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Does Informal Sector Suitable for Female Labor?

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Abstract

The existence of SDGs program which supported by the demographic bonus era provides potential for female labor force, but the fact in Indonesia is that there is an inequality in the number of working female labor force compared to men, especially the field of work dominated by women is threatened by industrial automation 4.0. The purpose of this study is to analyze how the characteristics of women to the opportunities in the informal and formal job that seen from age, marital status, wages, length of education taken, ethnicity, and area of residence. The method used in this study is binary logistic regression with IFLS 5 data sources. The results showed that women who decided to work in the informal sector were women of older age, married women, women who studied longer, women with Batak and Sasak ethnicities, and women who lived in rural areas. The Indonesian government is expected to be able to improve policies for informal sector workers including decent wages, social security and health, and legal protection in order to achieve Indonesian goals according to SDGs agenda.

Key words : Female, Formal, Informal, Labor

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INTRODUCTION

In the next decade, Indonesia will set a window of opportunity as a result of the demographic bonus era where the dependency rate is much lower than the working age. The acceleration of economic growth can be achieved due to the phenomenon of demographic bonuses (Jati, 2015). There are opportunities for economic growth through labor force participation, especially in the era of demographic bonuses (Bloom et al., 2009). Supported by the existence of the world agenda of the SDGs in Indonesia listed in goal 5 and goal 8, it can be a motivation for the labor force, especially women, to be involved in the decent work sector regardless of gender differences,

considering that since the last decade the working female labor force has tended to stagnate with long distances from the male labor force. This is of course not in line with the SDGs program in the era of demographic bonuses.

Indonesia is a country that hold tight with their culture and customs, this will certainly affect how people think to see the surrounding environment and work ability (Metekohy, 2013). Ethnic groups are groups of individuals or communities that have the same physical and non-physical characteristics, especially in relation to culture, language, and customs (Arfah, 2011). Cultural values in each ethnic group are often integrated into cultural identity, because a person's social background can affect freedom of custom, style, and behavior. A person's cultural identity also affects his ability to work (Sangen, 2005). The cultural value system that develops in society becomes an ideal guide when it comes to certain issues, including women's participation in the labor market.

No exception for women, women in Indonesia live with each of their ethnicities, so that each ethnicity will affect the way women think. There is an understanding in the Javanese that mentions the term woman with the meaning *of Wani Ditata* (dare to be styled). The term gives the impression that a woman must be submissive and be in passivity especially when the woman is married. Indonesian women are often referred to as *Kanca Wingking* (back friends) which means that women are a wife whose duties are only domestic only with the expression *3M terms Macak, Masak, Manak* (grooming, cooking, and giving birth). Most married women have to choose whether they will be in the public sphere with a career or the domestic realm by becoming a housewife (Dadheech & Sharma, 2022). In line with the smentioned-

above, in Sundanese society, men are considered as the head of the family who must support the family economy, while women act as regulators of family life. Sundanese has an expression that says that women must obey their husbands, *taraje nanggeuh, dulang tinande* (ladder leaning tray ready to hold) means women should always be willing to carry out their duty. Another expression that says *najan kaliang cocopet ge kudu milu* (women have to go into the flea hole too) means until women brought to a place full of difficulties, women must obey their husbands. In contrast to Batak women who are known to be hardworking, tough, and mighty. In their hometown, Batak women are known to work as farmers and work diligently in the fields belonging to their husbands' families. As immigrants, Batak women, also known as *Parlangsam* means people who collect used clothes and goods for resale. Owing to the fact that Balinese women (*predana*) have lower status than men (*purusa*), Balinese women are often referred as "heirs without inheritance". In Balinese ethnicity, boys have inheritance rights while girls are only connoisseurs without having inheritance rights (Rahmawati, 2016). The economic responsibility of Sasak ethnic is for men, while the management of household needs is left to women (Maryam, 2018). Sasak women in West Nusa Tenggara are positioned in a household role known as *Begawians Lek Bale Doan*. However, the role of Sasak women changed along with the easier access to education (Maryati, 2015). Women began to move from the domestic sector to the public sector. The role of women in the public sector is increasing, so that male dominance begins to decline. Bugis states that the female realm is around the house, while the male realm "the borders of the sky". This formulation defines the respective roles of men and women in family life, with men being the primary breadwinners and women being primarily employed at home or not far from it (Mahmud, 2017).

Banjar people have tradition of marrying minor which is known as *kawin* anom. Banjar women who still practice the *kawin anom* marriage culture, do not place much importance on education. Some women work as farmers and become enclaves of international immigration. Banjar women who adhere to *kawin anom* consider education unimportant, so that most Banjar women have low education (Kartika et al., 2018). Madurese women in a patriarchal socio-cultural system have social mobility and a strong work ethic to enable them to survive and thrive in the immigrant communities of origin and destination. However, the strong tradition of applying cultural values that are still centered on patriarchal culture tends to make the status of Madurese women unequal, even lower than men (Putri & Muharram, 2015)

Women who want to be involved in formal sector work are hindered by various administrative requirements such as the age limit for women who want to work tends to be lower than men (Lim et al., 2018) and the minimum limit of education taken by women. Women with older age are considered less energetic and flexible towards the development of the times, so women with older age tend to decide to work in the informal sector because of the flexibility of time given to the informal sector (Sari, 2016; Lim et al., 2018). Through increasing productivity and economic efficiency by utilizing optimal human resources, the dominance of the female labor force shows the potential for economic growth. In Vu's(2021) research in Vietnam on the female labor force, women aged 21-35 years who are engaged in work are greater than women with the age of 36-50 years. Globally, the labor force of women who come from countries with low GDP levels, if women aged 20-24 years and 50-59 years have

prospered financially they are less likely want to be involved in work (Besamusca, 2015).

The level of education taken by women is always below of men, where both in rural and urban areas women with elementary school graduates are always more than men and vice versa for high school graduates and above the number of women is less than men. Whereas education is one of the consideration factors for determining salary. Women who invest in higher education will get a bonus in the form of a high level of wages as well (Deidda & Paolini, 2013; Chattopadhyay, 2018) in long term, the huge amount of women who get higher wages would help to reduce the poverty (Fajansa, 2008). In general, education has an important role in the participation of the female labor force through the skills possessed (Mattos & Ogura, 2009; Akhter & Ward, 2009; Göksel, 2013; Kasseeah & Tandrayen-Ragoobur, 2016).

There is an inequality in rural and urban education so that the rural labor force that finishes high school is much less than the urban labor force. However, some cases in women who ultimately choose to drop out of school, are caused by the culture and environment that states that women do not need to go to high school because in the end women will marry young and become housewives. Rural women will tend to work in the informal sector such as in family-owned agriculture (Pfau-Effinger, 2017), so that if the woman moves to urban areas, they will still get an unfit job due to lack of experience and skills (Lukmanul, 2011). Another problem facing Indonesia is not only the number of school involvements, but there is an inequality in the quality of education in Indonesia between rural and urban areas. Infrastructure and educational facilities in rural areas are still unable to support good learning and teaching activities. In addition, educators with high and quality education are still concentrated in urban areas.

Table 1. Percentage of Labor eForce Who Worked During the Past Week by Area of Residence and Education Completed in 2016-2020

Year	Gender	Highest Completed Education		
		Primary School	Junior	High School And Above
	Urban			
	Woman	29.76	16.60	53.63
	Man	26.98	17.47	55.55
2018	*Rural*			
	Woman	59.06	17.10	23.84
	Man	52.75	20.48	26.77
	Urban			
	Woman	30.62	15.96	53.43
	Man	28.10	17.57	54.33
2019	*Rural*			
	Woman	55.75	17.22	27.03
	Man	50.39	20.11	29.58
	Urban			
	Woman	30.04	16.36	53.60
	Man	27.63	17.82	54.55
2020	*Rural*			
	Woman	54.46	17.60	27.94
	Man	48.80	20.72	30.48

Source: Kemenpppa (2019 – 2021)

The length of education taken will affect the level of wages women receive when they are involved in work. Women who study longer will increase productivity and encourage the wages women receive (Binelli, 2015; Elgin & Elveren, 2021). In Human Capital theory, education is an investment that will improve the welfare of life which is judged based on the level of income and the mindset of the individual. Women who study will get a return in the future in the form of a high level of wages.

On the other hand, the availability of jobs in rural areas is also limited, in general, jobs in rural areas are divided into farmers and farm workers. Meanwhile, women engaged in agricultural work are far from living wages, social security, and job protection (Williams, 2013; Miti et al., 2021).
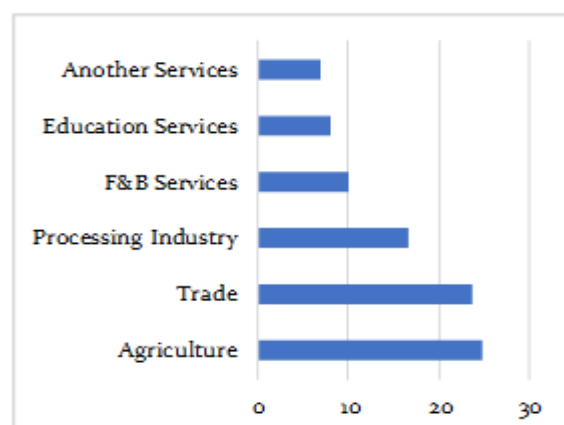

Figure 1. Female Percentage of Population Age 15-64 Years and Main Employment Last Week, 2019
Source: National Labor Force Supply (2019)

These top three types of jobs that are included in the informal sector have the greatest automation potential in the industrial era 4.0. This can be a threat of job loss for the female workforce. Job losses for the female labor force will further lower the graph of labor force participation which has a large difference compared to the male labor force in Indonesia.

Table 2. Number of Female Workers with Automation Potential based on The Main Types of Jobs in 2021

Main Jobs	Number of Female Workers	Automation Potential
Agriculture	24.79%	49%
Trade	23.65%	53%
Processing Industry	16.64%	65%

Source: Bappenas (2021)

Based on the explanation above, it does not mean that women have to work in the formal sector. However, it is hoped that in the potential of industry 4.0 automation, the government will be able to improve policies towards informal sector workers, a proportional wage system, and comprehensive legal protections. In addition, the government is expected to be able to provide skills training so that if women no longer work in these sectors, women are still able to develop their skills so that they can generate income. Informal sector workers in Indonesia still do not have good social security and health services; so that informal sector workers do not have accident insurance, old age, pension funds, and life insurance (Duma & Nuryanto, 2018). The female labor force working in the informal sector has a low wage rate (Elgin & Elveren, 2021) and often struggling to fulfill their livelihood needs (Omobowale et al., 2020). Efforts to overcome discrimination in the opportunity to obtain wages for female workers in Indonesia can be achieved through preventive legal protection in the form of socialization of the female labor force who have the potential to get wage discrimination (Putri et al, 2019).

Another factor that can influence women's employment sector opportunities is marital status. Informal sector jobs tend to be chosen by the married female labor force, this is becasuse married women will focus more on their families so that jobs with flexible working hours such as informal sector jobs become a forum for married women who want more income (Berniell et al., 2021). Another study on the labor force of married women was conducted by Septiawan & Wijaya (2020) in Indonesia using the regression method, the results of the study showed that married status in women will reduce the rate of women's involvement in work which will indirectly affect GDP. The study was limited to whether married women were engaged in work or not, but did not examine the job sectors that are opportunities for the female labor force. In fact, several studies conducted with research objects other than Indonesia show that marital status can affect the selection of the employment sector.

This research is interesting to study because it looks at how the opportunities of the job sector for women are based on their characteristics, the variables studied are related to each other such as ethnic variables that are closely related to marital status and women's employment decisions; married women tend not to work, while if married women work, they will tend to work in the informal sector (Berniell et al., 2021; Septiawan & Wijaya, 2020). Variables of wages, education, and place of residence, where education is one of the factors for determining wages. Higher education will provide a high amount of wages as well (Marnisah, 2017). The increasing number of women who finish high school and above will affect wages through

productivity and skills possessed (Binelli, 2015). However, access to education in Indonesia is still not comprehensive, as seen from the differences in access to rural and urban education. Lukmanul's research (2011) explained that rural women tend to work in the informal sector in agriculture, but this study does not examine labor force education with data processing as a variable. Research on education in women has been carried out by (Göksel, 2013) in Turkey using the subject of married women, but considering that Indonesia is a country that has a variety of ethnicities and cultures so as to provide a different mindset for each ethnic group, including work decisions and selection of the job sector. This is the reason researchers are interested in combining ethnic variables as a complement to variables related to the characteristics of the female labor force on women's employment sector opportunities.

In general, this study aims to determine how the characteristics of the female labor force (age of the female labor force, marital status, wages, length of education, ethnicity, and area of residence) affect the opportunities of the women's employment sector (informal and formal). The urgency of this study is to provide information to the Indonesian government to protect vulnerable informal sector workers. So that women working in the informal sector get a decent wage, social security, and legal protection to meet the goals of the SDGs agenda and take advantage of the era of demographic bonuses also in long term it would minimize poverty.

METHOD

This research approach uses quantitative methods with the type of data used is cross-section data derived from IFLS 5 of 2014/2015. The logistic regression analysis used in this study is binary logistic regression due to the dichotomous nature of the dependent variables. The logit model can estimate the probability of a binary response based on groups of predictor variables (Putri & Prasetyani, 2021). The dependent variables in this model have the probability of two values or are dichotomous, which if they meet "1" then correspond to the predetermined criteria and meet "0" if they are of the opposite value (Dawood et al., 2019). The advantage of estimating by using logite is that dependent variables do not need to be normally distributed and do not need to be protected from heteroskedasticity (Yah, 2020).

$$ln\left(\frac{P(y=1)}{1-P(y=1)}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots \ldots \ldots \ldots + \beta_n X_n \qquad (1)$$

In this study, the binary logistic regression analysis model was described by dummy dependent variables in the form of a working Indonesian female labor force. A1 in the dependent variable means that women's labor force has the opportunity to work in theformal sector and the number 0 means that they have the opportunity to work in the formal sector.

The object of this study is the labor force of women who worked for one week ago which was recorded in the IFLS 5 data. The dependent variable in this study is the job sector (SPIF) which is defined as 1 = the opportunity to work in the informal sector and 0 = the opportunity to work in the formal sector.

Meanwhile, the independent variables in this study were 1) age (US) in years; 2) marital status (SP), i.e. "1" indicates married/ever married and "0" unmarried; 3) wages (UP), in rupiah; 4) length of education (LP), which is measured by how many years of schooling "6" elementary school, "9" junior high school, "12" SMA / SMK / MA / Package C, "15" D1 / D2 / D3, "16" S1, "18" S2, "22" S3; 5) ethnic (ET), "0" other ethnic, "1" Javanese, "2" Sundanese, "3" Batak, "4" Balinese, "5" Sasak, "6" Bugis, "7" Banjar, and "8" Madurese; 6) residential areas (DTT), "1" rural and "0"

urban. So that the model can be written in the following equation:

$$SPIF = \alpha + \beta_1 US + \beta_2 SP + \beta_3 UP + \beta_4 LP + \beta_5 ET + \beta_6 DTT \quad (2)$$

Table 3. Cross Tab between Age and Job Sector Female Labor Force

Age Group	Formal	Informal
15 - 19	188	31
20 - 24	474	96
25 - 29	522	183
30 - 34	538	327
35 - 39	402	309
40 - 44	275	302
45 - 49	212	242
50 - 54	170	269
55 - 59	88	183
60 - 64	26	115

Source: IFLS (2015)

Workers in prime age working will choose to spend their time at work. In this age group, participation in the labor market is considered necessary because awareness of increasing family income has grown (Pratomo, 2017). Based on the cross-tabulation of the study subjects, the participation of Indonesian women in the labor market increased significantly in the age groups of 20-24 and 25-29 and then peaked in the age group of 30-34 with the number of 1,544 people, at this time the employment rate increased with age. This suggests that labor force participation peaks at a certain age and then drops to a minimum, especially in the over 60 age group (Hidayat et al., 2017)

Table 4. Cross Tab between Marital Status and Job Sector Female Labor Force

Marital Status	Formal	Informal
Unmarried	632	91
Married	2,263	1,966

Source: IFLS (2015)

In this study, the female labor force was sorted by marital status in the marriage/unmarried category, which consisted of married, living divorce, dead divorce, and cohabitation; and the unmarried category. Based on the data above, the working female labor force is dominated by married or married women with 86% of the total. At the same time, there are 14% of the female labor force who are unmarried. Referring to the hypothesis formed, based on the above data it is revealed that employment in the informal sector dominates based on marital status.

Table 5. Cross Tab between Wage and Job Sector Female Labor Force

Wage (IDR)	Formal	Informal
< 1,500,000.00	1.725	1.697
1,500,000.00–2,500,000,00	483	172
2,500,000.00–3,500,000.00	349	73
>3,500,000.00	338	115

Source: IFLS (2015)

In this study, the wages used came from IFLS data, namely wages received within one month. According to statistics agency (BPS), wages can be classified into four groups, namely the low class with a nominal wage of less than IDR 1,500,000.00 per month; average wage IDR 1,500,000,00–2,500,000.00 per month; high wages IDR 2,500,000–3,500,000.00 per month; and very high wages of more than IDR 3,500,000.00 per month. The table above shows that the female labor force is dominated by workers with a low wage rate of 69%. Wages are one of the factors in the selection of women's employment opportunities. Low-wage workers tend to seek higher wage levels by working in the formal sector.

Table 6. Cross Tab between Education Length and Job Sector Female Labor Force

Education Length	Formal	Informal
6 years	492	986
9 years	422	444
12 years	961	496
15 years	250	54
16 years	710	74
18 years	59	3
22 years	1	0

Source: IFLS (2015)

In IFLS data, the education system in Indonesia is divided into 21 groups. However, the variables used in this study were measured by the length of education completed by the working female labor force. The educational category used is 6 years (Elementary School/ Package A/ Islamic Elementary School/ Kindergarten); 9 years (Junior High School/ Package B/ Islamic Junior High School); 12 years (Senior High School/Vocational High School/Package C/Islamic Senior High School); 15 years (Diploma); 16 years (Bachelor's Degree); 18 years old (Master's Degree); 22 years old (Doctoral's Degree). The length of education taken indicates the high level of education of the female workforce. This affects the choice of working life, because in the economic theory of development, education is seen as human capital. Therefore, when someone invests in education, they expect to be rewarded with a decent job with a high salary. This corresponds to the level of salary offered for official positions in the field. Based on the cross-tabulation presentation above, the formal employment sector is dominated by the female labor force who studied for 12 years, which is equivalent to Senior High School. However, informal sector jobs are dominated by the female labor force who take the shortest education, which is 6 years equivalent to elementary school.

Table 7. Cross Tab between Ethnicity and Job Sector Female Labor Force

Ethnicity	Formal	Informal
Javanese	1,327	886
Sundanese	383	251
Batak	107	122
Balinese	171	117
Sasak	103	129
Bugis	83	68
Banjar	78	87
Madurese	56	32
Others	587	365

Source: IFLS (2015)

In IFLS-5 data, ethnic groups in Indonesia are described into 29 ethnicities. However, in this study there were only 8 ethnicities with the highest number of female labor force, namely ethnic Javanese, Sundanese, Batak, Balinese, Sasak, Bugis, Banjar, and Madurese. Based on the data above, ethnic Javanese dominate almost half of the total female labor force. In informal sector jobs, women with Javanese ethnicity also dominate at 886 people. Other ethnicities classified as category 0 are Chinese, Bima-Dompu, Makassar, Nias, Palembang, Sumbawa, Toraja, Betawi, Dayak, Malay, Komering, Ambon, Manado, Aceh, Sumbagsel, Banten, Cireubon, Gorontalo, Kutai.

Table 8. Cross Tab between Residential Area and Job Sector Female Labor Force

Residential Area	Formal	Informal
Urban	2,155	1,171
Rural	740	886

Source: IFLS (2015)

In this study, the residential areas of the female labor force were divided into two categories, namely rural and urban pec. Environmental differences often lead to differences in education, health care and other public services. Thus, it affects the supply of rural per labor and

the limited availability of rural per employment. The proportion of the female labor force working in urban areas is higher than in rural areas. This shows that the labor force of women is still working in the domestic sphere.

RESULTS AND DISCUSSION

A total of 16,204 households were listed in the IFLS survey, but in this study only 4,952 people were studied, namely the female labor force (15-64 years) who worked for one week ago. Table 9 shows the labor force of women working in the informal and formal sectors, marital status, ethnicity, and area of residence.

Table 9. Women's Labor Force by Their Characteristics

Characteristic	Sum	Percentage
Employment Sector		
Informal	2,057	41.54%
Formal	2,895	58.46%
Marital Status		
Married/Ever Married	4,229	85.40%
Unmarried	723	14.60%
Ethnic group		
Javanese	2,213	44.69%
Sundanese	634	12.80%
Batak	229	4.62%
Balinese	288	5.82%
Sasak	232	4.68%
Bugis	151	3.05%
Banjar	165	3.33%
Madurese	88	1.78%
Others	952	19.22%
Area of Residence		
Rural	1,626	32.84%
Urban	3,326	67.16%

Source: IFLS (2015)

Meanwhile, the female labor force with the average age, wages, and length of education taken is shown in table 10:

Table 10. Average Age, Wages, and Length of Education for the Female Workforce

Characteristic	Average
Age (in years)	36.76
Wages (in rupiah)	IDR 1,618,034.00
Length of Education (in years)	10.57

Source: IFLS (2015)

Based on the table above, the average age of the female labor force is 36–37 years; the average wage received by the female labor force within a month is IDR 1,618,034.00; and the average length of education taken by the female labor force is 10.57 years, which means that the average female labor force completes its education up to the junior high/ high school level.

This study used the Hosmer-Lemeshow model conformity test stage to test how compatible the model used was with variable data. The results obtained in the model conformity test were 0.2591 or above 0.05 so as to show that the model used was appropriate to estimate the dependent variables.

Table 11. Logistic Model for Y, Goodness-of-fit Test

Number of Observations	4,952
Number of Covariate Patterns	4,712
Pearson Chi2 (4,696)	4,758.23
Hosmer-Lemeshow	0.2591

Source: Author's Calculation

The estimation of the parameters of the predictor variables is carried out to determine the significant influence of the estimated parameters obtained on the model and the magnitude of the influence of each of these parameters on the model. The significance test consists of two stages, namely, simultaneously testing the significance of model parameters with the maximum likelihood ratio test and partially testing the significance of model parameters with the chi-square wald test.

Table 12. Variables in Equations

Y	Coefficient	Std.Error	Z	P.Value	Odds Ratio
US	0.0400	0.0033	11.79	0.000***	1.0408
SP	1.5561	0.4504	3.45	0.001***	4.7407
UP	-6.8777	1.3222	-0.52	0.604	1
LP	-0.1661	0.0368	-4.51	0.000***	0.8469
ET					
"1" Javanese	-0.3408	0.0930	-3.66	0.000***	0.7111
"2" Sundanese	-0.2921	0.1220	-2.39	0.017***	0.7466
"3" Batak	0.7391	0.1721	4.29	0.000***	2.0941
"4" Bali	-0.1257	0.1591	-0.79	0.429	0.8818
"5" Sasak	0.5674	0.1700	3.34	0.001***	1.7637
"6" Bugis	0.2252	0.2046	1.10	0.271	1.2526
"7" Banjar	0.3779	0.2021	1.87	0.062	1.4592
"8" Madurese	-0.7506	0.2617	-2.87	0.004***	0.4720
DTT	0.6165	0.8229	7.49	0.000***	1.8525
Hosmer-Lemeshow Test				0.2591	
Prob-Chi2				0.0000	
P>|z|				0.0000	

Source: Author's Calculation

Note: (***) significant in 1%; (**) significant in 5%; (*) significant in 10%

The logistic regression equation model can be written as follows:

$$LN\left(\frac{P(Y=1)}{1-P(Y=1)}\right) = -1.080461 + 0.0400675\ US + 1.556191\ SP(1) - 6.87 \times 10^{-9}\ UP - 0.1661196\ LP - 0.3408848\ ET(1) - 0.2921682\ ET(2) - 0.7391536\ ET(3) - 0.1257568\ ET(4) + 0.5674436\ ET(5) + 0.2252501\ ET(6) + 0.377918\ ET(7) - 0.7506219\ ET(8) + 0.6165381\ DTT(1)$$

The results of the simultaneous significance test produced in the table above have a significance value (Prob>chi2) smaller than 5%, so the addition of independent variables can have a real influence on the model, meaning that the independent variables used have a simultaneous influence on variable Y. While the results of the partial significance test produced in the table above have a significance value (P>|z|) less than 5% then the variables of age (US), marital status (SP), length of education (LP), ethnicity (ET), and area of residence (DT), exert a partial influence on var-iable Y.

Based on the results of the logistic regression test on the age variable shows significant positive results so it can be said that every increase in women's age by 1 year from the age of the working female labor force, will have a tendency to work in the informal sector as much as 1.04 times compared to working in the formal sector. The results of this study are in line with the results of research Sari (2016) and Pfau-Effinger (2017) which states that women with older age have a tendency to work in the informal sector because of the freedom of time at work and easier to enter because there are no complicated administrative requirements. Organization for Economic Co-operation and Development stating the existence of prime age working, which is the prime age for the labor force to work, this is related to the physical condition of women while working, the female

labor force that has good physical conditions will increase the productivity needed for work in the formal sector with more regular and long working hours.

Marital status in the labor force of working women has an influence on the selection of the employment sector. The results of the study on the labor force of women who work and have married status/ have been married provide opportunities for the tendency to work in the informal sector as much as 4.74 times compared to the formal sector. This is because married women prioriitize their families and spend time with their families, so informal sector work is appropriate because of time flexibility (Farida, 2011) (Berniell et al., 2021) (Berniell et al., 2021). In addition, the results of processing variable data on marital status have a relationship with Kauffman & Hotchis's theory of labor supply which is presented in the indifferent curve between wages and leisure. The married female labor force has domestic responsibilities so they choose to get a lot of free time allocated to domestic work by choosing to work in the informal sector.

In the wage variable, because the results of the data process show a negative coefficient with an insignificant P.Value so it can be said that the working female labor force has no real influence/ difference on job sector opportunities. This can be because women look more at existing job opportunities, so that any wage does not affect the opportunities of the job sector. Due to the absence of supply and demand on the wages of the female labor force, womens are often paid low wages (Kasseeah & Tandrayen-Ragoobur, 2014; Elgin & Elveren, 2021).

In the education variable, the results of the analysis showed a negative relationship, The increasingly long workforce of women studying has no opportunity to work in the informal sector. The odds ratio value indicates that any increase in the education level of the female labor force will provide a probability of 0.84 not being involved in the informal sector. The results of this study can be explained by the results of the research of Arbex et al., 2013, Pfau-Effinger and Abraham et al., (2017) longer education will lead women to tend to work in the formal sector, because the formal sector requires a higher level of skills. In Human Capital theory, it is explained that education is a form of humanitarian investment and it is expected that there will be returns in the future in the form of high wage levels through formal sector work. The labor force of women who decide to work is usually influenced by the length of their husband's education if the case is in the labor force of married women (Fogli & Fernandez, 2004).

Female labor force with Javanese, Sundanese, and Madurese ethnicities have a significant negative relationship which means that the female labor force does not have the opportunity to work in the informal sector with the odds ratio value shown by Javanese women of 0.71 times; Sundanese women by 0.74 times; and Madurese women are 0.47 times. In this case, when related to the length of education taken, based on data from IFLS shows that compared to other ethnicities, the female labor force of Javanese and Sundanese ethnicities with high school education and above dominates far in number. Whereas in the case of the female labor force who come from the Madurese ethnicity, they have a strong work culture and high mobility, so women with Madurese ethnicity are encouraged to participate in work.

Meanwhile Batak and Sasak female labor force have the opportunity to work in the informal sector as much as 2.09 times and 1.76 times compared to the formal sector. In this case, it can be explained by the number of female labor force research subjects who come from the

Batak and Sasak ethnicities, that almost all of the Batak and Sasak ethnic female labor force in this study has married status or has been married, this is in accordance with the results of processing variable data on marital status that the labor force of women who are married or have been married have the opportunity to work in the informal sector. In addition, it can be explained that it is related to the culture of the Batak and Sasak ethnicities. Women with Batak ethnicity tend to work in the agricultural sector by working on their own land or family-owned land from their husbands. Even though Batak ethnic women go to migrate, ethnic Batak women still carry their cultural values in the destination city, the work they do in the city where they migrate is to collect used goods for resale, this job is known as *Parlangsam* in Batak. As for women who come from the Sasak ethnicity, in their cultural values women must do household chores, because work is entirely the responsibility of men (Maryam, 2018). In Sasak culture there is the term *Begawians Lek Bale Doan*, which is women working by taking care of the household.

Based on the results of statistical analysis, the Balinese, Bugis, and Banjar female labor force have no significant effect/ difference on employment opportunities.

There is a lot of inequality in rural and urban areas, especially in development inequality. The existence of development inequality creates inequality in various public facilities, one of which is education and the availability of jobs. Educational inequality that occurs in rural areas is that there are differences in infrastructure that can support learning activities and the availability of quality educators who are centered in urban areas. This provides a different quality of human resources between rural and urban areas. In the end, differences in the quality of human resources will affect the supply of labor, where investors or job providers will choose to create jobs in urban areas in the hope of getting more qualified human resources. This will also affect interregional development, as a result of the centralized development of jobs in urban areas, then in rural areas it is still dominated by land that will be used in the informal sector of agriculture.

From the results of research with ethnic variables, indicates that there is an inequality in the average length of schooling in Indonesia, education in Java is far more advanced than outside Java (Yuniasih, 2019). So that the Javanese female labor force are able to compete in the formal employment sector because the educational administration requirements can be easily achieved. A more equitable distribution of education is expected to increase the average length of schooling in the community, increase employment and income opportunities, and improve the welfare of the community itself (Amin et al., 2017).

The female labor force that works and comes from rural areas compared to urban areas has 1.85 times the opportunity to work in the informal sector compared to working in the formal sector. If the female labor force moves to the urban area, then the female labor force will continue to work in the informal sector due to the limited skills possessed to be able to enter the formal sector (Lukmanul, 2011). In addition, employment in rural areas tends to be limited, there are government programs, namely BUMDes, which have the potential to improve the welfare of rural communities and create jobs (Ali et al., 2019). However, rural communities still do not understand the existence of BUMDes and do not seek to advance the BUMDes business unit (Gayo et al., 2020).

CONCLUSION

The contribution of this research in the literature is to determine how the characteristics of the female labor force affect the opportunities of the employment sector. Using 2015 IFLS data, it was found that the labor force of women who are older, married/ have been married, live in rural area, Batak and Sasak ethnic background have the opportunity to tend to work in the informal sector. Meanwhile, the level of wages have no influence on the opportunities of the women's employment sector. In the variable of female's labor force education length, it shows the result that the longer women study, the less likely it is not to engage in informal sector work. The results of this study show a close relationship with development inequality between regions so that differences in women's mindsets arise which also influenced by culture and other factors such as education and the availability of jobs. The government is expected to be able to improve policies on the vulnerable informal job sector, low wages, lack of social security, and comprehensive legal guarantees, to realize Indonesia's ideals in the SDGs program in the era of demographic bonuses, considering that the informal work sector dominated by women has the greatest potential for automation in industry 4.0.

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