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Women Labour Force and Standard versus Non-Standard Work Arrangement in Selected Indian States

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Abstract: *It has been commonly observed that women often participate in non-standard work arrangements (like part-time, temporary or casual jobs) unlike men (who are more likely to find regular-employment). There are both supply and demand-side factors that govern this type of work arrangement. This article serves three purposes. First, it delves into the trends and facts of women employment in India and secondly, it examines whether gender explains the type of employment status (regular or temporary) in selected Indian states. Lastly it tries to analyse if regional effect influences female work status. The methodology used is Logit analysis. It concludes that in West-Bengal, A.P., and Tamil Nadu, females find it easier to find a regular employment compared to male workers while Gujarat being the opposite. Odisha, Bihar, Maharashtra and Karnataka are gender-neutral. On a collective basis, women have a higher probability of finding a regular employment than men, considering these eight Indian states as a whole.*

Key Words: *Female Labour Participation Rate (FLPR), Regular Jobs, Temporary Jobs, Casual Employment and Logit Regression.*

1. INTRODUCTION:

Nonstandard work arrangements-such as part-time, temporary and contract work, have become an important research-topic on work and employment. Greater flexibility in employment has become a common facet ever since 1970s due to increased competition, sluggish economic growth, high unemployment and uncertainty compelled firms to become more flexible in contracting with their employees (Cordova, 1986). The adoption of nonstandard work was fostered by labour-saving technological progress in ICT which facilitated organizations to specialize their production, assemble temporary workers, particularly women. Stringent labor laws that protected interests of permanent employees raised firms' cost, and thus they preferred casual employment (Cappelli et al, 1997). Demographic changes in the composition of the labor force, such as the increase in married women workers and older workers, who often preferred the flexibility available through nonstandard work arrangements (Pfeffer & Baron, 1988).
But it must be noted that imputed values of contribution by women in non-marketed activities, particularly for LDCs, have been extremely essential for functioning of economic system (Jain, 2018).

It a common economic theory that as an economy advances, women participation rate initially falls, before rising. The economic rationale is that, initially women are engaged in domestic firms, and execute work from their homes, usually during their free time. They provide primary importance to household chores, and supplement their family income by lending labour in low-end, low-value-based activities. However, as economy progresses and men migrate to rural areas, women's role in house becomes all the more involving, which leaves them with lesser time to devote to value addition in marketable activities. But things change sooner or later, when with education, women learn about various work opportunities, and lured by monetary incentives, resort to formal or informal employment, that ultimately increases their work participation rate.

India has evidenced stupendous growth and development in many spheres, after independence, and particularly, post liberalization. However, gender equity in work participation is far from satisfactory level. The Indian policy-makers must acknowledge the important role played by women for in fostering economic development, as no nation can progress unless its women are given equal access to opportunities.

The issues relating to women's work employment are qualitatively different from those of male workers (Beneria and Sen, 1981). Raising wages of female workers does not always guarantee an improvement in the lot of women workers, since it can lead to a double burden upon women whose household obligations still have to be fulfilled. So focus must shift to the *quality* of women's work in marketable activities along with their household work and child care.

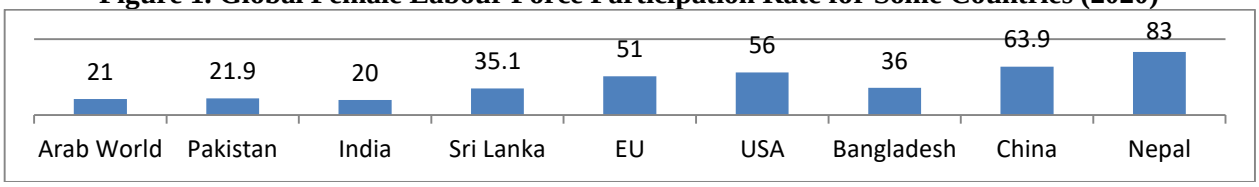
2. TRENDS AND FACTS OF WOMEN EMPLOYMENT IN INDIA:

The survey on employment and unemployment (EUS) situation in India, 2011-12, conducted by the National Sample Survey Organisation (NSSO), has revealed reduced female labour force participation rate (FLPR) and

employment in paid economic activities, particularly in the rural areas. However, this phenomenon of women exiting labour force appeared starkly in the previous round NSSO-Employment estimates in 2009-10.

The 2011-12 figures show a decline in the Labour Force Participation Rate to 22 percent and FLPR to 21.9 percent. This decline was primarily led by a decline in the economic participation of women in the rural areas. In the rural areas, the FLPR reduced by 2%, since, 2009-10 and by 8% since, 2004-05. In absolute terms, it implied a decline in female employment by almost 3 million compared to 2009-10 estimates, and a staggering 23 million compared to 2004-05. On the other hand, the urban areas have shown marginal improvement in women's participation in economic activities but not adequate to compensate the losses in the rural areas. Similarly, the 2009-10 EUS too, revealed loss of female workers in absolute numbers, despite robust 8% growth rate in India. Figure 1. gives us more insightful depiction of women employment in India.

Figure 1. Global Female Labour Force Participation Rate for Some Countries (2020)

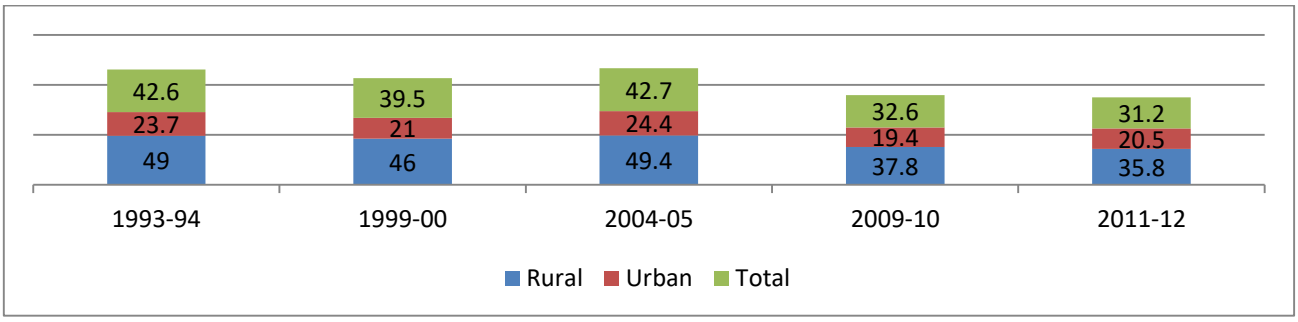


Source: ILO Database

From Figure 1, we discern that FLPR in India is not only below Arab countries and Pakistan, but also below Bangladesh and Nepal. Of the 185 nations that are part of the ILO database, 114 countries have recorded an increase in the FLPR while 41 countries have recorded a decline, and India is leading the pack here.

From Figure 2, it follows that while FLPR has receded both for rural and urban areas, the fall has been sharp in the former zone compared to the latter zone.

Figure 2. FLPR (%) in Rural, Urban India according to UPSS



Source: NSSO, Various Rounds

As per Labour Bureau of India (2017) Chandigarh has the highest FLPR while Jammu and Kashmir has the lowest. The North Eastern states have attained an equitable share in the scale, and can be considered to be more progressive. Haryana, Delhi, Daman and Diu, Bihar, Punjab and UP are laggards in terms of women participation. Telengana, Andhra Pradesh, Tamil Nadu, Maharastra and Sikkim lie in the second quartile of the distribution. West Bengal too, along with Gujarat, has a dismal share of below 20% rate.

3. METHODOLOGY:

In this paper the author tries to address the following questions for eight Indian states:

1. Whether women have a better chance of finding a regular employment over men?
2. Whether there is any regional effect on female work status?

To address these queries the author follows a simple Logit regression due to the fact that the dependent variable (nature of employment) is qualitative variable. Since, Logit and Probit regression are related to each other by the formula, Probit coefficient=0.55*Logit coefficient, we focus only on Logit model.

The data used in these analysis come from NSSO 55th round survey. The dependent variable considered here is the type of work status i.e., whether individual is employed on a Regular (Permanent) Basis (Code 31) or on a Casual (Part-Time/ Temporary) Basis (Code 51). The main independent variable is gender, while, age, education level (primary,

middle, higher secondary and graduate), enterprise type (proprietorship, partnership and public) and enterprise size (small, medium and large) are other control variables.

The basic regression equation is:
Pi=Prob{a worker is regularly employed}=prob{Y=1/z}=[1/(1+exp(-z))]=F(z) say,
Where z= constant+$\beta_1$dgender + $\beta_2$dprimary+ $\beta_3$middle+ β_4 dhsecondary+ $\beta_5$gradutate+ $\beta_6$dprop+ $\beta_7$part+ β_8 dpub+ $\beta_9$dsmall+ β_{10}dmedium+ β_{11}dlarge+ β_{12}age
Here the prefix d before the qualitative variables denotes the variable is a dummy variable as reported below.
dgender=1 if individual is male, 0 if female
dbprimary=1 if individual is educated below primary (Code 2 to 5), 0 otherwise
dmiddle=1 if individual is has studied upto primary or middle (Code 6,7), 0 otherwise
dhsecondary=1 if individual is educated upto secondary of higher secondary (Code 8, 9), 0 otherwise
dgraduate=1, if individual is a graduate (code 10 to 13)
dprop=1, if enterprise type is a propriety (Code 1 &2), 0 otherwise
dpart=1, if enterprise is a partnership (Code 3 & 4), 0 otherwise
dpub=1 if enterprise in public sector (Code 5 & 6), 0 otherwise
dsmall=1, if enterprise size is small (Code2), 0 otherwise
dmedium=1, if enterprise size is medium (Code3), 0 otherwise
dlarge=1, if enterprise size is large (Code4), 0 otherwise

The base cases pertaining to education, enterprise type and enterprise size are illiterate, category 'others' (co-operative society, public limited company, private limited company and other units covered under ASI) and below 6 respectively.

Bihar, West Bengal and Orissa comprise the eastern region, while for the western region we have states Gujarat and Maharashtra. Andhra Pradesh, Karnataka and Tamil Nadu are taken to belong in the South. These states have been chosen on the basis on random sample. The results would have given a greater insight with the incorporation of some of the Northern states, but the sampling process prevented this incorporation.

4. OBSERVATIONS:

Here we check for the influence of the various variables on work-status in each of the eight states.
We discern from Appendix A that age, education and public enterprises significantly raises the probability of finding a regular employment in all the eight states, while proprietorship firms significantly employs less of regular workers. Other state-specific results are posited below.

- West-Bengal

The interesting insight is that male workers have a lower probability of being regularly employed than female workers. Partnership enterprises do not explain work-status. As regards to the size of enterprise, small and medium sized businesses do have any explaining power on work status. But large enterprises tend to employ more regular workers.

- Orissa

For this state, we see that gender and enterprise size are insignificant variables, hence have no explanatory power in explaining work-status. No clear trend is present in case of partnership enterprises.

- Bihar

For this state, we see that gender, partnership enterprise and small and medium enterprise turn out to be insignificant variables. Large enterprises tend to employ more regular workers.

- Maharashtra

In this state we see that gender has no role in determining work status. Partnership enterprises have no isolating effect, either. Large enterprises tend to employ more regular workers while small and medium enterprises turn out to be insignificant variables.

- Gujarat

Male workers are employed more on a regular basis, over women. Probability of being a regular worker in partnership enterprises is lower than that of casual workers. Large enterprises tend to employ more regular workers, while medium enterprises employ more casual workers. For this state, the only insignificant variable is the dummy on small enterprises.

- Andhra Pradesh

In this state, females have a higher probability of getting a regular job than male workers. Small and medium enterprises tend to employ more casual workers while large enterprises do not have any significant preference for either of the two types of workers along with partnership enterprises.

- Karnataka

For this state, while gender, dummies on partnership enterprises, small and medium enterprises turn out to be insignificant variables. Large enterprises tend to employ more regular workers.

- Tamil Nadu

In this state, only partnership turns out to be an insignificant variable. *Male workers have lower probability of getting a regular job than female workers.* Small and Medium enterprises employ fewer regular workers. Large enterprises tend to employ more regular.

Using interaction variables in the Logit regression, the following facets have been found out (See Appendix B):

- For WB, A.P. and T.N.: women have a higher probability of finding employment in public enterprises, and opposite for proprietorship firms.
- Small enterprises in W.B. and A.P. are more likely to hire women.

Finally, we now address the second research questions i.e., whether there exists any regional effect on employment status. For this part we consider the new Logit regression equation (see Appendix B):

Logit Regression: Pi=Prob{a worker is regularly employed}=prob{Y=1/Z}=[1/(1+exp(-z))]=F(z) say,

Where z= constant+$\beta_1$dgender + $\beta_2$dprimary+ $\beta_3$dmiddle+ β_4 dhsecondary+ $\beta_5$dgradutate+ $\beta_6$dprop+ $\beta_7$dpart+ $\beta_8$dpub+ $\beta_9$dsmall+ β_{10}dmedium+ β_{11}dlarge+ β_{12}age+β_{13}dwestern+ β_{14}dsouthern

Here, the reference case is the eastern state. This new regression gives a different perspective as to the effect of the independent variables on work status. The sample size is more than 29000. We see that all the variables are significant. *Male workers have lower probability of getting a regular job than female workers.* Probability of getting a regular employment increases with education level. The probability of propriety and partnership enterprises to engage regular workers is lower than that of casual workers, while public enterprises tend to employ more of regular workers. Small and medium enterprises employ fewer regular workers while large enterprises employ more regular workers. Age increases the probability of finding oneself in regular employment

The interesting insight is that enterprises located in the western and southern parts of the country have a higher tendency of employing regular workers than eastern states. Probability of being a regular worker is higher by 4.2% and 4.5% in southern and western region of the country, compared to the eastern region. Thus regional effect, although low is seen to prevail.

5. CONCLUSION:

It is apparent that large and public enterprises tend to employ more regular workers. Propriety enterprises on the other hand tend to employ more casual workers. This is true for all the eight Indian states. Small and medium enterprises tend to show no such clear trends. Education and age increase the probability of finding a regular job. This might be because with age, experience increases and thus the person get better deals. Education increases human capital in one, and thus, one can find a regular job compared to less qualified people. Gender gives a confusing picture. In states like West Bengal, A.P., and Tamil Nadu, females find it easier to find a regular employment compared to male workers. Gujarat seems to be an exception to this trend. The other four states are gender insensitive to work status. Lastly, industries in South and West employ more regular workers than industries in the East, though on a collective basis, women have a higher probability of finding a regular employment than men.

It must be mentioned that the analysis will change when we incorporate other Indian states and experience in our analysis. This research is only the first and small step to the analysis of work status in India, which has huge scope of modification and further extension by incorporating all the Indian states and experience as an explanatory variable.

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Appendix A
Logit Results of State-Wise and Regional Regression Exercise

	West Bengal	Odisha	Bihar	Maharashtra	Gujarat	Andhra Pradesh	Karnataka	Tamil Nadu	Regional Effect
dgender	-0.75	***-0.3***	***-0.38***	***0.14***	0.58	-0.28	***0.17***	-0.58	-0.23
(marginal effect on gender)	(-0.10)	***(-0.02)***	***(-0.05)***	***(0.01)***	(0.12)	(-0.03)	***(0.24)***	(-0.07)	(-0.03)
dprimary	0.58	0.73	1.36	0.81	0.45	0.88	1.04	0.57	0.82
dmiddle	1.05	1.87	1.16	0.96	1.09	1.47	1.17	0.92	1.19
dhsecondary	2.17	2.55	2.61	1.93	2.51	2.01	2.48	2.02	2.03
dgraduate	3.35	4.74	4	3.93	3.82	5.06	4.56	4.96	4.02
dprop	-1.05	-1.32	-0.93	-0.73	-1.31	-1.41	-0.83	-0.27	-0.88
dpart	***-0.053***	***-0.23***	***1***	***-0.006***	-1.07	***0.22***	***-0.34***	***0.32***	-0.3
dpub	0.874	2.28	2.53	1.27	1.52	1.01	1.18	1.58	1.17
dsmall	***-0.029***	***-0.43***	***-0.18***	***0.06***	***-1.92***	-0.52	***0.52***	-0.34	-0.19
dmedium	***0.198***	***-0.52***	***0.04***	***0.04***	-0.53	-0.98	***0.18***	-0.32	-0.26
dlarge	0.515	***-0.23***	***0.34***	0.38	0.32	***0.007***	0.98	0.69	43
age	0.036	0.02	0.02	0.012	0.04	0.014	0.01	0.19	0.02
dwestern	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.35
dsouthern	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.31
No Obs	3554	1177	1510	6334	3156	4701	2876	5961	29269
prob>chi^2	0	0	0	0	0	0	0	0	0
Pseudo R^2	0.33	0.48	0.42	0.23	0.34	0.37	0.36	0.29	0.39

N.B. Bold and italicized cells indicate p>.05, and hence insignificant variables

Appendix B
Logit Regression using Interaction Dummies

	West Bengal	Andhra Pradesh	Tamil Nadu
dgender	-0.78	-0.28	-0.58
dprimary	0.63	0.88	0.57
dmiddle	0.99	1.47	0.92
dhsecondary	2.1	2.01	2.02
dgraduate	3.33	5.06	4.96
dprop	-0.07	-1.41	-0.27
dpart	***-0.05***	***0.22***	***0.32***
dpub	0.89	1.01	1.58
dsmall	***-0.03***	-0.52	-0.34
dmedium	***0.22***	-0.98	-0.32
dlarge	0.57	***0.007***	0.69
age	0.042	0.014	0.19
dgenderdprop	-0.78	-0.86	-0.69
dgenderdpart	***-0.09***	***-0.06***	***-0.074***
dgenderdpub	-0.95	-0.91	-0.81
dgenderdsmall	-0.56	-0.66	-0.54
dgenderdmedium	***0.98***	***0.84***	***0.85***
dgenderdlarge	***1.05***	***0.81***	***0.95***
No Obs	3554	4701	5961
prob>chi^2	0	0	0
Pseudo R^2	0.48	0.42	0.34

N.B. Bold and italicized cells indicate p>.05