

The Impact of Educational Attainment and Professional on Women's Income Contribution in Indonesian Human Resource Management

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Abstract: *This study analyzes the influence of women professional workers and women's education levels on women's income contributions. The data used are secondary data obtained from the Central Statistics Agency (BPS), using data at the provincial level for 2018-2022. The method used in this study is panel data regression. This study found that the variable of women professional workers positively affects women's income contributions. In addition, the results show that the variable of women's education level positively affects the variable of women's income contributions, especially elementary and high school education levels.*

Keywords: *Women's Income Contribution, Women's Professional Workers, Women's Education Level*

Abstrak : *Penelitian ini memiliki tujuan untuk menganalisis pengaruh perempuan tenaga profesional dan tingkat pendidikan perempuan terhadap sumbangan pendapatan perempuan. Data yang digunakan merupakan data sekunder yang di peroleh dari Badan Pusat Statistika (BPS), menggunakan data ditingkat provinsi tahun 2018-2022. Metode yang digunakan pada penelitian ini adalah regresi data panel. Pada penelitian ini memperoleh hasil bahwa variabel perempuan tenaga profesional berpengaruh positif terhadap variabel sumbangan pendapatan perempuan. Selain itu, hasil yang diperoleh adalah variabel tingkat pendidikan perempuan berpengaruh positif terhadap variabel sumbangan pendapatan perempuan, terutama tingkat pendidikan sekolah dasar dan sekolah menengah atas.*

Kata Kunci: *Sumbangan Pendapatan Perempuan, Perempuan Tenaga Profesional, Tingkat Pendidikan Perempuan.*

INTRODUCTION

Indonesia has experienced tremendous socio-economic changes recently, especially regarding women and the employment sector. The increasing number of women participating in various professional industries has triggered a change in traditional views on gender roles in Indonesian society. Women's income is essential for family welfare and supports

overall national development. This study focuses on two main variables: the influence of women professional workers and education levels on their income contributions in Indonesia. (Marhaeni, 2011)

The driving factors for women's participation in the workforce are based on various conditions, such as socio-cultural phenomena, legislative reforms, and

economic needs. Although Indonesia is known for its male-dominated workforce, women's participation in urban areas is increasing. Greater access to education and employment opportunities has helped more women enter the formal or professional workforce in roles in sectors such as health, education, and business. This shift shows the importance of recognizing women's contributions to household income and national development through labor. (Ananta, 1990)

Education has been one of the most critical factors in increasing income for decades, leading to intergenerational wealth-building and economic mobility—especially for women. Most agree that Indonesia has made significant progress in women's education in recent decades. In response to gender inequality in education, several government policies have been adopted to increase women's participation rates in primary, secondary, and tertiary education. With this increased access to education, women are better prepared to enter the professional labor market and thus can earn their incomes. (Sulistiyowati, 2015). The findings suggest that women's level of education is closely related to their contribution to household income. Women who are socioeconomically empowered and have attained higher levels of education are more likely to find better-paying and more secure jobs. In addition, more educated women can engage in jobs or businesses that benefit their households and the economy as a whole.

In addition to improving their households, women's incomes have ripple effects across the broader economy. Increased incomes for women's professionals reduce poverty, improve health, and open up future educational opportunities. Working women are more

likely to invest in their children's health and education—a positive cycle of empowerment and economic growth. Efforts toward a broader development strategy should focus on policies that encourage women's labor force participation and educational attainment so that the benefits of these ripple effects can be realized. (Mead et al., 2001)

However, barriers to full gender equality in the workplace persist. Gender discrimination persists in various forms, such as wage disparities, low numbers of women in top management positions, and social norms that consider childcare to be women's responsibility. Addressing these issues requires comprehensive solutions that include better policies, changes in socio-cultural norms, and systematic efforts to support women in balancing their work and family lives. Thus, when Indonesia takes action on these issues, the potential of the women workforce that can contribute significantly to economic conditions can be further optimized. (Malau, 2015)

In conclusion, women's participation in income-generating activities is strongly influenced by whether they work and their level of education in Indonesia. Empowerment is achieved by having more women in the workforce and higher levels of education. This will enhance economic development. This study aims to uncover some of these dynamics and provide observations on the influential role of women in the Indonesian economy. Recognizing and supporting women is essential, and their contributions will be critical to Indonesia's continued prosperity as we pave the way for the future together. (Pandean et al., 2018)

Therefore, this study will focus on women professional workers and how

women's education level affects women's income contribution in Indonesia. This study aims to determine the influence of women professional workers and women's education level on women's income contribution.

LITERATURE REVIEW

Human Capital Theory

Human Capital Theory assumes that humans are a form of capital or capital goods like other capital goods. Based on Todaro (2015) explaining the concept of Human Capital, it is necessary to look at someone who invests to obtain a higher level of consumption in the future—investing in human capital in the form of education and health. This explains that the higher a person's education, the more someone participates in training and the higher their abilities and skills. In addition, in the health sector, it is interrelated with education. Having a high education and a healthy body will increase productivity. Higher education will also affect a person's level of awareness of health.

Human capital theory explains that individuals invest in their education and skills that will be used to increase their productivity and earning potential in the labor market. Usually, this theory is relevant to the influence of women professional workers and women's education levels on women's income contributions. When women achieve a much higher level of education, they can increase human capital and contribute to overall economic productivity. Investing in education can sometimes lead to better job opportunities, higher wages, and increased participation in professional fields traditionally dominated by men (Bae & Patterson, 2014). This dynamic creates a positive feedback loop, where more

women can enter the workforce with higher education. It will also inspire future generations to continue to improve their education, thereby raising the overall skill level of the women workforce. This then contributes to economic growth and development by increasing the supply of educated workers. (Brixiová et al., 2020)

In addition, Human Capital Theory explains the importance of continuing education and developing skills. In an economy that can change rapidly, women who choose to establish themselves through lifelong learning and professional development will be better positioned to adapt to new challenges and opportunities. Adaptability not only increases individual income but can also strengthen economic resilience. Thus, this theory underscores education's important role in empowering women, increasing their income contribution, and driving broader economic progress. (Mayilyan & Yedigaryan, 2022)

The Economics of Gender Equality

The economics of gender equality in the workforce emphasizes the importance of equal opportunities and fair treatment for women in the workplace. This theory highlights that when women are given the same opportunities to learn and truly advance professionally, their contributions to the human economy can be substantial. The lack of women in specific industries and leadership positions primarily stems from systemic barriers and biases built around their possibilities. By attempting to address this injustice, the economy will benefit from the full potential of women's professional workers, which will bring about increased innovation and productivity (Fakih, 2013).

This theory also emphasizes the role of policies that promote gender equality, such as equal pay, parental leave, and flexible work arrangements. When organizations enforce these policies, women are allowed to advance in their careers. This aims to increase women's income and enables them to stay in the workforce, which impacts economic stability. Additionally, women who succeed in the economy reinvest their money into their families and communities, increasing social output and economic growth. (Cerrato & Cifre, 2018).

In addition, Labor Economics speaks about Gender Equality, where the presence of women leaders impacts organizational culture and decision-making processes. A more diverse team, including women, produces better decision-making formulations due to diverse perspectives and experiences. The number of women in positions of power is increasing; they can speak with strength about policies that are good for all workers, and therefore, women in positions of power accelerate proximity and equality in this dimension. This shift helps increase women's income contributions and promote economic progress by making necessary changes to generate a dynamic and innovative workforce. The primary responsibility lies in the role of accountability. (Anderson, L. and Shiness, K. J., 2003)

Social Capital Theory

Social Capital Theory emphasizes networks, social relationships, and connections that allow individuals to achieve their economic goals. In the case of professional women workers, social capital helps create access to job opportunities, mentorship, and support

systems that enable women to earn a good income. Women who succeed in entrepreneurial leadership and become cultural icons who earn money through publicity also involve social capital. Women engaged in informal training networks undergo such experiences more quickly. They feel mentored because they have access to trends in the current job market. The Social Capital Theory emphasizes networks, social relationships, and connections that provide means for people to achieve their economic goals. In the case of professional women workers, social capital helps provide access to job opportunities, guidance, and support systems for women to generate good income. Women who succeed in entrepreneurial leadership and cultural icons who earn money through publicity also involve social capital. Women engaged in informal training networks experience such experiences more quickly. They feel guided because they can access trends in the current job market. (Lin et al., 2017)

This theory also highlights the importance of women's communities and collaboration among colleagues. When women unite and share knowledge, experiences, and resources, they build a strong foundation for shared economic empowerment. United women, leading organizations, and support groups can provide valuable networking opportunities, mentoring programs, and workshops that can help skills development. These financial benefits not only enhance women's economic independence individually but also support the vitality of the community's economy by encouraging heads of households to cooperate. (Ghebremichael, 2013)

In addition, Social Capital Theory emphasizes the importance of trust and social relationships in economic affairs. Women with strong social networks are more likely to receive referrals and recommendations that can help them obtain employment opportunities and advancement. In addition, the social relationships that individuals build can assist in professional settings and be leveraged to advance their interests. Therefore, when individuals leverage their networks to advance their careers, they increase their income and help foster a more equitable and prosperous economy. (Lee, 2015)

METHODOLOGY

Research Data

The data used in this study are secondary. The variables used in the survey are women's income contributions as dependent variables. The variables of interest are women professional workers and women's education levels—data obtained from the official website of the Central Statistics Agency (BPS). The data used are provincial in Indonesia for 2018-2022.

Variables Data

Table 1. Variable Data

Category	Symbol	Variable
Dependent Variable	Spp	Women's income contribution
Interest Variable	ptp	Women's professional workers
	psd	Women's education level (Primary)
	psmp	Women's education level (Middle)
	psma	Women's education level (Secondary)
Control Variable	up	Regional minimum wage

ipmp	Human Development Index (Women)
sp	Marital Status
ikps	Stunting management index
kkes	Health complaints
skbp	KB Status (Ever used)
skbs	KB Status (Currently wearing)
skbt	KB Status (Not use)
ai1	Internet (13-15 y.o)
ai2	Internet (16-18 y.o)
ai3	Internet (19-24 y.o)
ai4	Internet (25+ y.o)

Panel Data Regression

1. Common Effect Model

The Common Effect Model is the simplest model based on the assumption that the intercept and slope are always good between time and individuals. The model equation is written as follows (Gujarati, 2015):

$$Y_{it} = \beta_0 + \sum_{k=1}^n \beta_k X_{kit} + \varepsilon_{it}$$

Information:

i = number of observations (1,2,...,n)

t = number of times (1,2,...,t)

n x t = number of panel data

ε = residual

2. Fixed Effect Model

Each object has different conditions, and there can be differences when the analysis is carried out. One object may be very different in condition at another time. The regression results must show the difference in constants between objects even though the coefficients are the same. The Fixed Effect Model is a regression

with a fixed effect, which means that one observation object has a constant that remains the same in various periods. So, the equation is (Gujarati, 2015):

$$Y_{it} = \beta_0 + \sum_{k=1}^n \beta_k X_{kit} + \varepsilon_{it}$$

Information:

i = number of observations (1,2,...,n)

t = number of times (1,2,...,t)

n x t = number of panel data

ε = residual

3. Random Effect Model

There are assumptions about the difference in intercepts and constants caused by residuals and differences between units and periods that occur randomly. This model has one requirement: the cross-section data must be greater than the number of coefficients. The equation of this model is (Gujarati, 2015):

$$Y_{it} = \beta_{0i} + \sum_{i=1}^m \sum_{k=1}^n \beta_{ki} X_{kit} + \varepsilon_{it}$$

Information:

i = number of observations (1,2,...,n)

t = number of times (1,2,...,t)

n x t = number of panel data

ε = residual

RESULT AND DISCUSSION

Random Effect Model Result

Table 2. Random Effect Model

Variable	Coefficient	P-value
ptp	0.021	0.046**
psd	0.014	0.013**
psmp	0.018	0.086***
psma	0.016	0.007*
up	0.001	0.080***
ipmp	0.093	0.038**
sp	0.009	0.360
ikps	0.006	0.583

kkes	0.010	0.038**
skbp	0.000	0.775
skbs	0.001	0.059***
skbt	0.001	0.045**
ai1	0.004	0.584
ai2	0.012	0.287
ai3	0.005	0.639
ai4	0.008	0.646
_cons	25.049	0.000*

Information:

* : Significance Level 1%

** : Significance Level 5%

*** : Significance Level 10%

Based on the table above, the results obtained by the variable of women professional workers positively influence the variable of women's income contribution, with a significance level of 5% ($\alpha = 0.05$) and a coefficient value of 0.021. For every increase in women professional workers by one person, women's income contribution will increase by 0.021 percent, assuming *ceteris paribus*.

The variable of women's education level in elementary school positively influences women's income contribution. With a significance level of 5% ($\alpha = 0.05$) and a coefficient value of 0.014, it can be explained that for every increase in women's education level in elementary school by one person, women's income contribution will increase by 0.014 percent, assuming *ceteris paribus*.

The variable of women's education level in high school positively influences women's income contribution with a significance level of 5% ($\alpha = 0.05$) and a coefficient value of 0.016. So, it can be explained that for every 1 percent increase in women's education in secondary schools, women's income contribution will increase by 0.016 percent, assuming *ceteris paribus*.

The Relationship Between Women's Income Contribution and Women's Professional Workers

The results obtained show that there is a positive relationship between women professionals and women's income contributions. If we look at the conditions in Indonesia, there is a trend that can expand opportunities for gender equality in the world of work. Until 2023, the Indonesian government has made various efforts with various organizations to empower women through education and professional development. Empowerment efforts have had an impact when women enter the labor market and take on roles as professional workers. Ultimately, What happens not only increases individual income but will positively impact the country's economy (World Bank, 2023).

The increase in the number of women professionals is related to several factors, including increased access to education and training. Efforts have been made to improve women's ability to obtain higher education, which has a positive impact, with many women pursuing degrees in economics and business, engineering, law, and health. The occurrence of increasingly advanced education will equip women to compete in the job market. This increase will bring professional opportunities and earn high salaries, contributing to their income later.

In addition, the emergence of women role models in many industrial fields has finally motivated and encouraged the younger generation of women to have aspirations to pursue a career in the professional field. Over time, women will be able to have leadership positions and be recognized in their fields. They can inspire others, forming a positive circle that will further encourage women's

participation in the workforce. Research explains that women tend to be motivated to do the same if they see other women succeed. Ultimately increasing the contribution of individual or community income (UN Women, 2023).

It is not only beneficial individually but also impacts the Indonesian economy. Women's participation in the world of work will be related to increased household income, improving the standard of living. Investment in education and health for families. According to the McKinsey Global Institute, Indonesia needs to reduce gender discrimination in workforce participation because it can increase Indonesia's GDP by \$28 billion by 2025 (McKinsey, 2023). There is potential for economic growth that supports the growth of women professionals and ensures that contributions are recognized and appreciated. It can be said that the positive influence of women professionals on women's income contributions is visible in the economic scope of development.

Women can become financially independent and contribute to the country's economy through education, role models, and increased workforce participation. Therefore, supporting women's empowerment in the professional field will be very important in encouraging sustainable economic growth and achieving gender equality (World Economic Forum, 2023).

The Relationship Between Women's Income Contribution and Women's Education Level

The results show a positive relationship between women's education level at the elementary school level and the contribution of women's income. The

results show a positive relationship between women's education level at the high school level and the contribution of women's income. In Indonesia, there is an interaction between women's education level and the contribution of women's income. In this condition, the correlation between education and income has been established quite well; a higher level of education will contribute to income or earnings. In Indonesia, the absorption of women workers with elementary school education is more significant because it is associated with informal work. This situation strengthens women's need for higher education to improve economic conditions and contribute more to household and community income (Setyadi, 2022). Elementary school education is a fundamental step to getting a job, even though women workers have yet to find a stable job with a good salary. Women have more or less started their role in earning income, even though they have yet to be financially stable (Yuniashri et al., 2023).

On the other hand, increasing the level of education to the high school level presents several different opportunities for Indonesian women, which, according to the analysis, have a positive impact on women's income contributions. The difference between elementary school graduates is that they can enter higher job qualifications, and employers require advanced skills and knowledge, which align with research results if the level of education is required for women. Even so, pursuing higher education is essential for women to increase their income (Karimah & Susanti, 2022). Higher education is not only helpful in obtaining a bachelor's degree but also equips women with more skills so that they can compete in the labor market. Not only can you gain increased

work skills, but the job position that will be obtained will also produce a higher and more stable salary.

The role of women is not only limited to traditional roles, but higher education can empower women and play a dual role, allowing for full participation in the economy. Opening access to higher education for women will enable them to influence economic decisions in households and communities. Producing broader social benefits. Educated women tend to make better investments in the education and health of their children; this is where there will be a sustainable chain effect, and ultimately, it can improve the long-term economy. In Indonesia, when women have higher education, they have the potential to make changes in their households and society, which will contribute to economic growth (Yadav, 2022).

CONCLUSION

The results of the data analysis showed that the variable of women professional workers has a positive influence on women's income contribution. So, it is explained that the increasing number of women who take part in professional roles will contribute to increasing household income, thereby increasing the household's economic status and independence.

Furthermore, the results of the data analysis showed that the variable of women's education level positively influences the contribution of women's income. Specifically, it positively influences the elementary and high school levels. This explains the need to invest in women's education, which is used for economic empowerment. It can ensure that girls can gain access to quality education.

Later, society could have a generation of women who would be able to participate in the workforce and compete in the labor market.

It can be concluded that the results obtained are related to each other regarding women's professional workers, women's education levels, and women's income contributions. In order to maximize significant results for policymakers and stakeholders, they can focus on opportunities for initiatives to support and empower women to have access to education and opportunities in the professional field. Thus, society can be fairer in economic development because the gap between discrimination and job opportunities is reduced, ultimately benefiting the entire community regarding sustainable development.

This study has several limitations. First, it relies solely on secondary data from the Central Statistics Agency (BPS) at the provincial level, which may not capture individual-level or household-specific factors. Second, the time frame is limited to 2018–2022, which may not reflect long-term trends. Third, the education variable only includes primary, junior, and senior high school levels, excluding higher education, which could have a more substantial impact. Additionally, the study uses a purely quantitative approach and does not explore qualitative insights such as personal motivations or societal barriers. Lastly, contextual factors such as cultural norms, labor policies, and family support were not examined but may influence women's income contributions.

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