CHAPTER ONE

REVIEW OF LITERATURE

1.1 Introduction

One of the most significant social phenomenon in the twentieth century has been the dramatic increase in female labour force participation across all nations, especially after World War II . The change in representation of women in the labour force, which was mainly due to diverse social and economic change, also increased awareness of the inequality of their economic position relative to that of men.

In the International Women's Year in 1970, the lack of attention paid to women's interests in development planning and policy making was brought to a head and a call was made at the United Nations Conference to intensify actions to ensure the full integration of women into the development process (Lyon, 1991). The most obvious means of engaging women in the development process is by increasing productive employment. In 1976, among the resolutions passed at the International Labour Office's World Employment Conference was to overcome the underutilisation of female human resources. As a result, women's economic position gained relevance as research and policy concerns. There was abundance of research into women's condition and consequently, various rural development programme involving women were implemented (Sinclair, 1991).

Although economists and sociologists in the western society have begun to focus their attention on women's issues for several decades now, it has not made a great impact in Asian countries, irrespective of the development stage of the country. This is mainly due to male-dominated cultures that have been deeply ingrained in the mind of society for decades (Meng, 1996).

The subsequent sections in this chapter will provide a general outlook of the literature on women's participation in the labour force. Section 1.2 examines the theoretical framework of labour supply, while Section 1.3 provides an overview of the econometric issues involved in the estimation of female labour supply. Section 1.4 states the objectives of this study and Section 1.5 is a summary of this chapter.

1.2 Theoretical Framework

The theoretical framework in this study draws liberally from economics and to some extend from sociology. Economists argue that economics theory has the advantage compared to sociology theory as it distinguishes between labour force participation and employment. While such an advantage is undeniable, economic analysis of the labour market is generally limited to individual characteristics that determine marketability and the value of time (Blau and Robins, 1990; Sandell, 1980). On the other hand, sociological perspectives incorporate a wider range of determinants such as norms, social acceptability and labour market accessibility. This study attempts to incorporate both approaches in order to achieve a more comprehensive analysis of married women's labour force participation across communities.

1.2.1 Neo-Classical Economics Theory

Orthodox economists use the supply of and demand for labour derived from neo-classical economics theory to explain women's position in the labour market . The conventional manner is to set out a theory to explain the supply or demand for labour as dependent upon a number of observable variables. Female labour supply analysis assumes that a household is an economic agent which maximises its welfare subject to time and budget constraints. This maximisation problem typically yields a decision rule for women's labour supply that can be described in terms of reservation wage function giving the minimum (shadow) wage for which a woman would be willing to work under various circumstances, and a market wage function that the woman could command from employers (Mincer, 1962; Becker, 1965; Gronou 1980). The labour supply decision of women is often segregated into two. In the first case, a woman is assumed to work in a designated time period (e.g. one year) if her market wage is greater than or equal to her reservation wage at zero hours of work. Secondly, if the woman is employed, the amount of work is assumed to be determined by equating her reservation wage and her market wage. The supply of labour is measured by women's participation in the labour market or number of hours worked, while the independent variables included in the early studies of the supply of female labour were usually limited to those which are attributed a value by the market such as a woman's own wage offer (substitution effect), her husband's earnings and family member's non-earning income (income effect) (Killingsworth, 1983; Killingsworth and Heckman, 1986).

The conceptual framework outlined above has many simplifying assumptions. For example, it envisages an individual as making labour supply decision in isolation. It does not analyse the relationship between female labour supply and household membership. Killingsworth (1983) has analysed such relationships and formulated three main types of

models that link family membership to labour supply. The first of these models, known as the "male chauvinist" model has been applied by Bowen and Finegan (1965, 1969) and Hausman (1981), in which wives view their husbands earnings as a kind of income producing asset when she makes the labour supply decision. Some studies such as Hall (1973), Ashenfelter and Heckman (1974), Hausman and Ruud (1984) assume that the only utility that is maximised is the household aggregate utility function. The utility is assumed to depend on consumption and leisure and it is maximised subject to family budget constraint.

The second model is known as the family utility - family budget constraint model. This approach has proven to be far the most popular in family labour supply analyses because it fits so easily into the theory of consumer choice developed by people like Slustky, Hicks and Allen, (see Killingsworth, 1983). The third model draws attention to the treatment of household utility and household decision making process. Leuthold (1968) has applied this model in her study and examined an individual's reaction to other family members labour supply by using "reaction curves" which are analogous to the Cournot or Stackelberg reaction curves of duopolist or oligopolist. Others such as Manser and Brown (1979, 1980) and McElroy and Horney (1981) applied bargaining models of family member's behaviour in which husband and wife arrive at decisions about labour supply and consumption spending through a complete process of bargaining.

In recent studies, economists began to emphasise the link between women's production and reproduction. As a result, other variables such as number and age of children were included to model female labour supply (Leuthold, 1979, Heckman and McCurdy, 1980). The interrelationship between children and women's work behaviour has received a great

deal of attention and there is a growing body of research[1] that explicitly addresses problems of estimating the effect of children on the labour supply of women (Nakamura and Nakamura, 1992).

1.2.2 Neo-Classical versus Segmented Labour Market Theory

Economists agree that the demand for and supply of labour are important determinants of female labour. However, there has been a debate on the nature of wage determination and specifications of earnings function. There are two main school of thoughts. Proponents of neo-classical labour market theory estimate earnings function based on the human capital theory. The most important factors that influence women's earning are schooling or education, experience and skill. Women are thought to have less human capital and hence are less productive than men because of the time they spend out of the labour force during the years spent rearing children (Mincer and Polachek, 1974). On the other hand, proponents of the segmented labour market theory argue that neo-classical economics fail to account for the ways in which labour markets are structured.[2] In segmented labour analysis, the macro phenomenon of occupational segregation is seen as the major factor affecting participation, wage rates, and hours of work. Therefore, these studies lead to different explanations of why labour force participation has increased in recent years. Among others, Bergmann and Adelman (1973), Cain (1976), Hill (1983) and Tiefenthaler (1994) analysed female labour supply by segmenting the labour market.

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[1] Studies that addressed the relationship between women's employment and labour supply include Blau (1989), Cramer (1980), Dooley (1982) and Motiff (1984).

[2] Labour markets are structured in either horizontal or vertical segregation.

1.2.3 Economics versus Sociological Explanation

While the orthodox economic analysis is effective in quantifying the outcome of changes in observable variables on the supply of and demand for female labour, and in enabling comparisons to be made with the changes in the supply of or demand for male labour, it fails to capture the non-quantifiable variables such as voluntary preferences and perceptions of appropriate roles. It also fails to consider the relevance of familial and social context. Among the important social and familial factors are economic position, ethnic identity and demographic composition of the household.

In many Asian settings, class and ethnic status can also affect labour market. In some societies, certain ethnic groups such as Muslims are more conservative in their attitude with regard to women than other ethnic groups. Often, women from such ethic groups are constrained in their activities because they are encouraged to devote their time to domestic activities. Therefore we would expect lower labour force participation among them (Malholtra and DeGraff, 1997).

Similarly, class can also be associated with women's participation in the labour market. For example, women who belong to the upper class status are usually associated with electronic gadgets and domestic servants to reduce their workload at home. In addition, they are also associated with higher levels of education. These attributes generally encourage higher level of labour force participation (Malhotra and DeGraff, 1997).

It is often argued that only in perfectly competitive labour markets would job offers and their acceptability depend entirely on skills, productivity and wage options. In reality, most labour markets are imperfect and jobs are often very much conditioned by cultural

and societal influences. Even wages in some sectors of economy are determined by variables such as trade union membership (Thomas, 1982).

1.3 Econometric Issues

There is no precise date when the research of female labour supply using empirical models began. However, it is believed to have begun in the 1930s.[3] However, one of the most well known study using aggregated data was undertaken by Glen Cain (1966). This study adopts the paradigm introduced by Killingsworth (1983) who classified the study as first generation based on the econometric techniques adopted in the study and the underlying economic theory.

1.3.1 First Generation Studies

Most of the first generation studies are undertaken between 1930 and early part of 1970s (Killingsworth, 1983). The prevalent feature among the first generation studies are the ordinary least squares (OLS) method that was used to estimate the parameters. The common models used in the first generation studies takes the form of one of the below

$$H = a + bW + cV + \epsilon \qquad (1.3.1.a)$$

$$H_i = a_i + \sum_{j=1}^{J} b_{ij}W_j + c_iV + \epsilon_i \qquad (1.3.1.b)$$

$$H_i = a_i + b_iW_i + c_i(V + \sum_{J=1, J\neq i}^{J} W_iH_J) + \epsilon_i \qquad (1.3.1.c)$$

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[3] The pioneering effort was made by Schoenberg and Douglas (1937)

where H denotes the hours of work, W is the real wage rate, V real property income, ϵ is the stochastic term, and i, j subscripts refer to differing household members. The intercept term in these equations are often made a function of other variables such as age, gender and race, which in turn reflect tastes for work. Further, early studies[4] did not address issues concerning the sources underlying the stochastic term ϵ. Instead, most of the studies simply assume that the error term is randomly distributed. The studies did not make efforts to distinguish between measurement error and omitted regressors that are implied by the stochastic term ϵ.

In terms of empirical findings, there was general consensus among the first generation studies that female labour supply is considerably more sensitive to changes in wage rate and property income than is male labour supply. Another common finding is that an income compensated increase in one's own wage increases one's labour supply. Despite such consensus, the estimated income and substitution effects vary between a wide range. Mrotz (1987) pointed out that although researchers have tried to test explicitly for the consequences of several economic and statistical misspecifications, questions relating to certain issues such as sample selection bias and measurement error were still unanswered. Such disappointing results led researchers to examine the underlying economic theory more closely (Heckman, Killingsworth and MaCurdy, 1981).

There were several issues that were scrutinised due to the unsatisfactory results generated by the first generation studies. First, these studies used labour force participation, hours worked per week, weeks worked per year, lifetime participation and the fraction of the lifetime participation interchangeably as a measure of labour supply. In second generation studies, the researchers formulated specific theoretical models to consider

[4] Among those included in the early studies are those undertaken by Cain and Watt (1973).

participation, hours worked per week, lifetime participation and lifetime hours of work decision.

Second, the first generation studies did not pay enough attention to functional forms and econometric issues. They failed to entail a more specific treatment of unobservable variables and did not address the issue of sample selection bias. The first generation studies either fitted equations such as (1.3.1a) to a random sample taken from population or set the labour supply of non-working individuals at zero and fitted the equation by OLS using population sub-samples that consists only of working individuals. The first method assumes that equation (1.3.1a) holds for all values of W, not just for values in excess of reservation wage (W_r) and leads to model mis-specification. The second method results in non-random selection of ϵ since only individuals with $H>0$ are included in the estimation.

Third, the first generation studies did not consider non-linear budget constraints which occur with the inclusion of income tax structures, various types of income transfer programs, fixed costs of work and employers preferences for minimum hours of work.

1.3.2 Second Generation Studies

Second generation studies stayed away from the problems that are associated with the first generation studies. The distinguishing feature of the studies in this era is the explicit treatment of utility function and unobservable variables. The utility function used in second generation studies includes time spent on leisure (non-market activities) and the error term ϵ actually represents interpersonal differences in tastes for leisure and for good consumption. These studies also emphasise a crucial threshold condition for labour force participation decision. It is highlighted that the labour supply function which holds

$W > Wr$ is actually different from the labour supply function that holds if $W \leq Wr$. Wever, these studies acknowledge that the same observable variable, unobservable iables and parameters affect both the labour force participation decision and the ount of labour force supply conditional on positive labour force participation

e of the econometric techniques developed to analyse the labour force participation ision is the *Probit* model. This model assumes that measures of real wage rate W are ilable for all individuals in the population, including non-workers. It is also assumes t ϵ has a mean of zero, has a standard deviation of σ_{II} and is normally distributed. parameters in a standard *Probit* model is estimated by maximising the sample elihood function. A distinguishing feature of *Probit* model is that although it provides rmation on the parameters governing labour supply, the information is only computed using information on V, W and whether the individual works. It does not utilise any rmation on hours worked.

alternative procedure developed to incorporate the additional information on hours rked is the *Tobit* likelihood function. The *Tobit* function is actually a combination of ression functions and *Probit* framework. As discussed above, estimation by OLS will ld unbiased estimates if everyone worked. However if some individuals do not work, s advisable to use *Tobit* as it can predict the number of hours worked as well as duce the estimated probability that an individual will not work and thereby help to lain a number of observations clustered at point $H=0$.

art from the *Tobit* procedure, there are other alternatives used for estimating labour ply models. One alternative is the selection bias-corrected regression method and this thod has been considered, among others, by Goldberger (1981) and Greene (1981).

Assume that the labour supply function has been derived from a utility optimising framework and has the form :

$$Hi = X_i \beta + u_{Hi} \qquad (1.3.1d)$$

where u_{Hi} have a population mean of zero and standard deviation of σ. Estimation of this function by OLS using data for working individuals will yield inconsistent estimates of the parameters as u_{Hi} is nonzero and u_{Hi} is correlated with X. Under the assumption that all dependent and independent variables are multivariate normally distributed in the population. Goldberger obtains strong results that the OLS regression coefficients are biased downward in the sense that the OLS coefficient vector is a scalar multiple of the "actual" labour supply coefficient vector. Greene (1981) shows that to obtain consistent estimates of the true labour supply parameters, all one needs to do is divide each element of the OLS coefficient vector by the proportion of observations for which $H > 0$. Although Goldberger's study yields remarkable results, it does not hold when the multivariate assumption is relaxed. On the other hand, Greene's method shows that even with dummy variable regressors, this simple adjustment of OLS provides a surprisingly robust approximation of maximum likelihood estimates of the labour supply parameters. However, the OLS based standard errors are inconsistent, and Greene shows that they cannot be easily adjusted. However, he suggests that an alternative to this procedure is to do *Probit* estimation on the labour force participation decision based on all observations, then do OLS estimation on the hours worked parameters by multiplying the OLS coefficient vector by the sample of proportion of observation for which $H > 0$.

Yet another alternative was suggested by Heckman (1976, 1979, 1980) and this method involves OLS estimation of an expanded regression equation. This procedure suggests that the labour force participation decision is estimated by using *Probit* equation. From

e *Probit* equation, an inverse of Mill's ratio or λ is computed and added as a regressor the hours of work equation (1.3.1d). The expanded regression equation is estimated by LS with the sample of individuals for which $H > 0$. This procedure yields consistent stimates of the labour supply parameters but the estimates of standard errors are biased nd inconsistent.

lsen (1980) proposed estimating a linear probability model with OLS function in which ie dependent variable is a dummy variable and the independent variables are the same as quation (1.3.1d). The values from this OLS (P) is retrieved, and (P – 1) is added as a gressor in hours worked equation to the sample for which $H > 0$.

he final procedure that will be discussed is often known as *Heckit* procedure. This rocedure which is also developed by Heckman involves three stages. In the first stage, bour force participation decision is estimated using a *Probit* likelihood function. From ie *Probit* estimates, the inverse Mills ratio is computed and appended as additional gressor to the wage equations to obtain OLS selection bias-corrected parameters for orkers. In the final stage, the reduced form hours equation is estimated with the ddition of Mills ratio.

lthough various other methods of estimation have been applied by researchers in the cond generation studies, it is beyond the scope of this study to discuss all these rocedures in detail.

econd generation studies such as Nakamura and Nakamura (1981 and 1985), Pong 1991), Arends (1992a, 1992b), Connelly (1992), Cox and Psacharopoulos (1992), Scott 1992a, 1992b), Steele (1992), Wong and Levine (1992), Scott (1992a and 1992b), and Vinter and Gindling (1992) employed *probit* model and estimated the parameter by

maximising the sample likelihood function. Despite providing information on parameters governing labour supply, *Probit* models do not utilise information on hours worked. Therefore, alternative procedures have been developed to incorporate information on hours worked. One popular alternative that has been employed in many studies is the T*obit* model. Among those who have applied the Tobit model in their study are Heckman (1974), Rosen (1976), Layard, Barton and Zabalza (1980), Mrotz (1987) and Tiefenhaler (1994).

Despite avoiding the problems faced by the first generation studies and developing sophisticated econometric techniques, there are still many questions that are related to measurement error, sample selection bias and the inclusion of taxes that remain unanswered (Mroz, 1987). The issue of sample selection bias has attracted the attention of many labour economist and econometricians such as Heckman (1974), Olsen (1980), Goldberger (1981) and Greene (1981). Though many have addressed the issue of sample selection bias, the procedure developed by Heckman by introducing the concept of inverse Mill's ratio has been widely applied in the literature of female labour supply. Studies such as Pong (1991), Arends (1992a, 1992b,), Scott (1992a), Steele (1992), Winter and Gindling (1992), Cox and Psacharopoulos (1992) and Tiefenhaler (1994) have computed the inverse Mills ratio using Heckman's procedure.

Previous studies have such as Winter and Gindling (1992) and Arends (1992a) have included individual characteristics of the female such as age, years of education, marital status, and household characteristics such as the number of children in the household and household income as determinants of female participation in the labour force. Others such as Arends (1992b) and Steele (1992) have also included geographic location as a determinant. Scott (1992) ventured further to included variables such as own home, public water and public sewage to reflect socio- economic status of an individual.

Of these factors, the most established and explained determinant is the child status variable because this variable contributes to the explanation on why work behaviour and wages of men and women differ. In fact Nakamura and Nakamura (1994) and Schultz (1990) agree that child status variable not only captures the family time demands of a woman that comes with having children, but also captures lifestyles and other pre-existing conditions not caused by having children. Nakamura and Nakamura (1992) summarised the reasons for estimating the effect of children on female labour supply into three. First, it improves the efficiency of estimates of income and wage elasticities. Second, the inclusion of child status variables enables researchers to obtain better forecast of the labour supply and earnings of women. Third, estimating the effect of children on labour force participation improves the fundamental knowledge on the interrelationships between fertility and female labour supply.

Researchers unanimously agree that the presence of young children in a household will increase the value of a woman's time in the house in terms of household production and hence reduce the probability of female participation in the labour force. Efforts have been made by some researchers such as Connelly (1992) to explicitly include child-care cost into analysis in order to separate the effect of the increased cost of child-care from other aspects of home production. Her results indicate that availability of free child-care is positively related to participation in the work force. Similarly, Blau and Robbins (1990) provided evidence that the availability of a substitute at home has significant positive effect on fertility among employed women. The evidence is not that strong among those who are unemployed.

Many of the second generation studies did not include child-care cost and instead, introduced a variable or a set of variables directly into the participation or hour of work function to indicate the presence of young children in household. Nakmura and Nakamura (1992) define the direct effects of children as the "current period labour supply responses to the time, effort and other resource requirements of having and caring for children". The authors point out that many labour supply models analyse the interaction between the labour supply and children in a "static" framework and that such framework is inappropriate. They suggested an inter-temporal model as an alternative. In a separate paper, Nakamura and Nakamura (1994) show that the objective of including the child status variable is also very important. If labour economists include child status variables as proxies for omitted factors or if they wish to interpret this variables as reflecting the effects on current labour supply of exogenous changes in the child status, then including the child status variables directly into the labour supply models will lead to biased estimates of the child status response coefficients.

Despite the criticisms, most studies have included child status variable directly into participation and hours of work function. Rosen (1976) has included only children aged below six to represent child status because children below six are not "school age children" and their presence is predicted to increase the value of a woman's time at home. Arends (1992a) used children aged below ten as a proxy for fertility due to data constraints and she found that the effect of children on female labour force participation is not as significant as the results of her study on Uruguay (see Arends, 1992b) in which the number of children aged below six have been included along with other variables.

Other studies such as Layard, Barton and Zabalza (1980), Greenhalgh (1980), Nakamura and Nakamura (1981), Scott (1992a and 1992b), Winter and Gindling (1992) and Arends (1992a), Tiefenhaler (1994) and Greenhalgh (1980) disaggregated the number of children

in the household by age groups. Among these studies, Greenhalgh (1980) and Layard, Barton and Zabalza (1980) have considered the development of pre-school education. Therefore, in their studies children were disaggregated to include those aged below three. Their results indicate that the presence of children aged below three in the household adversely affects the probability of participation. Their results indicate that the increase in the age of children increases labour force participation of married women.

Studies such as Arends (1992b), and Scott (1992) encountered difficulty because there was more than one female in the household and they were unable to determine which child belonged to which women. To overcome the problem, the total number of children in the household was used as a proxy for fertility. Monica (1976) points out that this is a serious shortcoming in the study because the author is neglecting the so called "own-children approach". In studying the relationship between work and fertility, Monica (1976) allocated children with their mothers. The results show that enumeration and coverage of young children using this method improves the measure of fertility. In addition, the relationship between work and fertility can easily be understood.

The labour supply literature is extremely large and complex and there is still much to synthesise. What we have actually done is to skim through the available literature and emphasise on the issues which are related to this particular research.

1.3.3 Studies on Malaysia

i. Female Labour Force Participation

Studies on female labour force participation in Malaysia are dated as far back as 1960s. Jones (1965) compared the variations of female activity rates across communities, mainly using data from the 1957 Census. He analysed urban-rural differences by using eleven states in Peninsular Malaysia as proxy for urban and rural. In order to lend further credibility to his study, some comparisons were carried out against data from the 1947 Census and the 1962 Unemployment Survey. Jones concluded that urban-rural differences was insufficient to explain the variation in the labour force participation among the ethnic groups. A set of other factors such as economic, social and cultural background plays an equally important role in determining female activity patterns.

Hirshman and Aghajanian (1980) carried similar analysis as Jones by using the 1957 and 1970 census data, with emphasis on the differences of agricultural and non-agricultural sectors in Peninsular Malaysia. In addition, this study also examined the relationship between female labour force participation and socioeconomic development. The results of this study suggests that the structural trends in 1960s reflect the pattern of socioeconomic development implied by the U-shaped curve of labour force participation rates. Comparison across agricultural and non-agricultural sector indicates that women in rural areas are associated with low level of education, employment in agricultural sector and marital status, while those in urban areas are characterised by higher level of education, delayed marriage and employment in non-agricultural sector.

There was proliferation of studies on female labour force in 1980s and 1990s using Malaysian data. Most of these studies used time-series data to analyse changes in labour

force participation of women and the relationship with socioeconomic development (see Kwok, K.K.1983; Kwok, K.K. and Van., K.Y. 1983; Chia, 1987; Siti Rohani, 1991 and Jamillah Ariffin, 1993). The results from these studies indicates that female labour force participation is closely related to the development process.

The labour force participation curves of women by age group in Peninsular Malaysia are bi-model or M-shaped, indicating that the country is in the early phase of industrialisation. When the labour force participation rates were analysed across ethnic groups, the age curves of Chinese females reflect uni-model pattern while the age curves of Malay women resembles the bi-model pattern. The age curves for Indian females were between the two extremes (Kwok, K.K., 1983; Kwok, K.K. and Van, K.Y., 1983 and Chia, 1987).

Very few studies in Malaysia applied econometric models to analyse female labour force participation. Among those who attempted to do so are Kwok, K.K. and Van, K.Y. (1983) and Abdul Razak Mohamad (1983). Kwok, K.K. and Van. K.Y. developed a model for projecting participation rates based on the level of industrialisation. The results indicate that as Malaysia becomes more industrialised, the age curves for female labour force participation will show a uni-model pattern with a high peak at the age group 10-20 years.

Abdul Razak Mohamed (1983) used data from 1970 Post Enumeration Survey to determine the variables that influence married women to participate in the labour force. They used RM1,500 as threshold level. Results from this study indicates that below the threshold level, female labour force participation is negatively correlated to the husband's income. On the other hand, above the subsistence level, female labour force participation is positively related to years of schooling.

ii. Earnings Function and Earnings Differential

Earnings function and earnings differential are topics that are closely related to labour force participation. Some empirical studies estimates labour force participation, estimate earnings function and earnings differential simultaneously (Arends, 1992a; Cox and Psacharopoulos, 1992; and Scott, 1992), while others focus on certain aspects of labour force participation (Barrett, Bridges, Semyonov and Gao, 1991 and Cain and Dooley, 1976) or earnings (Madhura, 1997).

In Malaysia, Chia (1987) analysed trends and patterns of labour force participation and some attempt was made to analyse earnings as well. This study used the Occupational Wage Surveys conducted by the Ministry of Labour and Manpower to analyse ratio of earnings of males and females for selected occupations and industries in Peninsular Malaysia in 1974, 1977 and 1980. For occupations which were well represented by both men and women, a differential index was computed. Based on the index for combined industries, Chia (1987) concluded that the average monthly earnings and monthly rates for women were lower than that of men. Even in the textile and electronics industry, women generally received lower salary than men.

Apart from that, the studies on earnings are really scarce in Malaysia. Among others, Chapman and Harding (1985) and Lee and Shyamala (1995) have used Malaysian data to estimate earnings function and earnings differential. Chapman and Harding analysed earning differentials of ex-students of the Mara Institute of Technology between 1966 to 1977. Their study shows that the major difference between the male-female earnings is due to employment distribution. Females are often placed in low paying occupations which results in lower salary than their male counterparts.

Lee and Shyamala (1995) analysed the wage differentials in seven industries located in Klang Valley which accounted for 83 per cent of manufacturing sector employment in Malaysia. Their study shows that the occupational distribution for males are more favourable than females, thus resulting in lower earnings for females with similar human capital endowments.

1.4 Objective of Study

While there is substantial literature available on female labour force participation in Malaysia, only a few studies have carried out empirical analysis to examine structural determinants such as fertility rate, family structure, social composition and spatial location of the area-social unit of female labour force participation. This study attempts to benefit from additional scrutiny of the Malaysian case by using empirical analysis across selected communities.

A second reason for renewed efforts in examining women's labour force participation in Malaysia is that existing studies, notwithstanding their importance, have used relatively large sample sizes on national level. While such studies are important as they describe patterns of participation with large, nationally representative sample, they fail to capture the details that community level studies can capture. Therefore, this study examines patterns and trends of labour force participation in Peninsular Malaysia by using data from Labour Force Surveys, Malaysian Economic Plans, Malaysian Economic Reports and Bank Negara Annual Reports. In addition to that, this study also examines labour force participation of women in six selected communities.

The third objective of this study is to analyse the impact of cultural and religious differences on female labour force participation. Such analysis is especially important in a multi-racial country such as Malaysia as we can expect to find important differences in the dynamics of labour supply behaviour between the three main ethnic groups.

The fourth objective of this study is to examine the impact of rural-urban differences on female labour force participation across the selected communities.

The fifth objective of this study is to estimate wage equation for the selected communities. This study adopts the second generation approach. Therefore, *Probit* equations will be used to estimate the determinants of female labour force participation. In order to overcome selectivity bias, Mills ratio will be included as an independent variable in the wage equation. By estimating wage equations, one can gauge how far human capital factors such as education and skills affect wages.

1.5. Summary

This chapter has provided an overview of the issues related to female labour force participation. First, the theoretical framework of this subject was analysed. The differences between the Neo-Classical and Segmented Labour Market Theory was highlighted. Similarly, the differences between the Economics and Sociological explanations were explored. The focus was then shifted to econometric issues and a lengthy description of various estimation techniques was presented. Finally, some of the available literature was reviewed with a special emphasis on the studies undertaken in Malaysia.

Based on the literature that is available on this subject, it is evident that there is still a lot of scope for researchers in Malaysia to explore on this topic. Studies in Malaysia are outdated in terms of econometric techniques that have been adopted in second generation approach. The intricacy and complexity of analysing female labour force participation with the introduction of income tax structures and income transfer programs are yet to be explored in Malaysia.