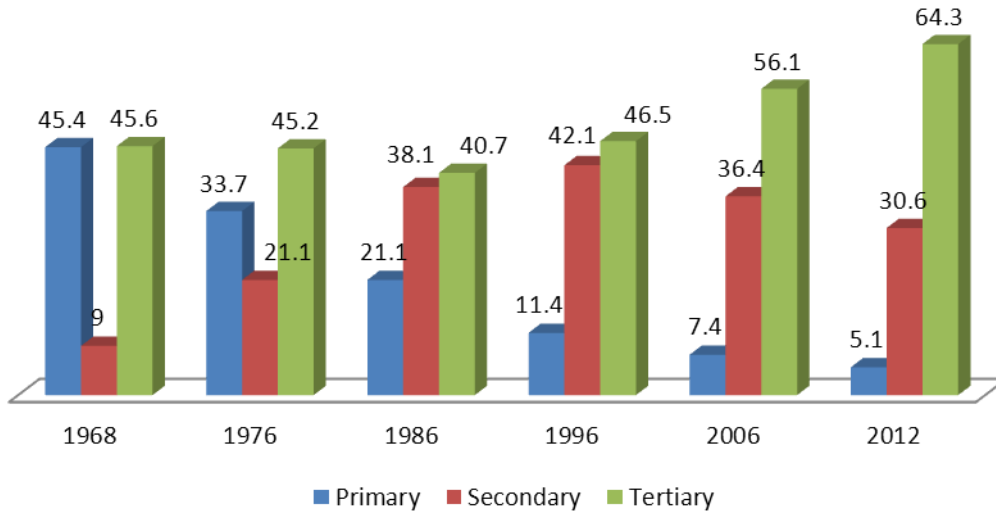
Over the years, employment in Mauritius has been rising with an increased participation of women in the labour market. From the fourth quarter of 2011 to the fourth quarter of 2012, employment increased by 14,300 to 556,100; male employment increased by 3,600 to 351,200 whilst female increased by 10,700 to 204,900.

From a sectoral perspective, we can note that the primary sector employment has witnessed a relentless decline over the years, falling from 45.4 percent in 1968 to 5.1 percent in 2012. The sugar industry is the largest component of the primary sector. Employment in large sugar establishments as a share of total employment in all large establishments has plummeted from more than 40 percent in 1968 to below 3 percent in 2012. Declining employment in recent years has been due to the restructuring of the sugar sector in order to meet the challenges of eroding trade preferences, falling sugar prices and increased global competition. The share of secondary sector employment rose from 9 percent in 1968 to more than 40 percent in the 1990s. It has dropped to 30 percent in 2012. Employment trends in the secondary sector are driven by changes in the EPZ sector. Employment growth in large EPZ establishments was at its highest during the late 1980s, rising by around 61,000 during the period 1984 to 1988, that is an average annual increase of 34 percent. By the end of 1980s employment in large EPZ establishments represented around 33 percent of total employment in large establishments compared to only 11 percent in 1980. Since attaining a peak of 90,798 in 2001, employment in large EPZ establishments has been in decline, falling by 40.6 percent to reach 53,967 in 2012. EPZ accounted for less than 18 percent of employment in large establishments in 2012. This has mainly been the result of a loss in competitiveness in the face of fierce international competition and eroding trade preferences.

Employment in the tertiary sector, inclusive of Government, has increased from 56,850 to 195,473 between the period 1968 to 2012, representing a rise from 45.6 percent to 64.3 percent of total employment. Government is the single largest employer. Yet it is noteworthy that employment in Government as a share of total employment in large establishments has fallen from 73 percent to 24 percent between 1968 and 2012. Tourism, Financial and Business Services accounted for 7.9 percent and 11.8 percent of total employment in large establishments in 2012 as compared to 1.6 percent and 2.2 percent in 1980. The rapid growth of the ICT sector has created a significant number of new jobs.

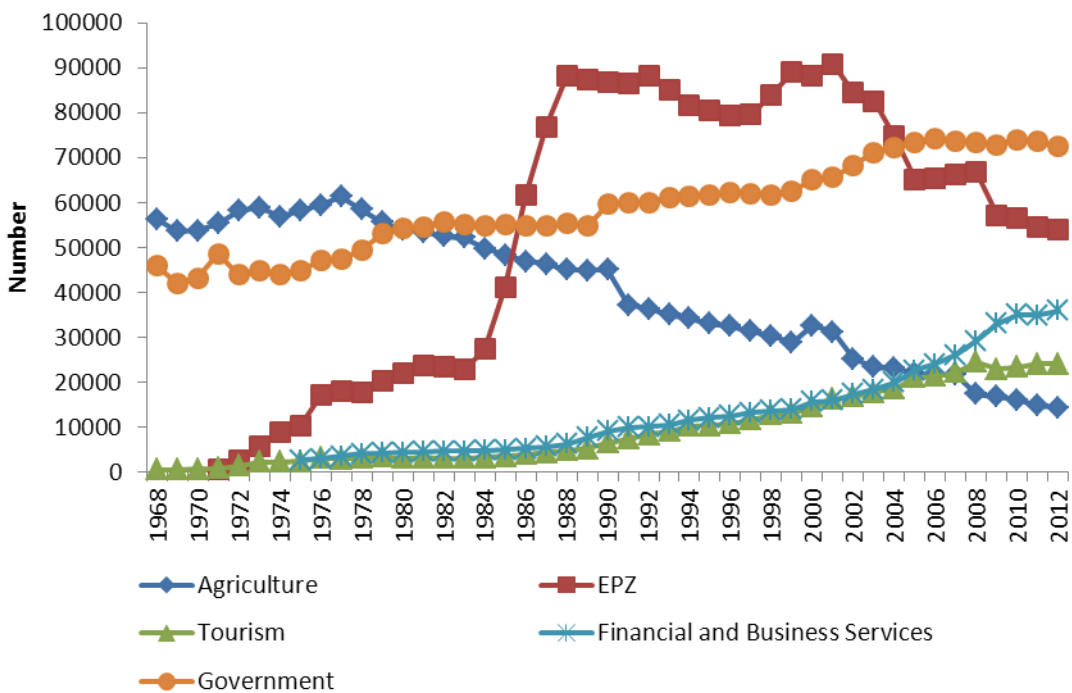
Employment in the sector has increased by more than 30 percent during the past five years to exceed 13,000 employees in 2012 (i.e. around 4.5 percent of total employment). This is shown by Figures 2 and 3 (Employment by sector) below.

Figure-2. Sectoral Shares of Employment in Large Establishments, 1968-2012



Source: Statistics, Mauritius

Figure-3. Employment Trends in Main Economic Sectors, 1968-2012



Source: Statistics, Mauritius

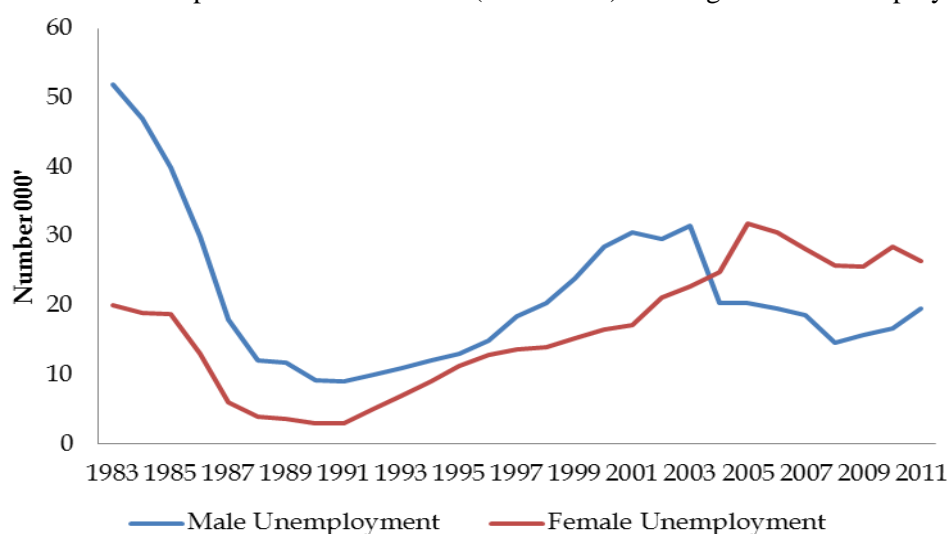
Since the 1990s, small establishments have been the driver of job creation in Mauritius. Employment in small establishments increased from 136,300 in 1990 to 250,800 in 2012, which is equivalent to an average annual increase of 3 percent. The increase in employment in small establishments over the past 20 years has been 4 times greater than in larger enterprises. Employment creation in large establishments has been relatively small during much of the 1990s and 2000s. Net job creation in large establishments amounted to only 26,700 between 1990 and 2012. As such,

employment in small establishments as a share of total employment increased from 32 percent in 1990 to 44.6 percent in 2012. Meanwhile unemployment which had been gradually increasing since the early 1990s gathered a new momentum with job losses in the EPZ sector resulting from growing international competition and the loss of trade preferences. The unemployment rate crept up to 9.6 percent by 2005. Economic reforms as from 2006 brought a period of respite in the increasing unemployment trend but this has been short lived as there has been a negative impact of the global financial and economic crisis and the Euro zone crisis on jobs. Unemployment has thus been on the rise again since 2008.

The overall unemployment rate has been rising, particularly since 2004 and the unemployment rate for women has more than double relative to men with the male-female unemployment gap widening over the years. In 2010, 64 per cent of the unemployed were women. Further, 67 percent of unemployed women were married relative to 36 percent for unemployed males. Women are less economically active compared to men (Tandrayen-Ragoobur et al. 2011). The number of unemployed persons numbered 45,200, comprising 16,700 males and 28,500 females. In 2010, the unemployment rate was 7.8 percent, higher among females (13.0 percent) than among males (4.6 percent). In the same year, unemployed women outnumbered unemployed men at all ages though they were generally more qualified. From the fourth quarter of 2011 to the fourth quarter of 2012, the number of unemployed persons increased by 3,000 to 46,800. This increase was due to an increase of 2,100 in the number of unemployed females and 900 in unemployed males. The unemployment rate increased by 0.3 percentage point to 7.8 percent from fourth quarter 2011 to fourth quarter 2012. Male unemployment rate increased by 0.2 percentage point to 5.1 percent whilst female unemployment rate increased by 0.2 percentage point to 12.0 percent.

Further from Figure 4 below, we find that as from 2004, female unemployment has exceeded male unemployment and the gender gap in the labour market has increased considerably since then. This rising female unemployment rate can be partly explained by the decline in the employment level of the EPZ sector due to closure of many firms due to the end of the Multi Fibre Agreement in 2004 (Tandrayen-Ragoobur and Ayrga, 2012). It led to massive structural unemployment, especially for women as the EPZ sector employed quite a large number of women. These women were unable to move to another sector of activity due to lack of appropriate skills and higher educational background. In addition, with the EU sugar reforms, which led to a fall of 36 percent in the sugar prices, the government and private sector adopted the Multi Annual Adaptation Strategy to restructure the sugar sector. One of the main measures introduced was the Voluntary Retirement Scheme in 2001 to reduce the labour force in the sugar industry. Many sugar factories closed down and workers, mostly women lost their jobs.

Figure-4. Gender Gap in the Labour Market (1983-2012) - Rising Female Unemployment



It has also been argued that marital status has a highly significant negative effect on female labour participation (Tandrayen-Ragoobur et al., 2011). Marital status is seen to be the most important

factor that prevents women to enter the labour market in Mauritius. It can be argued that Mauritian women value their married life more than work. A person usually derives utility from leisure and the consumption of a composite good. The woman in particular derives utility from leisure, consumption but also from being married and also the presence of her children (Van Der Klaauw, 1996). In addition to the direct utility derived from being married, marriage may provide additional utility gains through an increase in income as well as a possibly higher utility derived from having children when married. However, a major problem in Mauritius is lack of facilities in terms of day care centres for children. In fact many women when married and having children are not able to work. Another reason which may explain gender gap in the labour market is the lack of flexible working hours. One of the most important characteristics is that of having children. Specifically, Barone and Mocetti (2011) prove that having children is likely to have a negative effect on female labour force participation. If a great deal of studies is available about the effect of early motherhood on labour force participation, the same cannot be affirmed for the role of fatherhood (Eggebeen and Knoester, 2001)

3.2. Youth in the Mauritian Labour Market

In Mauritius, according to the National Youth Policy (2009), a young person is defined as one aged between 15 and 29 years. Based on this definition, the youth make up 24 percent of the Mauritian population. The legal working age in Mauritius being 16 years, the latest available statistics as at December 2012 indicate that there were 155,600 young people aged 16-29 years in the labour force (i.e. 25.8 percent of the Mauritian labour force). 128,900 were in employment and 26,700 were jobless. Despite representing around one quarter of the labour force, the youth accounted for 57.1 percent of the unemployed population in December 2012. The youth unemployment rate of 17.2 per cent during the last quarter of 2012 was more than twice the overall unemployment rate of 7.8 percent in Mauritius in the same quarter. Young people aged 16-29 are more vulnerable in the labour market and have the most difficulty in securing jobs. This is shown in Table 1 below.

Table-1. Labour force characteristics by age and sex, 4th Quarter 2012

	In thousands					
	Mauritian aged 16 and over	Age group (years)				
		16-24	25 - 29	30 - 39	40 - 49	50+
Both sexes						
In employment	556.1	65.6	63.3	152.4	144.2	130.6
Unemployed	46.8	19.3	7.4	9.9	6.4	3.8
Labour force	602.9	84.9	70.7	162.3	150.6	134.4
Economically inactive	394.1	100.4	17.6	43.4	39.0	193.7
Total Population	997.0	185.3	88.5	205.6	189.6	328.0
Employment rate (%)	92.2	77.3	89.5	93.9	95.8	97.2
Unemployment rate (%)	7.8	22.7	10.5	6.1	4.2	2.8
Activity rate (%)	60.5	45.8	79.9	78.9	79.4	41.0
Male						
In employment	351.2	42.3	38.6	93.1	87.8	89.4
Unemployed	18.8	8.0	3.4	3.1	2.2	2.1
Labour force	370.0	50.3	42.0	96.2	90.0	91.5
Economically inactive	118.2	44.2	3.2	6.1	3.8	60.9
Total Population	488.2	94.5	45.4	102.2	93.8	152.3
Employment rate (%)	94.9	84.1	91.9	96.8	97.6	97.7
Unemployment rate (%)	5.1	15.9	8.1	3.2	2.4	2.3
Activity rate (%)	75.8	53.2	92.5	94.1	95.9	60.1
Female						

In employment	204.9	23.3	24.7	59.3	56.4	41.2
Unemployed	28.0	11.3	4.0	6.8	4.2	1.7
Labour force	232.9	34.6	28.7	66.1	60.6	42.9
Economically inactive	275.9	56.2	14.4	37.3	35.2	132.8
Total Population	508.8	90.8	43.1	103.4	95.8	175.7
Employment rate (%)	88.0	67.3	86.1	89.7	93.1	96.0
Unemployment rate (%)	12.0	32.7	13.9	10.3	6.9	4.0
Activity rate (%)	45.8	38.1	66.6	63.9	63.3	24.4

Source: Statistics Mauritius

There is a marked disparity between young males and females. The unemployment rate among young women aged 16-29 was 24.2 per cent compared to 12.4 per cent for young men in December 2012.

Figure-5. Male and Female Youth Unemployment (2004-2011)



Source: Statistics Mauritius

4. Methodology

4.1. Research Questions

The objective of the paper is to examine the youth unemployment issue in Mauritius, by analysing the microeconomic determinants of employment. In other words, we explore the main variables that influence the young probability of finding wage employment. Our second objective considers the role of gender in the labour market and differentiates between unemployment across young males and females. Third, we focus on the length of time a young person is out of the labour market and the factors relating to a longer time span in being unemployed.

4.2. Questionnaire Design

The questionnaire is designed in such a way as to account firstly for the individual's profile. Section A of the survey looks at gender, age, marital status, family size, educational background, field of study, education of parents, the place where the individual lives, the head of household and income of parents. Section B relates more to the present employment status of the individual that is his/her present job, the number of working hours, the occupation of the respondent, number of jobs effected before the current job, length of unemployment before the present job, the reasons for leaving each job and the length of time spent in each job prior to the current one. The other questions emphasize on job search that is how the respondent has been able to get a job and the factors that may explain his/her success in finding employment. We also ask the individual about whether he/she wants to work more in terms of number of hours or seek a secondary job.

The last section of the questionnaire analyses the present unemployment status of the young individual. This part considers job search and the obstacles encountered in finding work. The discouraged worker effect is also captured as well as the time period for job search. The problems which the youngster faces as a result of being unemployed are also depicted.

4.3. Sampling Strategy

The stratified sample is obtained by independently selecting a separate simple random sample from each population stratum. The population is divided into different groups based on characteristics such as gender, age, occupation and location of the respondent. To determine the sample size, three criteria need to be specified namely the level of precision, the level of confidence or risk, and the degree of variability in the attributes being measured (Miaoulis and Michener, 1976).

Assume that we do not know the variability in the number of unemployed and employed youth; we, therefore, assume $p = 0.5$ (maximum variability). Furthermore, suppose we desire a 99% confidence level and $e = \pm 5\%$ is the level of precision. The resulting sample size is demonstrated in the following equation. $n_0 = \frac{Z^2 pq}{e^2} = \frac{(1.95)^2 (0.5)(0.5)}{(0.05)^2} = 380.25$. We use 5 percent for the level of precision.

For the first survey, we consider the population of Mauritius, which is around 1.2 million. Because a given sample size provides proportionately more information for a small population than for a large population, the sample size (n_0) can be adjusted as

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}} = \frac{380.25}{1 + \frac{(380.25 - 1)}{1200000}} = 380.13, \text{ where } N \text{ is the population size. Our data set thus}$$

covers 410 young people in Mauritius in different regions with various gender, marital status and age characteristics as well as educational background.

For the second survey of unemployed youth, we use the same methodology as above but concentrate only on unemployed youth which total 26,700 in the last quarter of 2012. Based on this figure and using the following formulae, we have

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}} = \frac{380.25}{1 + \frac{(380.25 - 1)}{26,700}} = 374.03$$

Our sample size thus consists of 374 unemployed young individuals actively seeking a job in the Mauritian labour market.

4.4. Sample Size

Our methodology rests on two surveys. The first one covers young people below 29 years and comprises of 410 young people who are either out or in the labour market. The second survey considers 374 young individuals who are unemployed and actively looking for a job (based on the sampling strategy specified in section 4.3).

4.5. Model Specification and Econometric Techniques

We aim at modelling the probability of working using the relevant variables that emerged in the literature review. Specifically we consider the following equation

$$W_i = \alpha + \beta' X_i + \varepsilon_i \tag{1}$$

where W_i is whether the young respondent is employed ($W_i=1$) or not ($W_i=0$). Moreover, ε_i is a random error assumed to be independent and identically distributed, with mean zero and variance σ_i^2 . β' stands for the vector of coefficients to be estimated and X_i for the regressors. Multiple

regression analysis is initially carried out to find the factors that influence the probability of the young in getting a job in the Mauritian labour market.

However, since the dependent variable is dichotomous, Ordinary Least Squares may not be applicable. Multivariate analysis, using a logistic regression in accordance with the basic principles of discrete choice models is applied. Thus

$$Pr ob(W_i = 1) = F(\beta' X_i) \text{ and } Pr ob(W_i = 0) = 1 - F(\beta' X_i) \quad (2)$$

The probability of having a job depends on a set of variables listed below and denoted as X. Using the logistic distribution, we have

$$Pr ob(W_i = 1) = \frac{e^{\beta' X_i}}{1 + e^{\beta' X_i}} = \Lambda(\beta' X_i) \quad (3)$$

where represents the logistic cumulative distribution function. Then, the probability model is the regression

$$E\left[\frac{W_i}{X_i}\right] = 0[1 - F(\beta' X_i)] + 1[F(\beta' X_i)] = F(\beta' X_i) \quad (4)$$

In addition to the probability of finding a job or being unemployed, we also analyse the length of time the individual has been out of the labour market and see whether it differs across personal characteristics like gender, age, educational attainment or family characteristics like family size and number of children or income characteristics like father's income among others.

The explanatory variables used for the specifications in the analysis of youth unemployment in Mauritius are: gender (male or female), other personal characteristic (age and its square), working experience, demographic characteristic (head of household, family size and number of children), educational attainment (primary, secondary and tertiary), and location (urban and rural districts of the island). The complete list of variables used in the empirical analysis is summarised in Table A in the appendix. We use STATA 12 for computation of variables and estimation of the above specifications.

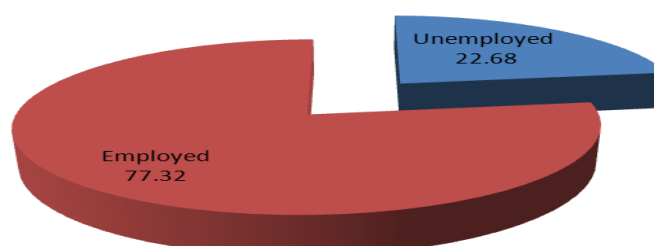
5. Data Analysis: The Survey

5.1. Survey I – Employed and Unemployed Youth

5.1.1. Profile of Young Individuals Surveyed

From the survey of 410 individuals, we note that 22.7 percent are unemployed while 77.3 percent have a job (see Figure 1 below). This is in line with the present youth unemployment rate prevailing in the small island economy.

Figure-6. Distribution of Unemployed and Employed Youth in Mauritius



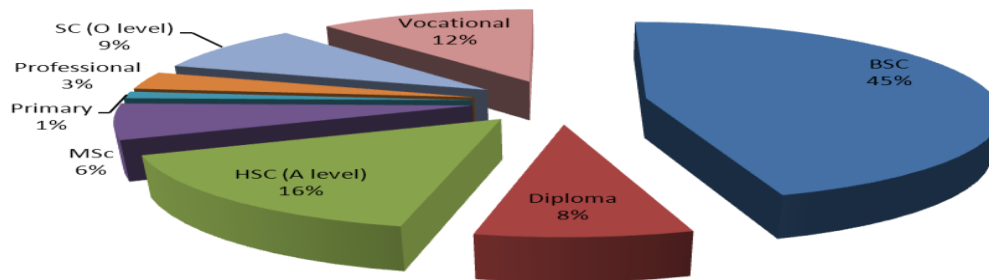
Source: Own Survey, 2013

In our sample, 83.6 percent of male are employed while 16.4 percent do not have a job. 68.6 percent of women in the study are employed relative to 31.4 percent being out of the labour market. With respect to their marital status, we note that the majority (91 percent) of young below 29 years old are single, while only 8.8 percent are married and the rest are separated. It is also observed that 47.2 percent of the respondents have a family size of 4 members, 19.8 percent live in a household of 5 members and around 15 percent have a family of 3 members.

From the sample, we further note that most of the young interviewed are still dependent on their parents as the head of household in the majority of cases (84.6 percent) is either their mother or father, while only around 8.8 percent of the respondents are head of household. Thus, 42.8 percent generate their main source of income for their daily expenses from their parents whereas around 40.5 percent use their own salary for their expenditure. Out of the 410 interviewees, 69.3 percent live in rural areas while the rest reside in towns.

In addition, the educational background of the individuals is captured and it can be observed from Figure 7 below that 45 percent of those interviewed have a first University degree (a Bachelors), 16 percent have completed A-level, 12 percent have completed a vocational course, 9 percent have reached an O-level, 8 percent have a Diploma and 6 percent have graduated with a postgraduate degree (a Masters).

Figure-7. Educational Background of Survey Respondents

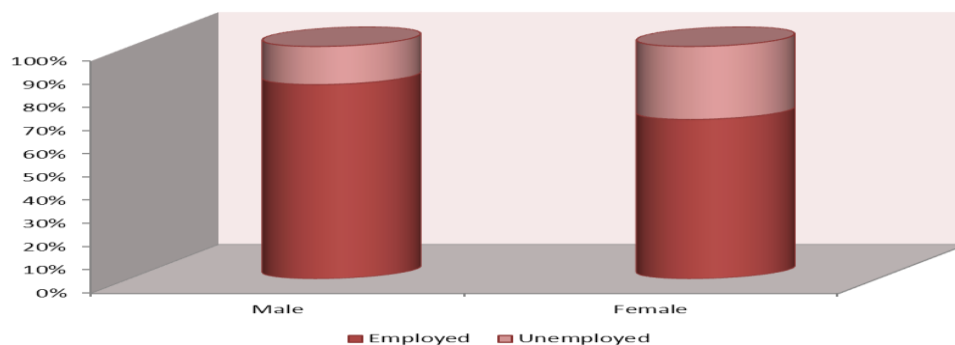


Source: Own Survey, 2013

5.1.2. Comparative Analysis of Young Employed and Young Unemployed in Mauritius

From the sample, 89.6 percent of those employed are single and the same picture holds for unemployed youth, as 95.7 percent are not married. For those young people who are employed, 62.7 percent are male while 37.2 percent are female. Unemployment is more pronounced for young women and this is also depicted in our survey as 58.1 percent are female relative to 41.9 percent being male. This is shown in Figure 8 below. This confirms the marked disparity between young males and females. The unemployment rate among young women aged 16-29 is much higher and our survey confirms the macroeconomic data discussed above. Female is often associated with a higher probability of being unemployed, as put forward by Kostoris and Lupi (2002), Quintano et al. (2012).

Figure-8. Unemployed and Employed Youth by Gender



Source: Own Survey, 2013

In terms of location, 71 percent of the employed live in the rural areas while the rest around 29 percent reside in towns. The same picture holds for the unemployed, as the majority of them (63 percent) reside in rural areas and the rest (27 percent) are in towns. We assess the dependence of young people on the income of their parents and note that the probability of being in wage employment is higher when the father’s income of the young person is lower. The average income of the father’s income is Rs 20, 402 for the unemployed young individual whilst that of the employed young’s father stands at Rs 13,156.

We also observe a positive correlation between the parents’ education level and the young’s probability of working. From table 2 below, we perceive a positive relationship between the secondary education level of the parents and the probability of working. However, the same does not hold for tertiary education level, where a negative correlation coefficient is obtained. It may be that once the parent has tertiary education, they are in white collar jobs with high income level and the young does not find the urgent need of getting a job.

Table-2. Correlation Matrix between Parents’ Education and Probability of Working

	Employed		Employed
Father's education		Mother's Education	
Primary	0.01	Primary	-0.08
Secondary	0.04	Secondary	0.13
Tertiary	-0.10	Tertiary	-0.15

Source: Own Survey, 2013

We further investigate the educational profile of both employed and unemployed youth in the sample and as shown by Figure 9 below, we note that around 41 percent of those employed have a first University degree, 18.6 percent have their A -evel, 12.9 have completed vocational courses, 11 percent have their O level and 8.8 percent completed a Diploma. For those young people who are out of the labour market, we perceive a high percentage (60.2 percent) with a University degree and even worst 9.7 percent with a postgraduate degree. It can be argued that having completed high education does not guarantee the young individual a place in the labour market. In fact, there is an “over-education problem” in Mauritius, which is also the case in many high income countries, with the higher education sectors producing too many graduates for the labour market to absorb (Mc Guinness, 2006).

Young people in Mauritius may also lack the necessary soft skills and relevant practical experience required by employers. Both of these aspects are direct consequences of insufficient linkages between the education system and the world of work (for example in terms of curriculum contents, work placements and internships). There is very much a skills mismatch in Mauritius whereby the skills needed/ demanded by firms and organisations do not match those available on the supply side. In turn, over-education may create an “under-employment problem”, with graduates working in jobs that do not require the skills acquired through their study. While empirical research based on a variety of methodological approaches (Lenton, 2011) does provide evidence of significant graduate under-employment, it is often viewed as a “short-term” problem, becoming less prominent the longer graduates remain in the labour market.

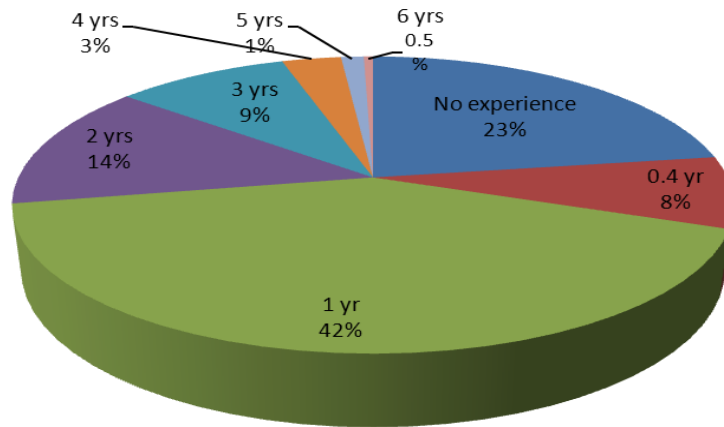
Figure-9. Educational Background of Unemployed and Employed Youth in Mauritius



Source: Own Survey, 2013

Experience might well be a problem for the unemployed youth. In our survey, we note that those who are unemployed do not have work experience. Around 42 percent of the respondents have 1 year of working experience, 23 percent (mainly the unemployed) have no experience while 14 percent and 9 percent of the young interviewed have 2 and 3 years of working experience as shown in Figure 10 below.

Figure-10. Working Experience of the Youth in Mauritius

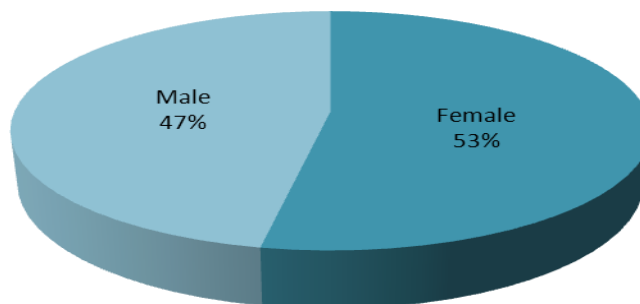


Source: Own Survey, 2013

5.2. Survey II –Unemployed Youth

Our second survey focuses on 374 unemployed youth and we note that 53 percent of the respondents are female while 47 percent are male. This is shown in Figure 11 below. We also observe that around 72 percent of the unemployed youth are single, 27 percent are married and less than 1 percent are separated. In terms of their place of residence, 18 percent live in the Plaine Wilhems (Centre), 12 percent and 11 percent reside in Moka (Centre) and Riviere du Rempart (North) respectively and 11 percent live in Savanne (South) and Flacq (East), while 9 percent live in Port-Louis (Capital city). Thus, a higher percentage is located in the rural areas.

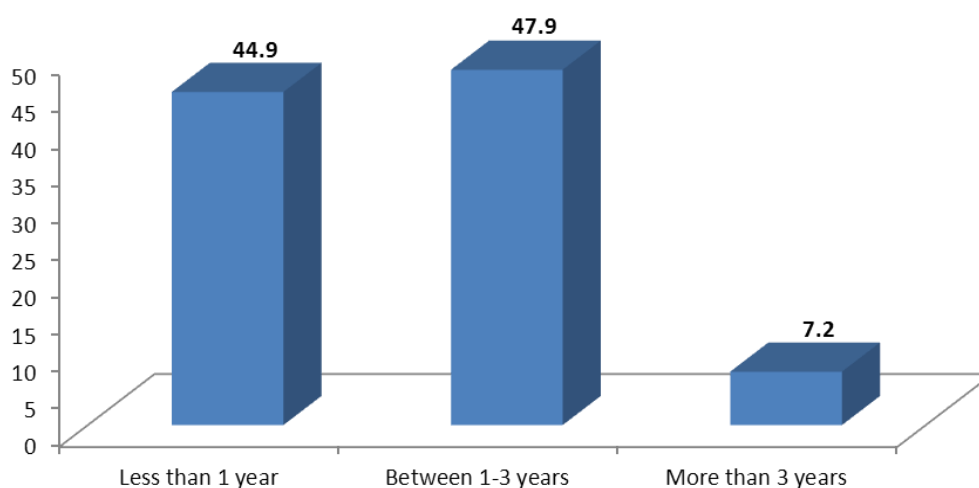
Figure-11. Unemployed Youth by Gender



Source: Own Survey, 2013

The second aspect being investigated is the duration of youth unemployment in Mauritius. In the survey, they were asked the period of time they have been out of the labour market. Figure 12 below shows that 47.9 percent are out the labour market for a period of 1-3 years, around 45 percent are not being employed for less than 1 year whilst 7.2 percent have been unable to get a job for more than 3 years.

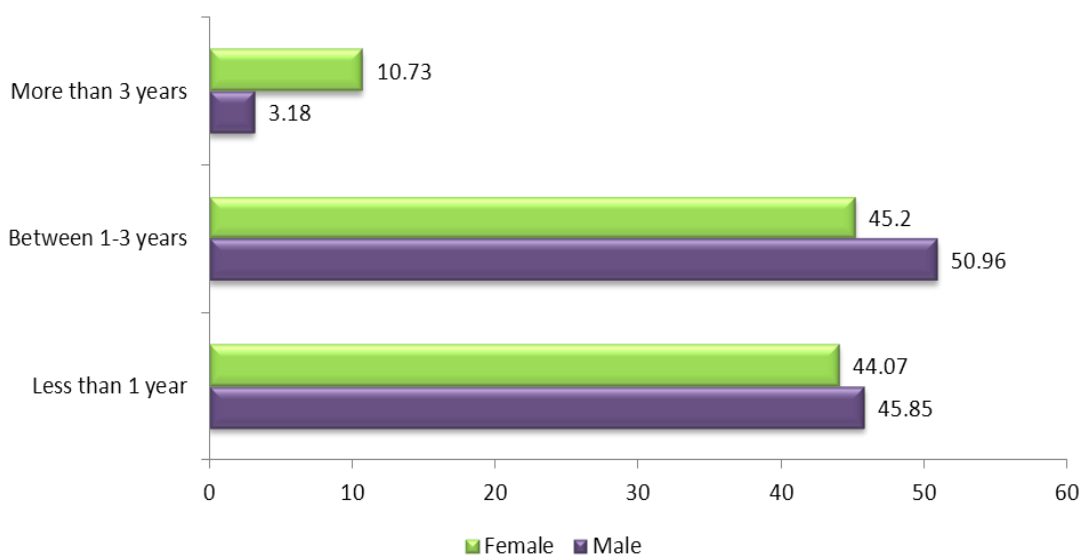
Figure-12. Length of Unemployment



Source: Own Survey, 2013

A breakdown by gender shows that women are more likely than their male counterparts to stay out of the labour market for more than 3 years (see Figure 13 below). Long term unemployment seems to be more problematic for female youth. A slightly higher percentage of male (45.9 percent) are unable to find wage employment for a period of less than a year compared to female youth (44.1 percent). From the aggregate figures in the previous section, we note that female youth unemployment is much more pronounced than male youth unemployment and this is further confirmed by our survey which shows that women are more likely to face long term periods of unemployment relative to their male counterparts.

Figure-13. Length of Unemployment by Gender



Source: Own Survey, 2013

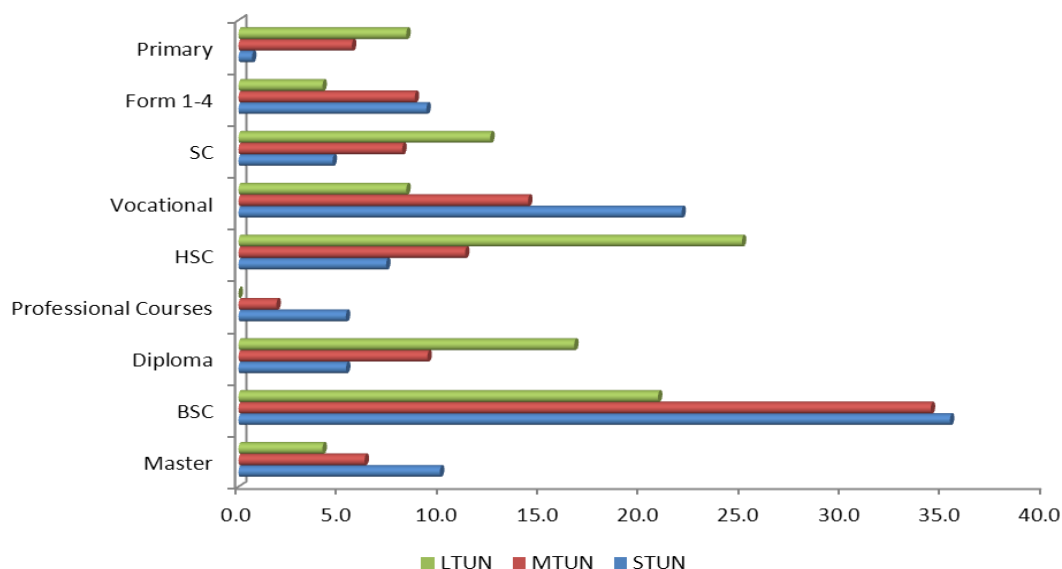
Lastly, we investigate the duration of being out of the job market in relation to the educational background of the young person. Table 3 and Figure 14 below show the link between the two variables. It is observed that a high percentage of those young with an A-level find themselves in long term unemployment followed by those having a first University degree (Bachelors degree). The BSc Holders find themselves also in short term unemployment (35.5 percent) and medium term unemployment (34.4 percent).

Table-3. Length of Unemployment by Education Level Attained

Percentage of Young	Short Unemployment (less than 1 year) STUN (%)	Term Medium Unemployment (1-3 years) MTUN (%)	Term Long Unemployment (More than 3 years) LTUN (%)
Master	10.0	6.3	4.2
BSC	35.3	34.4	20.8
Diploma	5.3	9.4	16.7
Professional Courses	5.3	1.9	0.0
HSC (A Level)	7.3	11.3	25.0
Vocational	22.0	14.4	8.3
SC (O Level)	4.7	8.1	12.5
Form 1-4 (Incomplete Secondary Level)	9.3	8.8	4.2
Primary	0.7	5.6	8.3

Source: Own Survey, 2013

Those young with a professional course are less likely to be out of the job market for long. Diploma holders and the young people who have completed their O-level are also in long term unemployment, with 16.7 percent and 12.5 percent respectively.

Figure-14. Length of Unemployment by Education Level Attained

Source: Own Survey, 2013

6. Findings

6.1. Estimating the Microeconomic Determinants of Youth Employment in Mauritius

To gauge the microeconomic determinants of employment in Mauritius, separate specifications are used as described above. We first estimate equations (1) using the Ordinary Least Square (OLS) technique. Relevant tests have been undertaken to meet OLS assumptions. We then estimate equation (4) using logistic regression technique. We perform some preliminary checks to detect the presence of major outliers and to test for heteroscedasticity. This is done using the Cook and Weisberg (1983) test. We also use the Shapiro-Wilk test for normal data and the Kernel density estimates from STATA to test for the normality of the residuals. Since there is no serious problem, we thus apply logistic regression technique with the dependent variable being discrete. The results are tabled below.

Table-4. Probability of being in Wage Employment: OLS and Logistic Regressions

Variables	OLS	Logit
Male	0.116 (2.54)**	0.764 (2.55)**
Single	0.041 (0.38)	0.408 (0.54)
Age	-0.345 (1.71)*	-2.388 (1.49)
Age2	0.010 (1.96)*	0.069 (1.75)*
Secondary	0.241 (4.15)***	2.388 (4.01)***
Tertiary	-0.081 (1.18)	-0.812 (1.56)
Number of Children	0.245 (2.60)***	- -
Family Size	-0.045 (2.36)**	-0.278 (2.19)*
Household Head	0.014 (0.24)	0.002 (0.00)
Grand Port	0.186 (1.73)*	1.252 (1.54)
Black River	0.385 (4.32)**	3.35 (3.12)***
Flacq	0.275 (2.91)**	1.849 (3.05)** *
Pamplemousses	0.296 (3.16)**	2.092 (3.44)***
	OLS	Logit
Plaine Wilhems	0.141 (1.46)	1.085 (1.86)**
Port Louis	0.224 (2.33)*	1.531 (2.42)***
Riviere du Rempart	0.191 (1.91)*	1.271 (2.13)***
Moka	0.187 (1.93)*	1.333 (2.10)***
Constant	3.496 (1.69)*	19.243 (1.19)
R-Squared	0.2	-
Prediction (Marginal Effects)	-	0.83
N	409	389

Source: Authors' Computation

From Table 4 above, the results point out that being a male is associated with a higher probability of being employed. We notice that women have had a lower level of employment relative

to their male counterparts. There is also evidence that personal and family characteristics are important in influencing the probability of working. The larger the family size, the lower the probability of working which may imply that the youngsters depend on the income of family members such as their parents and are less likely to enter the labour market. Considering the demographic variables, we observe that, as expected, there is an inverse U shaped relationship with age which is statistically significant. The positive effect of education with respect to probability of working is confirmed in the Mauritian case. However, only secondary education appears to have a positive and significant effect while tertiary education turns out to be negative and statistically insignificant. From the regional dummies, there is not much disparity in probability of working across regions.

6.2. Estimating the Microeconomic Determinants of Female and Male Youth Employment

From Table 5 below, it can be argued that the inverse U shaped link between age and probability of working holds for female young in employment. Secondary education also seems to have a positive impact on the ability to get a job. For young male, secondary education also helps in obtaining a job while we note a negative and significant effect of tertiary education. Tertiary education may not help the young in getting a job; we have seen above that there is an “over-education problem” in Mauritius, with the higher education sector producing too many graduates for the labour market to absorb. We have the government policy of one graduate per family which might not help in the case of youth unemployment.

Table-5. Probability of being in Wage Employment: Gender Approach

Variables	Female Young	Male Young
Single	0.885 (0.98)	0.021 (0.01)
Age	-9.019 (1.84)*	0.755 (0.36)
Age2	0.224 (1.97)**	-0.008 (0.14)
Secondary	2.256 (1.73)*	1.741 (2.46)*
Tertiary	-0.197 (0.31)	-1.634 (1.91)*
Family Size	-0.325 (1.61)	-0.27 (1.38)
Household Head	-0.445 (0.24)	0.008 (0.01)
Grand Port	0.72 (0.64)	1.902 (1.50)
Flacq	0.987 (1.07)	3.233 (2.76)***
Pamplemousses	1.698 (1.61)	2.743 (3.18)***
Plaine Wilhems	1.028 (1.07)	1.307 (1.59)
Port Louis	0.807 (0.84)	2.323 (2.66)***
Riviere du Rempart	0.378	2.862

	(0.41)	(2.42)**
Moka	1.364	1.585
	(1.45)	(1.66)*
Constant	89.901	-11.48
	(1.71)*	(0.54)
N	165	196

6.3. Estimating the Duration of Youth Unemployment

Our third objective rests on the duration of youth unemployment in Mauritius. Based on the second survey of 374 young individuals, we note that young males are unlikely to be in long term unemployment compared to their female counterparts (see Table 6 below). As we have seen above, young women are more prone to stay a longer period of time away from the labour market. Single young individuals appear to be in long term unemployment compared to married young individuals. In addition, those with secondary and tertiary education do not stay out of the labour market for long.

As for medium term unemployment, male youth are more likely to be present in this category. However, having secondary education may help in reducing the probability of being out of the labour market in the medium term. We further note the inverse U shape relationship between age and short term unemployment. Secondary and tertiary educations appear to increase the probability of being in short term unemployment. In fact many young having completed either secondary schools or a first degree at the University are in a period of job search which is likely to be a short term period out of the labour market.

Table-6. Probability of being in Long Term, Medium Term and Short Term Unemployment: Logistic Regressions

Variables	LTUN	MTUN	STUN
Male	-1.556 (2.04)**	0.436 (1.65)*	-0.079 (0.30)
Age	4.582 (1.54)	1.86 (1.54)	-2.279 (1.84)*
Age2	-0.097 (1.35)	-0.042 (1.44)	0.049 (1.66)*
Single	1.054 (1.95)*	-0.678 (2.24)**	0.488 (1.57)
Secondary	-1.529 (2.05)**	-1.248 (1.67)*	2.502 (2.42)**
Tertiary	-3.296 (3.08)***	-1.175 (1.45)	2.924 (2.75)***
Black River	-0.79 (0.62)	-0.189 (0.37)	0.366 (0.66)
Flacq	-0.81 (0.78)	-0.745 (1.43)	0.954 (1.74)*
Grand Port	-0.054 (0.06)	0.068 (0.13)	-0.095 (0.17)
Moka	0.752 (0.92)	-0.684 (1.33)	0.420 (0.76)
Pamplemousses	-0.318 (0.25)	-0.153 (0.29)	0.228 (0.4)
Plaine Wilhems	-0.902	-0.907	1.068

	(0.87)	(1.86)*	(2.03)*
Port Louis	-1.186	-0.053	0.277
	(1.11)	(0.10)	(0.47)
Rempart	0.574	-0.376	0.094
	(0.79)	(0.73)	(0.17)
Constant	-53.997	-18.808	22.558
	(1.76)*	(1.50)	(1.75)*
N	374	374	374

Source: Authors' Computation

7. Conclusion and Policy Implications

The paper examines the youth unemployment issue in Mauritius, by analysing the microeconomic determinants. In other words, we explore the main variables that influence the young probability of finding wage employment. The, we investigate the role of gender in the labour market and differentiate between unemployment across young males and females. Third, we focus on the length of time a young person is out of the labour market and the factors relating to a longer time span in being unemployed. One of the challenges related to reducing youth unemployment is the lack of relevant education, training and experience among young people for them to be employable. Young people may also lack the necessary soft skills and relevant practical experience required by employers. Both of these aspects are direct consequences of insufficient linkages between the education and training systems and the world of work (for example in terms of curriculum contents, work placements and internships). The absence of national policies and strategies targeted at promoting youth employment may explain the persistence of high rates of youth unemployment. In particular, it is often difficult to comprehensively address the youth employment challenge without well designed and targeted labour market programmes.

Access to education is crucial in order to enable the youth to acquire the knowledge, skills and competencies that are required for employment, social inclusion and active citizenship. In this respect, Government has had a long-term vision by providing free education since 1976. Education in public institutions is free at pre-primary, primary and secondary levels. At the tertiary level, full-time undergraduate programmes are free at the University of Mauritius. Students at all levels also benefit from free transport. Furthermore, as way of encouraging continuous education and delaying exit from the formal education system, schooling is compulsory till the age of 16. Public expenditure on education is thus the second highest item of Government's recurrent budget after social security. It is estimated at almost Rs10 billion, i.e. more than 16 percent of the national budget, for the year 2012.

It is noteworthy that education reforms are currently on-going. This is necessary to render our education system more responsive to the changing needs of the country and keep pace with its economic and social development. Emphasis is also given to vocational education and training. Vocational programmes and apprenticeships, offered mainly by the Mauritius Institute of Training and Development (MITD), are meant to train young people in a variety of trades and impart relevant practical skills that can readily be applied in the labour market. In addition, "second chance" programmes enable students who have not successfully completed primary education to join the pre-vocational stream for three years giving them the opportunity to later enrol on vocational or academic courses.

Much effort is directed towards the promotion of tertiary education and a dedicated Ministry for Tertiary Education has been set up. The Mauritian tertiary education landscape has, in fact, witnessed a major transformation since the country's independence. For Instance, in 1968 there was only one institution providing higher education namely, the University of Mauritius. At present there are over 60 tertiary education institutions in Mauritius. Government has moreover set an ambitious target for increasing access to tertiary education and enhancing the tertiary enrolment ratio from 45.1 percent in 2010 to 75 percent by 2015.

In order to better prepare young people for the world of work and make them more employable, students at the University of Mauritius are offered placements under the Student Work Experience Programme (SWEP) in enterprises during their course of study while the National Empowerment Foundation (NEF) has a special Training and Placement Programme for the unemployed, including young jobseekers. Through the Circular Migration Programme, the NEF also offers the possibility for young people to work abroad for a determinate duration and to develop new skills and experience in specified areas. A new HSC qualification, the HSC Professional, is also being contemplated to provide an alternative to students looking for a course of study that combines academic and practical contents and which will provide them with the necessary skills to directly enter specific fields of the job market.

To further boost the employability of youths, Government recently proposed a number of measures such as the implementation of a Sponsored Pre-job Training Initiative to prepare young people for employment with the Human Resources Development Council to pay 60 percent of training costs and half of a stipend of Rs6000 per trainee, the difference to be covered by the prospective employer. Other policies comprise of allowing employers to use training levy grants for prospective employees and training courses in hospitality on cruise ships, marine safety, fire fighting and first aid to enable young people to seize employment opportunities on cruise ships.

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