Comparing Voluntary and Involuntary Part Time Female Workers in Maluku

M B A Briliyanto, T Harsanti

Politeknik Statistika STIS

*Corresponding author's e-mail: bagusdjibril@gmail.com, titik@stis.ac.id

Abstract. Maluku Province has the third highest average length of schooling (RLS) for women nationally, but the rate of female workers with below normal working hours (part-time workers) is quite high. This study aims to determine the general description of married women age 15-49 years as part-time worker in Maluku and the determinants, also their tendency based on the significant variables using data from the National Labor Force Survey (Sakernas) August 2019. The analytical method used is multinomial logistic regression. The results of the study indicate the variables that significantly affect the part-time worker status of married women of reproductive age are employment status, income, and business field. The status of involuntary part-time worker (underemployed) significantly affected by age, work sector, disability, and the presence of toddlers. The status of voluntary part-time workers significantly affected by regional classification and education. The tendency to become underemployed is highest among those who have incomes below the minimum wage, work in agricultural sector, and work in informal sector. Meanwhile, the tendency to become voluntary part-time workers is highest among those who have incomes below the minimum wage, and work in the agricultural sector. So, policy makers must ensure married women get a decent paid job.

1. Introduction

In this modern era, the development women role as housewives to become working women is increasing rapidly. Based on data from the August National Labor Force Survey (Sakernas), from 2015 to 2019 the female labor force participation rate (LFPR) in Indonesia is increasing every year. In 2015, female LFPR was still at 48.97 percent. In the following year, female LFPR increased to 50.77 percent and continue to rise until 2019 reached 51.89 percent. This shows that more and more women are actively involved in the economy by entering the labor market.

Women in developing countries, such as Indonesia, still have greater barriers to deciding to enter the labor market than men. This relates to the dual role of women as housewives who are responsible for household affairs, including raising children, as well as women workers. Duxbury and Higgins suggest that the involvement of women in the world of work provides a double burden for women [1]. Women are asked to commit to their work like men, while at the same time they must prioritize the role of the family as housewives. The role of women as workers as well as housewives can bring women in a condition where women are unable to balance themselves, resulting in a clash between responsibilities as workers and as housewives.

With this dual role, many women prefer to work under normal working hours (35 hours/week) or commonly referred to as part-time workers because it is considered a middle way for women to balance work and family. Higgins et al. suggest that part-time work is associated with lower work-to-family

disruption, better time management skills, and greater life satisfaction for women in both career and breadwinner positions [2]. This can be seen from the high percentage of female part-time workers in Indonesia. In August 2019, the rate of female part-time workers amounted to 38.39 percent, much higher than men who only amounted to 22.92 percent. Furthermore, as many as 83.69 percent of part-time female workers are voluntary part-time workers, while the rest are involuntary part-time workers (underemployed) or forced to work under normal working hours.

Although being a part-time worker is considered a middle way, the high number of part-time workers has an impact on the low level of productivity and income earned by workers [3]. This is because the high number of part-time workers can be seen as a large number of the labor force absorbed in less decent jobs. This can be seen from the low income earned by women and the large number of women who are family/unpaid workers. Based on Sakernas data in August 2019, the majority of female part-time workers are family/unpaid workers, which is 36.88 percent of all part-time workers. In addition, part-time female workers had an average income of 42.23 percent lower than male workers. This gap is much larger when compared to full-time workers where the average income of female workers is only 24.91 percent lower than male workers.

On the other hand, women's decision to work normal hours and above, or commonly referred to as full-time workers, will reduce the time to take care of the household and take care of children. This will create new problems for women as housewives. The tendency to work outside the home would have consequences well as various social implications, such as increasing delinquency due to lack of parental supervision, and the looser the values of marital/family ties [4].

One of the target of 8th SDGs is to achieve permanent and productive work and decent work for the entire population, including for women. Efforts to improve education for women are expected to encourage more women to work properly and productively.). Education does not only increase knowledge, but also increases work skills, so that it will increase work productivity [5]. However, the high achievement of development in the field of education does not necessarily solve the employment problem of women in Maluku Province. Maluku Province is the province with the average length of school (RLS) for women third highest in Indonesia in 2019 with RLS reached 9.66 years [6]. Among the 5 provinces with the highest RLS women in Indonesia, Maluku has the highest level of female part-time workers, which is 45.58 percent in 2019. The high level of casual workers in Maluku is partly due to the large contribution of underemployed, there are 12.82 percent of underemployed of all female workers, which is the highest rate among all provinces in Indonesia.

There has not been much research on married women that are part-time workers in Indonesia. Research by Berliana and Purbasari who conducted research on married women workers in Indonesia using Sakernas data stated that there was a relationship between age, education, number and characteristics of household members, classification of area of residence, status in employment, and spouse's working status with the number of working hours of married women in a week [4]. However, in this study women over 49 years of age were included in the unit of analysis and a 40 hour work week cut-off was used to differentiate between full and part-time workers. In addition, the study has not differentiated part-time workers into underemployed and voluntary part-time workers. In this study, married women aged 15-49 years were used as the unit of analysis and cut off working hours of 35 hours a week to distinguish full and part-time workers, then part-time workers would be divided into underemployed and voluntary part-time workers.

2. Methodology

2.1. Theoretical basis
The concepts and definitions used in the collection of employment data by Badan Pusat Statistik (BPS) are The Labor Force Concept suggested by the International Labor Organization (ILO). This concept divides the population into two groups, namely the working age population and the non-working age population. Furthermore, the working age population is also divided into two groups based on the main activities they are doing. The group is the labor force and not the labor force. The population in the labor force are people of working age (15 years and over) who work, or have a job but are temporarily unemployed and unemployed. While residents who are not in the labor force are people of working age

(15 years and over) who are still in school, taking care of the household or carrying out other activities other than personal activities [7].

There are two concepts that can be used to determine whether a person is included in the workforce or not, namely the gainful worker approach (the habitual approach) and the labor force approach (the current approach) [8]. In the gainful worker approach, someone within a certain age will be asked what activities they usually do. When a person is usually routine school activities, but at the time of enumeration was looking for a job, then the concept of gainful worker approach that person will DIMA be incorporated in the school category. Mantra states that this concept is not able to provide an accurate statistical picture between those who are working and those who are looking for work. Another approach is the labor force approach [8]. In this approach, the entire population in a certain age group and in a certain period of time such as a month or a week ago was asked about the main activities. With this clear time reference, the population aged 15 years and over will be easily differentiated into the labor force and non-labor force. The concept of labor force used by BPS uses a time reference of one hour for a week. However, this concept also still has a weakness where those who only work are considered working [8].

A demographer, Philip M. Hauser, created a new approach called the labor utilization approach as a refinement of the labor force approach for an agrarian country [8]. Improvements made only to the labor force group. Those who work are divided into two, namely the fully employed workforce which is defined as being fully employed and the labor force that is not fully utilized as under employed/under-utilized. This division is based on the number of hours worked during the week where under-employed is better known as part-time workers [8]. In a subsequent development, BPS developed a new concept of part-time workers in terms of working hours, namely if less than 35 hours a week.

Workers are divided into two according to their working hours, namely full-time workers and part-time workers. Full-time workers are those who work at least the same as normal working hours (35 hours a week), while part-time workers are those who work under normal working hours (less than 35 hours a week). Part-time workers consist of underemployed and voluntary part-time workers. Underemployed are those who work under normal working hours, and are still looking for work or are still willing to accept work. Meanwhile, voluntary part-time workers are those who work under normal working hours, but are not looking for work or are not willing to accept another job [7].

Variables that can affect part-time work status include disability, presence of toddlers in the house [9], type of business field, work sector [10], status at household [11], age, education, status at work [4], and income [12].

2.2. Collecting data method

This study uses secondary data from the August 2019 National Labor Force Survey (Sakernas) conducted by BPS covering all regions in Indonesia, this survey used the two stage one phase stratified sampling method as the data collection method. The unit of analysis in this study is female workers aged 15-49 years who are married in Maluku Province. There are 1827 units of analysis used in this study. From this, there are 929 who work under normal working hours (part-time workers) and 898 who work full time. Women of reproductive age with married status who work part-time consists of 268 involuntary part-time workers (underemployed) and 661 voluntary part-time workers.

The response variable used in this study is the working status of married women of reproductive age which is categorical. The response variable consists of three categories, namely full-time workers, underemployed workers, and voluntary part-time workers. While the predictor variables used in the study consisted of regional classification, age, status in the household, work sector, status at work, education, income, disability, type of business field, and toddlers in the house. All predictor variables used are categorical.

2.3. Analysis method

Descriptive and inferential analysis were used to answer the research objectives. Descriptive analysis in this study is displayed in the form of a graph. While the inferential analysis in this study was carried out using multinomial logistic regression analysis.

Regression analysis is used when predicting the relationship between the response/bound variable (response variable) and the predictor/independent variable (predictor variable). In cases where the response variable is discrete with two or more possible answers, a logistic regression model is often applied [13]. Just like other regression models, the analysis using the logistic regression model aims to find the best model that can explain the relationship between the response variable and the predictor variable. Kleinbaum & Klein define logistic regression as a mathematical modelling approach that can be used to explain the relationship of several predictor variables to dichotomous response variables [14]. Logistic regression also has the advantage of being able to handle many variables, some of which may have different measurement scales [13]. To analyse the case of regression in which the response variable is qualitative data with more than two categories, multinomial logistic regression is the right method to use [15].

Suppose there are three categories in the response variable which are coded 0, 1, and 2. Then two logit functions are needed, because one of the categories is a reference category. Usually, the reference category is the response variable with code 0, which will be used as a comparison of the response variable with other codes (i.e., 1 and 2). So that two logit models are formed as follows:

$$g_1(x) = ln\left[\frac{P(Y=1|x)}{P(Y=0|x)}\right] = \beta_{10} + \beta_{11}x_1 + \beta_{12}x_2 + \cdots + \beta_{1p}x_p \tag{1}$$

$$g_2(x) = ln\left[\frac{P(Y=2|x)}{P(Y=0|x)}\right] = \beta_{20} + \beta_{21}x_1 + \beta_{22}x_2 + \cdots + \beta_{2p}x_p \tag{2}$$

where:
β = model parameters
p = number of predictor variables

The estimation method used to estimate the parameters in the multinomial logistic regression model is maximum likelihood estimation (MLE). According to Hosmer and Lemeshow, MLE method is a method performed by maximizing the opportunities of the data observations were obtained using a function of likelihood [13].

$$L(\boldsymbol{\beta}) = \sum_{i=1}^{n} y_{1i}g_1(x_i) + y_{2i}g_2(x_i) - \ln\left(1 + e^{g_1(x_i)} + e^{g_2(x_i)}\right) \tag{3}$$

The steps of multinomial logistic regression analysis are as follows:

a. Model Building

The multinomial logistic regression model formed in this study is as follows:

1. The model of underemployed compared to full-time worker:

$$g_1(x) = \beta_{10} + \beta_{11}D_1 + \beta_{12}D_2 + \beta_{13}D_3 + \beta_{14}D_4 + \beta_{151}D_{51} + \beta_{152}D_{52} + \beta_{161}D_{61} + \beta_{162}D_{62} + \beta_{17}D_7 + \beta_{18}D_8 + \beta_{191}D_{91} + \beta_{192}D_{92} + \beta_{110}D_{10} \tag{4}$$

2. The model of voluntary part-time workers compared to full-time workers:

$$g_2(x) = \beta_{20} + \beta_{21}D_1 + \beta_{22}D_2 + \beta_{23}D_3 + \beta_{24}D_4 + \beta_{251}D_{51} + \beta_{252}D_{52} + \beta_{261}D_{61} + \beta_{262}D_{62} + \beta_{27}D_7 + \beta_{28}D_8 + \beta_{29}D_{91} + \beta_{29}D_{92} + \beta_{210}D_{10} \tag{5}$$

b. Goodness of Fit Test

The goodness of fit test is a test carried out to determine whether the model formed is effective in explaining the response variable [13]. Hosmer and Lemeshow said that this condition was achieved if the model already contained the variables that should have been included in the model and had been entered in the correct functional form. One way to perform this test is through the Hosmer-Lemeshow test [13]. The Hosmer-Lemeshow test statistic ($\hat{C}$) was obtained by calculating the Pearson chi-square table value $g \times 2$ of the observed frequency and the estimated expected frequency. The formula used to calculate the $\hat{C}$ value is as follows:

$$\hat{C} = \sum_{k=1}^{g} \frac{(o_k - n'_k \bar{\pi}_k)^2}{n'_k \bar{\pi}_k (1 - \bar{\pi}_k)} \tag{6}$$

where:

o_k =   The total value of the response variable, $o_k = \sum_{j=1}^{c_k} y_j$.

c_k =   The number of combinations of predictor variables in the k-th decile

$\bar{\pi}_k$ =   The average probability estimate in the k-th decile, $\bar{\pi}_k = \sum_{j=1}^{c_k} \frac{m_j \hat{\pi}_j}{n'_k}$

n'_k =   the number of subjects in the k-th decile.

g =   number of groups (deciles).

c. Simultaneous Test of Parameter Estimator Significance

The significance test of the parameter estimators was simultaneously carried out to determine the significance of the effect of the response variables together on the predictor variables. This test can be done by using test statistics or likelihood ratio test. The likelihood ratio test statistic (G) is obtained by calculating the following formula:

$$G = -2ln\left[\frac{L_0}{L_1}\right] \sim \chi^2_{(p)} \tag{7}$$

with:

L_0 =   maximum likelihood value of a function without predictor variables

L_1 =   the maximum likelihood value of the function with all predictor variables

null hypothesis (H_0) of the likelihood ratio test is $\beta_1 = \beta_2 = \cdots = \beta_p = 0$ or there is no significant effect between all predictor variables simultaneously on the response variable. The likelihood ratio test statistic follows the *chi-square* probability distribution with degrees of freedom equal to p $\left(\chi^2_{(p)}\right)$. p is the difference between the number of parameters in the model with predictor variables and the model without predictor variables. The decision to reject H_0 is obtained when the value of G is greater than the value of $\chi^2_{\alpha(p)}$ or when the value of *p-value is* smaller than value of α.

d. Partial Test of parameter Estimator Significance

The partial parameter estimator significance test is a parameter test conducted to determine the significance of the effect of each predictor variable on the response variable. The test is performed by using the *Wald test statistic* (W) which is obtained by calculating the following formula:

$$W = \left[\frac{\widehat{\beta_J}}{SE(\widehat{\beta_J})}\right]^2 \sim \chi^2_{(1)} \tag{8}$$

with:

$\widehat{\beta_J}$ =   estimation of the regression coefficient of the-j predictor variable.

$SE(\widehat{\beta_J})$ =   the standard error value of the -j estimated predictor variable regression coefficient.

j =   1, 2, …, p, where p is the number of predictor variables.

null hypothesis (H_0) of *Wald test is* $\beta_j = 0$ or there is no significant effect between the-j predictor variables to the response variable. *Wald test statistics* follows the probability distribution *chi-square* with a degree of freedom equal to $1\left(\chi^2_{(1)}\right)$. The decision to reject H_0 is obtained when the value of W is greater than the value of $\chi^2_{\alpha(1)}$ or when the value of *p-value is* smaller than value of α.

e. Odds Ratio Interpretation

Hosmer and Lemeshow state that the odds ratio value can be obtained by the following formula [13]:

$$OR_j(a,b) = \frac{P(Y=j|x=a)/P(Y=0|x=a)}{P(Y=j|x=b)/P(Y=0|x=b)} \quad\quad (9)$$

$$OR = e^{\beta_j} \quad\quad (10)$$

With j = 1, 2 and β_j is the value of the-j^{th} model parameter. OR is nonnegative. Value of OR that is greater than one explains that the predictor variable with $x = a$ tend to have experience the event Y = j compares with $Y = 0$ (Agresti, 2013: page 44). Value of OR less than one shows that predictor variable $x = b$ has a tendency of $1/OR$ to experience the event $Y = j$ compare with $Y = 0$.

3. Results and discussion

The discussion of the results of research and testing obtained is presented in the form of theoretical descriptions, both qualitatively and quantitatively. The results of data processing by descriptive is presented with graphics or tables. The data presented is the result of population estimates from the August 2019 SAKERNAS data.

Based on the results of the processing of raw data SAKERNAS August 2019, it is estimated that 50.6 percent of married women of reproductive age in Maluku Province is a worker. Of these, an estimated 55.84 percent of full-time workers, 14.05 percent underemployed, and 30.10 percent of voluntary part-time workers.

The description of the employed married women of reproductive age by district/city in Maluku Province can be seen in Figure 4. From the figure, it can be seen that the majority of districts/cities in Maluku have a percentage of part-time workers above 40 percent. This shows that most districts/cities in Maluku have a fairly high level of part-time workers. East Seram Regency is the area with the highest part-time workers rate, which is 77.35 percent. There are only three districts / cities with the rate of part-time workers below 40 percent, which is South Buru Regency (27.38 percent), West Seram regency (36.21 percent) and Ambon (32.98 percent).

Meanwhile, there are five regencies/cities with an underemployment rate of more than 18 percent. Among these five areas, Southeast Maluku Regency is the most interesting to note because the underemployment rate is very high, which is almost 20 percent, while the part-time worker rate is not really high compared to the other areas. Two regency/cities with the highest levels of underemployed are East Seram Regency (27.5 percent) and the Tual city (22.85 percent).
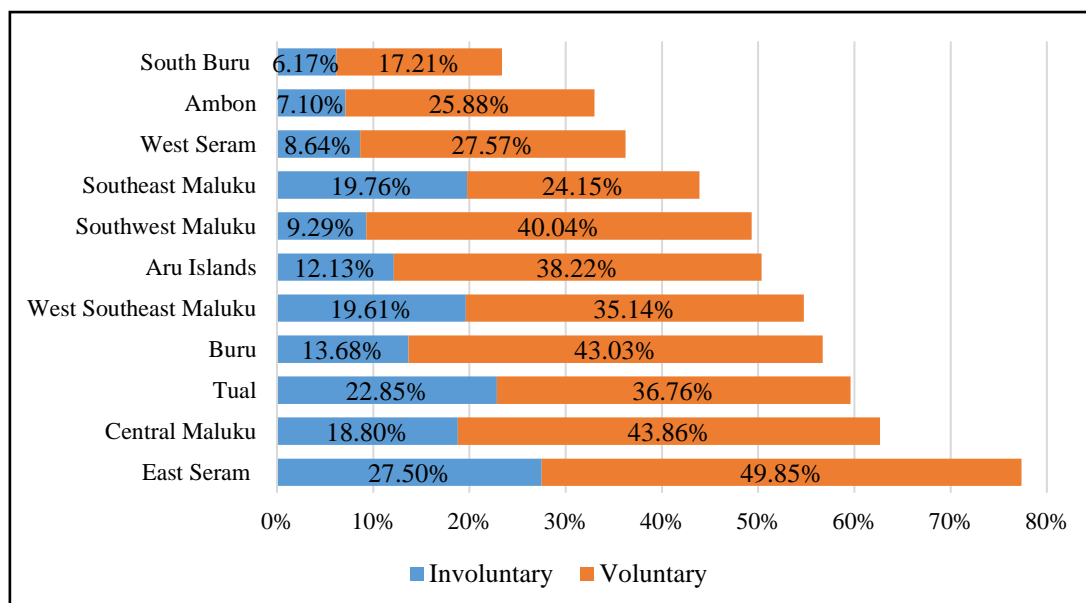

Figure 4. Percentage of married women of reproductive age in Maluku by district/city and part-time work status in 2019
Source: August 2019 Sakernas data processed

The general description of the working status of married women workers of reproductive age based on their characteristics is presented in Table 1. The percentage of women workers of reproductive age who are married as part-time workers mostly have characteristics such as living in rural areas, aged 15-24 years, not the head of the household, work in the informal sector, unpaid workers, education below senior high school, income below the minimum wage (UMP), have disability, work in agricultural business types, and have at least one toddler in the house.

Table 1. Percentage of student commuters by predictor variable

No.	Variable	Variable Category	Working Status		
			Full-time	Involuntary Part-time (Underemployed)	Voluntary Part-time
(1)	(2)	(3)	(4)	(5)	(6)
1	Region classification	Urban	71.87%	8.33%	19.79%
		Rural	46.07%	17.54%	36.39%
2	Age	15-24 years old	36.03%	33.85%	30.12%
		25-49 years old	56.89%	13.01%	30.1 0 %
3	Status in the household	Head of household	63.86%	6.02%	30.12%
		Not the head of the household	55.63%	14.27%	30.10%
4	Work sector	Formal	77.51%	5.03%	17.46%
		Informal	43.76%	19.09%	37.15%
5	Status in work	Unpaid workers	30.80%	20.83%	48.37%
		Paid workers	77.20%	5.36%	17.44%
		Entrepreneur	53.48%	17.45%	29.07%
6	Education	> Senior High School	80.52%	5.22%	14.26%
		Senior High School	58.38%	13.51%	28.11%
		< Senior High School	41.05%	19.10%	39.85%
7	Income	UMP (minimum wage)	83.73%	2.33%	13.95%
		< UMP (minimum wage)	46.59%	17.94%	35.46%
8	Disability	Yes	46.05%	18.25%	35.70%
		No	56.40%	13.82%	29.79%
9	Type of business field	Service	71.58%	7.84%	20.58%
		Agriculture	29.72%	23.33%	46.94%
		Industry	41.51%	22.53%	35.97%
10	Toddler in the house	Yes	54.34%	16.68%	28.98%
		No	56.94%	12.14%	30.92%

Source: August 2019 Sakernas data processed.

Inferential Analysis

The inferential analysis used in this study is multinomial logistic regression analysis with the parameter estimation method using MLE. The multinomial logistic regression method was used because the response variable used in this study is a categorical variable which has three categories, full-time workers, involuntary part-time workers, and voluntary part-time workers. The full-time worker category is used as the reference category.

The goodness of fit results of the model can be seen in table 2 which shows a chi-square value of 14,327 with a p-value of 0,5774. With a p-value of more than 10 percent alpha, it can be decided to fail to reject H0. So, it can be concluded that the multinomial logistic regression model is suitable for the data.

Table 2. Goodness of Fit model test results

Chi-Square	Sig.	df
(1)	(2)	(3)
14.327	0.5744	16

Furthermore, the significance test of parameter estimation was carried out simultaneously. Simultaneous test shows chi-square value of 394.12 with a p-value of 0.0000. With a p-value that is less than 10 percent alpha, it can be decided to reject H0. So it can be concluded that there is at least one predictor variable that has a significant effect on the response variable.

Table 3. Simultaneous test results

Chi-Square	Sig.	df
(1)	(2)	(3)
394.12	0.0000	26

After testing the significance of the parameter estimation simultaneously, then a partial test is carried out. The results of the partial test in table 4 show that in model 1 there are 7 variables that have a p-value of less than 10 percent alpha. So it can be decided to reject H0 on the 7 variables. Thus, it can be concluded that the 7 predictor variables have a significant effect on the working status of married women of reproductive age to become underemployed. The 7 variables are age, status in the household, work sector, status at work, income, disability, type of business field, and toddler in the house. In this case, in model 1 the variables of regional classification, education, and status in the household have no significant effect on the response variable.

Table 4. Partial test results

Variable	Underemployed (Model 1)				Voluntary Part Time (Model 2)			
	Coef.	SE	Sig.	Odds ratio	Coef.	SE	Sig.	Odds ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)	( )	(9)
Intercepts *	-4.8610	0.7501	0.0000		-1.7163	0.6029	0.0012	
Region classification								
Rural (D_1) Urban (ref)	0.2147	0.1952	0.2713	1.24	0.3330	0.1375	0.0155	1.40
Age								
15-24 years (D_2) ** 25-49 years (ref)	0.9232	0.3055	0.0025	2.52	0.0452	0.3007	0.8806	1.05
Status in the household								
KRT (D_3) Not KRT (ref)	0.1070	0.5279	0.8392	1.11	0.2957	0.3346	0.3768	1.34
Work sector								
Informal (D_4) ** Formal (ref)	1.2588	0.6313	0.0461	3.52	0.0503	0.4823	0.9169	1.05
Status at work								
Paid workers (D_{51}) **	1.0679	0.6306	0.0904	2.91	-0.0814	0.5013	0.8711	0.92
Entrepreneur workers (D_{52}) *** Family/unpaid workers (ref)	0.1079	0.1894	0.5689	1.11	-0.3378	0.1538	0.0280	0.71
Education								
High School (D_{61}) ***	0.2318	0.3155	0.4626	1.26	0.3356	0.2023	0.0972	1.40
< SMA (D_{62}) *** > high school (ref)	-0.1046	0.3349	0.7547	0.90	0.4160	0.2233	0.0625	1.52

Variable	Underemployed (Model 1)				Voluntary Part Time (Model 2)			
	Coef.	SE	Sig.	Odds ratio	Coef.	SE	Sig.	Odds ratio
Income								
< UMP (D_7) * UMP (ref)	1.4998	0.3381	0.0000	4.48	0.6946	0.1798	0.0001	2.00
Disability								
Yes (D_8) ** No (ref)	0.6114	0.2931	0.0370	1.84	0.18175	0.2399	0.4486	1.20
Type of business field								
Agriculture (D_{91})*	1.4249	0.2311	0.0000	4.16	1.1867	0.1724	0.0000	2.78
Industry (D_{92}) * Services (ref)	1.0229	0.2465	0.0000	3.28	0.4827	0.1956	0.0136	1.62
Toddler in the house								
Yes (D_{10}) ** None (ref)	0.3050	0.1527	0.0458	1.36	-0.0845	0.1147	0.4612	0.92

Note: * significant across the model at the 10% significance level.

** significant in model 1 at the 10% significance level.

*** significant in model 2 at the 10% significance level.

Meanwhile in model 2 there are 5 variables that have a p-value of less than 10 percent alpha. So it can be decided to reject H_0 on the 5 variables. Thus, it can be concluded that the 5 predictor variables have a significant effect on the working status of married women of reproductive age to become voluntary part-time workers. The 5 variables are regional classification, employment status, education, income, and type of business field. In this case, in model 2, the variables of age, status in the home, sector of work, physical disorders, and toddlers in the home have no significant effect on the response variables.

Referring to the parameter estimation results, the multinomial logistic modelling for the working status of married women workers of reproductive age in Maluku in 2019 can be written as follows:

$$g_1(x) = -4.8610 + 0.2147D_1 + 0.9232D_2{}^* + 0.107D_3 + 1.2588D_4{}^* + 1.0679D_{51}{}^* + 0.1079D_{52}$$
$$+ 0.2318D_{61} - 0.1046D_{62} + 1.4998D_7{}^* + 0.6114D_8{}^* + 1.4249D_{91}{}^* + 1.0229D_{92}{}^*$$
$$+ 0.3050D_{10}{}^*$$

$$g_2(x) = -1.7163 + 0.333D_1{}^* + 0.0452D_2 + 0.2957D_3 + 0.0503D_4 - 0.0814D_{51} - 0.3378D_{52}{}^*$$
$$+ 0.3356D_{61}{}^* - 0.416D_{62}{}^* + 0.6946D_7{}^* + 0.1818D_8 + 1.1867D_{91}{}^* + 0.4827D_{92}{}^*$$
$$- 0.0845D_{10}$$

Note:

$g_1(x)$: logit equation for the underemployed category

$g_2(x)$: logit equation for the voluntary part-time workers category

*) significant at 10 percent significance level

The interpretation of the odds ratio of each predictor variable for each model is explained as follows:

1. Model 1 (Underemployed compared to Full-time worker)

Age variable had an odds ratio of 2.52. This means that married female workers aged 15-24 years have a tendency of 2.52 times to become underemployed compared to married female workers aged 25-49 years assuming other predictor variables are constant.

Work sector variable had an odds ratio of 3.52. This means that married women of reproductive age who work in the informal sector have a 3.52 times tendency to become underemployed compared to married women of reproductive age who work in the formal sector assuming other predictor variables are constant.

Status at work variable of paid workers category had an odds ratio of 2.91. This means that married women of reproductive age who work as paid workers have a tendency of 2.91 times to become underemployed compared to married women of reproductive age who work as unpaid workers assuming the other predictor variables are constant.

Income variable had an odds ratio of 4.48. This means that married women workers of reproductive age with incomes below the minimum wage have a 4.48 times tendency to become underemployed compared to married women workers of reproductive age who work with incomes below the minimum wage by assuming the other predictor variables are constant.

Disability variable had an odds ratio of 1.84. That is, married women workers of reproductive age who have physical disorders have a tendency of 1.84 times to become underemployed compared to married women workers of reproductive age who do not have physical disorders by assuming the other predictor variables are constant.

Type of business field variable of agricultural category had an odds ratio of 4.16. This means that married women of reproductive age who work in the type of agricultural business sector have a tendency of 4.16 times to become underemployed compared to married women of reproductive age who work in the service business field, assuming the other predictor variables are constant. While the type of business field variable of industry category had an odds ratio of 3.28. This means that married women workers of reproductive age who are working on the type of industrial business field have a tendency 3.28 times to be underemployed than married women of reproductive age workers who work on the type of field services business by assuming the other predictor variables constant.

Toddler in the house variable had an odds ratio of 1.36. This means that married female workers of reproductive age who have at least a toddler in their house have a 1.36 times tendency to become underemployed compared to married women workers of reproductive age who have no toddler in their house by assuming the other predictor variables are constant.

2. Model 2 (Voluntary Part Time Workers compared to Full-time worker)

Region classification variable had an odds ratio of 1.4. That is, workers married women of reproductive age who live in the rural area have a tendency of 1.4 times to be voluntary part-time workers compared to married women of reproductive age who live in urban area by assuming the other predictor variables constant.

Status at work variable of entrepreneur category have the odds ratio of 0.71. This means that married women of reproductive age who work as entrepreneur have a tendency of 0.71 times to become voluntary part-time workers compared to married women of reproductive age who work as unpaid workers assuming the other predictor variables are constant. Or in other words, married women of reproductive age who work as unpaid workers have a tendency of 1.43 times to become voluntary part-time workers compared to married women of reproductive age who work as entrepreneur assuming the other predictor variables are constant.

Education variable of senior high school category had an odds ratio of 1.4. This means that workers married women of reproductive age with a senior high school education have a tendency 1.4 times to be voluntary part-time workers compared to married women of reproductive age with education above senior high school by assuming other predictor variables constant. While the education variable of below senior high school had an odds ratio of 1.52. This means that married female workers of reproductive age with education below senior high school have a tendency of 1.52 times to become voluntary part-time workers compared to married female workers of reproductive age with education above senior high school assuming the other predictor variables are constant.

Income variable has an odds ratio of 2. This means that married women of reproductive age with incomes below the minimum wage have a 2 times tendency to become voluntary part-time workers compared to married women of reproductive age who work with incomes of the minimum wage and above, assuming the other predictor variables are constant.

Types of business field variable of agricultural category has an odds ratio of 2.78. This means that married women of reproductive age who work in the type of agricultural business sector have a 2.78 times tendency to become voluntary part-time workers compared to married women of reproductive age who work in the service business field, assuming the other predictor variables are

constant. While the variable type of business field industry category has an odds ratio of 1.62. This means that married women of reproductive age who work in the industrial type of business sector have a 1.62 times tendency to become voluntary part-time workers compared to married women of reproductive age who work in the service business field, assuming the other predictor variables are constant.

4. Conclusions and suggestions

Based on the results of the analysis and discussion above, the following conclusions are obtained.

1. Half of all married women of reproductive age in Maluku Province are workers. Of these, almost half are part-time workers. By region, Seram Timur has the highest level of part-time workers. Married women of reproductive age as underemployed mostly live in rural areas, are aged 15-24 years, are not the head of household, work in the informal sector, are paid workers or entrepreneur, have education below senior high school, have an income below the minimum wage, have disability, work in a type of agricultural work, and have at least a toddler in the house. The characteristics of married women of reproductive age as voluntary part-time workers are mostly the same as those of the underemployed, the difference is that most voluntary part-time workers are those who don't have toddler in their house.

2. The variables that significantly affect the working status of married women of reproductive age to become part-time workers, both underemployed and voluntary part-time workers are status at work, income, and type of business field. Variables of age, work sector, disability, and toddlers in the house only affect the working status of being underemployed. While the regional classification and education variables only affect the working status of being a voluntary part-time worker.

3. Female workers of reproductive age who are married as underemployed (involuntary part-time workers) tend to be 15-24 years old, work in the informal sector, are paid workers, earn below the minimum wage, have disability, work in other types of business fields agriculture or industry, and there are toddlers in the house. The highest tendency to be underemployed is for those who have incomes below the minimum wage, work in agricultural or industrial types of business, and work in the informal sector. Work in the informal sector is related with low wages, so that married women workers aged infertile tend to want another job with a wage that is more feasible. Meanwhile, the married women of reproductive age as voluntary part-time workers tend to live in rural areas, status as unpaid worker, below senior high school education, earn below the minimum wage, and work on agriculture or industry types of business. The highest propensity to become voluntary part-time workers are for those working in the agricultural sector and earn below the minimum wage. Married women of reproductive age in rural areas tend to become family/unpaid workers for their husbands (usually in agriculture) to reduce production costs which indirectly increase household income, so they don't try to find other work because they have spent a lot of time helping husband's work and do housework.

Based on the results and discussion described in the previous chapter, the following suggestions were obtained.

1. Married women of reproductive age who are married with income below the minimum wage tend to be part-time workers, both underemployed and voluntary part-time workers. Therefore, policy makers in Maluku Province need to pay attention to the provision of decent wages for married women of reproductive age in order to reduce the rate of part-time worker among married women of reproductive age, particularly the underemployment rate.

2. The government or providers of facilities and infrastructure in Maluku Province need to improve adequate child care facilities around workplaces in the formal sector and impose flexible working hours for women with toddlers so that female workers with toddlers can balance their time between taking care of children and work so that married women of reproductive age are not only focused on working in the informal sector.

3. Married women of reproductive age in rural areas tend to be voluntary part time worker. Therefore, policy makers in the Maluku province, especially in the Eastern Seram and Southeast

Maluku regions, need to be activated by entrepreneurship training for married women of reproductive age so that the entrepreneurial spirit is awakened so that jobs in rural areas will be more varied.

4. Suggestions that can be made in further research are adding predictor variables related to the husband's characteristics of workers, such as work status and income. Then, further research is also recommended to be able to use more recent data and use other logistic regression methods, such as multilevel logistic regression, in order to determine the effect of regional variables, such as population density, or spatial regression methods to see the effect of spatial effects on full-time workers and workers. not full. Selection of a different locus or a broader one, such as Eastern Indonesia or Indonesia can also be done in future research.

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