

Asian Economic and Financial Review

journal homepage: http://www.aessweb.com/journals/5002



MALAYSIA'S LABOUR FORCE PARTICIPATION IN RURAL AND URBAN AREAS

Nor Amna A'liah Mohd Nor

Department of Economics, Faculty of Economics and Management, Universiti Putra Malaysia, Malaysia

Rusmawati Said

Department of Economics, Faculty of Economics and Management, Universiti Putra Malaysia, Malaysia

ABSTRACT

In Malaysia, transformation of economic structure from agricultural sector to manufacturing and services sector has led to urbanization process in which individual migrates from rural to urban areas for better jobs opportunity and higher wages. This inclination of movement has led to a reduction in labour absorption and expands the labour force disparities between urban and rural areas. In light of these disparities, this study used Labour Force Survey (LFS) data from Malaysia Department of Statistic to examine the determinants and changes between rural and urban labour force participation in Malaysia. The results of logistic regression models demonstrate that age group 25-34 years are the main determinant of rural and urban labour force participation. However, the probability of household in urban areas participate in labour market are higher than rural areas. Educations in urban areas are more significant compared to rural areas. A non-linear decomposition exhibits that the observed rural and urban differentials are attributable to differences in endowment (explained variables).

© 2014 AESS Publications. All Rights Reserved.

Keywords: Logistic regression model, Decomposition approach, Labour force. **JEL:** C25, C40, J21.

Contribution/ Originality

This study is one of very few studies which have investigated on the gaps occurred between rural and urban areas. Moreover, this study substantially differs from earlier studies because data is focusing on Labour Force Survey for three time periods which are 2000, 2005 and 2010.

1. INTRODUCTION

Labour market plays an important role in the Malaysian economy. It is one of the main factors contributing to the Malaysia's economic growth. Based on Toossi (2011), economic growth

depends primarily on the alteration in the growth of the labour force and labour force productivity. At the time of Malaysian independence in 1957, the economy is concentrated into primary sector (agriculture sector) in rural areas where it has generate important and leading sector in the Malaysian gross domestic product. Thus, the labour force participation in rural areas is higher than urban areas. However, as Malaysian economy shifted from the primary sector to the industrial sector (in 1980s and 1990s) and then focus on the services sector (in 2000s), the structure of the labour market is also changing.

Recent data released in 2013 by the Malaysian Department of Statistics has revealed that the proportion of rural labour force participation rate has dropped, while proportion of participation from urban side in the total employment of the country has registered an upward tendency in recent years (see Figure 1). The reduction in the rural labour force participation can be attributed to the slowdown in rural economic activity due to economic recession in recent years and low growth in agriculture sector; whereas urban labour force participation rate has increased due to substantial growth in the manufacturing and services sector in the country.



Figure-1. Malaysia's Rural and Urban Labour Force Participation Rate, 1982-2011.

Source: Department of Statistics (2013).

In addition, the transformation of economic structure also has led to urbanization process in which individual migrates from rural to urban areas for a good opportunity and better jobs with higher wages. Malaysia Department of Ministry of Rural and Regional Development (2012) shows that, there are about 51 percent of Malaysia's population lives in urban areas in 1991 compared with 34 percent in 1980. This urbanization process is growing from time to time. This high rate of urbanization is due to natural increase and migration flow in which migration from rural to urban areas is 17 percent of the total migration between states in the 1986-91 period and 23 percent of the total migration between regional or local (7th Malaysia Plan Report). The individual migration from rural to urban areas has been more often blamed for aggravating urban problems and tends to drag down productivity and expand regional disparities (Ma, 2001).

Meanwhile, according to Siwar and Kasim (1997), this urbanization as well as migration have led to a reduction in labour absorption and hence increased unemployment and incidence of urban poverty. This can be seen through the increase of urban population and the emergence of slums and poor settlements. Based on recent statistical data, incidence of urban poverty in Malaysia had decreased significantly, which indicates the non-severity of the issues. However, it should be noted that the poverty line income (PLI) that is commonly used in measuring poverty incidence in urban areas does not show much difference in its measurement when it comes to rural areas (see Table 1). As such, if PLI for urban areas elevated to a higher level due to higher cost of living in the urban areas, the level of incidence of urban poverty is also expected to increase.

In addition, impact of this urbanization and migration process, around 1990's, Malaysian labour force participation in urban areas is higher than rural labour force participation. This regional gap gets bigger from time to time. Hence, this study is one of very few studies which have investigated on the factors that influence the labour force participation and the gaps which occurred between rural and urban areas. Moreover, this study substantially differs from earlier studies because data is focusing on three time periods which are 2000, 2005 and 2010. By focusing on a decade, the correlates of the shift changes for the region labour market can be determined. Ntuli (2007) mentioned that the longer period is detailed useful because it shows the relative impact and allows the capturing of the changes and the robustness of the main determinants of labour force participation.

Table-1. Toverty Line meome								
Areas	Overall Poverty		Absolute Poverty					
	Gross PLI	PLI Per capita	Food PLI	PLI Per capita				
Peninsular Malaysia								
Total	720	180	430	100				
Urban	740	185	420	100				
Rural	700	160	440	100				
Sabah and Labuan								
Total	960	200	540	110				
Urban	970	200	540	110				
Rural	940	190	540	110				
Sarawak								
Total	830	190	520	115				
Urban	860	190	530	120				
Rural	810	190	500	110				

Table-1. Poverty Line Income

Source: Economic Planning Unit, 2007

2. LITERATURE REVIEW

According to the United Nation, labour force or the economically active population is defined as those individuals who provide supply of labour for production of economic goods and services, corresponding to the concept of income in national income statistics (Standing, 1978). Borjas (2008) and Ehrenberg and Smith (2009) define labour force refers to all those individuals aged over 16 years who are either employed or unemployed while labour force participation rate (LFPR)

refers to the fraction of the population that is in labour force. In China, Liu (2012) defined labour force participation rate (LFPR) as a ratio of participants divided by the whole population. However, in Malaysia, Department of Statistics defined labour force as those who are in the aged 15 to 64 years old regardless of their employment status, while LFPR is defined as the number of labour force divided by the number of population age 15 to 64 years old (Tin *et al.*, 2011).

Apart from the definition of the LFPR, the defining factors affecting the labour force participation rate have also been studied vigorously. Yet, despite the extensive study on the issue, factors influencing the labour force of rural (Scott *et al.*, 1977) and urban workers have received relatively little attention. According to Tacoli (1998), the rural population is normally considered to be involved in agriculture sector whereas the urban population is considered to be primarily involved with the industrial production and services sectors. Moreover, numerous studies have attempted to explain that, men (Faridi *et al.*, 2009b; Contreras *et al.*, 2011) and women (Güven-Lüsanïler and Bhatti, 2005; Ntuli, 2007; Evans and Kelley, 2008; Ackah *et al.*, 2009; Faridi *et al.*, 2009a; Contreras *et al.*, 2011) who live in urban area have a greater opportunity to enter the labour market as compared to men and women who live in rural area. This is probably caused by the insistence of unequal region progression in the face of free mobility. Thus, aspiring and skilled labour are more inclined to migrate to the region that provide better employment and self-advancement opportunities. Furthermore, compared to central area, women living in rural or less central area are found to be less inclined to participate in the workforce.

Nevertheless, it is contradicted with the study by Uraz *et al.* (2010) in Turkey. Their finding exhibit that compared to rural area, the propensity of women in urban area to enter labour market is lower by 31 percent. This finding is supported by the study from Malaysia by Abdullah *et al.* (2012). Abdullah *et al.* (2012) in their case study for married women in Selangor and Kedah found that married women who live in rural or less developed area are more inclined to enter the labour market as compared to married women in urban area. It is due to the fact that the informal sector in rural area acts as the larger and primary source of employment for women (Chen, 2001). There are high job availability and convenience in getting a job in the informal sector as well as low academic requirements. Hence, it will boost women to enter the workforce.

Meanwhile, a study by Faridi and Basit (2011) for rural area in Pakistan found that factors such as education, marital status, number of dependents and social overhead capital positively and significantly determine rural labour supply. However, the number of livestock, size of land holdings and spouse's participation in economic activities are found to be negatively related to rural labour supply. Moreover, as education plays a vital role in the formation of human capital and is often regarded as a major source of employment, Faridi *et al.* (2009a) have put an effort to determine the impact of educational of female labour force participation in district Bahawalpur, the under-developed area in Pakistan. The study concludes that education has a positive impact on the workforce except for workers with basic level of education.

On a further note, labour supply is found to be highly influenced the marital status. Liu (2012) points out that marriage positively attributes to the propensity of being in the labour market for

male and female in urban area. A man who is married has higher chance of being in the labour force compared to a single man (Liu, 2012). Married men tend to participate the labour market especially when they have children (Maurer-Fazio *et al.*, 2005). The result is similar to Faridi *et al.* (2009a) and Faridi *et al.* (2009b) studies for rural area, which indicates female and male in rural area are also positively related to labour force. Male engages in labour marker due to the household requirement of their families while women tend to enter the workforce in order to cope with the current financial burden caused by high levels of poverty, low household income and high inflation. Besides, women may participate in the labour force to protect themselves against the financial exigencies of potential divorce (McConnell *et al.*, 2010).

The above literature has identified the factors that influence on labour market status. These factors are thought to have the most impact on individual's decision to work or seek work. Hence, in order to analyze the effects of regional on Malaysia's labour force participation, the demographic variables will be used as independent variables. The details will be explained in methodology's section.

3. RESEARCH METHODOLOGY AND MODEL SPECIFICATION

3.1. Data

In this study, labour force survey (LFS) for 2000, 2005 and 2010 conducted by Malaysia's Department of Statistics were used. It contains information about features and structure of labour force, employment and unemployment in Malaysia's rural and urban areas. For the purpose of rural and urban analysis, urban were classified as a combination of metropolitan and urban large, while rural were refer to urban small and all rural areas¹.

Then, the following categories of variables were considered such as level of education, age group and marital status. Education is added to take into account on this model estimate which also used by previous researchers (e.g., (Ntuli, 2007; Evans and Kelley, 2008; Faridi *et al.*, 2009a; Toossi, 2011; Liu, 2012)). In this study, education was categorized into primary, secondary, tertiary and no school. In this context, no schooling is the educational attainment omitted variable as we are interested in knowing the changes in labour force participation for educational group relative to no schooling participation.

Age of individual and family situation also matters where it captures the impact of age and marital status on labour supply decision. For the age variables, data are broken down by 5 age categories corresponding to 16 to 24 years old, 25-34 years old, 35-44 years old, 45-54 years old and 55-64 years old groups while for marital status, it was broke down to four categories corresponding to never single, married, widowed and divorce. The age group of 16 to 24 years and single marital status are omitted variables.

¹ Refer to Labour Force Survey Report for more details.

3.2. Model Specification

In this paper, the model specification by Liu (2012) was used to analyse the changes of labour force participation in urban and rural areas whereby the coefficients and predicted probabilities from logistic regression model were measured first. Logistic regression model is a model in which the dependent variable itself is qualitative in nature whereas independent variables are either qualitative or quantitative or a mixture thereof (Gujarati and Porter, 2009). The function used is as follows:

$$lfp = f(Edu, Age, MS)$$

Based on the above functions, the estimation model is as follows;

 $lfp_i = \beta_0 + \beta_1 E du_i + \beta_2 Age_i + \beta_3 MS_i + \varepsilon_i \tag{1}$

lfp = labour force participation (1= if the person participate in the labour force and 0 otherwise) i = i-th observation

 Edu_i = categorical indicator of dummies educational attainment.

 Age_i = vector of 4 dummies variables measuring the individual age groups.

 MS_i = vector of 4 marital status dummies.

 β_0 = intercept

 β_i = coefficient of independent variables

 ε_i = stochastic disturbance term

Estimation model above will regress separately for rural and urban areas for 2000, 2005 and 2010 respectively, in purpose to look the trend and result happened in that specific group independently. The dependent variable is the rural and urban labour force participation with a binary or dichotomous character, whereby, the 1 denotes if the respondent or individual is in the labour force and 0 if he or she is not in the labour force.

After estimating the coefficient and predicted probability of labour force participation, an expansion of the Blinder (1973) and Oaxaca (1973) decomposition procedure were used. This nonlinear decomposition approach was created by Fairlie (1999; 2005). The primary advantage for this procedure is fairly easy to implement as the estimated coefficient of the logistic regression can be used directly in the decomposition determination. Besides, this method will be particularly useful in reviewing the differences of behaviour between two groups (Yun, 2000).

Originally, the Blinder-Oaxaca technique have mainly been applied in the context of linear regression model, but Fairlie (2005) has developed the extension of this technique for dealing with the non-linear (binary probability) outcome variables such as labour force participation and employment rates. The original applied of the Blinder-Oaxaca decomposition technique for urban (U) and rural (R) can be specified as follows:

$$\bar{Y}^U - \bar{Y}^R = \left[(\bar{X}^U - \bar{X}^R) \hat{\beta}^U \right] + \left[\hat{X}^R \left(\bar{\beta}^U - \bar{\beta}^R \right) \right] \tag{2}$$

Where Y denotes as the average values of the labour force participation, \bar{X}^G is the row vector of average or mean values of the control characteristics for all individuals in both region groups, G

and $\hat{\beta}^{G}$ is a vector of estimated coefficient for each group. The first term in this decomposition represents the "explained" component which is the differences in characteristics of particular group multiplied by a vector of coefficients while for the second term is "unexplained" component which are differences in coefficients multiplied by a vector of characteristics. According to Fairlie (2005), Blinder (1973) decomposition is easy to apply once its only requires estimated coefficient from linear regressions for the outcome of interest and sample averages of the covariate variables used in the regressions. However, for the binary outcome, these coefficient estimates cannot directly used.

In accordance to Fairlie (2005), the decomposition for a nonlinear such as logit or probit model, $Y = F(X\hat{\beta})$, can be written as the following form:

$$\bar{Y}^{U} - \bar{Y}^{R} = \left[\sum_{i=1}^{N^{U}} \frac{F(x_{i}^{U}\hat{\beta}^{U})}{N^{U}} - \sum_{i=1}^{N^{R}} \frac{F(x_{i}^{R}\hat{\beta}^{U})}{N^{R}} \right] + \left[\sum_{i=1}^{N^{R}} \frac{F(x_{i}^{R}\hat{\beta}^{U})}{N^{R}} - \sum_{i=1}^{N^{R}} \frac{F(x_{i}^{R}\hat{\beta}^{R})}{N^{R}} \right]$$
(3)

The Equation (3) exhibits the way to decompose the differences in average predicted probabilities for an outcome such as labour force participation, where N^G is the sample size for each rural-urban groups; U refer to urban group while R refer to rural group; F is a cumulative distribution function from the logistic distribution; X_i is a vector of behavioural characteristics and $\hat{\beta}$ is a vector of logistic regression coefficients.

For decomposition equations above, the first term (explained gap) in brackets represents the portion of the gender gap associated with differences in endowments (characteristics) whereas the second term (unexplained gap) is attributed with differences in response or returns to these characteristics such as differences in coefficients.

4. RESULTS AND DISCUSSION

4.1. Logistic Regression Model

Table 2 exhibits the regression results of the labour force participation in Malaysia's rural and urban areas. Education is significantly and positively related to labour force participation in urban areas. In 2000, compared to no educational level (reference variable), the probability that an individual who holds a secondary educational attainment joined the labor market were higher than tertiary educational attainment. Meanwhile, in 2005, the tendency of highly educated (tertiary) to enter the urban labour market is substantially increased which are exceeding the secondary educational level. Same trends happened in 2010 where the tertiary level is the highest participation, followed by secondary and finally primary educational level. This means, tertiary educational levels, the propensity of individuals in urban areas to engage in labour market are increasing. This result was supported by the theory of human capital that education attainment had a positive effect which increased at advanced levels. It is consistent with the findings by a previous researcher such as Faridi *et al.* (2009a), Faridi *et al.* (2009b), Faridi and Basit (2011) and Liu (2012).

Nevertheless, these results are contradicted with the labour force participation in rural areas. The results in rural areas found that household with secondary educational attainment are

Asian Economic and Financial Review, 2014, 4(10): 1461-1472

negatively or less inclined to participate in rural labour market in 2000 and 2005. In 2010, the result demonstrated positive sign but it is insignificant. For the tertiary educational level, the result significantly and positively determined the labour force participation of rural household for the year 2005 and 2010. The implementation of the government to eradicate rural poverty and narrowing the gap between urban and rural areas through education has caused the illiteracy rate has decreased and the involvement in the education of the rural population is also growing (9th Malaysia Plan). Hence, labour force participation in rural areas has increased.

		Rural			Urban	
	2000	2005	2010	2000	2005	2010
Constant	-1.169***	-1.501***	-1.862***	-1.665***	-1.669***	-2.051***
	(0.042)	(0.033)	(0.034)	(0.045)	(0.038)	(0.037)
Educational Level						
Primary	-0.015	0.032	0.137***	0.419***	0.403***	0.465***
	(0.037)	(0.030)	(0.032)	(0.043)	(0.038)	(0.038)
Secondary	0.166***	-0.109***	0.042	0.571***	0.447***	0.562***
	(0.039)	(0.031)	(0.031)	(0.042)	(0.037)	(0.036)
Tertiary	0.066	0.271***	0.359***	0.547***	0.728***	0.840***
-	(0.055)	(0.040)	(0.035)	(0.048)	(0.040)	(0.037)
Age						
25-34 years old	1.575***	1.794***	2.051***	2.069***	2.280***	2.461***
	(0.036)	(0.029)	(0.026)	(0.031)	(0.025)	(0.023)
35-44 years old	1.521***	1.704***	1.903***	1.975***	2.052***	2.183***
	(0.041)	(0.032)	(0.029)	(0.034)	(0.028)	(0.026)
45-54 years old	1.330***	1.475***	1.618***	1.744***	1.756***	1.889***
	(0.045)	(0.034)	(0.031)	(0.037)	(0.029)	(0.026)
55-64 years old	0.406***	0.462***	0.505***	0.266***	0.275***	0.443***
	(0.051)	(0.038)	(0.034)	(0.043)	(0.033)	(0.029)
Marital Status						
Married	-0.042	0.016	0.123***	0.498***	0.425***	0.205***
	(0.035)	(0.027)	(0.025)	(0.029)	(0.023)	(0.021)
Widow	0.074	0.079*	0.163***	-0.339***	-0.330***	-0.098***
	(0.064)	(0.047)	(0.046)	(0.059)	(0.047)	(0.042)
Divorced	0.985***	0.933***	1.096***	0.628***	0.534***	0.815**
	(0.114)	(0.079)	(0.070)	(0.096)	(0.074)	(0.062)
-2 Log Likelihood	60451.84	107722.39	116320.40	82007.06	129674.2	154710.77
Pseudo R-Squared:						
Cox & Snell	0.226	0.243	0.264	0.225	0.230	0.243
Negalkerke	0.309	0.328	0.356	0.307	0.312	0.331

Table-2. Logistic Analysis of the Probability of Rural and Urban Labour Force Participation

Note: *** Significant at 1%, ** significant at 5% and * significant at 10%. Standard errors are given in parentheses.

In addition, the age group profiles in rural and urban areas seem to matter a lot. All the age groups results for rural and urban areas show a positive related and significant at 1 percent significant level. In these three years, age cohort of 25-34 years was the most active in both rural and urban labour market compare to the other age cohort. A lot of energy, good health and a high marginal productivity among this age (Faridi *et al.*, 2009a) as well as other factors such as the newly graduated and looking for a job (Fullerton, 1999) has led them to the most active

participation in the labour market. The results demonstrates that relative to reference category (15-24 years), being in the age cohort 25-34 years tend to be associated with highest probabilities followed by 35-44 years, 45-54 years and 55-64 years. It is not in line with the theory which indicate that labour force tend to be low when the worker is young, rise as the worker ages peaking at about age 50 and remain stable or decline slightly after age 50 (Borjas, 2008). From time to time, the labour force participation rate for all age groups in both urban and rural areas are increasing, indicates a lot of jobs and encouraging economic growth. According to the 9th Malaysia Plan, within year 2000 to 2005, employment grew at an average rate of 3.3 percent per year with a 1.6 million new jobs were created.

According to marital status in rural areas, being divorced is the highest probability likely to enter labour market. Being widow or divorce has increased the prospects of participation in labour market (Ntuli, 2007; Ackah *et al.*, 2009). Ntuli (2007) argued, increased in divorce labour force participation was due to lack prospects for dependence on a spouse, caused them to likely enter the market for survival their life. If compared with urban areas, widow in rural areas are higher. In term of marital status in urban areas, married and divorced are significantly and positively related to labour force participation. This is an expected result whereby, normally household will choose to work in urban labour market due to job opportunity in urban areas are wide as well as high salary (Contreras *et al.*, 2011).

4.2. Decomposition of Rural and Urban Labour Force Participation

After estimating the factors that affect the labour force participation, the coefficients of this estimation will be used in non-linear decomposition approach. Table 3 exhibits the results from the non-linear decomposition of regional gaps in labour force participation. The first row shows mean probabilities of the outcome variables for urban and second row exhibits mean probabilities for rural whereas the third row indicates the gap differential. The contributions of the regional or stratum differentials from the endowments and coefficients were shown in fourth and fifth rows respectively.

Table 3 discovers that participation rate for urban areas decrease from 2000 to 2005 while in 2010; urban rate slightly increased about 0.15 percentage points. Meanwhile, for rural areas, the rates were declined over time. The gaps between urban and rural areas rising from -0.26 percentage point in 2000 to 2.22 point in 2005 and reduced a little bit into 2.196, showing that in this range years, the gaps for both areas become wider. In details, contribution from endowment encompass of 1.68 point of the total in 2000, 2.16 in 2005 and 2.08 in 2010. On the other hand, the contribution from coefficient comprised of -1.94 percentage point of the total in 2000, 0.07 point in 2005 and 0.12 point in 2010.

To sum up, the findings revealed that observed rural and urban differentials were mainly due to differential in endowment or labour market characteristic rather than to a change in coefficients or behavioural responses.

Asian Economic and Financial Review, 2014, 4(10): 1461-1472

	2000	2005	2010
Urban Rate	62.59	61.85	61.70
Rural Rate	62.85	59.63	59.50
Difference	-0.26	2.22	2.20
Contribution from endowments	1.68	2.16	2.08
Contribution from coefficients	-1.94	0.07	0.12

Table-3. Decomposition of location differences in participation rate (percentage points)

5. SUMMARY AND CONCLUSION

This paper carried out the factors that are influencing the patterns and trends of labour force participation inequality in rural and urban areas. The study sums up that, age 25-34 years are the main determinant for both rural and urban labour force participation but, labour force participation in urban areas are higher. It is caused by migration from rural to urban area and also urban to urban areas for a greater opportunity and high salary. Furthermore, the result from stratum decomposition approach demonstrated that the regional disparities happened in Malaysia is due to differences in endowment and characteristics.

Therefore, it is important that the government should develop the infrastructure in rural areas to promote foreign direct investment which is in turn creating better employment opportunities and hence increase the chances of household to enter the labour market. Besides, the emphasis on the modernization of the agricultural sector through the development of technologies will also enhance the labor force participation in rural areas. In term of urban areas, the government should prioritize the basic needs of the urban population, including increasing and providing job opportunities with appropriate salaries. Moreover, rising prices of basic goods, oil and home should be controlled so as not to burden the urban poor. Financial support, including loans and subsidies to the urban poor to start their own business should be emphasized and disclosure seriously. According Siwar and Kasim (1997), the urban entrepreneurship programme through benevolent loan scheme can uplift the status of the urban poor whereby they can involve themselves in various small-scale enterprises and generate other income that will alleviate their poverty problems.

REFERENCES

- Abdullah, N., R. Ismail, Z. Mohd Noor and F. Ahmad, 2012. Kebarangkalian bekerja wanita berkahwin di Malaysia. Jurnal Ekonomi Malaysia, 46(1): 107-117.
- Ackah, C., C. Ahiadeke and A.P. Fenny, 2009. Determinants of female labour force participation in Ghana.Ghana: Institute of Statistical, Social and Economic Research, University of Ghana.
- Blinder, A.S., 1973. Wage discrimination: Reduced form and structural estimates. Journal of Human Resources, 8(4): 436-455.
- Borjas, G.J., 2008. Labor economics. 4th Edn., New York: McGraw-Hill.
- Chen, M.A., 2001. Women and informality: A global picture, the global movement. Sais Review, 21(1): 71-82.
- Contreras, D., L. De Mello and E. Puentes, 2011. The determinants of labour force participation and employment in Chile. Applied Economics, 43(21): 2765-2776.

Department of Statistics, 2013. Labour force survey report Malaysia 2012, Putrajaya.

Ehrenberg, R.G. and R.S. Smith, 2009. Modern labor economics. Boston: Pearson.

- Evans, M.D. and J. Kelley, 2008. Trends in women's labor force participation in Australia: 1984–2002. Social Science Research, 37(1): 287-310.
- Fairlie, R.W., 1999. The absence of the African-American owned business: An analysis of the dynamics of self-employment. Journal of Labor Economics, 17(1): 80-108.
- Fairlie, R.W., 2005. An extension of the Blinder-Oaxaca decomposition technique to logit and probit models. Journal of Economic and Social Measurement, 30(4): 305-316.
- Faridi, M.Z. and A.B. Basit, 2011. Factors determining rural labour supply: A micro analysis. Pakistan Economic and Social Review, 49(1): 91-108.
- Faridi, M.Z., I.S. Chaudhry and A.B. Basit, 2009b. An Analysis of the determinants of male labor force participation and employment status in Pakistan: The case of Bahawalpur district. Pakistan Journal of Social Sciences, 29(2): 189-208.
- Faridi, M.Z., S. Malik and A.B. Basit, 2009a. Impact of education on female labour force participation in Pakistan: Empirical evidence from primary data analysis. Pakistan Journal of Social Sciences (PJSS), 29(1): 127-140.
- Fullerton, J.H.N., 1999. Labor force participation: 75 years of change, 1950–98 and 1998–2025. Monthly Labor Review, 122(12): 3-12.
- Gujarati, D.N. and D.C. Porter, 2009. Basic econometrics. 5th Edn., New York: Mc Graw-Hill.
- Güven-Lïsanïler, F. and F. Bhatti, 2005. Determinants of female labour force participation: a study of North Cyprus. Review of Social, Economic & Business Studies, 5(6): 209-226.
- Liu, Q., 2012. Unemployment and labor force participation in urban China. China Economic Review, 23(1): 18-33.
- Ma, Z., 2001. Urban labour-force experience as a determinant of rural occupation change: evidence from recent urban-rural return migration in China. Environment and Planning A, 33(2): 237-255.
- Malaysia Department of Ministry of Rural and Regional Development, 2012. Statistical bulletin of ministry of rural and regional development 2012, Putrajaya.
- Maurer-Fazio, M., J. Hughes and D. Zhang, 2005. Economic Reform and Changing Patterns of Labor Force Participation in Urban and Rural China (No. wp787). U.S.A: William Davidson Institute at the University of Michigan.
- McConnell, C.R., S.L. Brue and D.A. Macpherson, 2010. Contemporary labor economics. 9th Edn., New York: McGraw-Hill.
- Ntuli, M., 2007. Determinants of South African women's labour force participation, 1995-2004, IZA Discussion Papers, No. 3119.
- Oaxaca, R., 1973. Male-female wage differentials in urban labor markets. International Economic Review, 14(3): 693-709.
- Scott, L.C., L.H. Smith and B. Rungeling, 1977. Labor force participation in Southern rural labor markets. American Journal of Agricultural Economics, 59(2): 266-274.

Asian Economic and Financial Review, 2014, 4(10): 1461-1472

- Siwar, C. and M.Y. Kasim, 1997. Urban development and urban poverty in Malaysia. International Journal of Social Economics, 24(12): 1524-1535.
- Standing, G., 1978. Labour force participation and development. Geneva: International Labour Office.
- Tacoli, C., 1998. Rural-urban interactions; a guide to the literature. Environment and Urbanization, 10(1): 147-166.
- Tin, P.B., R. Ismail and N. Othman, 2011. Does labour supply respond to globalisation? Malaysia evidence from micro data. World Academy of Science, Engineering and Technology, 5(12): 373-379.
- Toossi, M., 2011. A behavioral model for projecting the labor force participation rate. Monthly Labor Review, 134(5):25-42.
- Uraz, A., M. Aran, M. Hüsamoğlu, D.O. Şanalmış and S. Çapar, 2010. Recent trends in female labor force participation in Turkey. State Planning Organization of the Republic of Turkey And World Bank Welfare and Social Policy Analytical Work Program Working Paper, No. (2).
- Yun, M.S., 2000. Decomposition analysis for a binary choice model (No. 145). IZA Discussion Paper Series.