THE ROLE OF HUMAN CAPITAL IN MARRIED WOMEN'S LABOR MARKET PARTICIPATION:

A MICRODATA ANALYSIS FROM SAKERNAS

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh modal manusia terhadap kecenderungan wanita menikah untuk berpartisipasi dalam pasar kerja. Menggunakan data mikro dari Survei Angkatan Kerja Nasional (SAKERNAS), penelitian ini menerapkan teknik analisis regresi logistik biner dengan pengelompokan berdasarkan kategori pedesaan-perkotaan dan jenis pekerjaan. Hasil penelitian menunjukkan bahwa wanita dengan pendidikan tinggi cenderung lebih mungkin untuk bekerja, meskipun hasilnya tidak signifikan. Temuan serupa juga ditemukan baik di kawasan pedesaan maupun perkotaan. Dalam pengelompokan jenis pekerjaan, hanya pada kategori karyawan/staf/buruh, pendidikan menengah dan tinggi sama-sama meningkatkan kecenderungan untuk bekerja. Wanita dengan pendidikan tinggi lebih cenderung memasuki pasar kerja setelah menikah dibandingkan dengan wanita berpendidikan menengah. Namun, pengaruh yang sama tidak terlihat pada pekerjaan wirausaha, pekerja bebas, atau pekerja keluarga. Penelitian ini menyimpulkan bahwa, secara rata-rata, pendidikan hingga tingkat menengah tidak berpengaruh terhadap partisipasi wanita menikah dalam pasar kerja di Indonesia, kecuali pada mereka yang memiliki pendidikan tinggi dan bekerja di sektor formal.

Kata kunci : Modal Manusia; Partisipasi Kerja Wanita; Pasar Kerja

ABSTRACT

The aim of this study is to analyze the impact of human capital on the likelihood of married women participating in the labor market. Utilizing microdata from the National Labor Force Survey (Survei Angkatan Kerja Nasional/ SAKERNAS), this research employs binary logistic regression analysis, with sample grouping based on rural-urban classifications and types of employment. The findings reveal that women with higher education levels are more likely to enter the workforce, although this result is not statistically significant. Similar patterns were observed across both rural and urban areas. When categorized by type of employment, only within the employee/staff/laborer category do both secondary and higher education levels equally increase the likelihood of workforce participation. Women with higher education are found to be more inclined to work after marriage compared to those with secondary education. However, the same effect is not observed in entrepreneurial, freelance, or family worker occupations. This study concludes that, on average, education up to the secondary level does not influence the participation of married women in the labor market in Indonesia, except for those with higher education working in formal sectors.

Keywords: Human Capital; Female Labor Participation; Labor Market

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I.   INTRODUCTION

Education plays a crucial role in determining the development level of nations, leading to a significant global increase in higher education since the 1970s, including among women. The swift growth in women's education is evident as women have not only reached parity with men but have also surpassed them in higher education attainment. This phenomenon provides new insights in the current era, particularly in the United States, where women outperform men across various educational metrics (Williams & Wolniak, 2020). The expansion of secondary and tertiary education among women, coupled with the rise of the white-collar service sector, presents new and appealing job opportunities for women that are less constrained by traditional restrictions and stigmas. Additionally, declining fertility rates, improved access to childcare, and the increasing availability of part-time work allow women to balance domestic responsibilities and child-rearing with employment outside the home. At this stage of development, female labor force participation correlates positively with per capita income, as women contribute to increasing household income (Mammen & Paxson, 2000; Maier, 2002; Klasen, 2019). Consequently, women's roles within households are recognized through their ability to generate income.

It is generally assumed that men and women are interchangeable in the labor market, implying that an increase in the supply of educated men or women would result in reduced earnings for both groups (Cortes et al., 2018; Petrongolo & Ronchi, 2020). Although women consistently earn less than men across all education levels, labor markets tend to value women's labor at a lower rate than men's. However, this wage gap has significantly narrowed over the past few decades. The structural shift from manufacturing to services has increased the demand for educated workers, as education plays a crucial role in industrial advancement by fostering essential behavioral traits and skills (Becker & Woessmann, 2019). This trend has likely been particularly advantageous for women. As a result, economic development has created more favorable conditions for women in the labor market. Nevertheless, not all nations provide equal opportunities for broad access to education, as individuals in poorer countries are less likely to attain higher education compared to those in wealthier countries (Becker et al., 2010). Similarly, opportunities for women to participate in the labor market are often limited, particularly due to cultural influences and local norms.

Bertrand, Cortés, Olivetti, & Pan (2016) and Kapadia-Kundu et al., (2022) propose a straightforward theoretical model that explains the relatively lower marriage rates among educated women by considering gender identity norms. This model sheds light on why the marriage market disadvantage faced by educated women might respond differently to improvements in labor market opportunities depending on whether the society is more or less gender conservative. Consequently, women's educational decisions, in the context of expanding labor market opportunities, could be influenced by the rigidity of these gender norms. Additionally, Bertrand, Cortés, Olivetti, & Pan (2016) found that in regions with stronger gender conservatism, such as certain parts of East Asia and Southern Europe, a smaller proportion of women opt to pursue higher education. In these societies, there is an inverse relationship between the level of female educational attainment and the extent of gender norm conservatism.

The issue of gender inequality remains prevalent today, particularly in the developing world (Samarakoon & Parinduri, 2015; Baten et al., 2021), largely due to enduring norms that continue to subjugate women (Agarwal, 1994; Silliman, 1996). In these countries, women entrepreneurs often face significant challenges, including limited access to finance, socio-cultural biases, low self-esteem, institutional voids, and a lack of skills and entrepreneurial education (Goyal & Yadav, 2014; Yadav et al., 2022). Research by Verick (2014) and Kabeer (2021) explore both the advantages and disadvantages of female labor force participation in developing nations. On the positive side, women's participation in the labor force is a crucial driver of growth and development, while also serving as an indicator of such progress. However, in many developing countries, high rates of female labor force participation are also closely associated with poverty. Women tend to earn less than men and are more frequently employed in unprotected jobs, such as domestic work.

Numerous studies have examined the impact of educational advancements on women's labor market participation in various countries, with these effects often shaped by the nation's cultural factors. Research on women's participation in the labor market, particularly in Asian countries, also has been widely explored in previous studies (Schaner & Das, 2016; Cameron et al., 2020). In a relatively recent study focusing on Indonesia, Schaner & Das (2016) and Klasen et al., (2021) observed that labor force participation among younger women in urban areas has increased in recent years, primarily through wage employment. In contrast, younger women in rural areas have seen a decline in

labor force participation, with many opting out of informal and unpaid work. In China, the participation of women in the formal labor market has steadily decreased over the past two decades, coinciding with a resurgence of patriarchal attitudes toward women (Fincher, 2016; Chang, 2020). Conversely, Xiao & Asadullah (2020) observed that women with higher education, strong English proficiency, better health, and who reside in communities with egalitarian views on gender roles, had a higher likelihood of participating in the labor force. Gender analysis from their research indicates that community norms regarding women's paid work and family responsibilities significantly influence women's decisions to join the labor force, but do not affect men's decisions in the same way. In contrast, in the United States—a developed nation—the situation at the beginning of 2020, just before the Covid-19 pandemic, showed a gradual improvement in women's representation in corporate America. Although women, especially women of color, were still significantly underrepresented, their numbers were slowly increasing, particularly in senior management roles (Thomas et al., 2020). This scenario in the United States contrasts with that in Indonesia, an emerging economy.

In Indonesia, the average years of schooling in 2021 were 9.23 years for men and 8.70 years for women (BPS, 2022-d). During the same period, 82.27% of men were active in the labor market, compared to only 53.34% of women. Additionally, in August 2021, 5.60% of the total workforce were commuter workers, with men comprising 70.34% of this group, while women accounted for only 29.66%. This suggests that men exhibit greater mobility than women in the workforce (BPS, 2022-c). Cultural diversity generally influences behavior, including women's attitudes toward employment. Issues related to women and gender equality have been advancing rapidly in Indonesia (Anggadwita et al., 2017; Meria et al., 2023). According to Suwarno (2019), there is a significantly higher number of men employed in the labor market compared to women. Despite being an emerging economy with the fourth largest population globally, the 10th largest economy by purchasing power parity, and a member of the G-20, Indonesia continues to face gender inequalities in several key areas.

This study aims to analyze how these trends evolve when considering the female workforce based on marital status, with a particular emphasis on education. The research seeks to challenge the traditional view of married women solely as mothers and housewives by demonstrating that education can offer new meaning and value to women's roles in the labor market by enhancing their knowledge and skills. Therefore, the primary goal of this research is to analyze the labor force participation of

married women and to examine how various factors influence their work decisions, recognizing that women's participation in the labor market is crucial for driving economic growth.

II. LITERATURE REVIEW

2.1 Human Capital Theory

Human capital theory asserts that investing in education, training, and health boosts an individual's productivity and, as a result, their earning potential. This concept highlights that, similar to how physical capital (such as machinery and buildings) increases productivity in industrial sectors, human capital (which encompasses skills, knowledge, and abilities) enhances productivity within the labor market. For women, accumulating human capital is especially vital as it impacts their involvement in the workforce directly. Women who achieve higher levels of education and specialized training acquire the skills needed to compete effectively in the job market, leading to improved employment opportunities and higher wages (Becker, 1993). This theory helps elucidate why women with more education and training are more likely to participate in and stay in the labor force compared to those with lower educational levels.

Women's participation in the labor market has been extensively studied within the context of human capital theory. Education is a key component, serving as a primary investment in human capital. Empirical research consistently shows a positive correlation between educational attainment and labor market participation among women. Higher levels of education significantly increase the likelihood of women participating in the labor force across various countries (Psacharopoulos & Patrinos, 2018; Assaad et al., 2020). Education not only provides women with the technical skills needed for employment but also enhances their social and cognitive skills, which are essential for navigating and succeeding in the workplace. Furthermore, the acquisition of education can shift cultural and societal perceptions, reducing traditional barriers to women's employment and promoting gender equality in the labor market.

Training and professional development also play a critical role in enhancing women's human capital. Vocational training and on-the-job training programs are essential for developing specific skill sets that align with labor market demands. Such training opportunities can help women, particularly those re-entering the workforce after periods of absence, to update their skills and improve their

employability. According to a report by the World Bank (2019), women who participate in vocational training programs are more likely to find employment and achieve higher earnings compared to those who do not receive such training. These programs not only provide practical skills but also increase women's confidence and readiness to engage in various economic activities, thereby fostering greater participation in the labor market.

Health, as an aspect of human capital, is another crucial factor influencing women's labor market participation. Good health enables individuals to be more productive and to work longer hours, thereby increasing their potential earnings. For women, access to healthcare and family planning services can significantly impact their ability to work. Healthy women are more likely to participate in the labor force and sustain employment over time. Additionally, family planning services allow women to better manage their reproductive health, giving them greater control over their career trajectories. Studies have shown that improvements in women's health and access to healthcare services are associated with higher rates of labor market participation (Gammage et al., 2020). Thus, investments in women's health are not only beneficial for the individuals themselves but also for the broader economy, as they enhance the overall productivity and labor supply.

2.2 Determinants of Women Participation in Labor Market

Educational attainment is one of the most significant determinants of women's participation in the labor market. Higher levels of education provide women with the knowledge and skills necessary to compete effectively in the workforce. Education enhances cognitive abilities, technical skills, and soft skills, making women more attractive to employers. According to the International Labour Organization (ILO), women with higher education levels are more likely to be employed, have better job opportunities, and earn higher wages compared to those with lower education levels (ILO, 2017). Furthermore, education empowers women by increasing their confidence and ability to make informed decisions regarding their careers. Training programs, including vocational and on-the-job training, further enhance women's employability by providing them with specific skills that are in demand in the labor market. Research by the World Bank (2019) indicates that women who participate in training programs are more likely to find employment and achieve higher earnings, demonstrating the importance of continuous skill development in improving labor market outcomes for women.

The type of employment, specifically working in the formal sector, significantly influences women's labor market participation. The formal sector generally offers better job security, higher wages, and more comprehensive benefits compared to the informal sector. Women working in formal employment are more likely to have access to maternity leave, health insurance, and retirement benefits, which can encourage sustained labor market participation (Etim & Daramola, 2020). Additionally, formal sector jobs often provide more opportunities for career advancement and skill development. Urban residency also plays a crucial role in women's employment prospects. Urban areas typically offer more diverse and abundant job opportunities than rural areas, along with better infrastructure and access to services such as childcare and transportation. According to a study by D'Costa (2024), women residing in urban areas are more likely to be employed and to work in higher-paying jobs compared to their rural counterparts. The concentration of industries, businesses, and educational institutions in urban centers creates a more dynamic and supportive environment for women's labor market participation.

Age is another important determinant of women's participation in the labor market. The relationship between age and employment can be complex, as it is influenced by various life stages and societal norms. Younger women, particularly those in their twenties and thirties, are often in the early stages of their careers and may be balancing work with family responsibilities. This age group is crucial for understanding trends in labor market entry and re-entry, as well as the impact of policies such as maternity leave and childcare support. Middle-aged women, on the other hand, may experience a different set of challenges and opportunities. According to a study by Blau & Kahn (2017) and Han & Lee, (2020), women in this age group often have accumulated significant work experience and human capital, which can enhance their employability and earning potential. However, they may also face age discrimination and increased caregiving responsibilities for both children and elderly family members. Policies that support work-life balance and lifelong learning are essential for maintaining and increasing labor market participation among women of all ages. Understanding the age dynamics in women's labor market participation helps policymakers design targeted interventions that address the specific needs and barriers faced by women at different life stages.

III. RESEARCH METHOD

This study uses data from the National Labor Force Survey (Sakernas) conducted by the Central Bureau of Statistics (BPS) in 2020. Sakernas data is micro-level data that provides a detailed illustration of the general state of employment in Indonesia, capturing shifts in employment structure over different periods of enumeration. The data from Sakernas is particularly valuable for this analysis as it offers a broad and detailed snapshot of the labor market, allowing for the observation of trends and patterns in women's labor force participation. A total sample of 149,508 married women was obtained for this study. Out of this sample, 132,778 women (88.81%) are working, while 16,730 women (11.19%) are not working. The high participation rate indicates that a significant majority of married women in Indonesia are engaged in some form of work. This study aims to provide a comprehensive description of the employment conditions of Indonesian married women and to identify the individual factors that influence their likelihood of entering the labor market. By examining variables such as education level, training, type of employment (formal or informal), urban or rural residence, and age, the study seeks to understand how these factors impact the employment status of married women.

The decision to use logistic regression in this study stemmed from the goal of determining if individuals with higher education levels are more likely to be employed and how their job mismatches might vary. Logistic regression is a robust statistical technique for modeling the likelihood of a binary outcome based on one or more predictor variables. In this instance, the binary outcome being examined is whether a married woman is employed (1 = employed, 0 = not employed). This method is especially suited for situations where the dependent variable is categorical and influenced by multiple independent variables. Additionally, logistic regression has been employed in various previous studies to analyze trends in labor force participation (see Assaad et al., 2020; Yeboah & Jayne, 2020 (Ebenezer et al., 2021)). Logistic regression estimates the odds that a certain event (working) will occur. The model generates coefficients for each predictor variable that indicate the strength and direction of the relationship between the predictor and the likelihood of the event occurring. These coefficients are initially in the form of log-odds, which need to be exponentiated to interpret them as odds ratios. The logistic regression model is expressed as:

$$ln \frac{working_i}{1-working_i} = Y_i = \beta_0 + \beta_1 secondary\ education + \beta_2 high\ education + \beta_3 training + \beta_4 formal + \beta_5 urban + \beta_6 age + \varepsilon \tag{1}$$

In this study, the predictors include education levels (secondary and high education), training, formal employment, urban residency, and age. By fitting this logistic regression model, we can quantify how each of these factors influences the likelihood that a married woman participates in the labor force. The estimated coefficients from the model above need to be interpreted using the odds ratio. The odds ratio (OR) for each coefficient is calculated by exponentiating the estimated coefficient. This is because the logistic regression model is in the log-odds form, and exponentiating the coefficient converts the log-odds to odds, using the formula:

$$Odds\ ratio = e^{\beta k}$$

$$\tag{2}$$

The odds ratio $e^{\beta k}$ represents the change in the odds of being employed (working) versus being unemployed (not working) associated with a specific individual characteristic. For example, if $e^{\beta k}$ corresponds to having a higher education level, then $e^{\beta k}$ indicates how much more (or less) likely individuals with higher education are to be employed compared to those without higher education, holding all other factors constant. An odds ratio greater than 1 suggests an increase in the likelihood of employment for individuals with that characteristic, while an odds ratio less than 1 suggests a decrease.

IV. RESULT AND DISCUSSION

Based on the research objective, which is to determine the probability of married women to work, logistic regression analysis is used in the analysis. Table 4.1 shows the results of the logistic regression results:

Independent variables	β	S.E.	Odds ratio	Prob	Exp (β)	95% C.I. for Exp (β)	
						Lower	Upper
Constant	1,780	0,002	5,934	0,000	46,38	1,705	1,856
Secondary Education	-0,090	0,030	0,913	0,000***	-4,76	-0,128	-0,053
High Education	0,038	0,028	1,039	0,324	0,99	-0,038	0,115
Training	0,003	0,178	1,003	0,913	0,11	-0,058	0,065
Formal	1,208	0,007	3,347	0,000***	40,20	1,149	1,266
Urban	-0,109	0,012	0,896	0,000***	-6,11	-0,144	-0,074
Age	0,003		1,003	0,000	4,33	0,001	0,004
Pseudo R²	0,0272						
Prob Chi²	0,0000						
Number of observations	149.508						

Table 1. Logistic Estimation Results on All Observation
Source: Data Estimation (2024)
*Note: significance level ***1%, **5%, *10%*

The estimation results reveal that factors such as gender, years of schooling, age, and training significantly enhance the probability of being employed. In contrast, the place of residence does not significantly influence the likelihood of employment. This suggests that while individual characteristics and educational background play a crucial role in determining employment chances, the geographic location—whether urban or rural—does not notably impact the probability of working. The variables of secondary education show that the opportunity of women to work after marriage is 0,913 times. While, the opportunity for women that have higher education show higher value, that is 1,039 times higher probability. Therefore, this study found that women with a higher education are more likely to work after they get married. Moreover, independent variable of having training experience or certification shows the opportunity for married women to work is 1,003 times higher. Women who experienced working in formal sector are also more likely to continue working after married with 3,347 times higher probability. The last variable is age shows that the opportunity for married women to work is 1,003 times higher along with the increasing age.

These findings align with earlier research conducted in West Nusa Tenggara, which indicates that women who are part of the workforce are inclined to work, particularly when they have higher education levels. This increased education often leads them to utilize their leisure time for earning money (Yuniati, 2019). Furthermore, higher education has been shown to significantly impact women's likelihood of working in the formal sector. Additional studies suggest that attaining higher education can also enhance family welfare by influencing women to pursue employment after marriage

(Bunsaman & Taftazani, 2018). To explore these dynamics further, the study involves an analysis that separates observations into urban and rural categories to provide a more detailed understanding of how these factors play out in different settings.

Dependent: Working	Rural			Urban		
Independents	β	Odds ratio	Prob	β	Odds ratio	Prob
Constant	1,454	4,282	0,000	1,884	6,582	0,000
Secondary Education	-0,111	0,894	0,001***	-0,069	0,932	0,003***
High Education	0,019	1,019	0,715	0,079	1,083	0,179
Training	-0,007	0,992	0,860	0,024	1,025	0,602
Formal	1,389	4,013	0,000***	0,998	2,713	0,000***
Age	0,008	1,008	0,000***	0,001	1,001	0,247
Pseudo R^2	0,0473			0,0158		
Prob Chi^2	0,0000			0,0000		
Number of observations	57.738			91.770		

Table 2. Logistic Result based on Rural-Urban Classification
Source: Data Estimation (2024)
*Note: significance level ***1%, **5%, *10%*

The analysis differentiating between rural and urban areas reveals that the trend of women working after marriage is quite similar in both settings. According to the odds ratio, women with higher education in rural areas have a 1.019 times greater likelihood of working after marriage. This pattern is also observed in urban areas, where women with higher education have a slightly higher opportunity—1.083 times more—compared to those with only primary or secondary education. These findings align with the research by of Schaner & Das (2016) and Klasen et al., (2021), which indicates that younger women in urban areas have notably increased their participation in the labor force in recent years, primarily through wage employment. Conversely, younger women in rural areas have shown a decrease in labor force participation, often transitioning away from informal, unpaid work to formal wage jobs. Schaner & Das (2016) also highlighted that wage jobs are generally more appealing compared to other types of employment, although many women leave these positions due to challenges related to family and childcare responsibilities.

Samarakoon & Parinduri (2015) and Efendi et al., (2023) argued that education significantly empowers women in middle-income countries such as Indonesia. In a broader context, recent research by Le & Nguyen (2021) has demonstrated that education is positively linked to women's authority in intra-household decision-making, encompassing both financial and non-financial aspects.

Additionally, education helps mitigate relational friction and reduces women's exposure to psychological abuse. However, contrary viewpoints are presented by Rohman (2013) , Chattier (2013), and Ahmed & Hyndman-Rizk (2020), who mentioned that education alone does not ensure women's empowerment. They contend that education may not adequately address the economic, cultural, and social barriers that women face, suggesting that while education is beneficial, it is not a comprehensive solution to these pervasive constraints. Besides that, families significantly influence women's educational choices, with family conservatism often impacting the number of years women spend in school. Research conducted by Dildar (2015) in Turkey reveals that approximately fifty percent of the women interviewed had their schooling decisions made by their families, predominantly by their fathers. These paternal decisions were largely influenced by cultural values, concerns about family honor, and efforts to control or monitor their daughters' activities. Dildar (2015) also identified a negative relationship between the number of years of schooling and both patriarchal values and family conservatism. This indicates that as patriarchal and conservative family values increase, the number of years women spend in education tends to decrease.

BPS (2021c) reports that the net enrollment rate for female high school education in Indonesia, both in rural and urban areas, has outperformed men. In 2021, the net participation rate for women in rural areas is 59,10 percent while men's is 56,27 percent, while in urban areas the difference between the two is slightly lower, namely 64,71 percent for women and 64.51 percent for men. This data shows a good indication that at least between rural and urban areas, access to secondary education for women has been fairly open and not too unequal to the opportunities obtained by men. In the Gender Empowerment Index, BPS (2020b) also reports that since 2010 this index has increased from 68,15 in 2010 to 75,57 in 2020. This index is one of the indicators used to measure the implementation of justice and gender equality based on political participation and economy. Although at the same time BPS (2020) noted that the proportion is still relatively low for women to occupy managerial positions in Indonesia. For example, at the level of senior secondary education graduates, only about 28.85 percent of the positions are occupied by women. Meanwhile, for higher education levels such as diplomas and universities, the proportion occupied by women is 35.19 percent and 28.60 percent, respectively. In line with the findings of this study, higher levels of education increase women's participation in the labor market in both rural and urban areas.

Dependent: Working	Self-employed			Employees		
Independents	β	Odds ratio	Prob	β	Odds ratio	Prob
Constant	2,463	11,745	0,000	1,651	5,214	0,000
Secondary Education	-0,032	0,967	0,350	0,168	1,183	0,017**
High Education	-0,176	0,838	0,014**	0,483	1,622	0,000***
Training	-0,204	0,815	0,000***	0,016	1,016	0,785
Urban	-0,083	0,919	0,009***	0,132	1,141	0,007***
Age	-0,0006	0,999	0,683	0,270	1,027	0,000***
Pseudo R^2	0,0014			0,0122		
Prob Chi^2	0,0000			0,0000		
Number of observations	53.446			38.679		
Dependent: Working	Freelancer			Family/Unpaid Worker		
Independents	β	Odds ratio	Prob	β	Odds ratio	Prob
Constant	3,715	41,064	0,000	1,560	4,760	0,000
Year of schooling*)	-0,050	0,950	0,009***	-	-	-
Secondary Education	-	-	-	-0,197	0,820	0,000***
High Education	-	-	-	-0,239	0,787	0,001***
Training	-0,164	0,848	0,634	-0,172	0,841	0,002***
Urban	-0,110	0,895	0,432	-0,551	0,575	0,000***
Age	0,0009	1,000	0,890	0,0009	1,0009	0,333
Pseudo R^2	0,0052			0,0136		
Prob Chi^2	0,0269			0,0000		
Number of observations	7.346			50.038		

Table 3. Logistic Result based on Type of Work
Source: Data Estimation (2024)
*Note: significance level ***1%, **5%, *10%*
*)Year of schooling was used due to ommited 'secondary education' and 'high education' variables, as most of the observations are in primary education.

The study's classification by job type reveals that higher education and secondary education only significantly enhance the likelihood of women working after marriage within the category of formal employees. Specifically, women with higher education have a greater chance of employment after marriage compared to those with secondary education. The odds ratio indicates that women with higher education are 1.622 times more likely to be employed after marriage than those with primary or secondary education. Overall, the study shows that women with higher education levels (such as diplomas or university degrees) are more inclined to continue working after marriage. However, this effect does not extend to self-employed individuals, casual workers, or family workers. The findings suggest that, on average, secondary-level education does not significantly impact the labor market participation of married women in Indonesia. Instead, the increased likelihood of working is primarily associated with higher education and formal employment settings.

Similar to previous studies, this research identifies several key factors influencing the decision to work after marriage, including age, higher education, and training. The importance of higher education in facilitating women's entry into the labor market is highlighted by Aditina & Sugiharti (2019). Many women are motivated to work in order to pursue their academic interests and gain experience for personal development, which often reflects the socioeconomic conditions of the upper middle class (Rizky & Santoso, 2018; Lentz, 2020). In developing countries, rapid declines in fertility rates, significant increases in female education, and favorable economic conditions have theoretically encouraged greater female labor force participation. However, the extent to which women's participation in the labor force increases is influenced by several factors. These include the economic conditions of their households, the availability of jobs suitable for highly educated women relative to their numbers, whether growth strategies are fostering female employment, and how effectively women can overcome occupational barriers within sectors where they are predominantly employed (King, Klasen, Porter, & Lomborg, 2009; Majlesi, 2016; Klasen, 2019).

The growing involvement of women in the labor market has significantly shifted societal perspectives, demonstrating that women can play roles beyond the domestic sphere and even lead in various professional fields (Anggraeni, 2015; Kabeer, 2021). According to Sulaeman & Silvia (2019), while there has been a positive shift away from patriarchal views, persistent stigmas still hinder educated women from pursuing careers outside of traditional white-collar jobs. To foster greater female participation, it is essential to encourage women to enter and excel in sectors like health, education, and public service. Moreover, expanding women's presence in these fields will likely require addressing and dismantling occupational barriers that restrict their advancement into higher-level positions traditionally dominated by men, such as roles in medicine, law, and academia. These efforts are crucial in reducing gender inequality in Indonesia and enhancing the overall quality of human capital. Increasing women's roles across various sectors aims to bolster their position, capabilities, independence, and resilience, contributing to broader societal progress (Kurniasari, 2021).

The rise in women's labor market participation has significant implications for the regulation of women's rights within the workplace. In Indonesia, the legal framework for protecting women workers is established through various laws and regulations. These include Law Number 13 of 2003 on Manpower, Law Number 8 of 1981 on Wage Protection, Regulation of the Minister of Manpower

Number 8 Per-04/Men/1989 on night work requirements for female workers, and the Decree of the Minister of Manpower and Transmigration Number Kep. 224/Men/2003, which outlines the obligations of employers who employ women between 11 PM and 7 AM.

These regulations ensure that female workers have rights related to working hours, protection during menstruation, pregnancy, and childbirth, as well as provisions for breastfeeding or pumping breast milk and access to medical check-ups during pregnancy and postpartum. Despite these legal protections, Susiana (2019) notes that many of these rights remain unmet due to both internal and external factors. Internally, there is often a lack of awareness and understanding among women workers about their rights. Externally, challenges such as entrenched patriarchal cultural norms, marginalization in the workplace, stereotypes against women, and insufficient socialization contribute to the inadequate fulfillment of these rights. This underscores the need for government attention and action as women's participation in the Indonesian labor market continues to grow.

V. CONCLUSION

This study found that higher education significantly increases the likelihood of married women participating in the labor force in Indonesia, particularly in formal employment sectors like employees, staff, and laborers. This trend is consistent across both rural and urban areas. However, this effect does not extend to self-employed, casual, or family workers. The study implies that while secondary education does not substantially affect labor market participation for married women, higher education does, highlighting the importance of educational attainment for improving female labor participation.

To improve female employment quality, policies need to address both the demand and supply sides of the labor market. Expanding access to secondary and higher education is crucial, along with fostering public discourse to dismantle stigmas around female employment. Effective labor policies that support women returning to work post-childbirth, such as childcare provision and family-friendly job regulations, are essential. Protecting women's workplace rights and increasing educational attainment in rural areas are also critical. The study suggests that further research should explore how family, cultural, and other external factors influence women's labor market decisions, as these factors were not thoroughly examined in the current analysis.

REFERENCES

Aditina, N., & Sugiharti, L. (2019). The Effect of Internet Technology on Women's Decision to Work at Home. *Jurnal Economia*, *15*(2), 209–220.

Agarwal, B. (1994). Gender and command over property: A critical gap in economic analysis and policy in South Asia. *World Development*, *22*(10), 1455–1478.

Ahmed, R., & Hyndman-Rizk, N. (2020). The higher education paradox: Towards improving women's empowerment, agency development and labour force participation in Bangladesh. *Gender and Education*, *32*(4), 447–465.

Anggadwita, G., Luturlean, B. S., Ramadani, V., & Ratten, V. (2017). Socio-cultural environments and emerging economy entrepreneurship: Women entrepreneurs in Indonesia. *Journal of Entrepreneurship in Emerging Economies*.

Anggraeni, N. . (2015). *Determinan Alokasi Waktu Bekerja Perempuan Menikah di Indonesia*. Universitas Indonesia.

Assaad, R., Hendy, R., Lassassi, M., & Yassin, S. (2020). Explaining the MENA paradox: Rising educational attainment, yet stagnant female labor force participation. *Demographic Research*, *43*, 817.

Baten, J., De Haas, M., Kempter, E., & Meier zu Selhausen, F. (2021). Educational gender inequality in Sub-Saharan Africa: A long-term perspective. *Population and Development Review*, *47*(3), 813–849.

Becker, G. S. (1993). Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education. In *NBER*. University of Chicago Press.

Becker, G. S., Hubbard, W. H. J., & Murphy, K. M. (2010). Explaining the worldwide boom in higher education of women. *Journal of Human Capital*, *4*(3), 203–241.

Becker, S. O., & Woessmann, L. (2019). How Luther's quest for education changed German economic history: 9+ 5 theses on the effects of the Protestant Reformation. *Advances in the Economics of Religion*, 215–227.

Bertrand, M., Cortés, P., Olivetti, C., & Pan, J. (2016). *Social norms, labor market opportunities, and the marriage gap for skilled women*. National Bureau of Economic Research.

Blau, F. D., & Kahn, L. M. (2017). The gender wage gap: Extent, trends, and explanations. *Journal of Economic Literature*, *55*(3), 789–865.

BPS. (2022-a). *APM SMU Perkotaan Menurut Jenis Kelamin 2019-2021*.

BPS. (2022-b). *Indeks Pemberdayaan Gender (IDG) 2019-2020*.

BPS. (2022-c). *Keadaan Ketenagakerjaan Indonesia Agustus 2021*.

BPS. (2022-d). *Rata-Rata Lama Sekolah Penduduk Umur ≥ 15 Tahun Menurut Jenis Kelamin 2019-2021*.

BPS. (n.d.-e). *Tingkat Proporsi perempuan yang berada di posisi managerial, menurut tingkat pendidikan 2018-2020.*

Bunsaman, S. M., & Taftazani, B. M. (2018). Peranan Perempuan Dalam Meningkatkan Kesejahteraan Ekonomi Keluarga (Studi Tentang Peranan Petugas K3L Perempuan Universitas Padjadjaran Jatinangor (Zona: Rektorat)). *Prosiding Penelitian Dan Pengabdian Kepada Masyarakat*, *5*(2), 146–157.

Cameron, L., Suarez, D. C., & Rowell, W. (2020). Female labour force participation in Indonesia: Why has it stalled. *Achieving Inclusive Growth in the Asia Pacific*, *241*.

Chang, S. (2020). *Chinese Women, Marriage and Gender: exploring the idea of women and marriage over time in the context of China.*

Chattier, P. (2013). Does schooling and work empower women in Fiji? Or have gender inequalities persisted and why? *Global Change, Peace & Security*, *25*(1), 61–76.

Cortes, G. M., Jaimovich, N., & Siu, H. E. (2018). *The" end of men" and rise of women in the high-skilled labor market*. National Bureau of Economic Research.

D'Costa, S. (2024). Re-evaluating the urban wage premium: the changing roles of geographical and job transitions for women and men1, 2. *Regional Science and Urban Economics*, 104038.

Dildar, Y. (2015). Patriarchal norms, religion, and female labor supply: Evidence from Turkey. *World Development*, *76*, 40–61.

Ebenezer, M., Samuel, A., & Sanusi, G. P. (2021). Effectiveness of fiscal federalism for poverty reduction in Nigeria: an analysis of federal and state governments' expenditures. *SN Business & Economics*, *1*(9), 1–19.

Efendi, F., Sebayang, S. K., Astutik, E., Reisenhofer, S., & McKenna, L. (2023). Women's empowerment and contraceptive use: Recent evidence from ASEAN countries. *PloS One*, *18*(6), e0287442.

Etim, E., & Daramola, O. (2020). The informal sector and economic growth of South Africa and Nigeria: A comparative systematic review. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(4), 134.

Fincher, L. H. (2016). *Leftover women: The resurgence of gender inequality in China*. Bloomsbury Publishing.

Gammage, S., Sultana, N., & Glinski, A. (2020). Reducing vulnerable employment: Is there a role for reproductive health, social protection, and labor market policy? *Feminist Economics*, *26*(1), 121–153.

Goyal, P., & Yadav, V. (2014). To be or not to be a woman entrepreneur in a developing country. *Psychosociological Issues in Human Resource Management*, *2*(2), 68–78.

Han, J.-S., & Lee, J.-W. (2020). Demographic change, human capital, and economic growth in Korea. *Japan and the World Economy*, *53*, 100984.

Kabeer, N. (2021). Gender equality, inclusive growth, and labour markets. In *Women's Economic Empowerment* (pp. 13–48). Routledge.

Kapadia-Kundu, N., Tamene, H., Ayele, M., Dana, F., Heliso, S., Velu, S., Berhanu, T., Alemayehu, G., Leslie, L., & Kaufman, M. (2022). Applying a gender lens to social norms, couple communication and decision making to increase modern contraceptive use in Ethiopia, a mixed methods study. *Reproductive Health*, *19*(Suppl 1), 138.

King, E., Klasen, S., Porter, M., & Lomborg, B. (2009). Gender and Development. *Global Crises, Global Solutions. Cambridge University Press, Cambridge*.

Klasen, S. (2019). What explains uneven female labor force participation levels and trends in developing countries? *The World Bank Research Observer*, *34*(2), 161–197.

Klasen, S., Le, T. T. N., Pieters, J., & Santos Silva, M. (2021). What drives female labour force participation? Comparable micro-level evidence from eight developing and emerging economies. *The Journal of Development Studies*, *57*(3), 417–442.

Le, K., & Nguyen, M. (2021). How education empowers women in developing countries. *The BE Journal of Economic Analysis & Policy*, *21*(2), 511–536.

Lentz, C. (2020). Doing being middle-class in the global South: comparative perspectives and conceptual challenges. *Africa*, *90*(3), 439–469.

Maier, F. (2002). Women's Work and Economic Development. In *Gender and Work in Transition* (pp. 83–91). Springer.

Majlesi, K. (2016). Labor market opportunities and women's decision making power within households. *Journal of Development Economics*, *119*, 34–47.

Mammen, K., & Paxson, C. (2000). Women's work and economic development. *Journal of Economic Perspectives*, *14*(4), 141–164.

Meria, A., Hasnah, R., Hakim, L., Amelia, R., & Nursa, R. A. (2023). The Role of Gender-Responsive PTKIS in Women's Career Development. *TSAQAFAH*, *19*(1), 157–188.

Petrongolo, B., & Ronchi, M. (2020). Gender gaps and the structure of local labor markets. *Labour Economics*, *64*, 101819.

Psacharopoulos, G., & Patrinos, H. A. (2018). Returns to investment in education: a decennial review of the global literature. *Education Economics*, *26*(5), 445–458.

Rizky, J., & Santoso, M. B. (2018). Faktor pendorong ibu bekerja sebagai K3L Unpad. *Prosiding Penelitian Dan Pengabdian Kepada Masyarakat*, *5*(2), 158–164.

Rohman, A. (2013). Does Education Empower the Indonesian Women? *Rohman, Arif.(2013). Does Education Empower the Indonesian Women*, 212–217.

Samarakoon, S., & Parinduri, R. A. (2015). Does education empower women? Evidence from Indonesia. *World Development*, *66*, 428–442.

Schaner, S., & Das, S. (2016). Female labor force participation in Asia: Indonesia country study. *Asian Development Bank Economics Working Paper Series*, *474*.

Silliman, J. (1996). *A Field of One's Own: Gender and Land Rights in South Asia*. JSTOR.

Sulaeman, A. S., & Silvia, V. (2019). Pendapatan Asli Daerah, Transfer Daerah, Dan Belanja Modal, Pengaruhnya Terhadap Pertumbuhan Ekonomi Regional Di Indonesia. *Jurnal Aplikasi Akuntansi*, *4*(1), 97–112.

Susiana, S. (2019). Pelindungan hak pekerja perempuan dalam perspektif feminisme. *Aspirasi: Jurnal Masalah-Masalah Sosial*, *8*(2), 207–221.

Suwarno, P. (2019). Equality in education and employment for sustainable development of diverse Indonesia: Enhancing equal opportunity, volunteerism, and philanthropy. *1st Non-Formal Education International Conference*, 1–8.

Thomas, R., Cooper, M., Cardazone, G., Urban, K., Bohrer, A., Long, M., Yee, L., Krivkovich, A., Huang, J., & Prince, S. (2020). Women in the workplace 2020. *New York: McKinsey & Company*.

Verick, S. (2014). Female labor force participation in developing countries. *IZA World of Labor*.

Williams, T. M., & Wolniak, G. C. (2020). Unpacking the "female advantage" in the career and economic impacts of college. *The Wiley Handbook of Gender Equity in Higher Education*, 5–28.

World Bank. (2019). *ADAPTING SKILLS TRAINING TO ADDRESS CONSTRAINTS TO WOMEN'S PARTICIPATION*.

Xiao, S., & Asadullah, M. N. (2020). Social norms and gender differences in labor force participation in China. *Feminist Economics*, *26*(4), 114–148.

Yadav, V., Unni, J., Naik, R., & Dutta, S. (2022). Gender differentials in entrepreneurship: insights from a multi-method study. *The Journal of Entrepreneurship*, *31*(1), 30–64.

Yeboah, F. K., & Jayne, T. S. (2020). Africa's evolving employment trends. In *The Transformation of Rural Africa* (pp. 27–56). Routledge.

Yuniati, M. (2019). Profil Tenaga Kerja Perempuan Berdasarkan Umur, Tingkat Pendidikan, Sektor Formal, Informal Di Provinsi NTB Tahun 2016–2018 Beserta Analisis Ekonominya. *Jurnal Bina Ilmiah. Mataram NTB*, *13*(12).