

LABOR FORCE PARTICIPATION OF WOMEN IN MALAYSIA

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Abstract

The article analyses the women labor force participation in Malaysia. The rapid absorption of women into the labor market has been influenced by several factors. The rapid economic growth was due largely to important growth in the manufacturing and services sectors, where substantial and proportionally larger increase of female workers has been registered. Among all sectors of the economy, the manufacturing sector has recorded the highest growth rate during the last decade. The increase in the female labor force participation may also be attributable to improving economic incentives in employment and policies favoring the employment of women. In addition, the combined effects of increased years of schooling, access to family planning services, improved maternal and child care, leading to arise in the average age at marriage, have allowed women to take advantage of the increased employment opportunities.

Keywords: women, labor force participation, probit model, government policy

1. Introduction

Human resource is one of the main contributing factors for economic growth and for social, political, and technological development. In the era of globalization, economic liberation and fast growing ICT, strengthening the national competitive advantage is the concern of the policy makers. Subsequently, various human resource development planning and strategies are formulated and action plan are outlined at various phases of development. Human resource development continued to be given priority in support the implementation of a productivity-driven growth, which required highly skilled, trainable and knowledge manpower. Emphasis continued to be given to increase accessibility to education at all levels in line with the democratization of the education policy.

The high growth rate of the economy was achieved with the price stability and since 1995, with virtually full employment before the currency crisis erupted in the late 1997. The rapid expansion in manufacturing increased employment in the sector sharply during the Sixth Malaysia Plan period, and dramatically altered the employment structure. The achievement of virtual full employment in 1995 marked a new landmark in the country's socioeconomic progress. The unemployment rate decreased from 2.8 percent in 1995 to 2.6 percent in 1996. However, the situation was different after the currency crisis occurred in 1997.

2. Labor Force Participation Rates

Malaysia has a very large population of productive potential work force. In terms of age structure, in 1999, about 35 percent of the population were below the age 15, while 4 percent were in the age group 65 and above. The remaining 61 percent were in the working age group that is the age group between 15 to 64 years. In year 2000, there were 9,194 people in the labor force and employments were 8,920 people (see Economic Report 1999/2000). 55.3 per cent of the labor force was in urban areas. The labor force participation rate (LFPR), which measures the people in labor force as a percentage of the non institutionalized population, increased from 65.3 per cent in 2001 to 65.5 percent in 2002, attributed mainly by school leavers in 20-24 years age group. Male LFPR increased marginally from 85.3 per cent in 1995 to 85.4 percent in 2000, while female LFPR increased from 43.5 per cent to 44.5 per cent. (see the Labor Force Survey by Department of Statistics)

Employment by Sector

During 1991-1995 periods, the employment rate expanded at an impressive rate of 3.4 per cent. A total of 1.2 million jobs were created during the period where the manufacturing sector was the highest contributor to the total employment, accounting for about one quarter of total employment and almost 60 per cent of net employment creation (Table 1).

Table 1: Employment by sector, 1990-2005 ('000 persons)

Sector	1990	%	1995	%	2000	%	2005	%
Agriculture, Forestry, Livestock and Fishing	1738	26	1428.7	18	1423.0	15.3	1405.7	12.9
Mining and Quarrying	37	0.6	40.7	0.5	41.7	0.4	42.7	0.4
Manufacturing	1333	19.9	2051.6	25.9	2565.8	27.7	3132.1	28.7
Construction	424	6.3	659.4	8.3	752.2	8.1	759.6	7.0
Electricity, Gas and Water	47	0.7	69.1	0.9	75	0.8	93.0	0.8
Transport, Storage and Communication	302	4.5	395.2	5.0	461.6	5.0	631.2	5.8
Wholesale and Retail Trade, Hotels and Restaurants	1218	18.2	1327.8	16.8	1582.9	17.1	1927.2	17.7
Finance, Insurance, Real Estate & Business Services	258	3.9	378.5	4.8	500.2	5.4	732.3	6.7
Government Services	850	12.7	872.2	11.0	986.0	10.6	1052.8	9.7
Other Services	479	7.2	692.2	8.7	891.2	9.6	1118.2	10.3
Total	6686	100	7915.4	100	7274.6	100	10894.8	100
Labor Force	7042		8140		9571.6		11290.5	
Unemployment	356		224.6		297.0		395.7	

Source: Seventh Malaysia Plan, 1996-2000 & Ninth Malaysia Plan, 2006-2010

Meanwhile, the service sector accounted about 47 per cent of total job creation during 1991-1995. The construction sector grew at an average 9.2 percent per annum and accounted for about 19 per cent of total job creation. The share of the construction to the total employment increased from 6.3 per cent in 1990 to 7.0 percent in 2005. While the share of agricultural employment to total employment fell from 26.0 per cent in 1990 to 12.9 percent in 2005. This sector continued to face labor shortages as local labor moved into other economic sectors because of better prospects and higher wage rate.

3. Women's Labor Force Participation Rates in Malaysia

Women are highly important contributors to the country's economic and social development. Over the years women participation in the economy has increased rapidly and they constitute almost half of the total population. Since 1990, women's participation in the labor force has increased enormously. Even though Malaysia is a newly industrializing country, its female labor force participation rate compares favorably with those of the industrialized countries of the Asia and Pacific region. Women's labor force participation rate has increased over the years, but is still significantly lower than that of men. In 1999, women's labor force participation rate was 44.2 percent compared to men, 83.4 percent. However in year 2004, women's participation rate in labor force has increased to 47.3 percent (Table 2). In year 2006, a total of 2,575.3 ('000) or 70.1 percent of employed women live in the urban areas.

Table 2: Labor Force Participation Rates By Gender 1995-2006

Gender	1995	1996	1997	1998	1999	2000	2004	2005	2006
Total	64.5	65.8	66.6	64.3	64.3	65.4	64.4	63.3	63.1
Male	83.8	84.8	85.7	83.4	83.4	83.0	80.9	80.0	79.9
Female	44.3	45.8	47.4	44.2	44.2	47.2	47.3	45.9	45.8

Source: Economic Report 1999/2000, 2003/2004, 2006/2007

Obviously, it can be seen that employment rates between the three ethnic groups are different: in 1984, 65.2 % of employed women were Malay, 21.9% were Chinese and 12.3% were of Indian origin. Ethnic composition of female employment rates varies between urban and rural sectors. In 1984 (Peninsular Malaysia), female labor force participation rates in the urban sector were 53.7% among the Chinese, 35.7% among the Malay and 10.2% among the Indian, whereas in the rural sector the Malay women had the highest employment followed by the Chinese and the Indians.

Women Employment Patterns by Sector

Economic growth has been accompanied by the greater participation of women in the formal workforce and in a range of other activities. Female labor force participation rate has kept pace with population growth and the number of female and male workers doubled between 1970 and 1995, while the labor force participation rate remained relatively unchanged after 1980. The labor participation rate increased from the upper thirties for women between 1970 and 1980, and has remained between 44 and 46 per cent between 1990 and 1995. The rapid absorption of women into the labor market has been influenced by several factors. The rapid economic growth was due largely to important growth in the manufacturing and services sectors, where substantial and proportionally larger increase of female workers has been registered. Among all sectors of the economy, the manufacturing sector has recorded the highest growth rate during the last decade. The manufacturing sector has created about 0.6 million new jobs between 1990 and 1994. In 1994 the sector provided employment to 1.9 million people. The growth of this sector has led to the mobilization of female labor and increase in employment, with about 46.4 percent (1990) and 43.4 percent (1995). The financial services and the government are the main employers of women and it accounts for about 60 percent of the total labor force in these sectors. Agriculture is no longer the major employer of women and the proportion of female labor in agriculture has declined as well from 40 percent in 1970 to 30 percent in 1995. Women workers have been able to move into relatively better paying opportunities in other sectors. Table 3 shows the percentage distribution of female labor force by sector in 1970 to 2000.

Table 3: Percentage Distribution of Women Labor Force (over Total Labor Force) by Sector (1970-2000)

Sector	1970	1980	1985	1990	1995	2000
Agriculture, Forestry, Livestock and Fishing	38.0	39.0	38.4	34.4	28.6	26.8
Mining and Quarrying	12.6	10.3	10.5	12.9	17.9	13.0
Manufacturing	28.1	40.1	43.1	46.4	42.8	41.1
Construction	5.3	7.5	3.4	6.9	6.5	6.0
Electricity, Gas and Water	6.7	7.1	5.6	4.3	9.6	9.5
Transport, Storage and Communication	18.2	29.3	37.4	38.6	12.1	13.1
Wholesale and Retail Trade, Hotels and Restaurants	4.3	6.3	10.4	11.1	38.7	39.3
Finance, Insurance, Real Estate and Business services	-	29.5	35.1	34.2	39.9	39.9
Community, Social and Personal Services; Public Administration; and Other Services	-	29.4	36.8	37.9	40.0	45.3

Source: Sixth Malaysia Plan, 1991 and Eight Malaysia Plan, 2001.

The proportion of females in the total labor in manufacturing peaked at nearly 50 percent in 1990, however it showed a decline in the female percentage of the total labor force in 2000 (41.1%). This can be explained by a trend towards increasing technology-intensive new investments to the concomitant demand for skilled labor, and provides early warning of the need to train female workers in sunset industries to prepare them for redeployment. Furthermore, the majority of women remain in low-skilled, labor-intensive jobs in agriculture, and in semi-skilled assembly work in the industry. (see Asian Development Bank, Labor Survey, 1995).

The importance of women in the industrial labor force can be analyzed in relation to the new development in the world economies linked with export-oriented industrialization. Increasing in export-oriented zones has systematically linked the national to international markets, thus expanding the demand for labor force in the industrial sector, especially the manufacturing sector. Industrialization process has benefited Malaysian women more than men. The establishment of export-oriented zones in the 1970s had provided more employment opportunities in the manufacturing sector. For example, more than 75 percent of its workforce consisted of women in manufacturing sector.

Likewise, over 90 percent of the workers, employed by the clothing and textile industries were mainly females. Furthermore, with the proportion of women in manufacturing (27.3 percent), it became the largest sector of employment for women in 2000 (Table 4), and is the single largest employer of women.

Table 4: Employment Distribution by Sectors and Gender (%)

Industry	1990		1995		2000	
	Male	Female	Male	Female	Male	Female
Agriculture, Forestry, Livestock and Fishing	24.8	28.5	21.6	16.9	20.2	14.1
Mining and Quarrying	0.7	1.2	0.5	0.2	0.4	0.1
Manufacturing	15.6	29.5	20.2	29.4	20.6	27.3
Construction	8.6	1.4	11.3	1.5	12.1	1.5
Electricity, Gas and Water	1.0	0.2	0.9	0.2	0.7	0.1
Transport, Storage and Communication	4.0	5.6	6.2	1.7	6.1	1.7
Wholesale and Retail Trade, Hotels and Restaurants	23.6	6.4	16.6	20.5	18.1	22.3
Finance, Insurance, Real Estate and Business services	3.7	4.2	4.3	5.6	4.5	5.7
Other Services	18.0	24.0	18.4	24.0	17.3	27.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Seventh Malaysia Plan, 1996 and Eight Malaysia Plan, 2001

4. Analysis of Women's Labor Participation

Economic theory indicates that family decisions regarding labor supply, child care quality, birthrates, and other relevant factors are likely to be affected by the child-care policies. A number of researchers have attempted to estimate the behavioral effects on various family decisions (i.e: the women's decision to participate in the labor market) of changes in income, wage rates, and the price of child care. A sampling of earlier studies includes Heckman 1974; Robin & Spigelman 1978; Stolzenberg & Waite 1984; Leibowitz, Waite, & Witsberger 1987; Berger & Black 1991; Blau & Robins 1988, 1989, 1991a, 1991b; Connelly 1992; Hofferth and Wissoker 1992; Leibowitz, Klerman, & Waite 1992; and Ribar 1992, 1995; Michapolos, Robins, & Garfinkel 1992; Kimmel 1993, Averett et.al 1997; Powell 1997; and Anderson & Levine 1999. The more recent research includes Han & Waldfogel 2001; Baum II 2002, Oishi 2002; Doiron & Kalb 2005; Viitanen 2005; Kimmel & Powell 2006; and Lockshin & Fong 2006.

For our econometric analysis, we employ the model by Connelly (1992) in which the decision of a woman to participate in the labor market is modeled as the outcome of maximizing her utility over goods. Specifically, we estimate a probit model relating employment to wages and child-care costs such that

$$L^* = \beta_0 + \beta_1 W + \beta_2 P_{cc} + \beta_3 A + \varepsilon_h$$

L =1 (participates) if $L^* > 0$

L =0 (does not participate) otherwise

where L^* is the labor supply of women, W is the market wage rate, P_{cc} is the hourly cost of child care, and A is a vector of other observed determinants. For other observable determinants A , we use the age, years of education, working experience, husbands income, number of children, and dummy variable showing the marital status, urban/rural areas, health, and wheater or not they live in their born-area. The problem is that W is not observed in the samples that are not employed. Similarly P is observed only in the sample of who left children at the formal care. Therefore, we make estimation of the market wages and price of child care.

The sample size used for estimation was 600 married women. Summary statistics of the variables used are as shown in Table 5.

Table 5: Summary Statistics

Variable (n= 600)	Frequencies	Percent	
Location	Rural	251	41.8
	Urban without industrial area	235	39.2
	Urban with industrial area	114	19.0
Age (Minimum= 18, Maximum= 63,	< 20	3	0.5
	20 – 29	162	27.0
	30 – 39	165	27.5

Mean =38.1)	40 – 49	158	26.3
	50 – 59	90	15.0
	60 and up	22	3.7
Race	Melayu	536	89.3
	Cina	32	5.3
	India	27	4.5
	Others	5	0.8
Education Achievement	No formal schooling	21	3.5
	Primary education	43	7.2
	UPSR	60	10.0
	Lower-secondary	10	1.7
	PMR	49	8.2
	Secondary education	9	1.5
	SPM	229	28.2
	STPM/ Diploma/Matriculation	98	16.3
	University/College/ Maktab	81	13.5
Area of Specialization	Art	499	83.2
	Science	73	12.1
	Technical/Vocational	10	1.7
	Others	18	3.0
Marriage Status	Married	555	92.5
	Widow	24	4.0
	Divorced	21	3.5
Health	Satisfactory	580	96.7
	Non-satisfactory	20	3.3
Housing Status	Rented	137	22.8
	Owned with bank-loan	188	31.3
	Owned privately	200	33.3
	Stay with parents / not-rented	75	12.5
Working status	Not working and not actively lookong for jobs	254	42.3
	Not working but actively looking for jobs	27	4.5
	Working	319	53.2
Income (monthly) n= 319	RM100 - RM1,000	168	52.7
	RM1,001- 2,000	120	37.6
	RM2,001- 3,000	20	6.3
	RM3,001- 4,000	6	1.9
	RM4,001- 5,000	4	1.2
	RM5,001- 6,000	1	0.3
Husbands Income (monthly) n= 496	RM100 - RM1,000	213	42.9
	RM1,001- 2,000	187	37.7
	RM2,001- 3,000	62	12.5
	RM3,001- 4,000	15	3.0

	RM4,001- 5,000	13	2.6
	RM5,001- 10,000	6	1.2
Cost of Childcare (monthly)	RM0	498	83.0
	RM1- RM100	12	2.0
	RM101- RM200	66	11.0
	RM201- RM300	21	3.5
	RM300 – atas	3	0.5

With a sample size of 600 married women at the working age of 15-65 years old, a number of 319 or 53.2 percent are working during the survey. Almost 30 percent of the respondents have at least one child at the age of less than 6 years old.

Table 6 shows the estimation results from the specification of the participation probits. This estimation uses years of education as a proxy for wage rate.¹ Based on the fact that analyses using cross-sectional data are prone to the problem of heteroscedasticity, this model is estimated using White's heteroscedasticity-consistent variances, or also called heteroscedasticity-robust estimator.

Table 6: Probit Model of Married Women's Participation

Variable	Coefficient	P> t 	Marginal Effect
-Intercept	-.6134476	0.719	
<i>Personal Characteristics</i>			
Urban	.5138713	0.001	.2027676
Age	.0034044	0.970	.0013581
Age squared	-.0010542	0.409	-.0004206
Years of Education	.0985829	0.000	.0393281
Status	-1.106121	0.174	-.3789177
Health	.1493478	0.752	.0594067
Birth origin	-.0660808	0.688	-.0263574
Experience	.1995302	0.000	.0795994
Exp squared	-.0013316	0.059	-.0005312
<i>Husbands' Characteristics</i>			
Age	.0173206	0.446	.0069098
Years of Education	.0015676	0.847	.0006254
Income	-	0.026	-.0000676
	.0001693		
<i>Children</i>			

¹ The estimation using the estimated wage had dropped the effect of education due to the problem of multicollinearity.

0-6 years old	-.3405044	0.000	-.1358389
7-12 years old	-.122623	0.262	-.0489185
13-17 years old	-.2570529	0.024	-.1025472
18 years old	-.0330402	0.811	-.0131809
Cost of childcare	.0076897	0.000	.0030677
<i>Log likelihood</i>	-178.68154		
<i>Pseudo R2</i>	0.5691		

As the theory predicts, years of education and working experience are significantly positive indicating that higher education or having more experience raise the probability of participation. As a proxy to wages, having more education means greater possibility of getting better jobs, hence have higher wages. The negative impact of husbands' income and having children at the age of 0-6 years old are also significant. High income of other household member, raises the reservation wage of mothers, thus lowers the probability of participation when the objective of working is to help family's financial need. The impact of childcare on mothers' labor force participation is significant but not as the theory predicted. The probability of participation in labor force is significantly higher for women who lived in the urban areas where jobs opportunities are greater compared to the rural.

5. Factors Influencing the Increase of Employed Women

The increase in the labor force participation rate of women in Malaysia could to a certain extent be explained by the decline in fertility rate from 3.9 in 1982 to 3.3 children per woman in 2001. The decline in fertility rate could in turn be trace to the rise in the average age at marriage thus reducing the span of active reproductive life. In 1980, women are marrying at an average age of 23.5 years, and in 1991 their age marriage increased to 24.7. This mean age at first marriage continue to increase as in 2000, it was 25.1 and at the age of 25.3 in 2004. The postponement of age at marriage among women led to the postponement in giving birth to the first child. The most important determinant of fertility is women's education. As primary education is becoming universal and more women are pursuing higher education, family size can be expected to drop further. Therefore, the highest female labor force participation in within the age group of 20 to 24, coinciding with the end of schooling age and before the age of marriage. Hence the age of marriage together with fertility bears a relationship with female labor force participation.

The increase in the female labor force participation may be attributable to improving economic incentives in employment and policies favoring the employment of women. In addition, the combined effects of improved maternal and child health care, access to family planning services, increased years of schooling, leading to arise in the average age at marriage, have allowed women to take advantage of the increased employment opportunities. Postponement of marriage from age 22.3 in 1970 to age 24.7 in 1991, and longer intervals between children has enabled more women of all ages to enter and remain in the workforce (see Table 7).

While the participation rate for the age group 15-19 years declined between the years 1980 to 1985 due to increased enrollments in secondary school, the other age groups of 20-24 years increased their participation. The decline in the participation rate after the age of 24 is related to marriage and the start of an active reproductive life. There are no significant additional incentives for women to re-enter the labor force at after age, which is why there is no rise in participation among women over 40 years.

Table 7: Labor Force Participation Rate by Gender and Age Group 1980-1990

Age Group	Participation Rates (%)					
	1980		1985		1990	
	M	F	M	F	M	F
15 – 19	47.9	33.5	43.7	28.2	44.1	31.4
20 – 24	91.1	54.0	90.7	58.3	89.1	63.9
25 – 29	92.4	44.6	98.1	49.2	97.4	53.9
30 – 34	98.0	40.5	98.8	47.3	98.4	50.2
35 – 39	98.2	42.7	98.9	48.5	98.8	47.8
40 – 44	97.9	43.8	98.3	50.4	98.5	48.8
45 – 49	96.6	41.4	97.9	48.7	97.2	48.5
50 – 54	92.7	36.5	93.5	40.0	93.3	40.9
55 – 59	77.4	30.8	76.6	32.6	71.3	29.4
60 – 64	68.6	25.0	67.1	23.9	59.9	24.0
15 – 64	86.6	39.3	84.6	44.6	84.4	46.8

Source: Department of Statistics, 1960 and Siti Rohani Yahya, (1993), "Patterns and Trends of Labor Force Participation of Women,"

Another factor that might induce more female to get involve in labor force is seems to be related to the attitude of the family towards women. A study of selected successful career women in Malaysia, for example, revealed that changing attitudes of parents and husbands towards a more positive trend were perceived to be related to higher educational attainment of women which in turn could influence women's participation in the labor force.

Overall increase in women education's level appears to be one of the main factors of women contribution in labor force. Education is essential to the improvement of women's living standards and to allow them to take a more active part in the decision making process within the family, the community, the place of paid work and the political area. In 1995, women made up 49.5 per cent of the enrollment of students at government- assisted universities. Half of women labor force possessed secondary education and 11 per cent had tertiary education in 1995, while 12.6 per cent did not receive any formal education.

However, several factors are identified as problems faced by working women in Malaysia; i) lack of technical and managerial skills or training for women. Although gender gap in lower education enrollment has been closed, there is gender stereotyping in the course selection in higher education, leading to the gender segregation in occupational sectors and the gender hierarchies in occupational distribution. This is largely linked to the cultural ideology, which associates women with their reproductive role, ii) there are disadvantaged positions of women farmers in terms of access to resource and services. Despite their significant role in agriculture, they have been largely ignored in the government's programs until recently, and the effects of the current programs focusing on income-generating activities such as food processing and handicrafts remain to be seen, iii) Women's low earning can be attributed to lifetime choices between work and family formation (from the viewpoint of labor supply) and to employment discrimination (from the viewpoint of labor demand). Since women usually have a greater role than men in caring for the family, they may invest less in their own education and may work for shorter periods and in occupations that require fewer hours or less effort than men. This combined with interruptions in labor-force participation limits women's access to better jobs and promotions.

Furthermore, employers, in turn, may invest less in nurturing women's skills through training or education because women are expected to drop out of the labor force while they are raising young children or, in many circumstances, to stop all work outside the home once they are married.

5. Conclusion

Much progress has been achieved in the past few decades in narrowing the gender gap in Malaysia. It can be shown in the developments in women's roles, both in absolute and relative terms, in the major socioeconomic aspects of the country's development: increasing rates of female labor force participation, gains in productive activities of women and their strengthened economic standing and their increased participation in education. Malaysia's impressive economic growth has been accompanied by the greater participation of women in the formal workforce and in a range of other activities.

There are equal opportunities for employment for both men and women workers in Malaysia. Based on the Labor Force Survey, in the first quarter of year 2002, women made up 35.5 per cent of the labor force. Policy statements in the Government's Second Outline Perspective Plan (1991-2000) also provide women with opportunities for economic participation as well as participation in education and training. The National Labor Policy reinforces the government policy of gender equality at all levels of employment. The policy also emphasizes that women be provided with opportunities for training and advancement, equal pay for work of equal value and be integrated into the mainstream of developments as well as increasing their participation rate in employment.

To meet future challenges, Malaysia has to prepare its labor force to suit the needs of a knowledge-based economy (K-based economy). A number of programs in human resource development were initiated with emphasis on the inculcation of new skills. These programs ranged from the implementation of new approaches in basic education via the use of computer and information technology (IT) in primary and secondary schools to Special Schemes involving programs on training in IT, mathematics and languages.

Training serves as one of the means of developing human resources. In this regard, one of the major insights of human capital theory is the observation that individuals can increase their productivity not only through investment in formal education but also by learning important work skills outside the formal school system. Viewed from this perspective, women as active actors, in both the private and public spheres-should be trained with their male counterparts focusing not only on their domestic role but also on their productive role.

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