# Working Paper

## Labor Supply, Employment, and Sustainable Development in Mauritius

*Kavita Pandit*

WP-90-61
October 1990

International Institute for Applied Systems Analysis □ A-2361 Laxenburg □ Austria

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## ABOUT THE AUTHOR

Kavita Pandit received her Ph.D. in geography from Ohio State University in 1987. She is currently Assistant Professor of Geography at the University of Georgia, USA, with interests in labor force and migration in developing countries. This report was prepared while she was participating in IIASA's Young Scientists Summer Program, 1990. Contact address: Department of Geography, University of Georgia, Athens, Georgia 30602, USA.

# FOREWORD

Mauritius is almost unique among the Less Developed Countries in facing an imminent labor shortage. At the time of independence in 1968, the population was growing fast, and unemployment was a major problem. Its going from surplus to deficit in labor supply in so short a time makes Mauritius a case worth study.

The initial prognosis at the time of independence could hardly have been less favorable. Sugar, an industry that has been declining ever since the 19th century, constituted about 40 percent of the economy. The population was growing rapidly; social unrest threatened.

The fashion in development in the world as a whole has changed during the 1980s from import substitution to exports. Mauritius is so small that it quickly abandoned import substitution strategies, and created free trade zones as early as the 1970s. These, along with the large labor force that was only partly employed, were a stimulus to textile and other industries. As late as 1983, 30 percent of the labor force was unemployed; by 1987 that had dropped to 5 percent.

With the tightened labor supply no one can be sure what the next move of the economy will be. Suitable conditions in the world market ought to permit moving to more specialized products, with higher skill requirements. The expanding educational system should be able to grade up the labor force and thus keep up the momentum of economic progress now attained.

That labor force is the subject of the present working paper. It has many features that are in line with trends in the world generally, and some that are not. Women are increasingly recruited, nearly 40 percent of women 20–24 years of age working outside the home in 1983 as against 15 percent in 1962. At the other end of life, men retire earlier, so that the proportion in the labor force above age 55 has gone down sharply. Declining activity in the primary sector and increases in the secondary are a feature of progressive development in Mauritius as elsewhere.

The description and analysis in the following pages is an early and useful result of IIASA's study of population, development and environment in Mauritius.

Nathan Keyfitz
Leader
Population Program

## ACKNOWLEDGEMENTS

I would like to thank Wolfgang Lutz and Babette Wils for their comments on an earlier draft of this paper, and Marilyn Brandl for secretarial assistance. The financial support of the Sarah Moss Foundation is gratefully acknowledged.

## ABSTRACT

The interconnections between a country's labor supply, employment, and its economic development have been extensively investigated in development literature. These interconnections are particularly crucial to small countries with limited capital and natural resources. This paper reviews recent trends in Mauritius' labor supply and employment levels and their implications for the future sustainable development of the island. Labor has played an important role in Mauritius' development since the establishment of sugar cane plantations and the imports of indentured laborers from India in the early 1800s. The thrust towards export-oriented manufacturing that began in the 1970s was also based upon the availability of a large labor pool. Changes in the labor force and employment composition currently underway suggest that the future economic development of Mauritius will have to adjust to a lower supply of labor and a levelling off of manufacturing jobs. Some policy suggestions related to the labor force are offered.

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# LABOR SUPPLY, EMPLOYMENT, AND SUSTAINABLE DEVELOPMENT IN MAURITIUS

*Kavita Pandit*

## INTRODUCTION

A country's labor force is an important consideration in its search for sustainable development. Labor is an essential ingredient in the production process, and an adequate labor supply is necessary for a country's economic growth. At the same time, the availability of jobs and the wage scale determine the standard of living of the labor, and are therefore tied into the quality of life in a country. The issues of labor supply and employment are particularly important in small, developing countries where other factors of production, viz. capital, land and natural resources, are limited. In these countries, labor can be a major force behind economic development, and can quickly transform itself by such development. A country like Mauritius, consequently, provides an excellent case study for the examination of the interactions between labor supply, employment, and development.

This paper examines the trends in Mauritius' labor market focusing mainly on the period between 1962 and 1983. The paper seeks to relate labor supply and demand patterns to the broader development of the Mauritian economy. In particular, the paper tries to examine the sustainability of Mauritius' development in the light of trends in labor supply, demand and wages. Section 1 discusses the theoretical background on the links between economic development and labor supply and demand. A historical background about labor issues in Mauritius is provided in Section 2. Sections 3 and 4 examine recent trends in Mauritius' labor supply and demand, respectively. The final section consists of a summary and concluding comments.

## 1. LABOR FORCE AND DEVELOPMENT

There are strong theoretical links between development on the one hand and labor supply and demand on the other. The complex socioeconomic changes associated with development transform the supply of and the demand for labor. Changes in the labor market, in turn, influence the development process. This section summarizes some of the principal areas of interaction between labor and economic development processes.

### 1.1. Demographic Change

The linkages between economic development and demographic change have been well established in the theory of the demographic transition. Observed first in the European context, this transition from a preindustrial stage of high birth and death rates to the stage of low birth and death rates in post industrial societies is thought to be a result of a number of proximate and environmental factors associated with modern economic development. Although the applicability of the demographic transition theory to many developing countries including Mauritius is questionable, there are clear links between demographic changes, the size of the working age population, and the labor supply. Thus, high levels of fertility are, all else being constant, associated with a swelling of the working age population. In the long run, however, there is a reduction in the size of the working age population due to lowered fertility rates.

The demographic changes in a country are also theoretically linked to its migration levels. Periods of high natural increase of the population are associated with low levels of in-migration due to government policy restricting migration and/or the perceived difficulty of obtaining jobs by potential immigrants. Periods of low fertility where natural increase fails to keep up with labor demand are frequently associated with an increase in migration and a growth of the labor force.

### 1.2. Social Change

Economic development is associated with improvements in literacy, education and health care, and with increasing levels of consumption. These in turn raise the labor force participation rates and the overall labor supply. These changes also directly impact the quality of the labor force, i.e. there is a shift from unskilled to skilled labor, and the labor is likely to be healthier and therefore more productive.

Economic development and the social changes that accompany it greatly impact the role of women in society. Here, however, there are two schools of thought. The modernizing perspective suggests that rising educational levels amongst women together with lowered fertility and a growth of "modernizing values" combine to increase female labor participation in the labor market. An opposing perspective was put forth by Boserup (1970) who noted that industrial development generally favors male employment because the separation of the home and workplace in the secondary sector makes women's work and family roles less compatible.

### 1.3. Changes in Consumption and Production

Economic growth or the rise in incomes per capita increases the per capita level of consumption. This in turn increases per capita production levels and the demand for labor. Besides its impact on overall consumption, economic development is associated with changes in the relative consumption of products of the three main sectors: primary (agriculture, mining, forestry, fishing), secondary (manufacturing, construction, utilities), and tertiary (all services, including government). Studies have shown that with rising GNP per capita, there is a de-

cline in the relative demand for primary sector goods, an increase and subsequent decline in the relative demand for secondary sector goods, and a monotonic increase in the relative demand for services (Clark 1940; Fisher 1939). Evidence from the industrialized countries has shown that production and labor force patterns generally follow these trends.

### 1.4. Technological Change

Modern economic development brings about technological change and a growing substitution of capital for labor. Increases in the capital intensity of production raises labor productivity. Since the same production levels can be achieved with a smaller labor input, the net effect of technological change is an overall decline in labor demand.

The rate of technological change is not the same in all sectors. Productivity increases in the service sector have been shown to be generally slower than those in the agricultural and manufacturing sectors. This implies that if all else is held constant, the service sector employment will increase relative to employment in the other two sectors with economic development.

Increasing technological levels are also associated with a growth in demand for skilled workers, rising scale of production, and increasing energy inputs. These trends contribute to a shift of employment from the small-scale, individual and family enterprises collectively referred to as the "informal sector" to the larger scale, wage activities requiring greater education and skills characteristic of the "formal sector" (Mazumdar 1976; Oberai 1978).

### 1.5. International Trade

The theoretical connections between international trade and economic development are not entirely clear. However rising levels of development are generally associated with an increase in exports (through the production of better and higher valued items) and imports (through higher domestic demand and purchasing power). Export and import levels have a definite impact on domestic production, and by extension, labor demand. An increase in a country's exports stimulates domestic production and employment even if consumption levels are held constant. Conversely, rises in imports satisfy domestic demands without stimulating local production and employment.

With the rise in global protectionism, there has been an increasing tendency for foreign direct investment to substitute trade relations. The amount and type of foreign direct investment influences the size and structure of production and employment.

## 2. THE LABOR FORCE AND MAURITIAN DEVELOPMENT

Mauritius had no native population. The Dutch took possession of the island in the late sixteenth century and built the first settlement in 1638. The years of Dutch settlement are not significant in terms of Mauritius' population or labor; by the early eighteenth century there were only 169 Dutch people and 67 slaves on the island (Addison and Hazareesingh 1984). After the island ceased to be of use to them, the Dutch abandoned it in 1710.

The French claimed the island in 1715, and began to develop its agricultural and commercial potential intensively. This development was supported by large numbers of slave laborers brought in from Madagascar and West Africa; as many as 50,000 slaves were brought into Mauritius by the end of the eighteenth century (Titmuss and Abel-Smith 1968). The French eventually lost Mauritius to the British in 1810 following the Napoleonic Wars.

Two major changes introduced by the British following their conquest of Mauritius had profound impacts on the island's labor patterns. First, they abolished slavery, and freed the slaves brought in during the French occupation. Second, they began a large scale development of the island as a source of sugar for the European market. Sugar cane plantations require relatively large numbers of unskilled laborers throughout the year. Facing an enormous shortage of labor (given the reluctance of the former slaves to working on the plantations), the British began to bring in indentured laborers from India. The inflow of South Asian labor grew rapidly; by the end of the 1800s they numbered 370,000. In comparison, the number of slaves that had worked on the plantations prior to emancipation had been only 34,000 (Addison and Hazareesingh 1984).

Between 1815 and 1860 there was a tremendous expansion in Mauritius' sugar industry. By 1860, Mauritius had surpassed Trinidad and Jamaica in sugar cane production to become the leading sugar cane exporter in the British Empire (Alladin 1987). Wages however remained low even during this boom period; because of the abundance of available labor, there was little incentive to increase labor productivity through technological innovation.

The sugar industry in Mauritius began to face problems in the latter part of the nineteenth century. First, with the development of sugar beet in Europe, sugar demand and prices began to drop. Second, there was a slowdown in the immigration of Indian laborers which, together with the malaria epidemic of 1867, created labor shortages and increased production costs. The stagnation of the sugar economy led to changes in landownership patterns whereby agricultural lands were either leased or sold to the indentured classes. While the small cane cultivators soon emerged as a new middle class in Mauritius, they also constituted a reserve labor pool that could be tapped by the large plantation owners during the peak seasons (Alladin 1987).

The decades of the 1930s and 1940s were characterized by political unrest. Part of the disturbance was caused by worker dissatisfaction with wages. The resulting Industrial Association Ordinance of 1938 recognized trade unions and made strikes legal. A Minimum Wages Board was established the same year to ensure that workers were able to meet their basic needs. However the implementa-

tion of the ordinance was far from ideal, and in subsequent years workers had to go on strike to demand the minimum wage itself.

Until the mid-1900s, the sugar industry provided dependable employment for the masses. In the post World War II era, however, a number of factors began to change this reality. First, dramatic declines in the mortality rate following the government's successful campaign against malaria caused the rates of natural increase to escalate in the mid-1900s. This in turn led to an enormous increase in labor supply in the 1960s and 1970s. The post World War II years also saw rapid mechanization in agriculture as the sugar industry tried to keep globally competitive. The two trends together meant the sugar industry was no longer able to absorb the bulk of the entrants to the labor force as before, and unemployment soared (Alladin 1987).

The security of the sugar industry was also closely tied to the sugar protocol of the Lome Convention. Under the protocol, the European Community guaranteed a number of sugar-producing Third World nations including Mauritius a fixed market for sugar at prices linked to the price of sugar beet within the Community (Addison and Hazareesingh 1984). Without this market, earnings from sugar exports were likely to be volatile, and too great a reliance on this export could make for an unstable economy.

In light of these considerations, the government began to stimulate manufacturing activity and employment by creating an Export Processing Zone (EPZ) in 1970. The EPZ consisted of a number of industrial firms, domestic and international, that produced purely for the export market. Foreign investment was attracted to the EPZ by means of various incentives including the promise of a cheap, adaptable, and largely non-unionized labor force. In the area of labor legislation, the government ensured that strikes were "legal" only under certain restrictive conditions. The wage legislation also ensured a lower minimum wage for women than for men. Kearney (1990) notes that the minimum wage legislation served more to keep labor costs down than to ensure the welfare of the workers. Beginning with four firms in 1971, the EPZ grew rapidly to include about 100 enterprises by 1980, and 586 enterprises by 1989 (Kearney 1990). A large percent of their employees were young women, and over half of the EPZ firms were engaged in the production of clothing and textiles (Alladin 1987).

## 3. TRENDS IN LABOR SUPPLY

### 3.1. The Working Age Population Size

The size of the population between 15 and 59 years of age at a given time gives the maximum theoretical size of the labor force. Figure 1 shows the growth of the working age population in comparison to the total population of Mauritius for the period 1851 to 1983. Both show fairly similar trends. The period of rapid population increase in the years after 1950 following the successful malaria eradication program is evident in the graph. This increase has important implications for the size of the working age population.

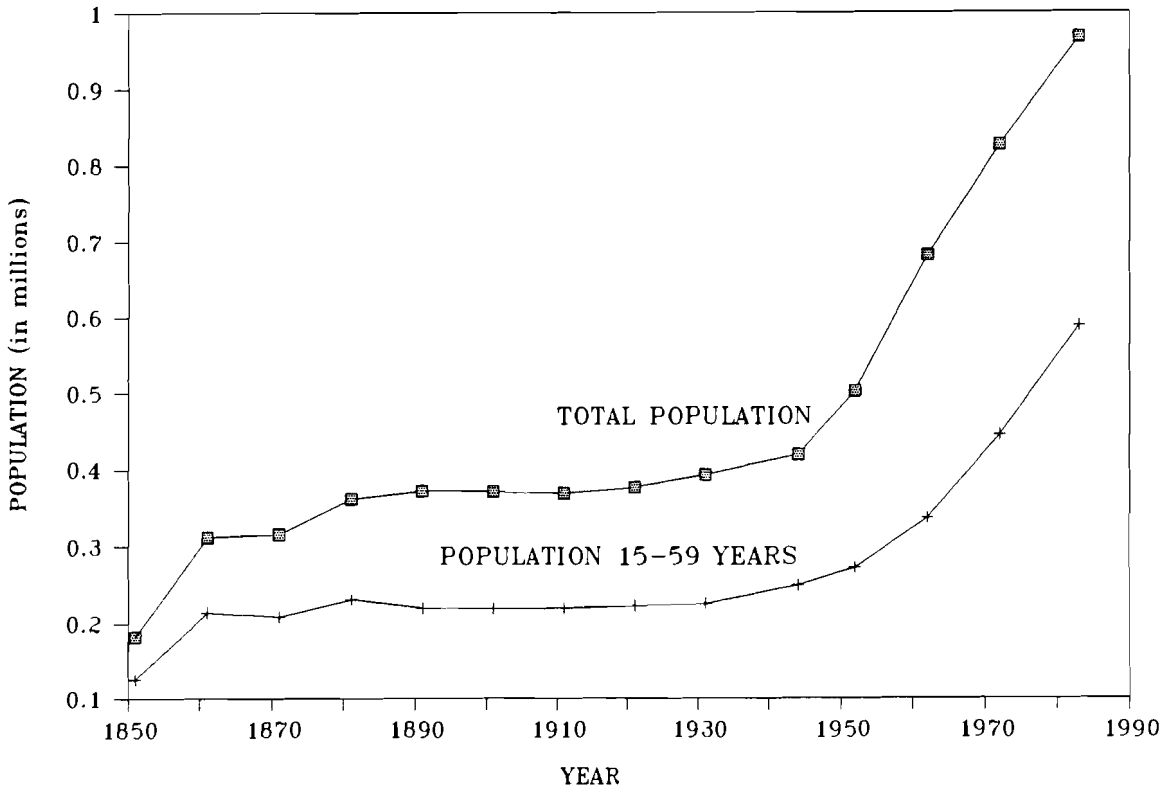


Figure 1. Trends in Mauritius' total population and population between 15 and 59 years of age, 1850–1990. Source: CSO (1956).

Figure 2 graphs the changing share of the Mauritian population falling into the 15–59 age category broken down by gender. Overall, the share was very high in the mid-1800s at the time of heavy labor in-migration. The graph confirms that almost half of Mauritius' population at this time was made up of males between the ages of 15 and 59 – mainly the indentured laborers brought in from South Asia. With the end of the policy to import labor to the island, the share of working age males in the population declined sharply, and reduced the overall share of the working age population in the total. It is interesting to note that the share of women in the working age population shows a gradual rise as processes of natural increase replace migration as the prime source of working age population. By the mid-1900s the sex ratio was close to 1:1.

The trends in the share of the population between 15 and 59 years of age after 1940 reflect the effects of the dramatic rise in the rates of natural increase. This rise contributed to a swelling to the very young population, and to a commensurate reduction in the share of the working age population between 1940 and 1960. The sex-specific trends in Figure 2 confirm this; as opposed to the earlier decline, the decline in the working age population share after 1940 affects the male and female populations equally.

The increase in the working age population share after 1960 reflects the effect of the large youth cohort, born in the 1940s and 1950s moving into their working age years. The 1970s also saw the beginning of an active population control program by the government following the publication of the Titmuss Report (Titmuss and Abel-Smith 1968). Important reductions in the fertility rate that fol-

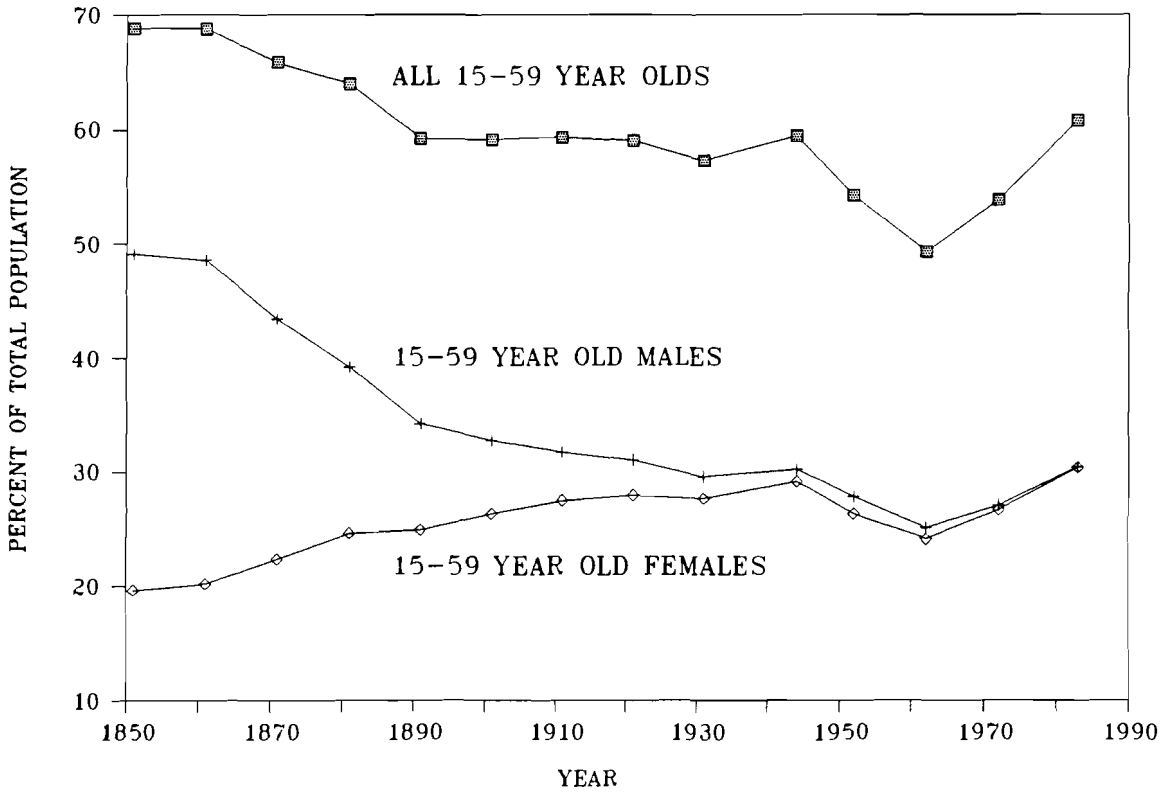


Figure 2. Share of the total population between 15 and 59 years, 1850–1990, by sex. Source: CSO (1956).

lowed in the 1980s (Jones 1989) additionally boosted the share of the population in the working age group.

### 3.2. The Economically Active Population

The economically active population or the labor force is made up of those people who are available for work. The labor force includes individuals who are employed as well as those that are unemployed and looking for a job. Unemployed persons who are not searching for a job, students and retirees are not considered to be a part of the economically active population.

Table 1 presents recent trends in the size of Mauritius' labor force by sex. The table indicates that the labor force size has been growing, something consistent with the increasing size of the working age population. The economically active males greatly outnumber the economically active females, although the share of females in the total labor force shows an increasing trend.

The age structure of the labor force is presented in Figure 3 for 1962, 1972, and 1983. With time there is an increase in the labor force at each age level paralleling the overall increase in the labor force. However there is a trend towards a younger labor force, reflecting Mauritius' positive rate of natural increase. The most prominent feature of the figure is the large number of 25–34 year old individuals in the 1983 labor force. This peak is caused by the cohort born in the high fertility period of the 1950s and 1960s entering the labor force.

Table 1. Size of the economically active population 1962, 1972, 1983, by sex. Source: CSO (1987).

| Year | Labor Force (000s) | | | |
|---|---|---|---|---|
| | Total | Male | Female | % Female |
| 1962 | 192.36 | 159.92 | 32.44 | 16.9 |
| 1972 | 254.73 | 204.13 | 50.60 | 19.9 |
| 1983 | 355.96 | 263.09 | 92.87 | 26.1 |

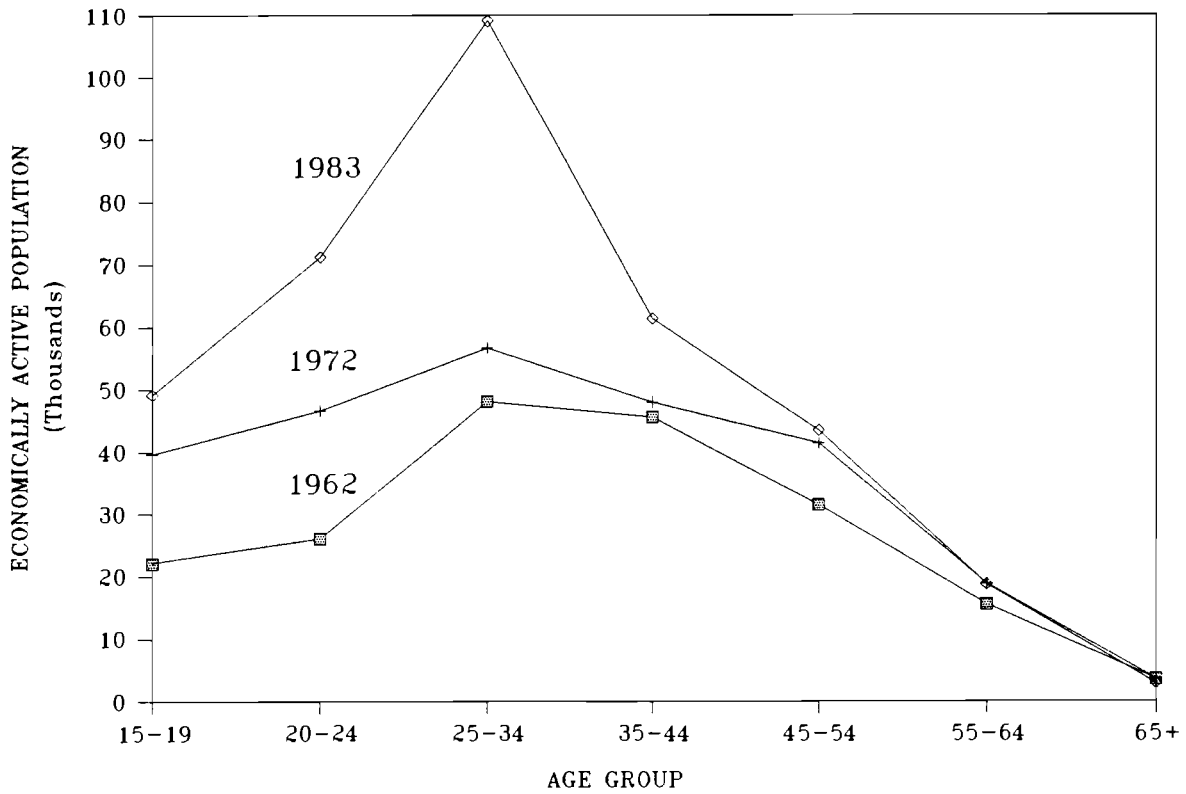


Figure 3. Labor force composition by age group, 1962, 1972, 1983. Source: CSO (1987).

### 3.3. Labor Force Participation Rates

The ratio between the economically active population and the working age population is given by the labor force participation rate (LFPR). For the computation of the LFPR, the working age population was defined as all persons over 15 instead of just 15 to 59 year olds. This was done because a notable, albeit declining share of the population over 60 is still economically active.

Table 2 shows the total, male and female labor force participation rates for years 1962, 1972, and 1983. Overall, the LFPR remained stable between 1962 and 1972 with a little over half of the population over 15 years participating in the labor force. Between 1972 and 1983 the participation rate grew slightly to 54.7 percent. The total LFPR however masks the gender differences in participation rates. Participation levels amongst males was significantly higher than amongst females; in 1962 approximately 86 percent of men over 15 years were economically active in comparison to only 17 percent of the women over 15. Since 1962, however, the male LFPR has shown a slow decline while the female labor participation rate has grown fairly rapidly. Despite this increase, only 28 percent of women over 15 were economically active in 1983.

Table 2. Total, male, and female labor force participation rates 1962, 1972, and 1983. Source: CSO (1987).

| Population Group | Labor Force Participation Rate | | |
|---|---|---|---|
| | 1962 | 1972 | 1983 |
| Total | 51.59 | 51.50 | 54.68 |
| Males | 85.65 | 82.96 | 82.46 |
| Females | 17.42 | 20.35 | 27.98 |

Further insight into the trends in the male and female labor participation rates can be gained by comparing their age specific LFPR schedules. This is done in Figure 4 which shows, for each sex, the age specific LFPR rates for 1962 and 1983. Clearly, the level of male labor participation is significantly higher than the corresponding female levels. The male schedules are virtually identical for the two time periods; the prominent exception is the participation rate of older men. The LFPR of males over 55 years of age was significantly lower in 1983, possibly due to the improvements in retirement benefits. This decline is largely responsible for the overall fall in male activity rates from 1962 to 1983 seen in Table 2.

The female labor force participation schedules, in contrast, show a high degree of variation between the two time periods. The 1962 LFPR schedule was characterized by an inverted-U shape: the rates were the lowest amongst the very young and very old and peaked in the 45–54 age category. The pattern suggests that in 1962 women deferred their entry into the labor force due to marriage and childbearing obligations, but joined the labor force for a short period after raising their children. The 1973 pattern shows higher participation rates in almost all age categories. The most dramatic increase is seen in the younger age groups; the participation rates of the 20–24 year old females, for example, increased from 15 percent in 1962 to almost 40 percent in 1983. Much of this growth has been attributed to the establishment and growth of export-processing industries in the 1970s and 1980s which employed young women soon after their schooling. However the figure also shows a drop in the LFPR for the 25–30 year age category, suggesting that a significant proportion of these women may drop out of the labor

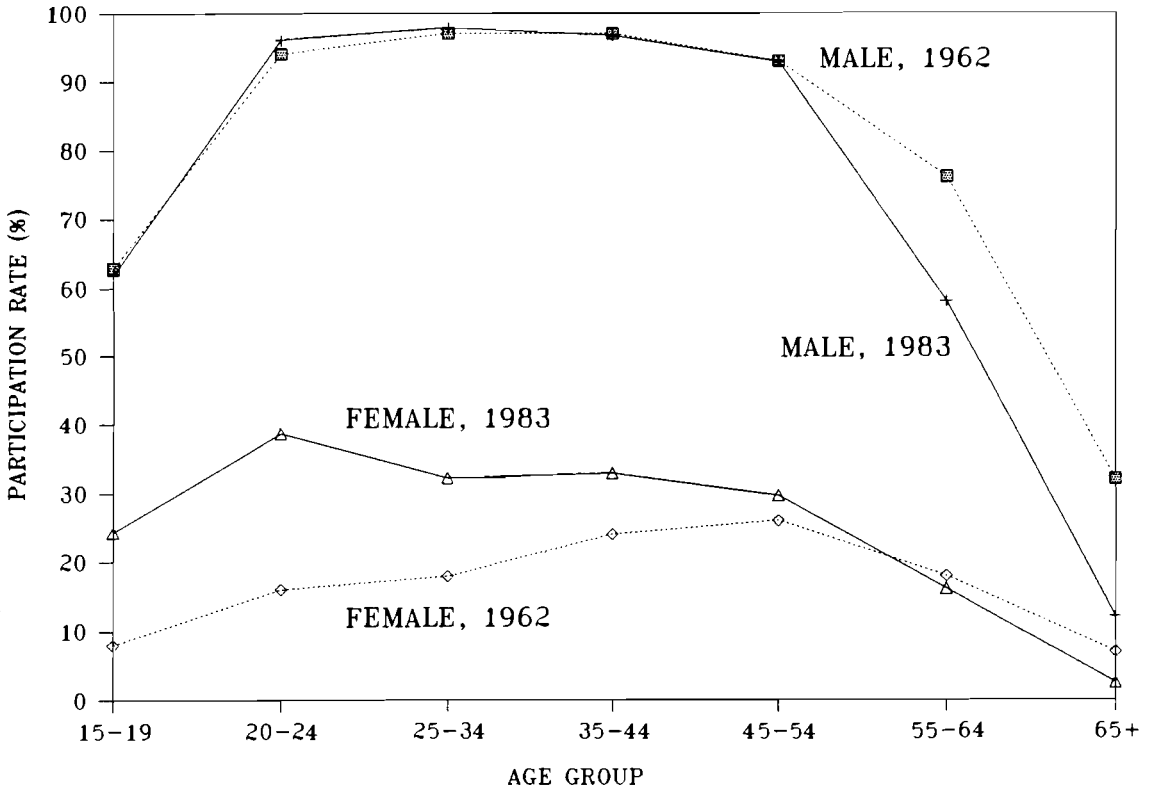


Figure 4. Age specific labor force activity rates for males and females, 1962 and 1983. Source: CSO (1987).

force after a few years possibly to get married. Alternatively, the dip in the LFPR in the 25–30 year age category could be due to the fact that this group maintained its lower participation rates from an earlier time period. The only group that showed a decline in the participation rate from the 1963 levels was the over 55 year category, paralleling the trend seen amongst older men.

It is also of some interest and policy value to examine the makeup of Mauritius' inactive population. Table 3 presents a breakdown, for 1983, of the male and female inactive population over 15 years by principal reasons for inactivity. Not surprisingly, inactive women greatly outnumber inactive men in Mauritius. Amongst males, the top reason for economic inactivity was retirement – over 45 percent of the inactive males over 15 years of age were retirees or pensioners. The second most frequent reason, accounting for 36 percent of the male inactive population, was education. These are fairly standard explanations for the lower activity rates in the very young and the very old populations.

The overwhelming majority – almost 84 percent – of the economically inactive women in Mauritius were homemakers. As compared to the figures for men, significantly smaller shares of women were inactive for reasons of education (7.4 percent) or retirement (6.3 percent). In absolute terms, however, the number of female students and retirees amongst the inactive population is about the same as for males.

Table 3. Population over 15 years not economically active by reasons of inactivity and sex, 1983. Source: CSO (1987).

| Reason for Inactivity | Male | | Female | |
|---|---|---|---|---|
| | Number | % | Number | % |
| Student | 20950 | 36.0 | 17695 | 7.4 |
| Homemaker | 1217 | 2.1 | 199980 | 83.7 |
| Institutionalized | 281 | 0.5 | 405 | 0.2 |
| Disabled | 5060 | 8.7 | 2720 | 1.1 |
| Rentier | 775 | 1.3 | 453 | 0.2 |
| Retired/Pensioner | 26383 | 45.3 | 15142 | 6.3 |
| Other | 3200 | 5.5 | 2353 | 1.0 |
| Not stated | 385 | 0.6 | 106 | 0.0 |
| Total | 58251 | 100.0 | 238854 | 100.00 |

### 3.4. Educational Levels

Besides the quantity of available labor, its quality or educational level is an important aspect of labor supply. Figure 5 shows the breakdown of Mauritius' 1983 labor force by the highest educational level attained. As much as 17.8 percent of the labor force had not been educated beyond the pre-primary level. The majority of the economically active population had only primary level education. About one-third had completed the secondary educational level, and only a little over 2 percent had completed one or more years of post-secondary education.

An important relationship for policy makers to evaluate is that between educational levels and degree of labor participation or labor inactivity. Since educational outlays per capita increase with years of schooling, the same level of labor force inactivity is increasingly costly to the state when it occurs at successively higher levels of educational attainment. Further, for a country such as Mauritius that is attempting to base its future economic growth on the availability to a large, well-trained labor pool, it is important to pinpoint the population groups that make up the untapped labor potential. This is done in Figure 6 which shows, for 1983, the educational attainment of the adult population broken down by sex and labor force status.

Examining first the educational levels for the population as a whole, the statistical mode is at the primary educational level; close to half of the population terminated its education after the sixth standard. About a third of the population over 15 years of age had completed its secondary education in 1983. The figure shows that only a very small percent of the adult population goes on to complete tertiary education. Educational levels are generally lower amongst women than men, i.e. fewer women complete each schooling stage.

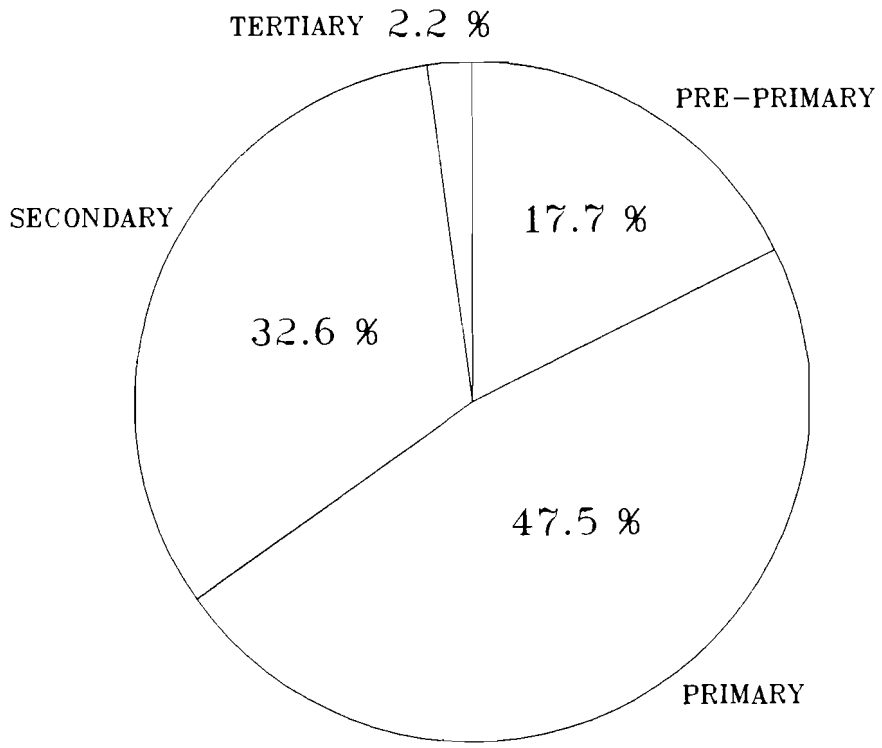


Figure 5. Labor force composition by highest level of schooling completed, 1983. Source: CSO (1987).

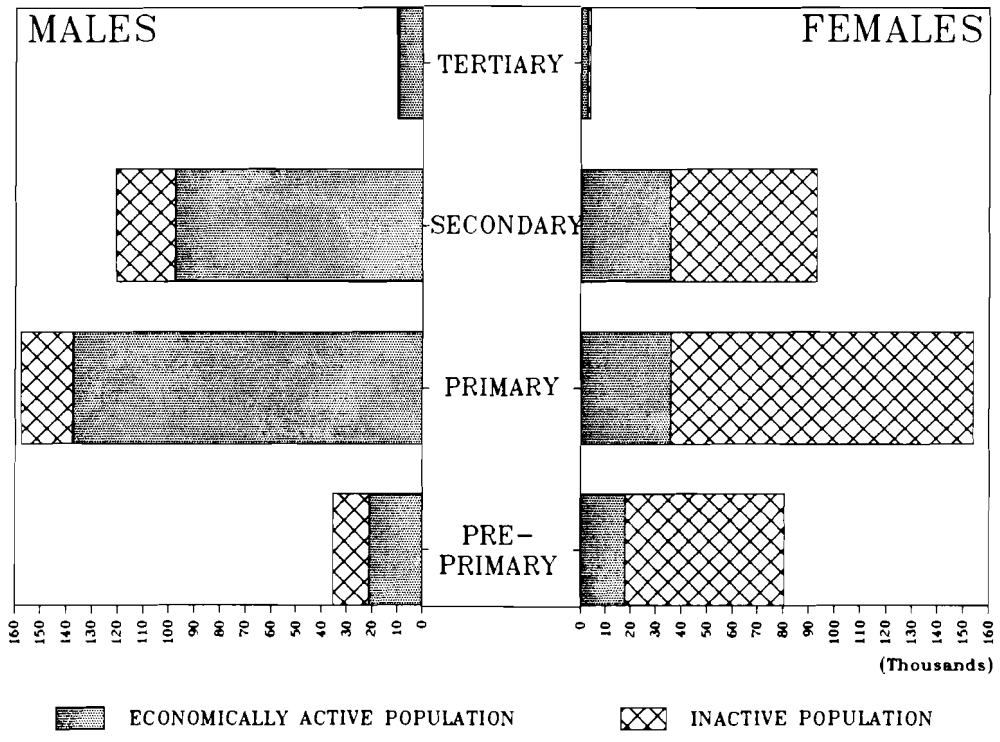


Figure 6. Highest educational attainment of the adult population, 1983, by labor force status and sex. Source: CSO (1987).

Turning to the labor force status by educational level, the graph bears out the observation made in the previous section that participation rates amongst women are lower than amongst men. In fact economically inactive women outnumber the active women at every educational level except the tertiary. The fact that over half of the women completing their secondary education do not join the labor force has serious implications for a country attempting to develop a large and well-trained labor pool.

## 4. TRENDS IN LABOR DEMAND

Theoretically, labor demand should be estimated by examining a country's economic activity together with its technological level, viz. capital-labor ratio. However precise data are difficult to obtain, and the process involves making a number of frequently arbitrary assumptions. In this section labor demand is examined by looking at employment statistics. Although not ideal in the theoretical sense, i.e. the employment level reflects the interaction of a number of factors including wages, it provides a good estimate of the current labor needs of the economy.

### 4.1. Total Employment

Trends in employment and labor force size for the 1962–1987 period are given in Figure 7. Growth rates of employment and labor force by gender are provided in Table 4. Between 1962 and 1983, the growth of the labor force outpaced employment growth in Mauritius. The periods after 1983 show a reversal in the earlier pattern; the average annual growth rate of employment exceeded that of the labor force. The 1983–1986 period in particular witnessed an increase in employment at the dramatic rate of 13.3 percent per annum. Much of this growth reflected the aggressive export-oriented trade strategy of the government which was able to attract large numbers of foreign firms to Mauritius. The gender-specific figures show that the female growth rates for both labor and employment were higher than the corresponding male rates. This was largely due to rising labor participation by women and a high demand for young women in the EPZ sector.

Table 5 presents trends in the unemployment rate. Unemployment grew in the 1960s and 1970s as the gap between the labor force growth rate and the employment growth rate widened. By 1983, the unemployment rate was almost 30 percent. The dramatic growth of the EPZ sector in the 1980s stimulated employment growth, and by 1987 the accelerated labor absorption had brought down unemployment to around 5 percent. Trends in male and female unemployment rates are qualitatively similar, but the male unemployment rates are generally higher than those for females.

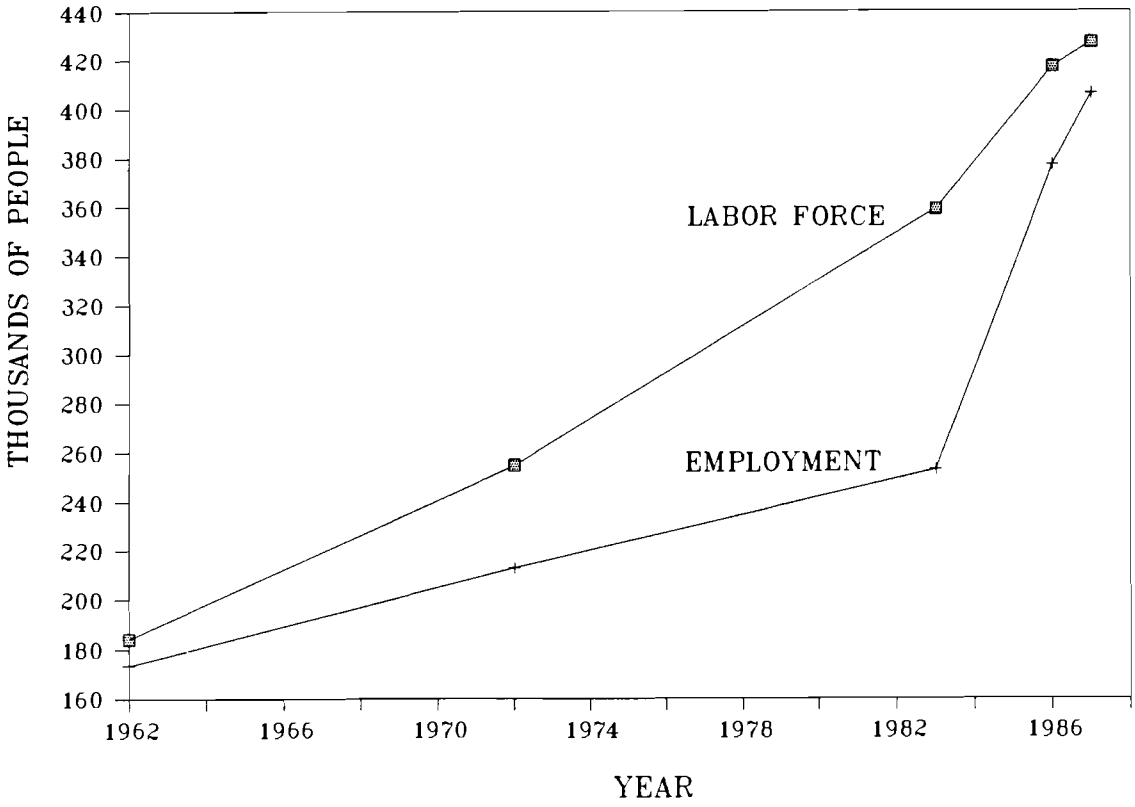


Figure 7. Trends in employment and labor force, 1962–87. Sources: CSO (1987); Bheenick and Hanoomanjee (1988).

Table 4. Average annual growth rates of labor and employment 1962–1987, by sex. Based upon estimates of 1986 and 1987 labor force and employment. Sources: CSO (1987); Bheenick and Hanoomanjee (1988).

| | Average Annual Growth Rates | | | |
|---|---|---|---|---|
| | 1962–72 | 1972–83 | 1983–86 | 1986–87 |
| Total | | | | |
| Labor force | 3.3 | 3.1 | 5.0 | 2.4 |
| Employment | 2.0 | 1.6 | 13.3 | 7.4 |
| Male | | | | |
| Labor force | 3.0 | 2.4 | * | * |
| Employment | 1.8 | 0.9 | * | * |
| Female | | | | |
| Labor force | 4.4 | 5.5 | * | * |
| Employment | 3.2 | 3.9 | * | * |

* data not available

Table 5. Unemployment rates for selected years, by sex. Source: CSO (1987).

| Unemployment Rate | 1962 | 1972 | 1983 | 1986 | 1987 |
|---|---|---|---|---|---|
| Total | 5.8 | 16.4 | 29.5 | 9.6 | 4.9 |
| Male | 6.3 | 17.0 | 30.1 | * | * |
| Female | 3.4 | 14.0 | 28.0 | * | * |

* data not available

### 4.2. Employment by Industry Group

The industrial structure of the employed population in 1972 and 1983, by sex, is presented in Table 6. Looking at the total employment first, the figures indicate that in 1972, the largest share (43%) was engaged in the tertiary sector followed by the primary sector (33%), the latter consisting of mainly sugar cane farming. The remainder (24%) was engaged mainly in manufacturing. Between 1972 and 1983, the primary sector lost employment to both other sectors. By the end of the period, less than 25% of the workers were engaged in farming making it the smallest of the three sectors. The tertiary sector increased its employment share to 45% and remained the leading sector. It was the secondary sector, however, that saw the most impressive gains; between 1972 and 1983 employment in this sector grew at an average annual rate of 3.5 percent. By 1983, over 30 percent of the workers were engaged in the secondary sector.

The changes in Mauritius' sectoral structure are generally consistent with the type of shifts that Clark (1940) and Fisher (1939) theorized would accompany economic development. The decline in the farm population was mainly due to the growing mechanization of sugar cane farming. Expansion of the livestock and fishing industries however reduced the severity of primary sector employment decline. The strong growth of the secondary sector reflected the Mauritian government's export-oriented manufacturing strategy introduced in 1970. Within the tertiary sector, the largest number of workers were employed in the category entitled "community, social, and personal services." This subsector is inflated largely due to the inclusion of government employees. The most rapid gains between 1972 and 1983 however were seen in the finance, insurance and real estate subsector. The growth of business services such as these is closely associated with rising industrial development and GNP per capita.

Turning to the sex-specific figures, Table 6 reveals that the structure of the male worker population is very similar to the overall structure; this is hardly surprising given that the bulk of the employment and labor force consists of males. The sectoral structure of the female workers, while qualitatively similar to the overall trends, shows interesting differences. In 1973, female employment shares in the primary and tertiary sectors were much higher than the corresponding male employment shares, and the secondary employment share was considerably lower. These differences are consistent with patterns in other developing countries, and are attributed to the fact that agricultural and service activities are

Table 6. Sectoral structure of employment, 1972 and 1983, by sex. Source: CSO (1987).

| Sector | 1972 Employment | | 1983 Employment | | Average Annual Growth Rate |
|---|---|---|---|---|---|
| | Number | % | Number | % | 1972–83 |
| Total | | | | | |
| Primary | 70198 | 32.97 | 62036 | 24.54 | -1.123 |
| Secondary | 51892 | 24.37 | 76628 | 30.31 | 3.544 |
| Tertiary | 90809 | 42.65 | 114159 | 45.15 | 2.080 |
| All Sectors | 212899 | 100.00 | 252823 | 100.00 | 1.562 |
| Males | | | | | |
| Primary | 53914 | 31.84 | 46480 | 24.99 | -1.348 |
| Secondary | 47243 | 27.90 | 55962 | 29.96 | 1.540 |
| Tertiary | 68179 | 40.26 | 83552 | 44.72 | 1.848 |
| All Sectors | 169336 | 100.00 | 185994 | 100.00 | 0.853 |
| Females | | | | | |
| Primary | 16284 | 37.38 | 15556 | 23.28 | -0.415 |
| Secondary | 4649 | 10.67 | 20666 | 30.92 | 13.562 |
| Tertiary | 22630 | 51.95 | 30667 | 45.80 | 2.745 |
| All Sectors | 43563 | 100.00 | 66829 | 100.00 | 3.890 |

more compatible with women's traditional household roles.

The 1972–1983 period brought about a marked change in the female labor force structure. A dramatic growth of 13.6 percent per annum in female employment in the secondary sector boosted the share of women employed in that sector from 10 percent in 1972 to over 30 percent in 1983. The increase was pronounced enough to reduce the tertiary sector's share of female workers from 52 percent to 45 percent, despite a healthy 2.7 percent per annum growth of service employment. The primary sector share of all female employment fell drastically from 37 percent to 23 percent, although the female employment in the primary sector declined at only a modest rate. By 1983, the sectoral structure of female employment was very similar to that of male employment.

The growth in female manufacturing employment, although unusual in most developing countries, reflects the widespread use of young women in export industries of newly industrializing countries such as Taiwan, South Korea, Thailand and Singapore. Numerous factors have been cited for this phenomenon including the willingness of women to work for lower wages, and the subordinate position in

society which makes them docile, easily manipulated, and willing to do repetitive assembly work (Hein 1984; Fuentes and Ehrenreich 1987). The increasing use of women in global assembly parts has been viewed alternatively as a liberating and modernizing trend or as a creation of a giant reserve army that is exploited by a male-dominated capitalist class. Case studies of Mauritius tend to lean towards the latter viewpoint; Hein (1984) and Alladin (1987), for example, have pointed out some of the negative conditions of work faced by women in the EPZ sector.

### 4.3. Formal Sector Employment

Examination of employment in the formal sector of the economy is of some interest. The formal sector consists of economic activities that are regulated by the state, carried out on a large scale, and require a minimum level of qualifications and education. The informal sector (Hart 1973), in contrast, consists of small scale, unregulated individual and family activities such as domestic service and street vending. Given that with development there is a tendency for the formal sector to grow and the informal sector to decline, assessing the size and structure of formal sector enterprises can give useful insight into emerging trends.

Since 1981, there has been a bi-annual survey of employment and earnings in the large establishments of Mauritius. The survey is taken in March and September of each year and covers those enterprises that employ ten or more persons. Here, the statistics from this survey will be considered to represent the "formal" sector. It is important to note, however, that there is an ongoing theoretical and methodological debate on the concept and measurement of formal and informal sectors.

In order to assess what percent of the total employment in Mauritius fell into the informal sector, I first compared the annual employment figures given in the census with the formal sector employment data (viz. average of the March and September figures) for the same year. The year 1983 was selected for the comparison because it was the only year in which both census employment data and survey employment figures were available. The comparison is presented in Table 7 which gives the sectoral employment numbers and shares from the census and the survey, and the ratios of the employment in large establishments to the overall employment.

The table shows that overall, formal sector employment in 1983 accounted for over 75 percent of the total employment. This is a much higher figure than seen in most developing countries where there has been a trend towards large and rapidly growing informal sectors. In terms of the sectoral division of employment, the table indicates that as much as 87 percent of primary sector employment was in the formal sector. This reflects the large scale in which sugar cane production is carried out. It is surprising to note that only 60 percent of secondary sector employment is of the formal type. This suggests that a fair amount of industrial activity is carried out in small, informal sector firms. Finally, Table 7 shows that about 80 percent of tertiary sector employment is of the formal type. This is expected since the government sector accounts for a fairly large share of the sector's employment.

Table 7. Comparison of total employment to the formal sector employment for 1983, by sex. Source: CSO (1987).

| Economic Sector | Total Employment (a) | Formal Sector Employment (b) | Ratio (b/a) |
|---|---|---|---|
| Primary sector | 62036 | 54148 | 0.873 |
| Secondary sector | 76628 | 46285 | 0.604 |
| Tertiary sector | 114159 | 91108 | 0.798 |
| Total | 252823 | 191541 | 0.758 |

Trends in formal sector employment for the March 1981–September 1988 period are given in Figure 8. The size of total formal sector employment was fairly level until 1983, after which it gradually increased. The increase was principally fuelled by manufacturing sector growth. Employment in the primary sector reflects the seasonality of agricultural labor demand.

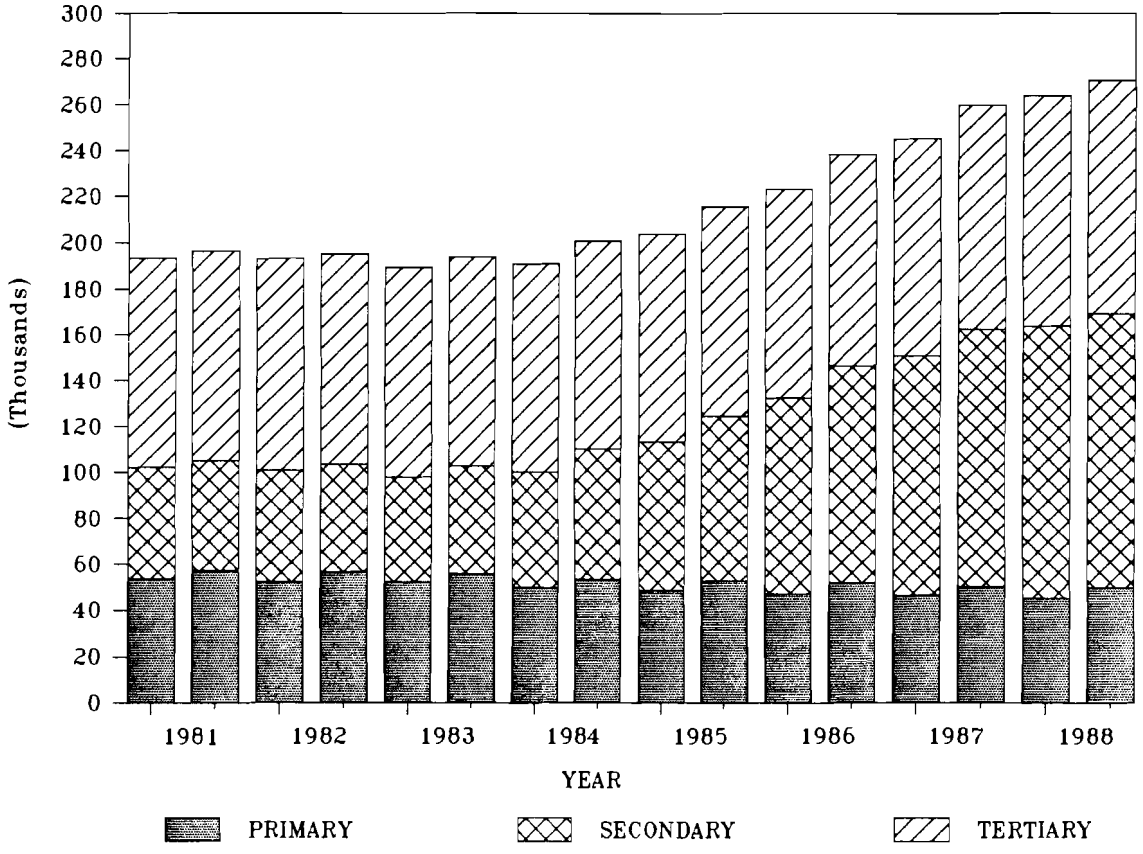


Figure 8. Formal sector employment March 1981–September 1988, by industry group. Source: CSO (1987).

The role played by manufacturing in formal employment generation is shown clearly in Figure 9, which graphs the trends in the annual rates of employment increase, by sector. (The rates are calculated on the basis of the average of the March and September employment figures in order to eliminate the seasonal effect in the primary sector.) In the years following 1983, secondary employment grew at dramatic rates, peaking at 26 percent in the 1985–1986 period. Manufacturing employment growth then slowed down considerably, but was still respectable at around 8 percent in 1987–1988. The primary sector lost employment throughout the period, the most severe declines being in the 1983–1984 period. The tertiary sector posted little loss or gain until the 1984–1985 period. Following this there has been a steady increase in its employment growth rate to the 1987–1988 level of 4 percent or so.

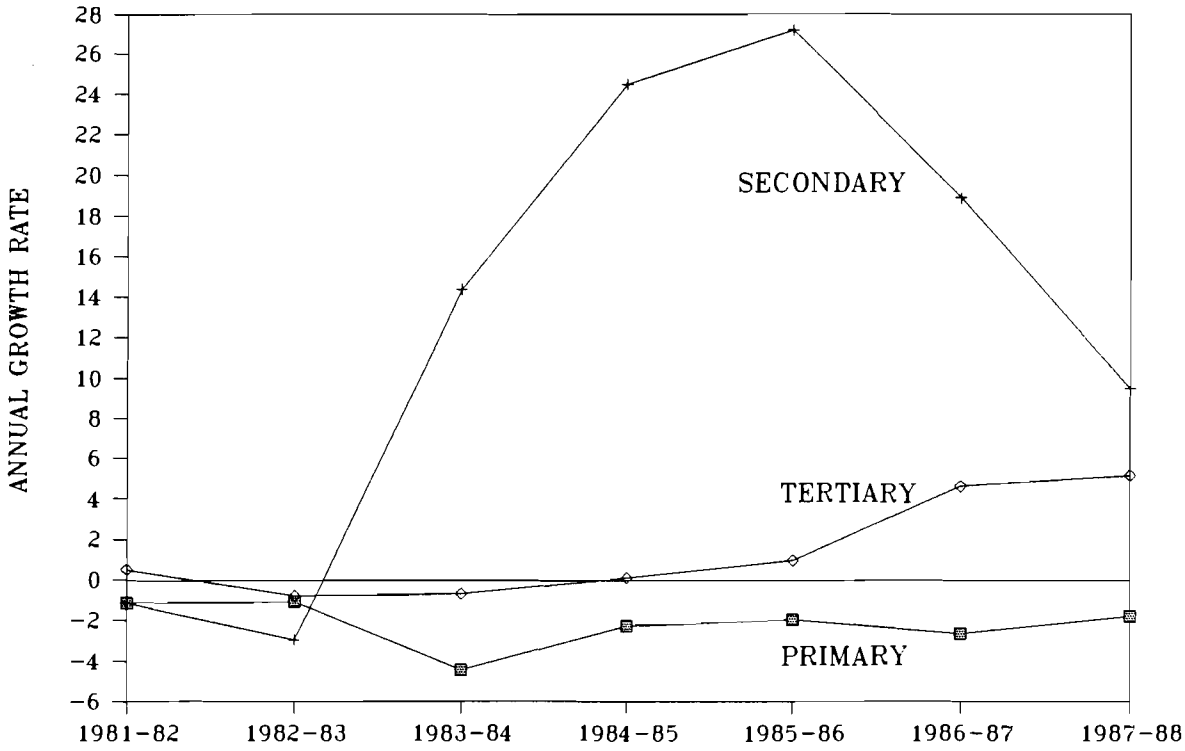


Figure 9. Annual growth rates of formal employment growth by industry group, 1981–1982 through 1987–1988. Source: CSO (1987).

The differential growth rates of the three sectors imply a changing sectoral structure of employment. Figure 10 graphs each sector's share of the employment in large establishments for the 1981–1988 period. The growing importance of the secondary sector in the overall economy is clear – the sector's share grew from about 25 percent in 1981 to about 45 percent in 1988. Agricultural employment shares show a seasonal variation as well as a general declining trend. The tertiary sector lost its worker share despite an absolute employment increase.

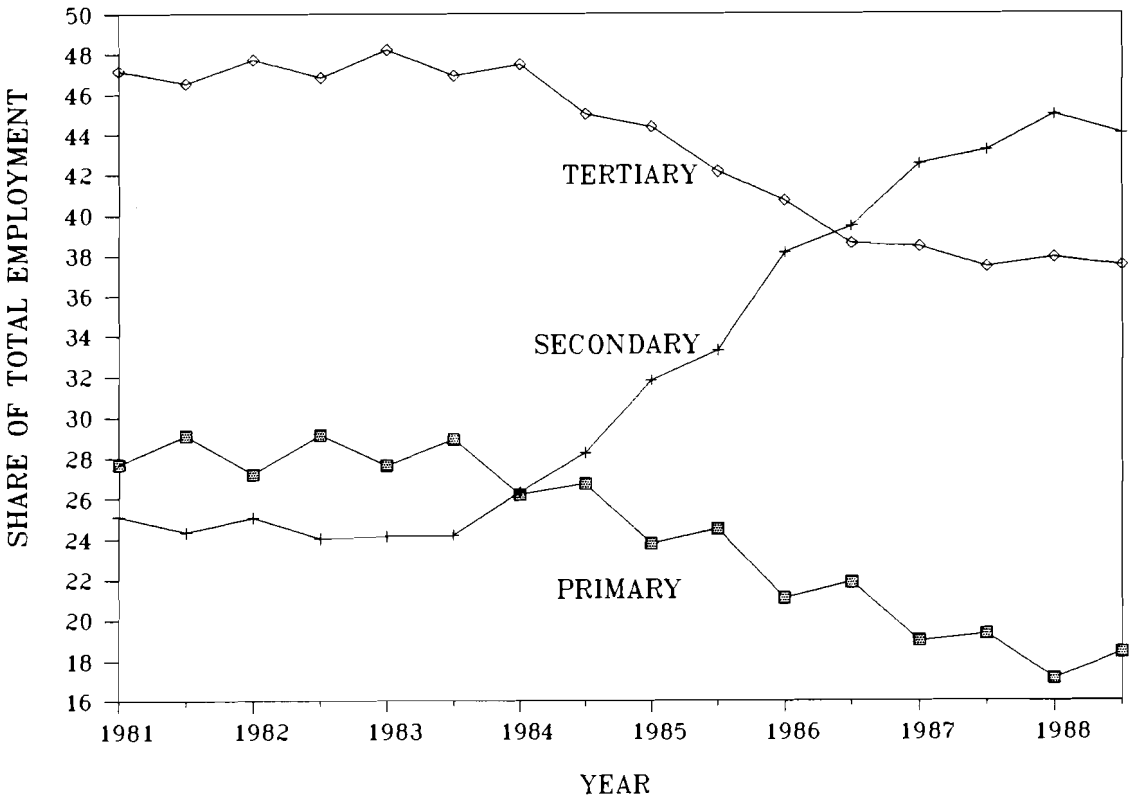


Figure 10. Sectoral shares of formal employment, March 1981–September 1988. Source: CSO (1987).

### 4.4. Trends in Wages

Trends in monthly wages in the agricultural, manufacturing, and community, social and personal service branches of the formal sector, are shown in Figure 11. The wage figures are given in current rupees and do not account for inflation. Consequently they are more useful for assessing sectoral differences than the changes in living standards of the workers.

All three sectors show a general trend towards increasing wages. Agricultural wages, not surprisingly, show a seasonal trend with the higher wage paid in high labor demand season. It is interesting to note that the manufacturing sector wages parallel the overall trend in agricultural wages. This may be because both the sugar cane and the manufacturing sectors largely employ unskilled workers, and therefore bid for the same type of labor force. Consequently they need to be competitive in the wages they offer. The substantially higher wages paid to workers in community, social, and personal services reflect the more difficult entry into the sector. Since the bulk of the employment is in the government, workers are required to have a higher minimum education than in agriculture or manufacturing. The recent dramatic increase in service wages is largely due to a 15 percent across-the-board wage increase in late 1988.

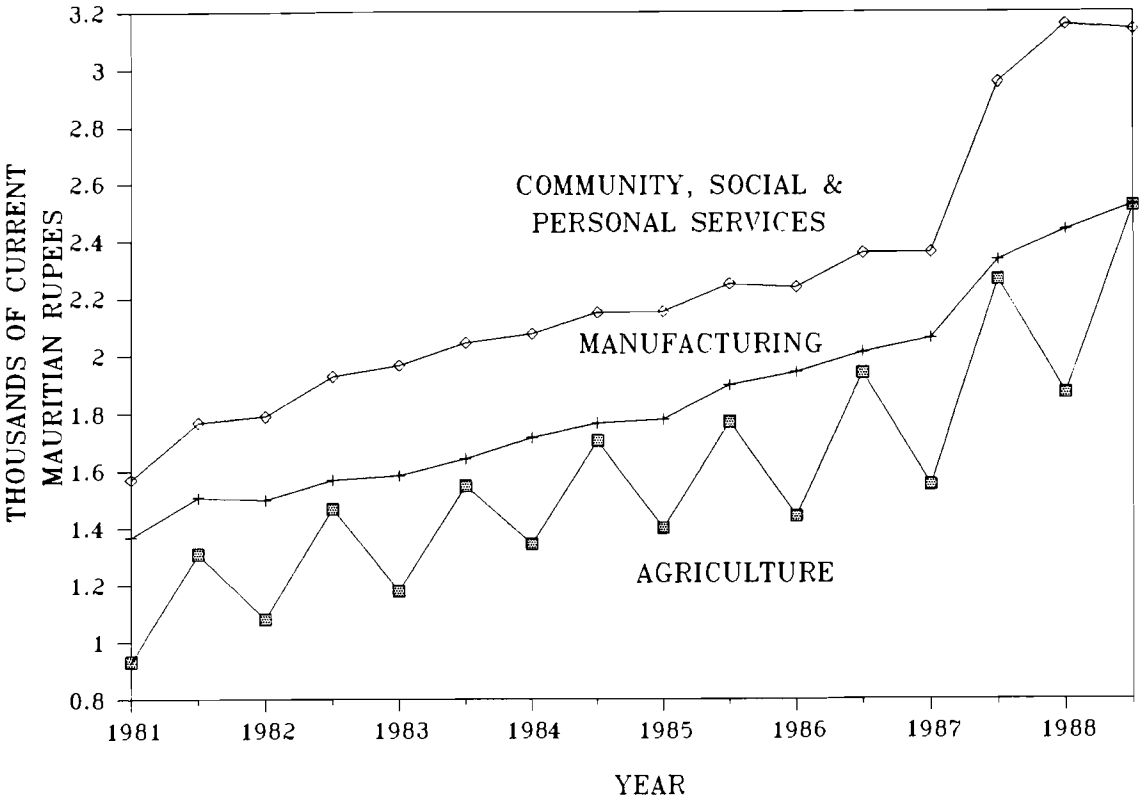


Figure 11. Average monthly wages of formal employment in selected sectors, March 1981–September 1988. Source: CSO (1988).

## 5. EMERGING TRENDS IN LABOR AND SUSTAINABLE DEVELOPMENT

For sustainable development, Mauritius must have a labor supply that is adequate in terms of quantity and quality, and an economy that ensures a relatively steady labor demand in balance with the supply. Recent trends point to the following in terms of labor supply and demand.

1. Labor supply:
   (i) The rapid reductions in fertility in the 1980s will cause a decline in the working age population beginning the late 1990s. All else being constant, this means a commensurate decline in the size of the labor force.
   (ii) Labor force participation rates amongst males are very high, and unlikely to increase. On the contrary a continued growth in educational levels and/or further improvements in retirement benefits can actually bring down the overall male LFPR. However female labor force participation rates are currently low, despite impressive gains since 1962.
   (iii) There continue to be gains on the educational front as evidenced by rising school enrollment and university attendance rates. However amongst the females, large numbers of those completing each level of education do not join the labor force.

2. Labor demand:

   (i) The bulk of Mauritius' employment and labor demand is generated by the "formal sector" or large, regulated enterprises. This is in contrast to trends in most less-developed countries where the informal sector plays a greater role in absorbing the labor supply.

   (ii) Employment in the sugar cane industry is gradually declining, mainly due to mechanization. The future of the sugar cane industry is closely tied to the fate of the sugar protocol of the Lome Convention of 1975.

   (iii) The most rapid gains in employment in the 1980s have been in the manufacturing sector. Within the sector, the bulk of the firms and workers are in the labor-intensive clothing and textile industry.

   (iv) The Export Processing Zone firms disproportionately employ young women for a number of reasons including lower wage costs. Surveys indicate that the working conditions of the female laborers are poor and can use improvement.

   (v) Employment in the tertiary sector has been growing, albeit at slower rates than the manufacturing sector. The bulk of the tertiary sector workforce is employed by the government sector. The most rapid growth in service employment has been in the financial and business services.

The above trends have important implications for the future development of Mauritius. In terms of labor supply there is a clear declining trend based upon demographic patterns. One way in which the size of the labor force could be maintained is through measures that encourage women to enter the labor force, and to remain in the workforce even after marriage. It is possible that the presently low fertility rates may contribute to further increases in female labor participation in the future. However, it is important to note that a growth in the female labor force will have major implications for Mauritius' family and social structure, and these need to be considered.

Another possible way of increasing the labor supply is through immigration. There is recent evidence of private contractors bringing in small numbers of Indian laborers into Mauritius. While this is certainly a direct way of raising the labor supply, it has important social and political implications. Unless dealt with in the context of a comprehensive immigration policy with a national mandate, such piecemeal efforts to boost the workforce may generate resentment within the Mauritian population.

The improvements in formal education point to rising skill levels within the population. There has also been recent attention given to increasing non-formal education and industry-specific training (Bheenick and Hanoomanjee 1988). Such a supplement to the formal schooling will enable Mauritius to shift from unskilled, labor-intensive activities to higher skilled, possibly capital-intensive industries, the latter being an appropriate response to the possible labor shortages. Further, the precise nature of the training programs will allow the country to decide the future direction of its growth.

The trends on the labor demand side also suggest some important changes. The future health of the sugar industry currently hinges on the Lome Convention's sugar protocol. Although the protocol was recently renewed in late 1989, it is subject to annual review. There is some concern that the secure quota that Mauritius enjoys may disappear with the move towards a single European market in 1992. Alternative uses for sugar cane in the absence of the guaranteed European market are currently under consideration. Regardless of whether the protocol is renewed or alternative markets developed for the sugar, the trend towards mechanization of the sugar cane industry suggests that the industry will not play an important role in future employment generation.

The recent growth of manufacturing has clearly reduced the dependence of Mauritius on sugar cane farming. At the same time, the heavy concentration of manufacturing in the clothing and textile sector can be as problematic as the dependence on a single crop. The desirability of industry diversification, together with the possibility of labor shortages in the years ahead has prompted the Mauritian government to seek out more capital-intensive industries. The increased attention to training programs should aid this effort.

Besides diversification, future sustainable development of the Mauritian manufacturing sector depends on a cooperative relationship between workers and management. Current conditions do not support harmonious interactions. The bulk of the EPZ workforce, young women, are paid a lower wage than their male counterparts. This, together with the poor working conditions, is likely to result in greater worker dissatisfaction. If a stable future is being sought for industry, these issues must be dealt with fairly and humanely.

Finally, the Mauritian economy can be further balanced by the development of the service sector. The government has already begun to develop the island's tourist potential. Emphasis is being placed on improvements in air transportation, investment incentives, and foreign advertising. This development is likely to spur service employment in retail trade, hotels, restaurants, and transportation. This development should be balanced with the broader aspects of sustainability with regards to the environment.

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