PATTERN OF FERTILITY RATES AND FEMALE LABOUR FORCE PARTICIPATION IN MANIPUR

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ABSTRACT

Background: Each emerging country's fertility rate is falling, and as a result, female labor force participation has shifted. The role of women in achieving the demographic dividend is a problem that emerging countries must address. As a result, in order to reap the benefits from the demographic dividend, gender equality in the workplace must be prioritized. **Aim:** To study the association between the fertility rate and female work participation in Manipur. **Methods and Materials:** The Indian Census across the years 1991 to 2011 was accessed, and the descriptive statistics were employed. **Results:** It was found that among the main workers, Manipur (13.06%) had a substantially lower proportion of the 10-15 years age group than India (35.35%) in 1991, implying that premature married women were more widespread in India than in Manipur. Married women who did not work (housewives) increased further throughout all census years in Manipur (5.47%) and India (14.19%). The main workers were often more concentrated in urban areas than in rural areas in both Manipur and India, indicating that there are more job prospects in urban areas. From 1991 to 2011, Manipur and India saw a general trend of dropping fertility rates across all age groups and economic activity categories. **Conclusion:** The female labour participation rate is very low when compared to many advanced economies, showing that there is still tremendous space for growth in terms of gender equality and women's economic empowerment.

Keywords: Fertility rate; Female work participation rate; Demographic dividend; Northeast India; Gender equality.

INTRODUCTION

The fertility level of each developing country is declining, and as a result, there has been a change in the behaviour of females to participate in the labour force. Women's role in gaining the opportunity for the demographic dividend is an issue that is pertinent to developing countries. The population boom in working-age individuals has resulted in a rise in the labour force participation rate during the demographic transition caused by the drop in the fertility rate. In addition, there is also an increase in the number of women participating in the labour force due to the smaller family size brought up by the dropping fertility rate (Torres, 2015). Women's involvement in the workforce has contributed

positively to the Gross Domestic Product (Aydin et al., 2019). As much as 12.2 percent more GDP may be generated if gender differences in labour force participation were reduced (Marone, 2016). Therefore, to reap the benefits of the demographic dividend, gender equality in the workforce needs to be given particular attention.

Theoretical Concepts and Assessment of Sources

Variations in fertility rates cause differences in population growth rates and age-structured population scenarios among countries. There may be an increase in the working-age population, but there will be an imbalance in numbers between men and women. Again, there would be an uneven distribution of people entering the labour force. A higher level of female labour force involvement in an economy may provide a more significant advantage in capturing the demographic dividend. To this, Wodon et al. (2020) stated that "*if women were earning as much as men, women's human capital wealth could increase by more than half globally ……".* Hence, disparities in women's employment rates may contribute to the differences in economic growth rates among nations. Higher economic growth for a country depends on a higher participation rate of females. Narrowing the gap in labour force participation between males and females will boost economic growth.

Besides, the differences in education level attained by females and the fertility level acquired may impact women's participation in the workforce. A woman's entry into the workforce depends on how many children she has. There is a long-run co-integration between the female labour force participation rate and total fertility rate, and both influence each other through the interaction effect of female age at first marriage, per capita gross domestic product, and infant mortality rate (Ali & Dhillon, 2022). Attracting more women into the labour force requires equal access to education and the opportunity to gain the skills necessary to compete in the labour market.

However, they face certain challenges in attaining decent work. How they are engaged in the labour force and how their unique values and constraints must be assessed to get the opportunity of demographic dividends are now issues.

Empirical Evidences

Numerous scholars have attempted to assess the connection between fertility and female labour force participation globally. Most of the analysis remarks a significant connection between fertility and the employment of women influenced by other auxiliary variables (Ahn and Mira, 2000, and Majbouri,2019).

Fertility plays a significant role in women's decisions to enter the labour market, with a negative impact on female labor force participation overstated when fertility is not considered (Ukil, 2015). Having a third child or more has an unfavorable effect on labor market participation, with an average decrease of 7.4 percentage points. This can lead to poverty traps and economic inequality for low-skilled women in informal employment (Tumen & Turan, 2020). Role Incompatibility Approach articulates that there is an inverse relationship between female employment and fertility, only in a condition where the trade-off between a mother's duty and work is not accommodated duly (Mason & Palan, 1981). However, fertility and employment positively correlate when the economies have limited employment chances. As the rate of women finding jobs rises, the direction of the association between employment ratios and fertility rates across nations may vary (Fang et al.,2013; Krishnan, 1991).

The decline in fertility reduces population growth and increases the ratio of working age

to the total population, augmenting female labour force participation. Fertility hurts female labour force participation largely in the age 20-39, but persistent cohort participation exists over time (Bloom et al., 2007).

Economic growth in developing nations encourages women to enter the labour force only when labour market regulations actively support women's entry (Luci, 2009). On the other hand, entitlement to social security benefits, having children in the home, and long-term illness all reduced participation. Patriarchal household cultures adversely impact the participation and productivity of women in the workforce. However, the outcome varies somewhat according to the type of job and the work site (urban vs. rural) (Sarkhel & Mukherjee, 2014). A tactic to lessen the "double burden" of work for women appears to be decreased labour participation and growing income levels. The patriarchal society restricts women's options to home pursuits rather than paid employment by elevating domestic activities and stigmatizing paid jobs (Abraham, 2013).

Fertility and education also significantly influence the degree of female labour force participation. Higher-educated women have fewer offspring than lower-educated women in both developed and developing nations (Kim, 2016). Thus, female education has a positive effect, and the fertility rate has a negative effect on female labour force participation (Altuzarra et.al, 2019). Both personal choices and policy influence women's decisions to labour on the extensive and intensive margins.

Many earlier studies also highlighted the association between fertility and types of employment (Kinoshita & Guo, 2015; Aydin et al., 2019). And other studies also addressed the relationship between fertility, wage, religion, and female labour force participation worldwide (Siegel, 2012; Fatima & Sultana, 2009; Abdou & Shalaby, 2019; Alam et al., 2018)

Indian context

Despite significant economic growth, the proportion of Indian women working in domestic, non-remunerative occupations has risen, while India's FLFP has fallen since the 1980s (Afridi et al., 2018; Chaudhary & Verick, 2014). In India, women's labor force involvement and fertility are not entirely associated. The long-run co-integration of female labor force participation rate and total fertility rate is influenced by the interaction impact of female age at first marriage, per capita GDP, and infant mortality rate (Ali & Dhillon, 2022). Tiwari et al. (2022) argue that increasing the number of children born decreases income and female labor force participation in India by analyzing the influence of intertemporal fluctuations in reproductive behaviour on outcomes for women in the labour market. The data shows that women with more than three children had a 3.5% higher likelihood of exiting the labor force than their counterparts with two or fewer children. Again, on segmented analyses by caste, economic status, educational status, and region, the probability of leaving the labor force due to changes in fertility varies by region, and it was higher for non-poor women with primary to secondary education and those from socially disadvantaged castes than for poor, uneducated, and socially advantageous women. Mahapatro (2013), who investigated the causes of the decline in female labor force participation in India, found that changes in age and time can explain a major drop in labour force participation. Women's labor-force participation has been declining across all ages and educational levels. Longer educational duration tends to reduce female engagement in younger generations. Workforce participation rates were strongly connected with socioeconomic and demographic criteria other than gender,

such as age, education, caste, religion, place of residence, family size, etc. These considerations must be considered to fully reap the benefits of the region's demographic dividend (Mawkhlieng & Algur, 2021). These studies show that reducing fertility alone will not enhance female labor force participation in India.

In the last 25 years, female labour force participation in India has declined. Between 1983–1984 and 2011–2012, India's female labour force participation rate fell by 25% (Lahoti & Swaminathan, 2013). This drop in female LFPR can be explained mainly by increases in the education levels of women and men in their households (Afridi et al., 2018).

The employment transition of Indian women of working age not only left the workforce at a concerning rate, but they were also participating in it less. According to Sarkar et al. (2017), women's entry and leave possibilities decrease when the income of other household members increases. The critical discovery that household wealth and income have a major impact may help explain why, despite economic progress, female labour force participation may not rise over time. Furthermore, the study discovers that a sizable public workfare program considerably lowers the rate women leave the workforce.

On the other hand, given that institutional childcare is practically non-existent in Indian society, Das & Zumbyte (2017) claimed that women's job decisions are increasingly being influenced by the issue of caring for little children. So, mothers' employment was negatively impacted by having small children at home, a worsening trend. Additionally, having older children and women over 50 years was positively correlated with women's employment. As such, Sorsa et al. (2015) exclaimed that there was a negative correlation between female labour force participation and income and education levels of the women. In this regard, apart from a dearth of jobs, their study proclaimed that societal and cultural restrictions hinder women from joining the workforce. Infrastructural constraints, financial accessibility, labour laws, and rural employment programs are additional variables that persist in the issue.

North-Eastern States context

When comparing the average position of women across India to that of the North Eastern area, Das (2013) concluded that women in the region had a better overall situation than women across the country. The indicators depicted that women's freedom of mobility, self-control, and power to impact change in NER were severely limited. The survey also found that NER states had greater rates of married women participating in household decision-making than the national norm. Certain NER states had observed an increase in FWPR. Women in the Northeast had a higher working-age population rate than the national average, although it was typically lower than men. Female labor participation was increasing in all states of Northeast India, except for Assam, and it is now more significant than the national average. The study found that Northeast India's average FLPR was higher than the national average due to the presence of tribal dominant states in the region. Women's labor-market involvement will be increased by increasing job opportunities based on education and removing gender-based compensation discrimination (Kaur, 2016). Higher labor participation does not automatically result in improved outcomes; it necessitates more education and/or assets (Srivastava & Srivastava, 2010). While education may not influence a woman's decision to work, it was the most essential element in identifying higher-quality non-agricultural jobs for

working women. Women can enter non-agricultural jobs because of their autonomy, which was characterized as their freedom to manage their land, travel, and participate in self-help groups.

While there has been a noticeable increase in women's work participation rates in the north-eastern Indian states, women's work participation rates remain significantly lower than men's (Pegu, 2015). Regarding women's engagement in the workforce, there appears to be a difference between rural and urban areas. The northeast states had seen a rise in women's literacy, which benefited the political, social, and ideological domains. All of this resulted from the beneficial developments that the area had seen as a result of training and education. The percentage of women participating in the labour sector for rural and urban Assam was dropping.

Objectives of the study

As per reviews, a few studies related to fertility by age groups and female labour force participation in the northeastern states of India. The nature of policies and programmes relating to the female labour force at the time of birth and the kind of employment marketplaces available in each state of India appear to be distinct. In this light, more studies are needed to evaluate Manipur's demographic dividend concerning female labour force participation and fertility. And also, Manipur's low economic performance compared to the other central states of India, as well as the predominant agriculture-based employment, has been a source of concern for this study.

MATERIALS AND METHODS

The study strictly used the Registrar General of India's census data from 1991, 2001, and 2011.

Description of the Study Framework

The commonly acknowledged age range for reproduction is 15-49. In Indian society, the reproduction of a child is generally permitted solely for married women. Every woman is characterized by her current age, educational level, religion, health conditions, and activity. Such self-characterization allows for the assessment of the appropriate marriage age. Various characteristics of different women determine more than just their age at marriage. The married women, coordinated with the above characteristics, also determine the number of children they can bear in their reproductive life. On the other hand, age at marriage also determines the number of children a woman can bear in her reproductive lifetime and the woman's work participation rate. Again, the number of children born and work participation also affect each other in determining each other.

The age at marriage is classified into age groups- below 15, 16-23, and 24 and above (for the availability of the census data). Again, the engaged activities were classified into Main, Marginal, and Non-worker, as defined by the census. Total, Rural, Urban, and inter-district comparisons were carried out in the age at marriage section (except 1991). In the district-wise analysis, no rural and urban classification was carried out due to the lack of urban and rural classification in the hill districts. Due to the unavailability of the data for age at marriage and activities in the 1991 census, the 1991 analysis is omitted. In the section on the age and number of children born, both total and rural/urban will be discussed. Simple descriptive statistics were used for the analysis.

RESULTS & DISCUSSION

Women's engagement in specific activities also influences their marriageable age. What age a woman should marry may be determined by the activities she has participated in. As

the economy improves, women's educational attainment increases, and as a result, their work patterns and ways of generating money for their families and themselves change. The age at which a person marries may be determined by the kind of women they work with. Women involved in various interests are more likely to marry later in life. As a result, it is critical to examine how women's diverse activities influence marriage at various ages.

Table No.1. Percentage of Married Women by their Age at Marriage and Engage Activities for Manipur, Rural, and Urban (1991, 2001, and 2011)

1991	Manipur			Rural			Urban		
Engage activities	Age-group (in years)			Age-group (in years)			Age-group (in years)		
	10-15	16-23	24+	10-15	16-23	24+	10-15	16-23	24+
Main	13.06	73.10	13.84	13.07	73.68	13.25	13.00	70.52	16.48
Marginal	16.02	74.36	9.62	15.44	74.66	9.90	17.26	73.71	9.02
Non-worker	20.00	66.86	13.14	20.30	67.69	12.01	19.63	65.86	14.51
1991	**India**			**Rural**			**Urban**		
Main	35.35	60.73	3.92	36.81	60.52	2.67	24.02	62.37	13.61
Marginal	35.00	62.93	2.07	35.23	62.78	61.47	29.41	66.54	4.04
Non-worker	31.72	64.76	3.52	35.91	61.47	2.62	23.14	71.44	5.37
2001	**Manipur**			**Rural**			**Urban**		
Main	6.18	64.97	28.85	6.11	67.09	26.79	6.37	58.65	34.99
Marginal	7.99	70.14	21.87	7.90	70.71	21.39	8.32	68.06	23.62
Non-worker	8.50	66.84	24.66	8.23	68.00	23.77	8.96	64.92	26.13
2001	**India**			**Rural**			**Urban**		
Main	25.56	67.67	6.77	27.10	68.30	4.60	17.56	64.35	18.09
Marginal	28.02	68.46	3.52	28.25	68.46	3.29	24.39	68.41	7.20
Non-worker	23.16	70.30	6.55	26.23	69.05	4.71	18.01	72.38	9.61
2011	**Manipur**			**Rural**			**Urban**		
Main	4.36	59.04	36.59	4.29	61.50	34.21	4.58	51.64	43.78
Marginal	5.19	64.51	30.30	5.21	65.81	28.98	5.11	60.97	33.92
Non-worker	5.47	62.36	32.17	5.41	64.94	29.65	5.55	58.98	35.48
2011	**India**			**Rural**			**Urban**		
Main	15.33	74.94	9.73	16.30	77.64	6.06	11.91	65.40	22.68
Marginal	15.38	79.27	5.35	15.51	79.92	4.57	14.17	72.87	12.96
Non-worker	14.19	76.93	8.88	15.63	78.34	6.03	12.07	74.87	13.06

Source: Author's calculation using Census F-3A and F-3B data for 1991 and C-7 data for 2001 and 2011, Manipur.

Table No. 1 illustrates the engagement activities (Main worker, Marginal worker, and non-worker) of married women of different age groups (10-15, 16-23, and 24+) in rural and urban areas of Manipur and India across the years 1991, 2001, and 2011. Among the married women engaged as main workers, it was observed that Manipur (13.06%) had a significantly lower proportion of the 10-15 years age group compared to India (35.35%) in 1991, suggesting that premature marriage was more prevalent in India than in Manipur. Among the age group (16-23), the women engaged as main workers in India had a consistently higher percentage share, depicting a larger workforce than in Manipur. Regarding marginal workers, the percentage share remained high in both Manipur (5.19%) and India (15.38%). But those married women who did not engage (housewives) in any work activity increased further across all census years in both Manipur (5.47%) and India (14.19%). Rural and urban differences, especially among the main workers, were generally higher in urban areas than in rural areas in both Manipur and India, indicating that more employment opportunities are available in urban areas.

Table-2 shows the age of marriage as influenced by married women's activities by district. The age at marriage for those under 16 and those between 16 and 23 has been observed to decrease over the census periods for all activities, while the age at marriage for those 24 and older has been observed to grow for all districts. There were substantially more married women in Senapati among unemployed women aged 16 to 23 than among employed women. Again, there were more married women from Tamenglong, among the women aged 16 to 23, who were engaged in their main activity than those engaged in other occupations. This picture contradicts previously established criteria, which stipulate that a more significant proportion of married women working in marginal occupations must choose to marry between the ages of 16 and 23. In the Tamenglong and Ukhrul districts, the proportion of women who were unemployed at the age of 24 or older was much higher

than that of women engaged in primary or secondary jobs. The preceding requirements, which specify that the majority of married women in the principal activity must have decided to marry at the age of 24 or older, were also in divergence with this signal. Nonetheless, most women in the remaining region who engaged in marginal activities chose to marry between the ages of 16 and 23. Again, a higher proportion of women in the remaining districts—aside from Tamenglong and Ukhrul—choose to marry when they are 24 years old or older, indicating that women who marry later in life were actively involved in their main activity.

Table No. 2 District-wise Percentage of Married Women by their Age at Marriage and Engage Activities (1991, 2001, and 2011).

Bishnupur									
Census period	1991**			2001			2011		
Engage Activities	Age-group (yrs)			Age-group (yrs)			Age-group (yrs)		
	<16	16-23	24+	<16	16-23	24+	<16	16-23	24+
Main				7.14	66.45	26.41	5.10	61.92	32.98
Marginal				8.85	69.98	21.17	4.67	63.70	31.63
Non-worker				10.02	68.15	21.83	5.27	61.51	33.22
Chandel									
Main				6.75	67.84	25.41	4.69	62.04	33.27
Marginal				5.39	68.42	26.19	4.33	64.28	31.39
Non-worker				6.75	67.84	25.41	5.90	65.04	29.06
Churachandpur									
Main				5.13	69.09	25.78	4.53	65.53	29.94
Marginal				5.98	70.91	23.12	5.31	67.59	27.10
Non-worker				4.66	68.53	26.81	4.45	67.21	28.34
Imphal East									
Main				7.63	60.47	31.90	5.06	54.78	40.17
Marginal				8.97	70.78	20.25	6.29	62.96	30.75
Non-worker				9.84	67.34	22.82	6.78	61.91	31.30
Imphal West									
Main				5.74	57.48	36.78	4.62	49.56	45.81
Marginal				6.78	66.32	26.90	4.75	58.56	36.69
Non-worker				7.73	63.36	28.90	5.04	56.98	37.97
Senapati									
Main				6.55	69.82	23.64	3.56	59.76	36.67
Marginal				8.95	70.32	20.74	5.11	63.77	31.12
Non-worker				7.31	68.10	24.59	5.30	67.34	27.36
Tamenglong									
Main				4.29	67.08	28.64	4.67	61.19	34.13
Marginal				6.35	66.17	27.48	3.92	60.74	35.34
Non-worker				7.52	58.02	34.46	4.95	55.92	39.13
Thoubal									
Main				7.93	72.96	19.11	4.73	68.52	26.75
Marginal				9.09	73.67	17.24	5.62	70.73	23.65
Non-worker				11.78	73.88	14.34	5.53	70.83	23.64
Ukhrul									
Main				3.43	59.25	37.32	3.06	53.02	43.92
Marginal				3.40	60.25	36.35	3.41	56.19	40.41
Non-worker				4.30	57.36	38.34	2.95	51.89	45.16

Source: Author's calculation using Census C-7 data, Manipur.
** Data for 1991 were not available from the official website.

Table 3 shows the number of children born to women who were actively engaged in their activities. In both Manipur and India, there is a general trend of declining fertility rates across all age groups and economic activity categories from 1991 to 2011. This suggests the successful implementation of family planning programs and increasing access to reproductive healthcare. In 1991, Manipur generally had higher fertility rates than India across all age groups and economic activity categories. Whereas between 2001 & 2011, the fertility gap between Manipur and India narrowed, suggesting that fertility rates in Manipur declined faster. In terms of work participation, fertility rates were generally higher among main workers than marginal workers and non-workers in both Manipur and India. This could be attributed to various factors, such as later marriage age and increased family planning access among non-working women.

Table No. 3. Number of children born by their age groups and their economic activities attended by Manipur and India (1991, 2001, and 2011)

1991	Manipur	Age-group (in years)					
Economic Activities	Total (All Age)	< 15	15-24	25-34	35-44	45-54	55+
Worker	3.38	0.53	1.13	2.58	4.00	4.57	4.20
Main	3.38	0.56	1.12	2.55	3.97	4.56	4.18
Marginal	3.37	0.40	1.19	2.70	4.18	4.66	4.32
Non-Worker	2.47	0.03	0.76	1.97	3.11	3.53	2.98
1991	**India**						
Worker	3.00	0.10	1.04	2.68	3.73	4.24	4.34
Main	2.92	0.11	1.03	2.60	3.59	4.07	4.13
Marginal	3.21	0.09	1.05	2.88	4.12	4.71	4.82
Non-Worker	3.11	0.08	1.02	2.67	3.85	4.41	4.40
2001	**Manipur**	**Age-group (in years)**					
Economic Activities	**All Age**	**< 15**	**15-24**	**25-34**	**35-44**	**45-54**	**55+**
Worker	3.18	0.84	1.04	2.27	3.49	4.16	4.23
Main	3.23	1.08	1.06	2.25	3.43	4.11	4.17
Marginal	3.11	0.58	1.02	2.29	3.57	4.26	4.31
Non-Worker	2.96	0.29	0.73	2.04	3.36	4.21	4.07
2001	**India**						
Worker	3.07	0.34	1.11	2.73	3.56	3.97	4.29
Main	2.99	0.42	1.11	2.63	3.39	3.79	4.11
Marginal	3.17	0.28	1.10	2.87	3.84	4.26	4.52
Non-Worker	3.01	0.30	0.99	2.48	3.43	3.91	4.27
2011	**Manipur**	**Age-group (in years)**					
Economic Activities	**All Age**	**< 15**	**15-24**	**25-34**	**35-44**	**45-54**	**55+**
Worker	2.84	1.03	0.96	1.97	3.00	3.60	3.94
Main	2.93	1.17	1.02	2.00	3.02	3.61	3.90
Marginal	2.68	0.87	0.89	1.91	2.95	3.58	4.03
Non-Worker	2.68	0.34	0.73	1.74	2.74	3.53	4.17
2011	**India**						
Worker	2.71	0.87	0.49	2.26	3.00	3.36	3.72
Main	2.60	0.97	1.06	2.14	2.82	3.17	3.55
Marginal	2.87	0.78	1.05	2.44	3.32	3.70	3.98
Non-Worker	2.69	0.34	0.91	2.10	2.93	3.32	3.88

Source: *Author's calculation using census F-9A and F-9B for 1991 and F-4 for 2001 and 2011.*

CONCLUSION

The present paper is intended to highlight the changes in the fertility rate and female work participation along with the different age groups in Manipur, a northeastern state of India. The finding suggested that the changes in work participation patterns over time likely reflect economic development, urbanization, and changes in social structures. The increase in the percentage of non-workers, especially in the younger (10-15) age group, suggests improvements in education and changes in social norms regarding child labor and school attendance. Further, the high percentage of marginal workers indicates the significance of informal employment in Manipur and India, highlighting the need for policies to support and formalize this sector. Moreover, the dynamics of economic growth should be a concern to improve the participation of the female labour force in harnessing the demographic dividend. Unfortunately, the female work participation rate remains relatively low compared to many developed countries, indicating that there is still significant room for improvement in terms of gender equality and women's economic empowerment.

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