Women Workforce Participation and Its Associated Factors in Urban Odisha

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Abstract: *The participation of women in the workforce has evolved significantly over the years and is a topic of social, economic and political importance. Greater participation of women can be a source of inclusive growth and well-being. The women workforce in urban Odisha has seen a growth from 14.95 percent in 2001 to 20.3 percent in 2011 but is 55 percent low compared to its male counterpart. The paper tries to study the regional and sectoral disparities in women workforce along with the existing gender disparities. It also tries to investigate the intricate relationships that exist between a variety of sociodemographic, economic, and developmental factors and women's workforce. The study is completely based on secondary sources of data. It reveals that the Southern region accounts for a high women workforce rather than the coastal region which exhibits a high urbanisation rate. Women are highly engaged in the tertiary sector with a sharp surge in marginal category within the tertiary sector. High gender disparities exist in workforce participation across various districts in Odisha. The key outcome is that while illiteracy, higher sex ratio and widowhood positively impact women workforce, other factors like economic development, marriage and increased education levels limit it.*

Keywords: *Women workforce, gender disparities, regions, tertiary sector, education*

1. INTRODUCTION

UN Sustainable Development Goal-8 promotes equitable, productive employment and decent work for sustainable economic growth. Women population accounts for around half of the population but their work participation remains very low. Social norms, financial limitations, and conventional gender roles restrict and confine women to the household work in many nations, including India. For the progressive sustainable economic and social development women work participation is one of the essential components (Pal, 2024). However, despite social and economic progress in the 21st century, gender inequality and disparities in Female Labor Force Participation (FLFP) across regions and countries remain a major concern (Gaddis & Klasen, 2014). Globally, the FLPR is 48.7 percent which is 24 percent lower than the Male Labor Force Participation (MLFP). While FLFP has seen an overall increase, rural and urban disparities are noticeable, with rural women having higher FLFP. The rise in FLFP is a result of females increasing enrollment in education as well as opting for higher studies thereby advancing their education levels, thus decreasing gender inequalities and falling fertility rates (Klasen et al., 2019). Still disparities exist across regions and countries which can be evident from a study that while FLFP rates continue to lag behind due to cultural and structural barriers in South Asia and Middle East, East Asia and Latin America shows a rising FLFP (Klasen, 2017). While access to education, childcare facilities, and equal employment opportunities have been instrumental for the steady rise in FLFP rates in developed economies. Gender pay gap, societal expectations, limited job opportunities and under-representation in leadership are making the situation more complex in developing economies (Klasen et al., 2019; Heymann et al., 2023).

The studies found a critical determining role of Education on FLFP rate and showed that higher levels of education are positively correlated with labor force participation among women (Psacharopoulos & Tzannatos, 1989). However, in developing countries like India the relationship between education and

FLFP is U-shaped, indicating that women with intermediate levels of education are less likely to participate in the labor (Klasen et al., 2019). Decrease in fertility rate enhances women's engagement in the workforce. This tendency is observed mostly in developing economies (Klasen et al., 2019). Societal norms play an important role in determining FLFP. Women often Prioritize domestic and caregiving activities over paid employment (Chant, 2013; Algul, 2024). Urbanization has both positive and negative impacts on FLFP (Gaddis & Klasen, 2014). Positively it offers better access to education and employment opportunities but negatively, it increases gender inequalities, crimes, violence, lack of safe and affordable transportation, community support and more (Sigelman & Tsai, 1985; Lathiya, 2018). Globalization has often led to employment opportunities for women (Sheraz et al., 2024; Roll et al., 2024). However, the fruits of economic globalization have not been equitably distributed. Moreover, women in developing countries often face exploitation and unsafe, precarious and unsatisfactory working conditions (Hossain et al., 2022). Gender-responsive urban planning can help to create conditions that encourage women to join the labour force, through provision of safe and accessible transport, childcare services, and public spaces (Bertram, 2023).

In India, women's workforce participation has remained low despite economic growth. According to the Periodic Labour Force Survey (PLFS-2023), the female labor force participation rate (FLFP) is about 26 percent, which is much lower than the global average (49 percent). The available latest Census of India (2011) reported that only 21.9 percent of Indian women were engaged in economic activities[1]. Women's economic contributions are under- reported as unpaid household labor accounts for more than 30 percent of India's GDP (George & Shaji, 2024). Female Workforce Participation Rate (FWPR) is uneven across rural and urban as well as social groups (Census of India). Disguised employment in the agricultural sector accounts for higher FWPR in rural areas. And among social groups, FWPR is higher among SC and ST women (Alvi, 2023). However, these jobs are often concentrated in low-income sectors, with little access to job security or benefits.

At the sub-national level, the Census 2011 data indicates that urban women's workforce participation in Odisha is significantly lower than in rural areas, despite higher literacy rates. Over the past few decades, the demographic and economic profile of urban Odisha has undergone a transformation, particularly with regard to women's population and their participation in the workforce. According to Census of India, the proportion of women in the urban area has increased from 45.2% to 49.7% in 2011 (Anand, 2015). A closer look at the composition of women workers reveals an important shift. The share of main workers dropped to 63.9% in 2011 from 87.0% in 1991. Conversely, the proportion of marginal workers increased to 36.1% in 2011 from 13.0% in 1991. This trend suggests that although more urban women are entering the workforce, a substantial and growing number are employed in insecure, short-term, or part-time jobs, often in the informal sector. (Kalyani & Das, 2020) in their study found decline in female labor force participation in Odisha is due to changing family structures, mechanized farming, industrial growth, and the shift towards skill-based employment.

In this context, this study is an attempt to undertake a comprehensive analysis of women's workforce participation and associated factors in urban Odisha. The objectives of this study are,

1. To examine the regional variations in women's workforce participation across urban Odisha encompassing primary, secondary, and tertiary sectors.

2. To study the district-wise scenario of women workforce participation in urban Odisha.

3. To examine and explore the complex interplay between women's workforce participation and a range of socio-demographic, economic and developmental factors.

2. DATA SOURCES AND METHODOLOGY

The present study is based on secondary source of data collected from the Census of India (2001 and 2011) and the Statistical Abstract of Odisha, 2012. Data pertaining to workforce and economic activities have been primarily drawn from the B-series tables of the Census for both years. Additional demographic and socioeconomic variables used for correlation analysis—such as literacy rates, marital status, migration patterns, fertility indicators, and information on female-headed households—were obtained from the B, C, D, F, and FH series of Census tables. Furthermore, district-level indicators such

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[1]A major factor contributing to this gap is the definition of "work", which often excludes household and care-related labor (domestic work, family farm labor, and informal care-giving).

as Gross District Domestic Product (GDDP), per capita income, Human Development Index (HDI), Gender Development Index (GDI), and Infrastructure Development Index (IDI) were collected from the Statistical Abstract of Odisha, 2012.

In the study, Women Workforce Participation Rate (WWPR) = Total women workers/Total women population*100[2]

For the regional analysis of WWPR, Geographic Information System (GIS)-based techniques were utilized. Using ArcGIS software, thematic maps were generated to visualize the spatial distribution of urban WWPR across Odisha. Furthermore, a comparative bar graph map was developed to show the urbanization rate and WWPR, thereby facilitating a visual understanding of their spatial relationship. In examining the distribution of women across economic sectors, the study calculated the Compound Annual Growth Rate (CAGR) of women workforce participation within the primary, secondary, and tertiary sectors during the decade 2001–2011. This enabled an assessment of the sectoral shift and the pace of change in women's engagement with different segments of the urban economy.

The district-wise analysis of WWPR was performed through a composite chart, allowing for a comparative display of workforce statistics across districts, highlighting intrastate disparities and trends in women's work force participation. For the district-wise gender disparity analysis in workforce participation, the Modified Sophers Disparity Index (DI) of Kundu and Rao was employed (De, 2022),

$$DI = log\left(\frac{X_2}{X_1}\right) + log\left(\frac{200 - X_1}{200 - X_2}\right) \qquad (1)$$

"Where X_2 indicates men variables and X_1 indicates women variables. The Sopher's index value lies between zero to one ($0 \leq DI \leq 1$). Zero means perfect equality and one means perfect inequality (Bhowmick et al., 2022)." These values were then spatially represented through a tint map to show the disparity index, thereby offering a clearer perspective on gender-based inequalities at the district level.

To identify the determinants influencing women workforce participation, correlation analysis between workforce indicators and selected socio-demographic, economic, and migratory variables has been used in the study. These relationships are visualized using heat map and a correlation matrix, providing both depth and clarity to the understanding of multifactorial influences. The heat map of the correlation coefficients (see Appendix, Table – 3) was framed using STATA.

Through these methods combining spatial visualization, statistical analysis, and computing index, the study endeavors to provide a robust and holistic assessment of women's workforce dynamics in urban Odisha.

3. RESULTS AND DISCUSSION

3.1. Regional pattern of women workforce participation in urban Odisha

The total WWPR in India is 40.75 percent. While the share of rural WWPR is 82.3, only 17.7 percent accounts for urban WWPR. Odisha on the other hand, has an urban WWPR of 20.3 percent which is only 2.6 percent higher than India's urban WWPR, but still significantly low as compared to their male counterparts.[3]

The graphical representations in fig 1 and fig 2 collectively shows the spatial and urban dynamics of women's workforce across the districts of urban Odisha regionally[4]. Figure-1 illustrates the regional pattern of women workforce participation in Odisha. The Nabarangpur district reported the highest percentage of WPR with more than one third (34.9%) women engaged in different types of economic activities. On the other hand lowest WPR is reported in the district Jajpur with 10.8%.

The spatial differentiation captured through the map in Fig 1 presents a spatial overview of WWPR across the state. Fig 2 presents vertical bar charts, showing differences in district-wise WWPR and Urbanization rate. A notable insight emerging from a regional analysis of Women's Workforce

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[2]Here, total women workers and total women population includes both 15-59 and 60+ age group category.

[3]Source – Census of India, 2011.

[4]The regional divisions – Coastal, Southern and Northern Odisha is referred from the NSS 66th round survey – "List of NSS regions and their composition" data.

Participation Rate (WWPR) in urban Odisha is the unexpectedly strong performance of Southern Odisha, which, despite its relatively low urbanization levels (see fig-2), emerges as the most active zone in terms of women workforce engagement. Districts such as Kandhamal, Gajapati, Malkangiri, Ganjam, Subarnapur, Nuapada, Kalahandi, Rayagada, Nabarangpur, Koraput, and Boudh exhibit moderate to high WWPR, indicating a pattern of women's participation in traditional, informal, and community-based economic activities as most of these states have a higher proportion of tribal population often mobilize in locally available resources and networks to sustain livelihoods—be it through forest produce collection, weaving, agriculture, or SHG driven micro-enterprises as SHGs plays a significant role in empowering tribal women by progressing their socioeconomic condition, decision making power and capability structure (V S, 2018). This shows that women are equally engaged in the workforce contributing to the household economy as men in tribal dominated areas (Naresh, 2014). The only exception in this region is Balangir, which reflects a relatively low WWPR, possibly due to its high out-migration rates. (Panda, 2003; Odisha Bytes, 2023) in his study reports that Balangir is the district with the highest number of inter-state migrant laborers with nearly 65% from the total migrants of the state[5].

In contrast, Coastal Odisha despite being the most urbanized and infra-structurally developed zone in the state presents an alarmingly low to very low level of WWPR across a majority of its districts. Districts such as Khordha, Jagatsinghpur, Balasore, Cuttack, Bhadrak, Kendrapara, Nayagarh, Puri and Jajpur register low women engagement in the workforce. With the exceptions of Khordha and Cuttack, which experience both high urbanization and reasonable WWPR, the remaining districts exhibit relatively higher urbanization levels which do not necessarily translate into increased WWPR. This difference may be attributed to deep sociocultural constraints, restrictive gender norms, and a lack of women-friendly employment opportunities. Although it is believed that women in metropolitan regions have more social, economic, and political freedoms and opportunities than their counterparts in rural areas, research indicates that obstacles to women's empowerment are nevertheless common in urban settings (Dhamija et al., 2025).
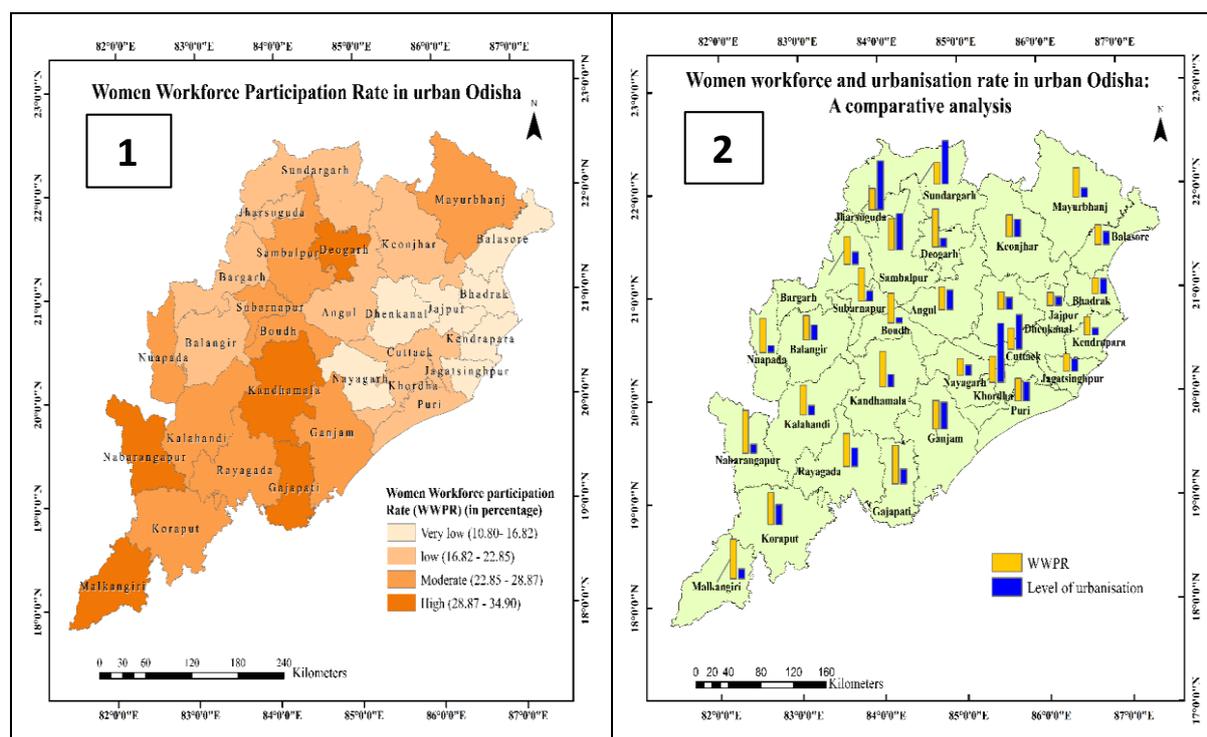

Figure 1. *Women workforce participation in urban Odisha and level of urbanisation.*

Source: *Census of India, 2011.*

Northern Odisha presents a miscellaneous picture with moderate to high WWPR. Districts like Deogarh, Mayurbhanj, and Sambalpur display a relatively active women workforce presence, possibly facilitated by local industries and better women literacy. In contrast, Dhenkanal, Angul, Bargarh, Keonjhar, and Sundargarh—despite their industrial importance—record low WWPRs, highlighting a

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[5]Here the migration is not rural or urban specific, rather it is for the entire Balangir as a whole.

possible disparity between the nature of employment available and women's access to it. Thus urbanization, while generally assumed to be a catalyst for women's economic participation, does not uniformly produce such outcomes unless accompanied by inclusive policies, social reform, and structural facilitation.

3.2. Sectoral composition of Women workforce participation

Table 1 shows a decrease in WWPR in primary and secondary sector with an increase in tertiary sector (Sundari, 2020). While there is a decrease in main WWPR and an increase in marginal WWPR among primary and tertiary sectors, there is an increase in main WWPR and decrease in marginal WWPR in secondary sector. As urbanization diminishes agricultural production by encroaching the farmlands (Dadi et al., 2023), thereby decreasing involvement in primary activities as a main work. Industrialization leads to increased participation of workers in formal employment (O'Clery et al., 2024). As many informal jobs are part time or have irregular hours, making them more accessible for women who need to manage household duties (Kumari, 2024), there is a sharp surge in marginal workers within the tertiary sector.

Table 1. *Changes in Women Workforce Participation across Economic Sectors in urban Odisha (2001–2011)*

Year	Women WWPR	2001	2011	CAGR (%)
Primary	**Main**	46.59	44.96	-0.4
	Marginal	53.41	55.04	0.3
	Total	**18.78**	**14.21**	**-2.7**
Secondary	**Main**	66.31	70.32	0.6
	Marginal	33.69	29.68	-1.3
	Total	**28.36**	**25.8**	**-0.9**
Tertiary	**Main**	87	77.4	-1.2
	Marginal	13	22.6	5.7
	Total	**52.85**	**60**	**1.3**

Note: *"Total" denotes total women workforce share in each sector respectively.*

Source: *Census of India, 2001 and 2011. Compound Annual Growth Rate (CAGR) calculated by the authors.*

3.3. Trend of women workforce participation in urban Odisha

The decadal percentage change (2001-2011) in women workforce participation across the districts of Odisha is presented in the fig 2, dis-aggregated into Main and Marginal workers, with an overarching Total trend line reflecting the quantitative shifts in women's economic engagement along with the dynamics between stable employment and unsecure, seasonal and precarious occupations. While more than 66 percent of districts have registered an increase in marginal employment.
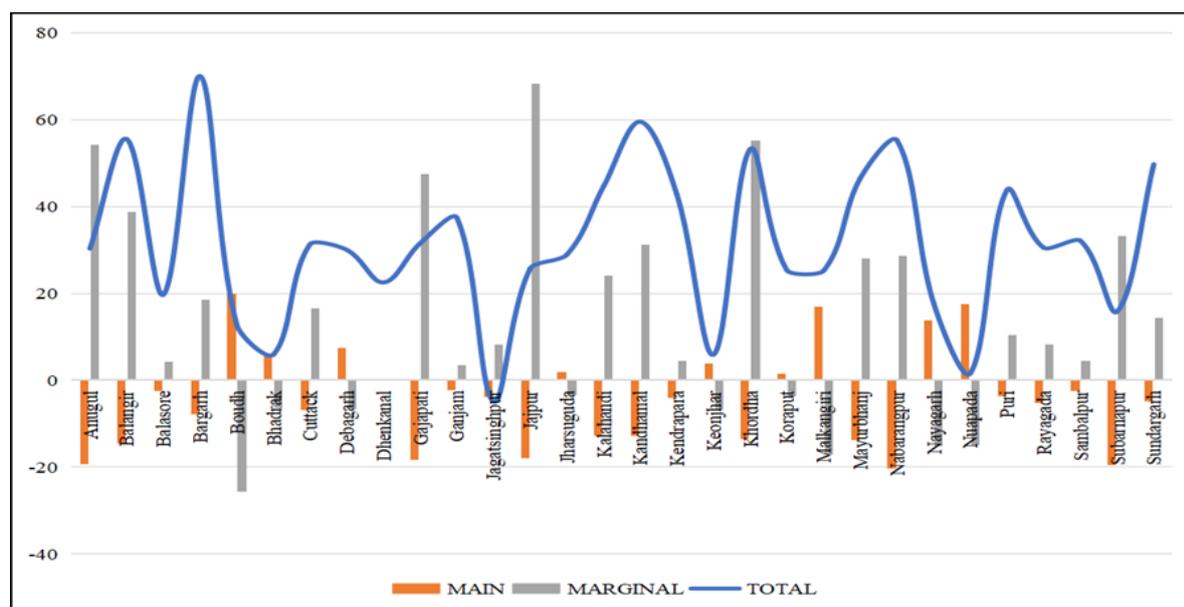

Figure 2. *Percentage change in women workforce in urban Odisha (2001-2011).*

Source: *Census of India, 2001 & 2011.*

That is more women are getting engaged in low paying and unsecured jobs. Some districts registered a decrease in main workers indicating a decline in secured employment. Districts like Boudh, Bhadrak, Deogarh, Jharsuguda, Keonjhar, Koraput, Malkangiri, Nayagarh and Nuapada register a significant rise in main WWPR. But such instances are few and in most of these districts the rise in main WWPR is very low or negligible.

3.4. Gender Disparity in Workforce Participation

Female Labor force Participation (FLFP) in India remains low despite increasing educational enrolment and levels which can be due to other sociocultural factors (Banerjee, 2019). Fig 3 presents a Disparity's Index (DI), to show inequality in workforce participation between men and women across urban districts of Odisha.

The presented data highlight high gender disparities in workforce participation across various districts in Odisha. While male workforce participation remains consistently high—ranging between approximately 72 to 84 percent, women participation is significantly lower ranging from 11 to 35 percent. The chart shows that all districts in Odisha have relatively lower WWPR than Men Workforce Participation rate.

Jajpur district has the highest disparity ranging around 1.02. Districts like Deogarh, Gajapati, Kandhamal, Malkangiri and Nabarangpur have relatively lower disparity. "Interestingly these are the regions with high tribal population ranging from 28 percent to more than half of their population as tribes, with none of these states' literacy ranging above national literacy rate of 74 percent and all of them having a low urbanization rate. This shows that areas with low literacy and urbanization have more equality in workforce participation than areas of higher literacy and urbanization like Cuttack, Khordha" (Census of India). It can be also due to the dominance of tribal population as tribal women participate in revenue-generating labour in roughly equal numbers with men (Banerjee, 2024) and they contribute significantly towards their family income (Chatterjee, 2014).
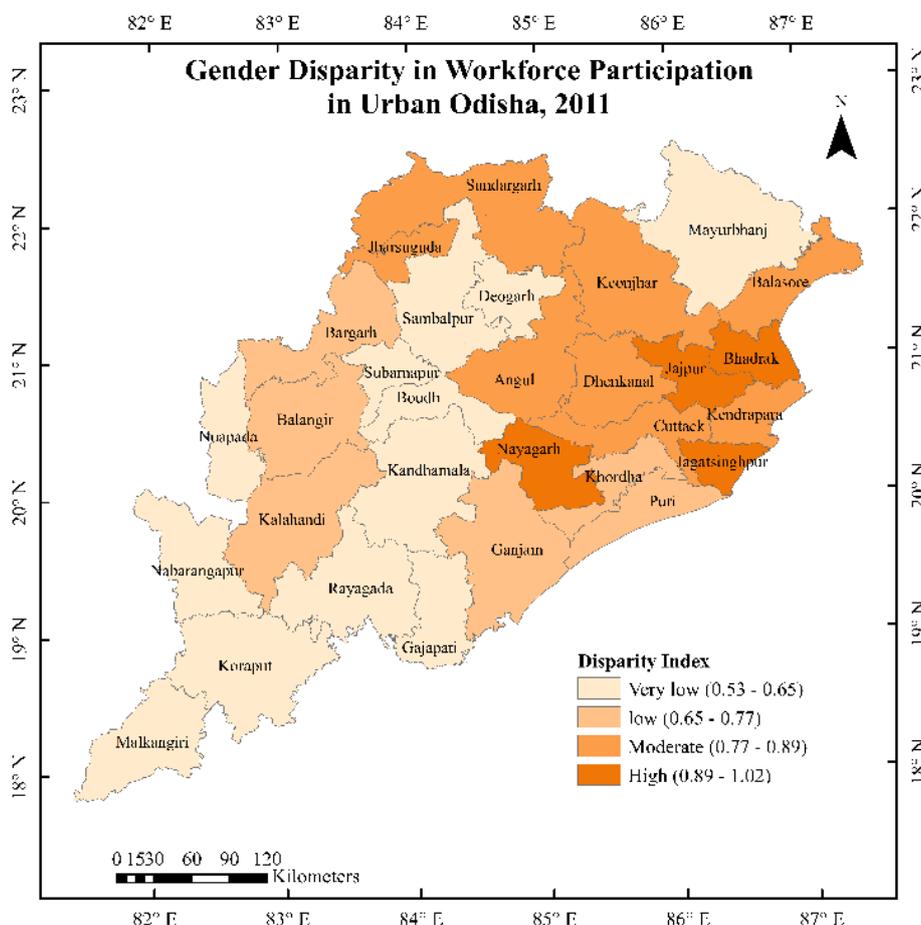

Figure 3. *Gender Disparity in Workforce Participation in urban Odisha, 2011.*

Source: *Census of India, 2001 & 2011.*

3.5. Analysing factors influencing women workforce participation

This section analyzes the correlation between WWPR and various associated factors. The analysis has been categorized into socio-demographic, economic and developmental factors. Studies reveal how literacy, household income, marital status, and other key factors determine women's workforce participation rates (Sudarshan et al., 2008).

By examining the socio-demographic variables, the study finds that "Female-Headed Households" show a minor positive effect, indicating that women who head households are slightly more likely to participate in the workforce, possibly due to financial necessity. "Children Ever Born to Women Ratio" is weak and statistically insignificant to WWPR, suggesting that fertility rates may not have a strong direct impact on WWPR in urban Odisha. "Our findings align with (Bloom et al., 2009), who analyzed data from 97 countries (1960–2000) and found that higher fertility rates reduced WWPR, particularly in low-income households. While our correlation (-0.09) is weak, this suggests that childbearing responsibilities may impact workforce participation differently across economic and cultural contexts."

"Sex Ratio" is strongly correlated with WWPR, meaning regions with more women tend to have higher workforce participation. However, this does not establish causality, higher women presence may lead to increased participation, or urban areas with better opportunities may attract more women migrants, affecting the sex ratio. Likewise, "Women Migrants for Work" shows a positive relationship, but "Women migrants moved with households" exhibits a negative correlation with WWPR. This suggests that an independent women migrant has freedom or own labor force interests rather than the women following their male counterparts (Hiller & McCaig, 2007).

The analysis presents a contradictory situation that while women with "No formal education" have a higher correlation with WWPR, those with "basic" and "higher education" show a negative correlation with WWPR. This predicts that low educated women might be more engaged in the informal sector which requires minimal skill and educational background and those with higher education might prefer stable and formal jobs which are limited and thus impacting the participation. Lack of jobs according to preference and sociocultural barriers adversely impact educated women (Kingdon & Unni, 2001; Das & Desai, 2003).
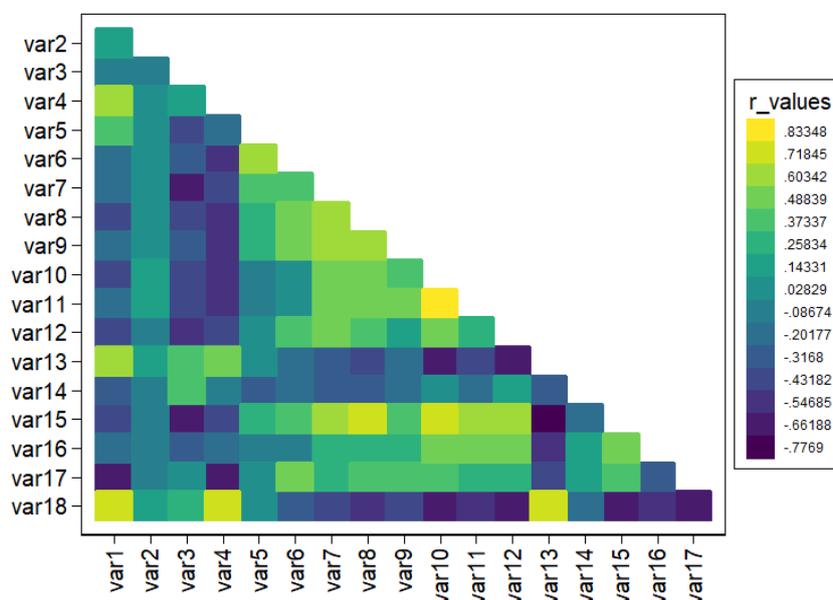
Figure 4. Women Workforce and Socio-demographic, economic and developmental indicators.

***Source** – computed by author.*

"Women Widowed, Separated or Divorced" shows the strongest positive correlation with workforce participation, indicating that these women are significantly more likely to engage in the workforce. The PLFS (2017-18) reports that Labor Force Participation Rate (LFPR) for widowed women is 50.93% and divorced/separated women is 62.17 percent, much higher than 26.15% for currently married women (Neff et al., 2012). This suggests that economic compulsion rather than choice drives workforce

participation among widowed or separated women, as they lack male financial support. Skill training and employment incentives targeted at widowed/separated women could further improve their workforce integration (Tyagi & James, 2022). "Currently married" women show a pronounced inverse relationship with workforce involvement, suggesting that marital responsibilities, domestic labor burdens, and traditional gender roles continue to significantly curtail economic engagement among this cohort. While those "never married" is moderately negative with WWPR, suggesting that women who are unmarried are also less likely to participate in the workforce. This finding may appear counterintuitive at first glance, particularly when compared to global patterns where never-married women often represent a more independent and mobile demographic segment (UN Women, 2019). However, the situation can vary globally. Working of unmarried women are limited by societal restrictions and family control for the sake of social image (Paul, 2020).

Economic indicators also play a vital role in determining women's workforce participation. "Gross District Domestic Product" and "Per Capita Gross District Domestic Product" are negatively correlated with WWPR, which indicates that WWPR is not positively influenced by economic growth. Rising income levels hinders WWPR participation rate (Ministry of Labour and Employment, 2023; Saha et al., 2017). Similar trends have been observed in urban India (Klasen, 2015), where higher economic development led to women withdrawal from low-paid jobs rather than entry into formal employment.

Development indicators provide further insights with "Human Development Index" and "Gender Development Index" both showing negative correlations, implying that higher levels of human and gender development slightly decrease WWPR. Economic growth and higher standard of living which leads to better educational access and modernization reduces WWPR (Malik, 2018). Similarly, "Infrastructure development index" also negatively correlates to WWPR showing infrastructure may not solely or have a positive impact on WWPR. "India is ranked 108th among 149 countries despite advancement in infrastructure (Confederation of Indian Industry (CII) & Interweave Consulting Pvt. Ltd., 2019).

Table 2. *Correlation coefficients of WWPR and Socio-demographic, economic and developmental indicators.*

Variables	Socio-demographic, economic, and migratory indicators	WWPR
Var 1	Women Worker Participation Rate (WWPR)	1
Var 2	Total no. of female headed households	0.115
Var 3	Ratio of total children ever born to the total women population aged 15+ years	-0.09
Var 4	Sex Ratio	**.555****
Var 5	Women migrants in search of work	**.402***
Var 6	Women migrants moved with households	-0.169
Var 7	Urbanisation	-0.161
Var 8	GDDP (in lakh)	**-.403***
Var 9	Per Capita GDDP (in Rs.)	-0.218
Var 10	HDI	**-.468****
Var 11	GDI	-0.233
Var 12	IDI	**-.414***
Var 13	No. formal education	**.620****
Var 14	Basic education	-0.334
Var 15	Higher education	**-.456***
Var 16	Never married	-0.237
Var 17	Currently married	**-.632****
Var 18	Widowed/separated/divorced	**.718****

*Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Here, GDDP indicates "Gross District Domestic Product", HDI indicates "Human Development Index", GDI indicates "Gender Development Index" and IDI indicates "Infrastructural Development Index".

Source – Census of India, 2011

Correlation coefficients computed by the author.

4. CONCLUSION

In Odisha regional disparities in WWPR shows how strategies should be preferred considering that each region has its own unique culture, resources and capabilities. Encouraging development from bottom levels like MSMEs, ending sociocultural barriers, and improving infrastructure can encourage higher

participation of women in the workforce. Over the decade from 2001 to 2011, the major shift is observed from primary and secondary sectors to the tertiary sector. However, this transition is characterized by more in unregulated and informal sector roles which offer limited economic security as the rise is inclined to the marginal category rather than the main category which urges the requirement of gender-specific policies which could ensure stability in the workforce. The government should also emphasise on encouraging women's participation in the secondary sector by improving and promoting household industry, food processing, and packaging. The "Mission Shakti" initiative of the Odisha government was a remarkable initiative which helped in employment generation for women.

The major problem is the definition of work confined to external economic activities and not considering household and caregiving activities. Higher education and income does not ensure higher WWPR rather it also requires other efforts like removing patriarchal norms, improving work space and safe, affordable and accessible transportation. The major finding is that while illiteracy, higher sex ratio and widowhood positively influence WWPR, other factors like economic development, marriage and increased education levels limit WWPR. Women with low level of education can opt for any job available to them rather than those with higher education level. Rare job oppurtunities exist for qualified women in urban areas and with long working hours and insecurities in private sector, arises family restrictions which limits women from working.

Only on changing the criteria of urban area, a region's characteristics do not change into urban, thus in tribal dominated forest areas, Forest Products and Produce (FPPs) should be promoted, which in turn will result in increased participation of women in the workforce. Lastly, the Government should focus on a robust policy framework with continuous monitoring of gender data which will be crucial in tracking progress ensuring inclusivity and equity.

5. DECLARATION OF CONFLICTING INTEREST

The authors declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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APPENDICES

Table 1. *Total, main and marginal women workforce in Urban Odisha (in percentage), 2011.*

Districts	Total WWPR	Main WWPR	Marginal WWPR
Anugul	18.4	59.4	40.6
Balangir	19.7	62.3	37.7
Balasore	16.2	63	37
Bargarh	22.5	64.4	35.6
Boudh	24.3	67.5	32.5
Bhadrak	12.9	56.9	43.1
Cuttack	17.1	66.2	33.8
Debagarh	30.9	50.2	49.8
Dhenkanal	14.1	60.3	39.7
Gajapati	31.4	58.9	41.1
Ganjam	23.2	58.3	41.7
Jagatsinghpur	14.3	65.6	34.4
Jajpur	10.8	65	35
Jharsuguda	17.6	64.7	35.3
Kalahandi	24.2	57.1	42.9
Kandhamal	28.9	62	38
Kendrapara	14.7	50.4	49.6
Keonjhar	17.9	66.7	33.3
Khordha	21.3	69.3	30.7
Koraput	26	71.7	28.3
Malkangiri	32.2	58.7	41.3
Mayurbhanj	23.9	58	42
Nabarangpur	34.9	46.6	53.4

Nayagarh	13.5	59.7	40.3
Nuapada	27.8	54.3	45.7
Puri	18.4	70.8	29.2
Rayagada	27	57.8	42.2
Sambalpur	25.5	63.9	36.1
Subarnapur	26.7	50.5	49.5
Sundargarh	17.7	71.5	28.5
Source – Census of India, 2011			

Table 2. *Decadal percentage change of women workforce in urban Odisha (2001 – 2011)*

Districts	Total	Main	Marginal
Anugul	30.3	-19.4	54.2
Balangir	55.5	-14.5	38.8
Balasore	19.7	-2.4	4.3
Bargarh	70	-7.9	18.5
Boudh	12.8	20	-25.7
Bhadrak	5.9	5.6	-6.5
Cuttack	31.3	-6.8	16.6
Debagarh	30	7.5	-6.6
Dhenkanal	22.5	0	0.1
Gajapati	31.5	-18.3	47.5
Ganjam	37.4	-2.3	3.5
Jagatsinghpur	-4.9	-3.9	8.3
Jajpur	25.7	-17.9	68.2
Jharsuguda	28.9	1.9	-3.4
Kalahandi	44.6	-12.7	24.1
Kandhamal	59.5	-12.7	31.1
Kendrapara	42.7	-4.1	4.5
Keonjhar	5.9	3.8	-6.8
Khordha	53.2	-13.6	55.2
Koraput	25.3	1.5	-3.6
Malkangiri	25.2	17	-17.1
Mayurbhanj	46.5	-13.7	28
Nabarangpur	55.2	-20.4	28.7
Nayagarh	17.7	13.8	-15.2
Nuapada	1.6	17.5	-15
Puri	43.8	-3.7	10.4
Rayagada	30.5	-5.2	8.2
Sambalpur	32.1	-2.4	4.5
Subarnapur	15.8	-19.6	33.1
Sundargarh	49.7	-4.8	14.4
Source – Census of India, 2001 and 2011.			

Table 3. *Correlation coefficients of Women Workforce and Socio-demographic, economic and developmental indicators.*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1																	
2	0.115	1																
3	-0.09	-0.12	1															
4	.555**	0.015	0.162	1														
5	.402*	-0.011	-.413*	-0.251	1													
6	-0.169	-0.01	-.373*	-.504**	.608**	1												

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
7	-0.161	-0.024	-.631**	-.422*	.363*	.403*	1											
8	-.403*	0.025	.482**	-.502**	0.224	.465**	.648**	1										
9	-0.218	-0.016	-0.328	-.495**	0.29	.543**	.630**	.590**	1									
10	-.468**	0.106	-.432*	-.576**	-0.091	0.066	.498**	.444*	0.343	1								
11	-0.233	0.147	-.416*	-.496**	-0.053	0.029	.516**	.440*	.448*	.891**	1							
12	-.414*	-0.05	-.588**	-.438*	0.077	0.338	.520**	.406*	0.136	.543**	0.313	1						
13	.620**	0.178	.383*	-.532**	-0.029	-0.218	-0.319	-.445*	-0.233	-.641**	-.400*	-.652**	1					
14	-0.334	-0.143	.421*	-0.121	-.367*	-0.233	-.364*	-0.339	-0.259	-0.009	-0.257	-0.193	-.366*	1				
15	-.456*	-0.101	-.650**	-.489**	0.248	.369*	.549**	.668**	.399*	.682**	.574**	.570**	-.834**	0.207	1			
16	-0.237	-0.047	-0.309	-0.202	-0.1	-0.049	0.28	0.255	0.212	.481**	.466**	.455*	-.513**	0.171	.440*	1		
17	-.632**	-0.139	0.028	-.693**	0.055	.465**	0.206	.392*	0.324	.371*	0.203	0.281	-.426*	0.102	.390*	-0.264	1	
18	.718**	0.153	0.231	.738**	0.038	0.344	-.400*	-.533**	-.442*	-.702**	-.551**	-.606**	.774**	0.226	-.683**	-.604*	-.609**	1

Computed by author.

Table 4. *Disparity index showing Inequality in workforce participation between men and women in urban Odisha, district-wise, 2011.*

Districts	WWPR	MWPR	DI
Angul	18.4	77	0.79
Balangir	19.7	75.7	0.747
Balasore	16.2	77.7	0.859
Bargarh	22.5	78.2	0.705
Baudh	24.3	73.8	0.627
Bhadrak	12.9	79.1	0.977
Cuttack	17.1	72.7	0.786
Deogarh	30.9	79.8	0.559
Dhenkanal	14.1	72	0.871
Gajapati	31.4	78	0.535
Ganjam	23.2	74.5	0.656
Jagatsingpur	14.3	76.1	0.901
Jajpur	10.8	75.1	1.021
Jharsuguda	17.6	76.4	0.806
Kalahandi	24.2	78.5	0.671
Kandhamal	28.9	76.9	0.568
Kendrapara	14.7	76.9	0.897
Keonjhar	17.9	78.7	0.821
Khordha	21.3	73.9	0.691
Koraput	26	77	0.623

Malkangiri	32.2	83.6	0.573
Mayurbhanj	23.9	74.2	0.638
Nabarangpur	34.9	83.6	0.531
Nayagarh	13.5	75.8	0.924
Nuapada	27.8	81.9	0.632
Puri	18.4	75.1	0.774
Rayagada	27	77.3	0.607
Sambalpur	25.5	77.6	0.637
Subarnapur	26.7	76.8	0.607
Sundargarh	17.7	73.9	0.781
Source – Census of India, 2011.			

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