Female Labour Force Participation in Perak Darul Ridzuan, Malaysia: A Demographic Empirical Analysis with Survey Data

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ABSTRACT

The purpose of this study is to investigate the demographic determinants of women's employment in Perak Darul Ridzuan. The data is collected through the survey via distribution of questionnaire. A Binary Regression Model is used to estimate the effects of the determinants of female labour force participation in Perak, Malaysia. Based on the results from the binary regression model, age and race are among the factors that significant at one percent, field of study and education status significant at five percent and marital status significant at ten percent which affects the female employability. The finding from this study is expected to contribute to improving women standard of living as well as their economic status.

Keywords: *Female Labour Force Participation, Binary Logistic Regression Model, Demographic Factors, Perak Darul Ridzuan*

INTRODUCTION

This paper aims to investigate the demographic determinants of the female labour force participation in Perak Darul Ridzuan. In order to be included in the labour force, a person must be between the ages of 15 and 64 and either employed or unemployed during the reference week (in completed years at last birthday). All individuals who, at any point during the reference week, worked for income, profit, or family gain for at least an hour (as an employer, employee, own-account worker, or unpaid family worker). They are also regarded as employed if they were absent from work during the reference week due to an illness, injury, disability, inclement weather, leave, labour dispute, social or religious reasons, but had a job, farm, enterprise, or other family businesses to return to or were temporarily laid off with pay and would be called back to (DOSM, 2020). The boundaries of Perak Darul Ridzuan and females are the only focus of this study. The reason Perak Darul Rizduan is the subject of study is because the state has the greatest proportion of B40 households (12.5%), followed by Selangor (11.4%) and Sarawak (11.0%). (DOSM,

2020). The median household income fell to fifth place in 2016 and to fourth place in 2019 and 2020. The economy of Perak is diverse and includes sectors including maritime, automotive, housing, agricultural, and tourism. The population of Perak is very diverse in terms of culture and ethnicity.

Perak Darul Ridzuan is a state in northwest Malaysia with a land area of 21,146 square kilometres in 2020. Perak was the second-largest state in Peninsular Malaysia, the fourth largest in Malaysia. Perak's population distribution was ranked fifth in 2010 and fourth in 2020. Perak's population grew at an annual rate of 0.2 percent and the population in 2020 is 2.51 million. The male population is 1.27 million and female is 1.24 million (DOSM, 2020). Perak state has twelve (12) administrative districts, namely district of Kinta, Hilir Perak, Perak Tengah, Batang Padang, Kampar, Kuala Kangsar, "Larut, Matang and Selama", Kerian, Manjung, Hulu Perak, Muallim and Bagan Datoh. The total of 12 administrative districts further categorised into four development corridors namely Northern Corridor, Southern Corridor, Central Corridor and North-Eastern Corridor. Female labour force participation rate (FLFPR) in Perak is in the ranged from 41.8 percent to 49.1 percent between 2010 and 2019 and increased to 51.1 percent in 2020. FLFPR in Perak is still considered lower compared to the other states in Malaysia such as Johor, Kedah, Melaka, Negeri Sembilan, Pulau Pinang, Selangor, Sabah, Sarawak, Wilayah Persekutuan Kuala Lumpur, and Wilayah Persekutuan Putrajaya. FLFPR in Perak is just slightly higher than Pahang and Sabah. Perak's overall unemployment rate is fluctuating. Perak had the highest total unemployment rate in 2013, at 3.8 percent. From 2010 to 2019, the male unemployment rate was lower than the female unemployment rate. The greatest female unemployment rate of 4.6 percent was reported in 2016, and it was repeated in 2019. The female unemployment rate has been higher than 4.0 percent for the last three years (2017-2019), whereas the male unemployment rate has been lower than 3.3 percent. The conceptual framework was developed to visually explain the key concepts of the dependant and independent variables of this study. Figure 1 depicts the frameworks.

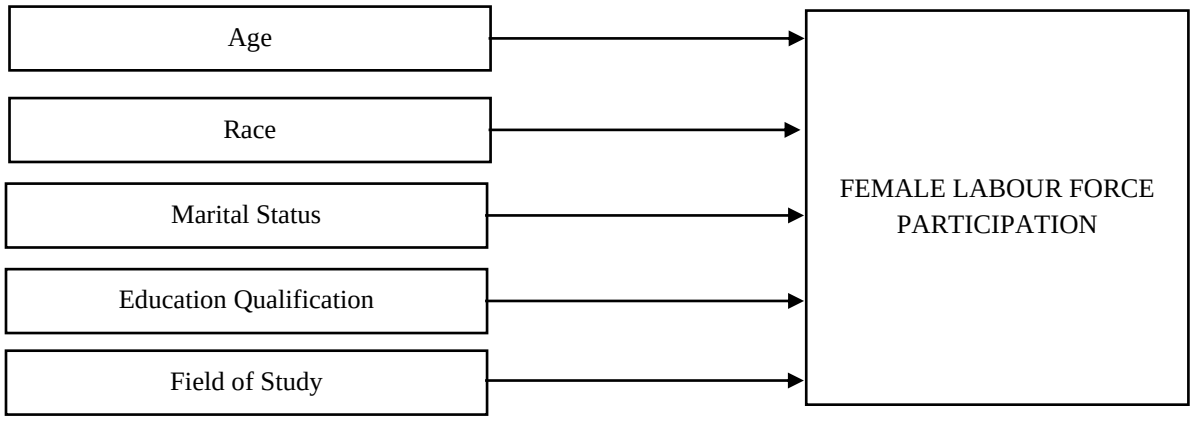

Fig 1 Conceptual Framework (Model 1: Demographic Determinants)

LITERATURE REVIEW

According to a study by Asmah, Nurhatiah, and Hani (2022), income has a considerable short- and long-term impact on women's participation in the labour force. In order to assess both short- and long-term effects on reducing the wealth gap in Malaysia, annual time series data from 1970 to 2019 were analysed using the Autoregressive Distributive Lag (ARDL) method. Working women will eventually contribute significantly to the Malaysian economy. This is true, particularly when women make educational investments and increase their employment rates in an effort to better their economic standing.

In a recent study, Sharifah and Norma (2022), who used the 8158 observational data from the Fifth Malaysian Population and Family Survey (MPFS-5), found that women's labour force participation appears to follow an inverted u-shaped pattern in terms of age and a u-shaped pattern in terms of years of education. Married women are also less likely to work than unmarried women to be in the labour force. Indian women are less likely to work than Malay women to be employed. Also made evident was the relationship between the number of children and the likelihood of women working, which increased when parents were available to look after their kids.

According to Lusiyanti and Wicaksono (2020), socio-demographic factors and educational attainment have a significant impact on women's participation in the labour force in Indonesia. Women are more likely to work when they have more education. The likelihood of working increases with age and being the household head, but it decreases with marriage, the presence of children under the age of five, and living in an urban area. Probit model study using National Labor Force Survey data from Statistics Indonesia for 2019.

The east coast of Peninsular Malaysia has varying rates of youth unemployment, according to Elia, Nor Hayati, Siti, Nazli, and Nor Hafzan (2020). Age, experience, job mobility, and marital status are the most crucial factors in Kelantan. In Terengganu, characteristics like experience, marital status, and training mattered more than in Pahang, where they mattered together with gender and age. Women are more likely to be unemployed than men are. The intended respondents were 1083 young persons between the ages of 18 and 29, who were identified by descriptive analysis and multiple linear regression.

A study by Siti Noraain, Lim, Khairul, and Nga (2019) in Sabah, Malaysia, found that the level of female education has a significant and positive influence on female labour force participation in Sabah as women with higher levels of education tend to be more likely to engage in the labour force to advance their careers as well as to improve their social lifestyle. The study used secondary data from 1991 to 2000 and employed a logistic regression model. Other independent variables include age, marital status, husband’s employment status, the number of children, the presence of young children, and ethnicity in Sabah. Despite some variables having negligible results, the independent variables exhibit a favourable association with the dependent variable that affects the participation of women in Sabah.

Gebreyes (2019) discovered that age, educational status, relationship to household head, marital status, fertility, and household size are significant indeterminate female labour force participation factors in Ethiopia. For this study, a binary logit model is used. This study also discovered that the larger the household size, the greater the participation of women in the labour market. As a result, as women's positions in the household decline, so do unemployment.

Yuying and Stephen (2017) conducted a study using 5 percent samples of Hong Kong population census and by-census data from 1991, 1996, 2001, 2006, and 2011. The income levels of married women's husbands influence their participation in the labour force. According to the theory of assortative mating, highly educated women are more likely to marry highly educated men. As a result, it is expected that husbands with higher incomes will also have higher income wives. As a result, their wives are more likely to remain in the labour force. However, research indicates that married women with high-earning husbands, particularly those at the top of the income scale, are less likely to work. This suggests that women's labour-force participation is typically a joint family decision.

A group of researchers conducted a study among 63 female respondents in public services at the Perak State Secretariat in Ipoh, Perak (Saadin, Ramli, Johari, and Harin, 2016). Using multiple regression analysis, it was discovered that the beta score for gender stereotypes was higher than the beta score for work-life balance. According to their findings, gender stereotypes are the most significant factor preventing women from advancing in their careers. Furthermore, education and ongoing learning are important factors in achieving successful career advancement. The authors also discovered that men held the majority of decision-making roles. Women are not advancing to leadership positions in Malaysia at the same rate as their male counterparts due to persistent negative stereotypical attitudes. Further to that, as a result of work overload, more women thought flexible working hours were effective.

The study conducted by Nazier and Ramadan (2016) in Egypt using an instrumental variable probit model to investigate female labour force entry discovered that women with more children were less likely to be employed, but if employed, women with more children were more likely to work in public sectors. Age has no bearing on the decision to enter the labour force; however, once in the labour force, the likelihood of employment increases with age, and among employed young women, they are less likely to work in the public sector. The employment status of the father has no bearing on the daughter's decision to join the labour force, but if the mother works (any type of work), the likelihood of her joining the labour force increases. Female labour force participation rises when the husband is present and unemployed.

A comparative study was conducted in Spain and Korea by Leon, Choi and Ahn (2016) discovered that Korean women tend to leave the labour force when they reach childbearing age, whereas Spanish women do not. Moreover, in Spain, women's educational attainment is important for their career prospects, whereas, in Korea, it is not. Besides that, when highly educated women in Korea have children, working culture, long working hours, and a lack of good quality jobs disrupt them.

Osman, Bachok, Muslim & Bakri (2015) conducted a study in Kinta, Manjung, and Kuala Kangsar, Perak, Malaysia, using a questionnaire to unemployed people and discovered that the majority of unemployed people are between the ages of 21 and 30. Unmarried respondents are more likely to be unemployed than married, divorced, or widowed respondents. Besides that, approximately 80 percent of unemployed people have work experience and have been employed for one to five years, and the majority of respondents earned less than RM1,000, which resulted in reasons for resignation. Furthermore, an increase in foreign workers leads to a shortage of job opportunities for locals. Further to that, one of the factors contributing to unemployment is a lack of communication and writing skills in English.

Besamusca, Keune and Steinmetz (2015) used a two-level hierarchical model to investigate the effects of economic conditions, families, education, and gender ideologies on female labour force participation rates

in 117 countries and discovered that female labour force participation is lower at young and old age and higher in between. When her children were young, her mother had a greater tendency to withdraw from work for a couple of years. The country's economic prosperity tends to show a U-shaped female labour force participation, and countries with large agricultural and service sectors tend to have higher female labour force participation than countries with large manufacturing sectors.

Nor'aznin and Norehan (2007) discovered that a year of schooling, access to family planning, and improved maternal and childcare increase female labour force participation in Malaysia using the probit model. Furthermore, they discovered that there are no incentives for women to re-enter the workforce after the age of 40. The family attitude toward women, especially if they are encouraged to further their education by their parents or husbands, makes it more likely that they will increase their labour-force participation. Further to that, one of the challenges that working women in Malaysia face is a lack of technical and managerial skills among female employees. Women typically take on a greater role in family care than men, so they seek jobs that require fewer working hours and less effort than men.

RESEARCH METHODOLOGY

Sampling

This research is based on the primary data collected through questionnaires. The eligibility of the respondents is female respondents either they are employed or unemployed. Binary Logistic Regression Model with the help of IBM Statistical Package for the Social Sciences (SPSS) used for the regression. Stratified sampling used to collect data through a questionnaire. There were 142 respondents in all, 63 (44.4%) of whom were classified as unemployed and 79 (55.6%) as employed. The stratified sampling strategy is applied in this study to choose enough samples from the targeted population.

Model 1

Model 1 is focused on the demographic variables of unemployed and employed females. The demographic variables are as follows, age, race, marital status, higher education status and field of study. The determinant factors for this demographic are based on the unemployed and employed females' profiles. This model aims to investigate the demographic variables play a significant influence on female employability. There is a total of 142 cases subjected for the analysis but due to the outlier, ten cases are deleted. Hence only a total of 132 cases are included for further analysis to achieve the consistency of the model.

$$ln\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon_i$$

$$SESD = \beta_0 + \beta_1 Sage + \beta_2 Srace + \beta_3 Sms + \beta_4 Shes + \beta_5 Sfos + \varepsilon_i$$

$$SESD = -11.866 + 3.230 Sage + 1.614 Srace + 1.735 Sms - 0.508 Shes - 0.503 Sfos + \varepsilon_i$$

FINDINGS

Table 1 Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	135.352	5	.000
	Block	135.352	5	.000
	Model	135.352	5	.000

Table 2 Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	10.304	8	0.244

Table 3 Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	45.176[a]	0.641	0.861

a. Estimation terminated at iteration number 8 because parameter estimates changed by less than .001.

Table 4 Classification Table[a]

Observed			Predicted		
			SESD		Percentage Correct
			Unemployed	Employed	
Step 1	SESD	Unemployed	51	6	89.5
		Employed	8	67	89.3
	Overall Percentage				89.4

a. The cut value is .500

Table 5 Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Sage***	3.230	0.797	16.416	1	0.000	25.285	5.299	120.638
	Srace***	1.614	0.510	9.999	1	0.002	5.022	1.847	13.654
	Sms*	1.735	0.964	3.240	1	0.072	5.668	0.857	37.478
	Shes**	-0.508	0.238	4.560	1	0.033	0.602	0.377	0.959
	Sfos**	-0.503	0.214	5.532	1	0.019	0.605	0.398	0.920
	Constant	-11.866	2.917	16.549	1	0.000	0.000		

Variable(s) entered on step 1: Sage, Srace, Sms, Shes, Sfos
Source: Author Calculation
****Significant at 0.001
**Significant at 0.05
*Significant at 0.1

Binary logistic regression is performed to assess the influence of demographic factors from the supply-side (unemployed and employed) on female employability. This analysis focused on the demographic factors (independents' variables) on the likelihood that respondents would report that they are employed compared to unemployed. The model consists of five independent variables (age, race, marital status, highest education status and field of study). All the variables tested here are referring to the demographic variables from the supply-side (unemployed and employed) based on the respondents' profiles.

The full model containing the predictors was statistically significant, $x^2(5, N = 132) = 135.352$, $p < 0.000$, indicating that the model was able to differentiate between respondents who were unemployed and employed as shown in Table 1. The model is considered a good fit if the significant value of the Hosmer and Lemeshow Test is more than 0.05 ($p > 0.05$, insignificant) and the significant value of Omnibus Tests of Model Coefficients is less than 0.05 ($p < 0.05$, significant). In this model, the chi-square value for the Hosmer-Lemeshow (HL) is 10.304 with a significance level of 0.244 (Table 2). While the chi-square value for Omnibus Tests of Model Coefficients (OTMC) is 135.352 with a significant level of 0.000. Thus, the insignificant value of 0.318 for HL and significant value of 0.000 for OTMC showed that this model is considered a good fit model for further analysis and interpretation.

This model (Table 3) also explains that between 64.1 percent (Cox and Snell R square) and 86.1 percent (Nagelkerke R square) of the variance in the dependent variable is explained by independent variables of age, race, marital status, higher education and field of study at -2 Log-likelihood of 45.176. The comparison between the null model (Block 0) and full model (Block 1) showed there is an overall improvement of over 56.8 percent in the null model to 89.4 percent (Table 4). The null model is a model without predictors and just the intercept while the full model is a model with predictors.

Based on the regression result (Table 5), the independent variable of Age (Sage) and Race (Srace) are significant at 1%. While the independent's variables of Highest Education (Shes) and Field of Study (Sfos) are significant at 5% and the independent variable of Marital Status (Sms) is significant at 10% significant. The strongest predictor of Age with an odds ratio of 25.285 is positively significant at 1 percent indicates that over 25 times of the employed females reported that the probability for them to get employed is increased with an increase in their age. The older they are, the more likely they are to be hired. This could be due to the attitude of self-reliance demonstrated by the female applicant during their interview session, which has enticed employers to hire them. As women's ages increase, so do their experience and skills; as a result, it has become a value-added for women to easily match their experiences and skills to available jobs in the labour market. According to the findings, those between the ages of 30 - 44 have a better chance of being hired or employed than those between the ages of 20 - 29.

The second strongest predictor is Race with an odds ratio of 5.022 is positively significant at 1 percent indicates that approximately five times of the employed females reported that race could play an important role for them to get employed. Chinese and Indians females show a higher probability to get employed compared to Malay females. It might be due to the mother tongue languages owned by Indians and Chinese as it might be an advantage to them to secure a job and the same applies to Bumiputera Sabah and Sarawak. As a result, in addition to Malay and English, applicants must be fluent in another spoken and written language. The majority of females who can communicate or write in three different languages have a better

chance of getting a job than those who can only communicate or write in one or two languages. In other words, additional language skills appear to be a plus in female employment.

The third and fourth strongest predictors are Field of Study and Highest Education with an odds ratio of 0.605 and 0.602 respectively are negatively significant at five percent indicate that nearly to 1 time of the unemployed females reported that the higher education and field of the study play an important role for their employment. According to the findings, female applicants who specialise in economics, business, and accounting have a better chance of getting hired than those who specialise in education. In terms of educational qualification, female bachelor's degree applicants are more likely to be unemployed than those with other educational qualifications. There are still many opportunities for female applicants to obtain employment, but the delay may be due to a mismatch between the field of study and the available job in the nearby district or corridor. As a result, females who are able to adapt to the available jobs in the current labour market are more likely to be hired than those who are waiting for the best job match.

The fifth predictor of Marital Status with an odds ratio of 5.668 is positively significant at ten percent indicates that nearly six times of the employed females reported that their marital status as married, divorced and widowed has higher chances to get employed compared to those with a single (unmarried) status. It could be due to the responsibility carried by married women, particularly those with children, to support their husbands (spouses) in order to cover family expenses. Both partners must work as family expenses rise, particularly for couples with multiple children under the age of 15. Higher participation, particularly among married women, may be due to encouragement from their partner (spouse). According to the findings, 40 out of 46 married women, or roughly 87 percent, said their spouse encourages them to work.

CONCLUSION

The demographic background is the main subject of the analysis of Model 1. Age and race were shown to be positively significant at one percent, according to the findings. The likelihood of finding work increased by nearly 25 times and 5 times, respectively. Women's experience and skills increase with age, particularly for those between the ages of 30 and 44 compared to those between the ages of 20 and 29. There are no incentives for women to return to work after the age of 40, according to Nor'aznin and Norehan (2007), despite findings by Lusiyanti and Wicaksono (2020), Gebreyes (2019), Saadin et al. (2016), Leon et al. (2016), Nazier and Ramadan (2016), Osman et al. (2015), and Besamusca et al. (2015) that are similar. In terms of race, Chinese, Indian as well as Bumiputera Sabah and Sarawak has higher probability to get hired compared to Malay females, this might be due to the additional language own by the applicants such as Mandarin, Tamil, and any other additional languages besides of Malay and English. The ability to write and speak in additional languages could be the value added for the applicants. This result is contradicting Sharifah and Norma's (2022) finding that Malay women are more likely than Indian women to participate in the labour force.

The factors of field of study and highest education are negatively significant at five percent. About one times of the unemployed respondents claimed that there is difficulty for them to secure the job due to these factors. The finding by Asmah et al. (2022), Sharifah and Norma (2022), Siti Noraain et al. (2019) and Leon et al., (2016) found that there is positive significant relationship between level of education and female labour force participation. Thus, a candidate's field of study and level of education are simply a

ticket to employability; as a result, they should be well-rounded not only in terms of their academic achievement but also in terms of their active participation in soft skills, which could speed up the hiring process. The process may be delayed if there is a discrepancy between the field of study and the jobs that are available around their region or corridor. Females must seize any potential employment opportunities that may arise rather than waiting for the ideal position to become available. Those with bachelor's degrees appear to take longer to find work than those with other qualifications. While the factor of marital status is positively significant at ten percent. The probability to get employed increased about six times, especially among the married, divorced, and widowed females compared to the single females. This might due the responsibility carried by them to support their spouse and their children. Nearly 87 percent of married respondents claimed that get strong encouragement from their husband to achieve their dream career. This result findings consistent with Osman et al. (2015) and Hotchkiss et al. (2011) but contradicts Sharifah and Norma's (2022) finding that single women are more likely than married women to participate in the labour force as well as the finding from Elia et al. (2020) that married youth in East Coast of Peninsular Malaysia tends to be more unemployed. Therefore, it's crucial for women to be independent, acquire new languages, and receive support from their families in order to pursue their careers.

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DECLARATION OF INTERESTS

The authors declare that there is no conflict of interest in this study.

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