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ABSTRAK

Studi ini menganalisis perkembangan Tingkat Partisipasi Angkatan Kerja (TPAK) perempuan di Indonesia dari sisi permintaan tenaga kerja. Isu TPAK perempuan di Indonesia menjadi sorotan dalam berbagai literatur karena pertumbuhannya yang relatif stagnan selama lebih dari dua dekade di tengah kondisi perekonomian dan ketenagakerjaan Indonesia yang menunjukkan pertumbuhan. Meskipun sempat melalui tren yang stagnan dalam waktu cukup lama, tren TPAK perempuan kemudian terus menunjukkan peningkatan sejak tahun 2016. Kondisi-kondisi ini kemudian menimbulkan pertanyaan tentang faktor apa yang dapat berpengaruh pada TPAK perempuan di Indonesia, terutama dari kondisi yang semula stagnan menjadi tumbuh. Studi ini menggunakan data dari hasil Sakernas dan Susenas pada 366 kabupaten/kota selama tahun 2006-2024. Data tersebut kemudian melalui proses analisis menggunakan metode regresi *balanced panel fixed effect*. Melalui proses analisis tersebut, kemudian diperoleh hasil yang menunjukkan bahwa perubahan permintaan tenaga kerja berpotensi memiliki pengaruh signifikan positif pada perubahan TPAK perempuan. Hasil ini mengindikasikan bahwa partisipasi kerja dari perempuan akan meningkat apabila permintaan tenaga kerja atau lapangan pekerjaan tersedia.

Kata kunci: TPAK perempuan, permintaan tenaga kerja

Klasifikasi JEL: J160, J230

ABSTRACT

This study analyzed Indonesian female labor force participation (FLFP) rate from the labor demand perspective. The issue of FLFP rate in Indonesia has received considerable attention in literatures due to its relative stagnant for more than two decades, despite the Indonesia's economy and employment conditions have continued to grow. Although the FLFP rate experienced a prolonged period of stagnation, it has shown a consistent upward trend since 2016. These phenomenon raises question regarding the factors that influence changes in the Indonesia's FLFP rate. To address this issue, the study examines the relationship between labor demand and FLFP rate using data from the National Labor Force Survey (Sakernas) and the National Socio-economy Survey (Susenas) covering 366 regencies and municipalities during the period 2006-2024. The data are then analyzed using a balanced panel fixed-effects regression model. The estimation results indicate that changes in labor demand have a significant and positive effect on the changes in Indonesian FLFP. This finding suggest that female participation in the labor force is likely to increase when the labor demand rises or employment opportunities expand.

Keywords: FLFP, labor demand

JEL Classification Codes: J160, J230

INTRODUCTION

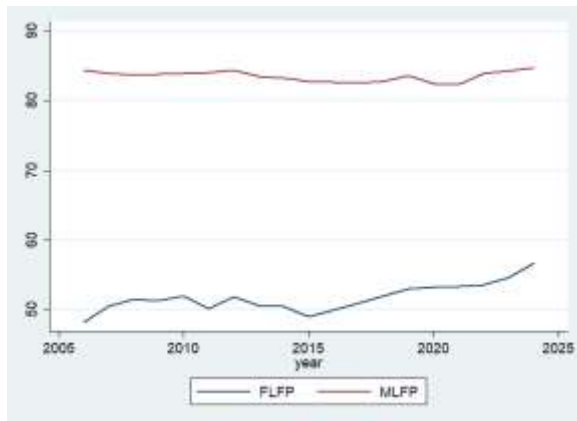
The discussion on female labor force participation has continued to evolve as increasing opportunities of female contribution to the economy. Various studies in the developing countries have observed a trend in labor force participation, with females lagging behind males (Blau & Kahn, 2017; Lo Bue et al., 2022; Malik & Rahman, 2020). This disparity is often associated with social norms beliefs which perceived that working is more appropriate for men than women. This issue has been also mentioned in the classic theory of development economics by Lewis (1955) which stated that the impact of economic growth on the working opportunities was different between for male and female.

In the context of Indonesia, recent growing studies have drawn attention to the prolonged stagnation of FLFP for more than two decades (Cameron et al., 2019; Halim et al., 2022; Kusumawardhani et al., 2023; Schaner & Das, 2016). The repeated fluctuation trend in the short term have contributed to a relatively stagnant long-term trend.

Meanwhile, at the same time, Indonesia's economy and employment condition have continued to grow, which from a theoretical perspective, could create greater employment opportunities and potentially encourage higher female labore force participation.

Despites literatures documenting the stagnation trends of Indonesia's FLFP, recent data indicate that FLFP rate has shown an upward trend since 2015, including during the COVID-19 Pandemic era in 2020 (Figure 1). This pattern suggests that Indonesia's FLFP may have begun to move beyond its previously observed stagnation. However, this recent upward trend has received limited attention in the existing literature.

Figure 1: The Trend of Female Labor Force Participation (FLFP) and Male Labor Force Participation (MLFP) in Indonesia 2006-2024



Source: BPS (2025)

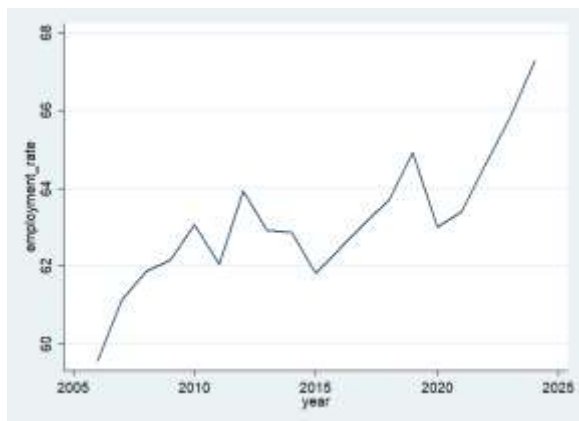
Previous studies which observed Indonesia's FLFP were more consider in their association with the norm beliefs and the supply side factors of female labor (Cameron et al., 2019; Cameron & Suarez, 2017; Jayachandran, 2019; Schaner & Das, 2016; Yuniashri et al., 2023). The norms beliefs which influenced the perspective of the main role of women in their household than have a professional career would influence their decision for women's future, including about the future career or education level. Then, this consideration would affect the FLFP trend. Literatures have also found that some women prefer to exit from their

jobs caused by their married decision, having child/children, and any role in their domestic activities (Cameron et al., 2019; Halim et al., 2017; Schaner & Das, 2016). Furthermore, literatures found that education level, age, marital status, etc. can influence women's decision of whether to work (Cameron, 2023; Cameron et al., 2019; Schaner & Das, 2016; Taymaz, 2010).

In contrast to previous studies, this study investigates Indonesia's FLFP from the demand side. Indonesia's labor demand appears to increase both during and after exit from the FLFP's stagnation. Theoretically, the increasing of labor demand should increase the opportunity for all working-age population in joining the labor force participation. Nevertheless, when the FLFP stagnates, the labor demand is increasing (Figure 1 and Figure 2). This different trend seems to be no correlation. Nonetheless, literatures in other countries have found that there is a potential impact of demand for labor on FLFP (Bhalotra & Fernández, 2024; Deshpande & Singh, 2024; Fallah et al., 2021). Hence, this

study seeks to examine the demand labor impact for Indonesia's case.

Figure 2: Trend of Employment Rate in Indonesia 2006-2024



Source: BPS (2025)

This study then gives three contributions relative to prior literatures. First, this study examines the potential correlation between demand labor and FLFP in Indonesia. Previous studies on FLFP in have primarily focused on norms beliefs and supply side factors for analyzing the phenomenon in the issue of Indonesia's FLFP. However, the role of labor demand has received comparatively less attention. Examining the demand side is important because the availability of employment opportunities may influence female's decision to enter the labor market. Accordingly, this study fills this gap by providing empirical

analysis from the demand side perspective. Second, this study covers the period 2006-2024. Regarding this, this study not only covers the stagnation period of FLFP but also the period after it moves out from stagnation. This condition has not yet been discussed in the previous studies, which has largely focused on the stagnation trend. Thus, this study fills this gap by covering the stagnation and the post-stagnation period during 2006-2024. The third contribution of this study is that Indonesia presents a different case from previous studies that have examined FLFP from the demand side perspective in the other countries (Bhalotra & Fernández, 2024; Deshpande & Singh, 2024), particularly because Indonesia experienced a prolonged period of FLFP stagnation followed by an upward trend.

RESEARCH METHODOLOGY

This study mainly uses two datasets: National Labor Force Survey (SAKERNAS) for the period of August 2005-2024 and National Socio-economy Survey (SUSENAS) for the period of March 2005-2026 which collected by

Statistics Indonesia (BPS). Data from the 2005 are used only for constructing the change variables, therefore this study is estimated over the period of 2006-2024. After undergoing a data cleaning process, this study estimates a balance panel data which is covered 6.588 observations from 366 regencies/municipalities during 2006-2024. This study excludes regencies and municipalities that underwent administrative changes or territorial divisions during the 2006-2024 period to mitigate potential bias in the estimation. In addition, data for 2016 are also excluded from the analysis because the BPS has not published the 2016's SUSENAS data at the regency/municipality level.

We estimate the potential impact of demand labor on Indonesia's FLFP using fixed-effect regression method. This method is employed to control unobserved and time-invariant characteristics across regencies/municipalities that may affect female labor force participation. This model is adapted from the equation developed by Deshpande & Singh, (2024). The

dependent variable is $\Delta FLFP_{it}$, defined as the change of FLFP in regency/city i at time t . The independent variable is ΔEMP_{it} , the change of employment rate in regency/city i at time t . The employment rate calculated from the ratio of worker population relative to working-age population. The specification is shown in the following equation (Eq 1).

$$\text{Eq 1: } \Delta FLFP_{it} = \alpha_0 + \alpha_1 \Delta EMP_{it} + \alpha_2 X_{it} + \mu_i + \pi_t + \varepsilon_{it}$$

X_{it} , defined as control variables (male labor force participation, female marital status, age of female worker, education level of female worker, motherhood (Deshpande & Singh, 2024) (Deshpande & Singh, 2024) (Deshpande & Singh, 2024) status, and elderly household member), the information details are shown in Table 1. μ_i , defined as regencies/cities fixed effect and π_t , defined as time fixed effect.

Table 1: Control Variables

No	Notation	Definition
1.	$dMLFP_{it}$	year-to-year changes of male labor force participation rate
2.	$single_{it}$ $married_{it}$ $divorced_{it}$ $widowed_{it}$	percentages of working-age female by marital status
3.	15_19_{it} 20_24_{it} 25_29_{it} 30_34_{it} 35_39_{it} 40_44_{it} 45_49_{it} 50_54_{it} 55_59_{it} 60_{it}	percentages of working-age female by age group
4.	$no_schooling_{it}$ SD_{it} SMP_{it} SMA_{it} $Diploma_{it}$ $Bachelor_{it}$	percentages of working-age female by last education level
5.	$child0_2_{it}$	percentages of working-age female having child/children 0-2 years olds
6.	$older45_65_{it}$	percentages of working-age female living with older aged 45-65 years olds

RESULT AND DISCUSSION

The analysis begins with examination of descriptive statistics. The descriptive statistics show that the data in this study exhibit considerable variation across years and across regencies and municipalities. The change in the FLFP shows substantial variation with a standard deviation of 6.31 and a mean of

0.403. Similarly, the change in the labor demand also exhibits considerable variation, as indicated by a standard deviation of 4,14 and a mean of 0.397. Meanwhile, the other control variables tend to exhibit relatively lower dispersion. The detailed of descriptive statistics shown by Table 2 below.

Turning to the estimation result, labor demand has a potential to encourage the increasing FLFP in Indonesia. This finding can be inferred from the estimation result as shown in Table 3. The table shows that the change of employment rate has a significant positive impact on the change of FLFP, in the significant level one percents. For every one percentage point increase in labor demand, it is estimated to contribute 1.6 percentage points to the change of Indonesia's FLFP. This result means that demand labor has a positive effect on the FLFP which is 1.6 percentage points. This impact can explain the reason why Indonesia's FLFP shows a gradual growth during 2006-2024.

Table 3: Descriptive Statistics

Variables	N	mean	SD	min	max
dFLFP	6,588	.403	6.31	-51.07	46.57
dEMP	6,588	.397	4.14	-34.59	32.24
dMLFP	6,588	-.054	3.44	-37.80	38.44
married	6,588	65.62	5.80	38.64	88.22
divorced	6,588	2.60	1.24	0	19.17
widowed	6,588	10.6	3.16	0	26.59
15_19	6,588	12.30	2.62	0	30.25
20_24	6,588	11.07	2.65	0	33.42
25_29	6,588	11.30	2.37	0	28.99
30_34	6,588	11.29	2.06	0	32.41
35_39	6,588	10.49	1.57	0	31.06
40_44	6,588	9.58	1.20	0	19.79
45_49	6,588	8.40	1.26	0	20.44
50_54	6,588	7.20	1.46	0	16.79
55_59	6,588	5.66	1.68	0	38.36
No schooling	6,588	20.51	10.53	0	92.67
SD	6,588	26.7	9.80	4.84	92.21
SMP	6,588	21.33	4.32	.219	53.32
Diploma	6,588	2.95	2.28	0	24.16
Bachelor or higher	6,588	5.83	4.46	0	30.46
child0_2	6,588	25.34	18.35	.73	100
older45_65	6,588	62.02	11.48	20.15	100

Table 3: Fixed Effect Regression Result of The Impact of Change of Employment Rate on Change of Indonesia's FLFP

dFLFP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
dEMP	1.609	.033	49.13	0	1.544	1.673	***
dMLFP	-.637	.036	-17.67	0	-.708	-.566	***
married	-.069	.036	-1.92	.056	-.14	.002	*
divorced	-.015	.102	-0.15	.88	-.216	.185	
widowed	-.01	.062	-0.17	.868	-.133	.112	
15_19	.033	.084	0.40	.692	-.132	.199	
20_24	.028	.074	0.38	.707	-.117	.173	
25_29	.025	.072	0.35	.729	-.117	.166	
30_34	-.113	.093	-1.21	.227	-.297	.071	
35_39	.034	.098	0.35	.729	-.158	.226	
40_44	.064	.079	0.81	.421	-.092	.22	
45_49	.03	.094	0.32	.747	-.154	.214	
50_54	.075	.105	0.71	.48	-.133	.282	
55_59	.029	.112	0.26	.798	-.191	.248	
No schooling	-.009	.026	-0.36	.717	-.06	.041	
SD	-.083	.029	-2.88	.004	-.139	-.026	***
SMP	-.004	.032	-0.11	.912	-.066	.059	
Diploma	.038	.037	1.03	.305	-.035	.11	
Bachelor or higher	.035	.03	1.16	.248	-.024	.093	

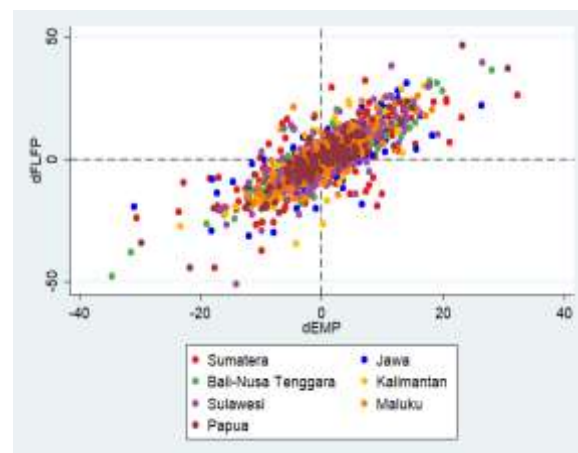
dFLFP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
child0_2	-.033	.016	-2.11	.035	-.065	-.002	**
older45_65	-.019	.016	-1.19	.233	-.05	.012	
2007	.089	.627	0.14	.888	-1.145	1.322	
2008	-.071	.432	-0.17	.869	-.92	.777	
2009	-.053	.451	-0.12	.907	-.94	.834	
2010	-.317	.478	-0.66	.507	-1.256	.622	
2011	-.043	.511	-0.08	.933	-1.048	.962	
2012	-.801	.499	-1.61	.109	-1.782	.179	
2013	3.266	1.466	2.23	.026	.384	6.149	**
2014	.282	.534	0.53	.598	-.768	1.332	
2015	.354	.567	0.62	.533	-.761	1.469	
2017	-.697	.643	-1.09	.279	-1.961	.566	
2018	-.118	.633	-0.19	.853	-1.362	1.127	
2019	-1.066	.678	-1.57	.117	-2.399	.268	
2020	1.684	.726	2.32	.021	.255	3.112	**
2021	-1.067	.745	-1.43	.153	-2.532	.398	
2022	-1.248	.75	-1.66	.097	-2.723	.228	*
2023	-.99	.759	-1.30	.193	-2.482	.503	
2024	-.742	.798	-0.93	.353	-2.312	.828	
Constant	7.044	6.694	1.05	.293	-6.119	20.206	
Mean dependent var		0.403	SD dependent var			6.307	
R-squared		0.782	Number of obs			6588	
F-test		187.944	Prob > F			0.000	
Akaike crit. (AIC)		32907.412	Bayesian crit. (BIC)			33165.547	

*** $p < .01$, ** $p < .05$, * $p < .1$

From the result, we can reach a conclusion that the condition which lead a stagnant trend and then increasing trend are also affected by the labor demand condition. This finding is also consistent with other literatures from other countries who found a potential impact of labor demand on their FLFP (Bhalotra & Fernández, 2024; Deshpande & Singh, 2024; Fallah et al., 2021). Moreover, the finding above is also in line to the following scatter plot graph (Figure 3) which provides visual illustration of the correlation between

changes of employment rate on the Indonesia's FLFP.

Figure 3: Scatter Plot of The Changes in Employment Rate and Indonesia's FLFP



Source: BPS (processed)

From the graph above can be seen that there are data grouping in the quadrant I and III. This grouping data shown if the employment rate shows a positive change, then the FLFP will move to positive change. Similarly, if the employment rate moves to the negative change, then the FLFP will move to the negative change too. However, some data in quadrant II and IV shown an inverse relationship. This indicates that during 2006-2024 some regencies/cities have previously exhibited an inverse relationship. In those regencies/cities, if the employment rate increase, then the FLFP will decrease, or vice versa. Nevertheless, those quadrant positions were possible to be changed annually during 2006-2024.

CONCLUSION

Based on the analysis above, we found a significant positive impact of demand labor on Indonesia's FLFP. This result indicates that changes in labor demand have a significant and positive effect on the changes in Indonesia's FLFP rate. This finding suggest that female

participation in the labor force is likely to increase when the labor demand rises or employment opportunities expand. Based on these findings, promoting female labor force participation requires efforts to expand employment opportunities and improve access to available jobs, especially for female.

The analysis presented through this study seeks to provide a comprehensive analysis of the current developments in Indonesia's FLFP. Nevertheless, the faces limitation particularly regarding data availability and coverage which may constrain the comprehensiveness. In particular, the findings do not fully represent all regions of Indonesia due to changes in regional administrative boundaries over the study period.

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