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## Determinants of Women's Informal Work in Manipur: An Empirical Analysis

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### **Abstract:**

*Manipur is one of the most economically backward states of North-Eastern region of India bordering with Myanmar. Women constitute about half of the total population and about 40% of the workforce in the state. Unlike other parts of India, Manipuri women face less discrimination. Women are playing multiple role in the economy and society besides their role as mother, wife, home maker, and care giver in the household. But their participation in the organised sector as worker is low as majority of them are engaged in the informal or unorganised sector characterized by low productivity, insecurity and vulnerability. Keeping this in view, the present paper tries to examine the determinants of the women's participation of such informal work by using National Sample Survey Organisation's Unit level data on employment and unemployment for two different rounds i.e., 61<sup>st</sup> and 66<sup>th</sup> round respectively. The study employed the Logistic Regression model for the analysis. Eight Independent variables have been selected viz. Age, education, marital status, location, household type, household headship, social group, religion respectively. The overall result indicate that, among the explanatory variables, age and education have significant contribution in predicting the dependent variable that is women's entry into informal work.*

**Keywords:** Informal sector, care giver, organized sector, informal work

### **1. Introduction**

There has been increasing volume of research on 'informality' more particularly of empirical research both at the global and national level. In India, various research and analysis has been done mostly for major states of India. However, at the sub-national level, there is lack of such research more particularly in case of Manipur. Therefore, the paper is a humble attempt to fill research gap by adding few insights towards the vast literature of informality. The paper tries to study the determinants of informality empirically vis-à-vis women work force in the state of Manipur situated in the North-Eastern part of India. Because women workers constitutes around 40% of the total workforce in the state (2011 Census). However, most of them are engaging in informal or unorganised work which is characterized by low productivity, insecurity and vulnerability. Women informal employment constitute 87.73% in 66<sup>th</sup> round (estimates from unit level data) of the total women employment in the state. Hence, the paper attempts to answer the basic research question ---- why Manipuri women enter into such informal work? This question will be answered by using various household and individual characteristics of women workers in the state with the help of National Sample Survey Organisation's (NSSO) Unit level data on employment and unemployment for two rounds i.e. 61<sup>st</sup> (2004-05) and 66<sup>th</sup> (2009-10) respectively.

### **2. Conceptualising Informality**

The concept and scope of the term Informality has been changing through both time and space no longer confined to particular sector or region. Therefore, the ILO in its report

'Decent work and Informal Economy broadened the term to include employment in the informal sector as defined by 15<sup>th</sup> ICLS and other forms of informal employment (i.e. Informal employment outside informal sector).

The term 'Informality' refers to both economic units and workers which are beyond the ambit of regulation and protection of the public authority i.e. government. Different individual researchers have defined informality in their own way. However, the present paper is followed most of the concepts and definitions used by National Sample Survey Organisation's survey on employment and unemployment which is in line with the International Guidelines regarding informality endorsed by 15<sup>th</sup> and 17<sup>th</sup> International Conference of Labour Statisticians (ICLS).

The 15<sup>th</sup> ICLS (ILO) defined employment in the informal sector as "comprising all jobs in informal sector enterprises, or all persons who, during a given reference period, were employed in at least one informal sector enterprise, irrespective of their status in

*employment and whether it was their main or a secondary job*". This definition has been criticised for three main reasons. (i) Lack of reporting by the self-employed workers about their activities in statistical survey. (ii) Inaccuracy of the informal sector statistics due to misclassification of employment status of persons who are in the borderline between wage and self-employment. (iii) This definition failed to capture the changing dynamics of labour market i.e. 'informalization' of the employment arising out of globalisation (Haussmann 2004)<sup>1</sup>. Despite its criticism, it is still retained for estimating accurate Gross Domestic Product (GDP) by the UN. Hence, definitions of informality given by both ICLS has been regarded as

internationally agreed one. Subsequently included in the Revised United Nation's System of National Accounts 1993 (15<sup>th</sup> ICLS on Informal Sector ) and 2008 (17<sup>th</sup> ICLS on Informal Employment) respectively. The present paper will be based on the labour approach for defining informality in line with the 17<sup>th</sup> ICLS guidelines which is more broader than 15<sup>th</sup> ICLS (enterprise based) in capturing not only informal sector workers but also the diverse workers and activities outside informal sector as well.

The 17<sup>th</sup> ICLS defined Informal Employment "as the total number of informal jobs, whether carried out in formal sector enterprises, informal sector enterprises, or households, during a given reference period". The informal employment include :- own account workers of the of the informal sector enterprises, contributing family workers irrespective of sector of employment, employees holding informal jobs( not covered by labour law, social security and other non-wage benefits) and members of informal producers cooperatives etc.

Therefore, in the present context, it would be more appropriate to use the term informal work rather than informal sector in order to address diversity and heterogeneity of employment. With the given information from NSSO survey, we defined informal workers as 'those workers who are not eligible for social security'. The residual of it will constitute workers having formal employment.

### 3. Review of Empirical Work on Informality and Women

Beyond economic benefits, women's participation in the labour force can be seen as a signal of declining discrimination and increasing empowerment of women (Mammen and Paxson, 2000 cited in Klasen and Pieters 2012)). However, feminization of the workforce is not necessarily a sign of improvement of women's opportunities and position in society. It can also be a response to recession or increasing insecurity in the labour market, with female labour supply functioning essentially as an insurance mechanism for households (Standing, 1999; Bhalotra and Umaña-Aponte, 2010). The labour force participation rate for less educated women is tend to be counter-cyclical whereas for highly educated, it is pro-cyclical (Bhalotra and Aponte (2009). The former is due to 'added worker effect' (more participation to compensate household income shocks and later to 'discourage worker effect' (withdrawal from labour market). Klasen and Pieters (2012) studied labour force participation rate for urban women in India by using NSSO unit level data of employment and unemployment 1987- 2004-05. The study found that that increase participation of women with less than secondary education was driven more by necessity than improved opportunities. Therefore, according to them, for the urban population with low education, the labour market trends are in line with the view of Standing (1999) that is, female labour force participation is driven by men's erosion of position in the labour market, rather than improvements in women's opportunities as economic liberalised and become more globally integrated, worker face more insecurity (Ibid:25). On the contrary, India's impressive economic performance only creating attractive labour market opportunities for highly educated women. They conclude that Indian women with little education, push factors and household social status are major determinants of participation while own earnings potential plays no role, their participation can hardly be considered as a sign of emancipation.

Heintz and Pickbourn (2013) in a more recent article on the determinants of selection into non-agricultural self-employment in Ghana by using GLSS-5 (Ghana Living Standard Survey, 2005-06) argued that participation in the informal employment can also be understood as outcome of choices made in the context of structural constraints outside the labour market. Such constrain include – distribution of assets, access to credit, education gender, and social norms of household provisioning etc. That is, there is no single 'cause' of informality. On the average women will specialise both unpaid work and non-agricultural self-employment in households with young children, while men specialise in other forms of paid employment. Profit estimates for men and women show the different effect of educational attainment between man and women. For man only junior high school (post primary education has a positive impact on operating household enterprise. For woman, primary and post-primary education has positive impact on the likelihood of that woman operating household enterprises, but the effect for man is not significant.

Another study on Indonesia by Gallaway and Bernasek (2002) found that education and family responsibilities are important factors in determining both the labour force participation and sector of employment. The presence of infants and toddlers decrease the likelihood that a woman will participate in paid employment outside home relative to work in the home and increase the odd that a woman will participate in informal sector employment relative to formal sector employment. Their results suggest that, it is the most marginalised women who work in the informal sector with the least education and lower potential earnings. They emphasised need for addressing the issues of education of women and child care if women are to gain access to opportunities in the formal sector which is the better quality of employment.

Dogrul (2012) study of urban labour market in Turkey identifies education as a major factor determining participation in modern wage employment. Education also appears to have negative impact on the informal sector employment. Possible reasons are that informal sector employment requires skills and capital, rather than a high education level. The proportion of working women is relatively higher in the informal sector compared with the formal sector. There is need for policies to upgrade women's education and skills so that they can compete with men in the labour market.

Given the above literature in view, the main purpose of this study is to answer the basic research question why Manipuri women enter into informal sector work? Understanding these determinants is necessary to be able to understand the implications for women's status and for future growth of the labour force in the economy in general and women in Manipur in particular. To answer this empirically, the logistic regression is employed for the analysis of the observed NSSO Data of Manipur for three different rounds (1999-00, 2004-05 and 2009-10) respectively.

#### 4. Data Sources and Methodology

The paper is based on the Unit Level Data of National Sample Survey Organisation quinquennial survey on employment and unemployment for 2 rounds 2004-2005 and 2009-2010 respectively. The reason for choosing specifically these rounds are: First, it captures information on various aspects of informality. Second, these rounds are based on large sample. Third, National Sample Survey Organisation's data is considered as most reliable/comprehensive source of information at the national level as far as labour force is concerned. It is also based on better sampling design and data are collected by trained investigators. Fourth, from the unit level data detail information of each and every members of the sample household can be configured. It enables us to zero down from the household to the individual level analysis.

The study will be focused on the women in informal workers in the state of Manipur. The NSSO's survey adopted stratified multi-stage sampling design. The first stage unit is the census village for rural areas and urban frame survey blocks for urban areas. The household is considered the ultimate stage unit. Whereas in the present study, analysis further goes down to the individual level (i.e. individual being the ultimate stage unit). The total number of Central Sample of first stage units allocated for the state Manipur in each round were, 320 (61<sup>st</sup> and 66<sup>th</sup> round). Total number of person in the sample are 15,964 (61<sup>st</sup> round) and 12,675 (66<sup>th</sup> round) respectively. It may be noted that person below 15 years of age were not included in the study. Therefore, the total numbers of person surveyed mentioned in the NSS reports are different from it.

The present paper used Logistic Regression model for analysis. For conducting regression, with limited data availability from the NSSO Survey, we have selected Variable Sex (women in informal work=1) as dependent variable which is a categorical variable and 8 Independent variables viz. location rural/urban, household type, social group, religion, marital status, headship of household, age and education etc. as predictors or explanatory variables. For performing logistic regression, we have selected only sample of woman workers only. So, we find the total number of observations 5432 and 4048 for 61<sup>st</sup> and 66<sup>th</sup> rounds respectively. Accordingly, performed logistic regression for female informal work with respect to above mentioned independent variables.

#### 5. A Brief Profile of Manipur

Manipur is a small hilly state (22,327sq.km) having population of 25, 70,390 (2011 Census) located in the North-Eastern corner of India having international boundary with Myanmar. Valley occupied only 10% of its total area (2,238sq.km). Meiteis are the major community. There are thirty three ethnic tribes (STs), seven Schedule Caste communities (SCs), Meitei Paangals (Muslims of Manipur), Nepalese and Non-Manipuri (coming from various parts of India (mainly traders and labourers) respectively inhabited in the state. Sixty years of economic planning in India have failed to establish the industrial base of the economy and remained as most backward economy in the region despite its achievement in demographic and social indicators. The Net Domestic Product and Per Capita Income are abysmally low in compare to rest of India. The Net state Domestic Product (NSDP) and Per Capita Income stood at Rs. 8,228 Crores and Rs 29,684 respectively as against Per Capita Income of Rs. 54,385 all India average (economic Survey 2011-12). There

are no medium and large scale industries which can accommodate ever increasing numbers of labour force. The government sector provide only small fraction of secure employment. Further, India's Economic Reforms introduced in 1991 have had serious implications on employment and income in many states. Manipur is no exception. Cut in public spending, downsizing of the government departments, ban on recruitment of jobs and closing of sick

Units etc. were the main feature of managing the state's economy. The immediate impact was lowering of employment level on the one hand and creation of low quality and insecure work such as part-time and contract employment without social security benefits in the government departments. The immediate options of the people were either work in the informal sector or remain unemployed.

#### 6. Women and Informal Economy in the context of Manipur.

Manipuri women have a unique status in the society. Women in Manipur are free from social evils prevalent in other parts of India such as bride burning, demand for dowry, foeticide and infanticide, neglect of girl child etc. They are more socially visible outside the home front and are relatively more economically active and independent than women in the rest of India (Arambam 2013:2). Women in Manipur face lesser discrimination than in other parts of the country. Moreover, social norms are such that there is lesser pressure on women to marry; there is greater freedom in movement, in the choice of occupation and in the choice of their life partner (Ibid.18). However, still patriarchal system is still prevailing in Manipuri society which is characterized by gender stereotype in the allocation of household work. In other words, there is the phenomenon of 'feminisation of household work' in the Manipuri Society. These put pressure on women's time and labour in the family. Women plays major role in the society and economy besides their role in the family as wife, mother, homemaker and care giver of the household members in the family. The 'ImaKeithel' (mother's market) at Kwairamband Bazaar is the vivid example of the women's participation in economic activity from different parts of the state. The market is controlled and managed exclusively by the womenfolk. The earning from engaging such economic activity is used for

maintaining family and children's education. The women's market is no doubt a glaring example of women's independent role and the maintenance of an indigenous system, which is also a surviving mechanism of various cottage industries in the state (Baruah and Devi 2004). In many households women are shouldering the familial responsibility as the main breadwinner of the family Manipuri women despite their outside work, they are not free from doing unpaid household chores such as cooking, water fetching, collection of fuel wood (mainly rural and hill areas), washing & cleaning, child and elder care etc. at home thereby shouldering double burden of paid and unpaid work. It is the women who keeps kitchen running and bear the burden of poverty. Besides their contribution to the family, Manipuri women contribute substantially to the economic development of the state. In fact, "women are the real backbone of the Manipur's economy", (Yumnam, 1999). Not only this, Manipuri women stood against the colonial economic exploitation of British Administration. The history of famous Nupilan<sup>ii</sup> of 1904 and 1939 are the testimony of women's involvement of women's collective socio-economic movement in the state against the British colonial exploitation.

According to 2011 Census, women constitute nearly half of (49.80% ) the total population and 39% of the workforce out of total workers 11,59,053 of Manipur. As for the Work Participation Rate(WPR), Manipur has higher participation rate of women as compare to all India average(both Census and NSSO). However, the WPR figure of NSSO is lower than Census figures because the later used sample based estimates as against much larger and comprehensive coverage of population. According to 2011 Census the female Work Participation Rate of Manipur is 38.56% as against the all India average of 25.51%. However, there has been marginal decline in the rural WPR during 2001 to 2011 period to the extent of (-) 0.3%, whereas for Urban WPR a marginal increase is observed from 32.2% in 2001 to 33.2% in 2011(1% increase ). Increasing participation of women's outside employment (formal) is the better indicator of raising the status of women in the society. Further it will have its impact on socio- demographic indicators as well such as fall in fertility and infant mortality level.

However, mere increase in the rate of participation does not mean that women are really empowered and acquired better status. Even though women in Manipur have higher work participation rate the question is where they work and are their work remunerative and decent? These are the pertinent questions that need to be answered and addressed. The share of women organised sector employment was only 24.1% in 2009-10. This clearly indicates that most of the women workers are concentrated in informal or unorganised segment of the economy as it constitute around 87% in 2009-10.

Keeping the above facts in view, the present study attempts to answer the basic but fundamental question as to why women enter into such low quality informal work ?The present study will try to answer this question empirically by using Unit level data of NSSO 'Employment and Unemployment' for two different rounds i.e. 61<sup>st</sup>(2004-05) and 66<sup>th</sup>(2009-10) respectively. The study covered both rural and urban areas of Manipur.

## 7. Profile of Sample Workers

### 7.1. Locational Characteristics of Workers

The following table gives the Rural Urban composition of sample workers by gender.

Sector	2004-2005			2009-2010		
	Male	Female	Total	Male	Female	Total
Rural	5,675	5,294	10,969	3,636	3,461	7,097
Urban	2,476	2,519	4,995	2,889	2,689	5,578
Total	8,151	7,813	15,964	6,525	6,150	12,675

*Table 1: Distribution of Sample Workers by Location and Sex for Two Rounds Manipur*  
*Source: Calculated from the Unit Level Data on Employment and Unemployment (schedule 10)*  
*For two Rounds of National Sample Survey Organisation, 2004-05, 2009-10*

### 7.2. Household Characteristics

Household characteristics	2004-05(%)	2009-10(%)
I. Household Type		
• Self-employed in non-agri.	30.95	38.27
• Agri.Labour, and casual wage worker	10.11	19.03
• Self-employed in Agri.	33.52	19.32
• Others	25.42	23.28
II. Household Headship		
• Male	34.40	35.18
• Female	4.77	4.28

*Table 2: Household Characteristics of the Sample Workers (Source: Ibid)*

Individual Characteristics	2004-05		2009-10	
	Male	Female	Male	Female
<b>Social Group</b>				
• ST	39.40	38.85	28.97	28.82
• SC	1.03	1.03	3.28	3.35
• OBC	56.06	57.56	61.66	61.95
• Other	3.50	3.14	6.09	6.04
<b>Religion</b>				
• Hinduism	48.98	49.25	57.91	58.45
• Islam	7.70	8.10	8.59	8.16
• Christianity	38.82	37.65	28.99	28.65
• Others	4.50	5.00	4.51	4.74
<b>Age Group</b>				
• 15-19	15.15	14.07	15.92	13.00
• 20-29	26.39	27.45	19.70	21.02
• 30-39	20.69	22.33	23.74	28.09
• 40-49	16.78	16.85	20.75	19.30
• 50-70	20.98	19.30	19.89	18.58
<b>Marital Status</b>				
• Never Married	58.98	52.37	55.79	48.47
• Currently Married	39.27	41.16	42.74	45.49
• Widowed	1.80	6.46	6.04	3.69
<b>Education</b>				
• Illiterate	18.22	30.49	13.81	23.02
• Primary	32.32	33.94	23.44	24.65
• Middle	19.51	16.70	17.09	19.15
• Secondary	13.10	9.43	17.70	16.34
• Hr. Secondary	8.24	5.08	13.58	9.48
• Graduate & above	8.60	4.35	14.39	7.35

Table 3: Individual Characteristics of the Sample Workers

Source: Ibid

### 7.3. Nature of Women's Employment

As far as distribution of women worker's by nature of their employment, the share of informal employment is high as 78.17% in 1999-00, 78.48% in 2004-05. The share is highest in 2009-10 as it reaches to 86.73, an increase of 8.25 over previous round. Whereas formal employment constitute only 13 to 21% as it will be evident from the table below.

Nature of Employment	2004- 2005		2009-2010		% Change 2009-10 Over 2004-05
	Total	(%)	Total	(%)	
Formal	1,661	21.52	801	13.27	(-) 8.25
Informal	6,056	78.48	5,234	86.73	(+) 8.25
Total	7,717	100.00	6,035	100.00	-

Table 4: Distribution of Women workers by nature of Employment

Source: Authors' calculation from Unit Level Data on Employment & Unemployment NSSO 61<sup>st</sup> & 66<sup>th</sup> round

### 7.4. The Status of Employment by Gender

The analysis of the various type or category of status of employment by gender reveals that women are at the lower end of the employment distribution except in the category of employer. Though the percentage of women self-employed has been increased marginally from 11.86 % in 2004-05 to 11.96% in 2009-10, it is far below than men i.e. (13- 19 percentage points). On the contrary, in case of unpaid helper in household enterprises, the percentage of women has been increasing during the same period i.e. from 4.32% in 1999-00 to 9.73% in 2004-05 and further jump to 23.38% in 2009-00. The percentage of men has also increased but percentage is less in comparison to women. In case of regular wage salary workers, women constitute only about 2 to 3.5% of the total women



employment. Women casual workers also constitute only 1% of the total. The distribution of categories of employment between men and women is given in the following table.

Employment Category	2004-2005		2009-2010	
	Male	Female	Male	Female
Worked in Hhd. Enterprise(self-employed	30.37	11.86	24.80	11.96
Employer	0.19	0.07	0.18	0.00
Helper in Hhd. enterprise	6.77	9.73	14.55	23.38
Regular Salary/Wage Employee	10.15	1.94	15.34	3.68
Casual Labourer	3.32	1.00	8.01	1.03

*Table 5: P.C Distribution of Workers by Employment Category for Different Rounds  
Source: Ibid*

## 8. Empirical Results

This section presents the results of the logistic regression model on the determinants of the participation of women in the informal work or employment in the context of Manipur. The study aims at testing the hypothesis that lack of education is the main reason for women entering into informal work. Before proceeding further, the description of the variables is given briefly as follows:

### 8.1. Dependent Variables

The dependent variable is the participation of women in the informal work.

### 8.2. Independent Variables

Eight independent variables have been included in the analysis ---location, household type, household headship, social group, religion, marital status, age and education respectively. The location variable will capture whether women residing in either rural or urban women are more likely to participate in the informal work have a different impact on the labour market participation specifically in informal work. Next, variable household type examines whether self-employed or wage labour, as a major source of household income for livelihood has an impact on the individual's choice of work or not. Social group and religion is the proxies for attitude towards women's work. e.g. ST/SC being the lowest social strata is more likely to work and religion relates to more traditional role of women. Education variable is the indicator of work orientation. Increase in educational attainment, more is the chances of better job/ employment opportunities for women in the formal sector. Age variable is to see whether young or older women are more likely to participate in the informal work.

Informal	Odd Ratio	Robust Std.Err	z	P >  z	[95% Conf. Interval]
<b>1. Location</b>					
(i) Urban	1.009901	.163799	0.06	0.952	.7348855 1.387835
<b>2. Household type</b>					
(i) Agri. lab. hhd.	.6176868	.1088704	-2.73	0.006	.4372601 .8725631
(ii) Self-emp. agri.	1.078003	.1339551	0.60	0.546	.844983 1.375284
(iii) Other hhd.	.8954435	.1271865	-0.78	0.437	.6778532 1.18288
<b>3. Religion</b>					
(i) Islam	1.296119	.3137135	1.07	0.284	.8065277 2.082909
(ii) Christianity	2.136596	.8338811	1.95	0.052	.9942857 4.591277
(iii) Other	2.423036	.4805731	4.46	0.000	1.642618 3.574234
<b>4. Social Group</b>					
(i) S.C	.0414939	.0505138	-2.61	0.009	.0038172 .4510437
(ii) OBC	.9172966	.3520756	-0.22	0.822	.4323174 1.946332
(iii) Other	.5579251	.2613566	-1.25	0.213	.2227593 1.397385
<b>5. Relation to head</b>					
(i) Spouse	.1166031	.0421821	-5.94	0.000	.0573827 .2369405
(ii) Married child	.1132687	.04355	-5.69	0.000	.0534936 .2398378
(iii) Unmarried Child	.2639509	.0888694	-3.96	0.000	.1364372 .5106384
(iv) Grandchild	.2124831	.056952	-5.78	0.000	.125653 .3593128
<b>6. Marital Status</b>					
(i) Currently Married	.3531985	.1399733	-2.63	0.009	.1624373 .7679833
(ii) Widow	.3911941	.1301223	-2.82	0.005	.2038254 .7508035
<b>7. Education</b>					
(i) Below primary	1.29657	.208361	-1.62	0.106	.9462151 1.77665
(ii) Primary	.6678428	.1098015	-2.46	0.014	.4838673 .9217691
(iii) Middle	.5848706	.0896129	-3.50	0.000	.4331517 .7897316
(iv) Secondary	.2639161	.0541491	-6.49	0.000	.1765306 .3945586
(v) Hr. Secondary	.3391478	.0763474	-4.80	0.000	.2181576 .527239
(vi) Graduate & Above	.6314933	.1453653	-2.00	0.046	.4021872 .991538
<b>8. Age</b>					
(i) 20-29	6.597305	1.069453	11.64	0.000	4.801567 9.064632
(ii) 30-39	13.35022	2.676735	12.93	0.000	9.012008 19.77677
(iii) 40-49	15.29678	3.451994	12.09	0.000	9.82904 23.80614
(iv) 50-70	10.93163	2.752179	9.50	0.000	6.673966 17.9054

Table 5.3(a): The Logistic Regression for 61<sup>st</sup> Round (Full Model)

- Number of Observation = 5432
- Wald Chi2 = 566.42
- Prob. > Chi2 = 0.0000
- Log pseudo likelihood = -2735.5027
- Pseudo R2 = 0.1774
- (Std.Err. adjusted for 318 clusters in n61lv1v2)

Informal	Odds Ratio	Robust Std. Err.	z	P > z	[95% Conf.Interval]
<b>1. Location</b>					
(i) Urban	.7457089	.1497355	-1.46	0.144	.5030965 1.105318
<b>2. HHD. Type</b>					
(i) Agri.Labour	.6785289	.1096372	-2.40	0.016	.494355 .9313354
(ii) Self-employed in agri	.7785079	.1377806	-1.41	0.157	.5503223 1.101308
(iii) Other hhd.	.307178	.0555164	-6.53	0.000	.2155521 .4377518
<b>3. Religion</b>					
(i) Islam	.3020796	.1011235	-3.58	0.000	.1567383 .582194
(ii) Christianity	.741352	.243626	-0.91	0.362	.3893133 1.411724
(iii) Other	.799202	.2419772	-0.74	0.459	.4415047 1.446698
<b>4. Social Group</b>					
(i) SC	.7746838	.2922105	-0.68	0.499	.3698721 1.622548
(ii) OBC	.4602699	.1473658	-2.42	0.015	.245743 .862073
(iii) Other	.4959179	.2184757	-1.59	0.111	.2091291 1.175994
<b>5. Relation to head</b>					
(i) Spouse	.1337414	.0511328	-5.26	0.000	.0632164 .2829453
(ii) Married child	.2245014	.0853073	-3.93	0.000	.1066043 .4727845
(iii) Unmarried child	.2858364	.1002004	-3.57	0.000	.1437896 .5682082
(iv) Grandchild	.3285768	.0924492	-3.96	0.000	.1892956 .5703391
<b>6. Marital Status</b>					
(i) Currently Married	.3801629	.1679712	-2.19	0.029	.1599097 .9037839
(ii) Widow	.4452395	.159491	-2.26	0.024	.2206385 .8984749
<b>7. Education</b>					
(i) < Primary	1.210522	.33305	0.69	0.487	.7059637 2.075693
(ii) Primary	1.047491	.2346669	0.21	0.836	.6752396 1.624962
(iii) Middle	.9224998	.1941634	-0.38	0.702	.6106739 1.393552
(iv) Secondary	.6153419	.1448804	-2.06	0.039	.3878856 .9761788
(v) Hr.Secondary	.4866327	.1214838	-2.89	0.004	.2983363 .7937735
(vi) Graduate & above	.5146444	.1474328	-2.32	0.020	.2935345 .9023089
<b>8. Age</b>					
(i) 20-29	8.523516	1.879402	9.72	0.000	5.532637 13.13123
(ii) 30-39	11.84472	3.185035	9.19	0.000	6.992583 20.06375
(iii) 40-49	16.09031	4.794198	9.32	0.000	8.973137 28.85259
(iv) 50-70	13.0923	4.434926	7.59	0.000	6.74027 25.43048

Table 5.4(a) Logistic Regression for 66<sup>th</sup> Round

- Number of Observations = 4048
- Wald chi2 (26) = 356.89
- Prob.>ch2 = 0.0000
- Log pseudo likelihood = -1674.2382
- Pseudo R<sup>2</sup> = 0.1585

## 9. Discussion

- **First**, in both rounds 61<sup>st</sup> & 66<sup>th</sup>, the location variable has no statistically significant role in predicting the outcome variable controlling other variables. *P-value* > 0.05 for odd ratios relating to urban women.
- **Second**, the variable household type, women worker who belong to non-agriculture household is more chances of joining informal work.
- **Third**, variable religion does not indicate systematic evidence in predicting outcome variable.
- **Fourth**, As for social group, SC & OBC women less likely to be in the informal work in comparison to the reference category, ST.
- **Fifth**, women other than Head of the household are less likely to be in informal work with respect to the reference category (self). The corresponding odd ratios are significant as *p-values are* < 0.001. **Sixth**, both married women and widow are less chances of joining informal work in compare to never married women as their odd ratios < 1, *p-value* < 0.05. **Seventh**, women upto primary education are having more chances of joining informal work. The result is significant as corresponding *p-values* < 0.05. However, women with graduate and above education is more likelihood than Hr. secondary education joining informal work than women with secondary education as their respective odd ratios decreases as the level of education increases. Our empirical result implies that as the level of education increases the odd of becoming informal worker decreases controlling for other variables. The result is significant as the *p-values are* < 0.05. But surprisingly, women with graduate and above also have the tendency to work into informal work. The possible explanation of the result must be seen in the light of unavailability of better job opportunities in the organized sector more particularly in the public sector. Therefore, women who bear the major familial responsibility cannot afford to remain unemployed for long period. So, they are likely to be in the informal work.



- **Lastly**, as for variable age the result is quite similar for both rounds. That is women in the age group of (40-49) years are most likely to be engaged into the informal work with respect to the reference category. The odd ratio is highest for this group 16.33 when women in the age group (15-19=1). In other words, the odd of being informal worker is increases with increasing age of the women controlling for other variables. The result implies that the variable age have significant role in predicting the outcome or dependent variable. The results reflect that women in this age group re-enter the labour market after completion of their reproductive roles of child bearing and rearing(Rustagi,2012).Furthermore, when children are grown up, the household's demand for goods and services also increases, so women have to work in order to meet rising expenditure needs of the household.

The overall result suggests that among the independent variables, education and age have significant contribution in predicting the dependent variable i.e. women into the informal work. Hence we reject the null hypothesis that the independent variables have no role in explaining the dependent variable (the hypothesis of independence) as their independent *p-values* are close to zero. Our interest variable in the present study is education, and results of the regression analysis confirm the hypothesis that lack of education is the important factor for women's entry into the informal work upto secondary level. But it does not hold true for women with graduate & above as women with this level of education have higher odds ratio than secondary level. Another interesting finding is that the variable age also playing major role in determining the nature of women's work. Though, NSSO data is not a panel data, it is widely used by many researchers .In the present case, the models of Logistic regression (61<sup>st</sup> and 66<sup>th</sup> rounds) discussed above are fit as Prob.>Chi2 = 0.0001.

### 10. Policy Implications and further Research

The analysis of the logistic regression on women informal work brings new insights on the functioning of labour market in the state of Manipur that higher educational attainment in general and women in particular do not translate into better employment outcomes. It is under-developed structure of the economy which limits better job opportunities in the formal sector. Further, the result also reflects the fact that Manipuri women are entering and taking up informal work out of necessity rather than a better option. Hence the present findings points to the need for effective public intervention in the following areas ---(i)adequate Infrastructural(e.g. road, safe drinking water) and institutional support (e.g child care facilities non-existent in the state) in order to create more job opportunities and raising productivity of women workers,(ii) access to education including technical and vocational training for women workers is highly needed because none of the workers in the sample are holding any technical qualification, and(iii)effective implementation of social protection measures and designing of state specific ones that suited to local labour market in order to protect workers from insecurity and vulnerability .However, one of the major limitation of the present study is that it does not use panel data. Therefore, further investigation can be done by constructing panel data through comprehensive household survey to validate the previous findings including the present one. Second,In this analysis the interest variable is education, it excluded many important variables such as number of dependents, ownership of assets, percentage of household (e.g husband's income) unearned income etc.as studied by many researchers in the literature.. Lastly, in the NSSO survey information on household income is not available. So, NSSO need to include information on the earnings (e.g self-employed),further at the state level, one can take up analysis by conducting comprehensive household survey by collecting information on activities ,time allocation between paid and unpaid work, income and expenditure of the household members. The information can be used in many areas such as estimation of accurate GDP(inclusion of extended SNA and Informal activity by women) , effective intervention in the labour market, enforcement of anti- discriminatory laws. In other words, it will be an important source of implementing overall policies inclusive development and more particularly of raising status of women.

### 11. Notes

<sup>i</sup> See Hussmanns(2004), "Statistical definition of informal employment: Guidelines Endorsed by the 17<sup>th</sup> International Conference of Labour Statisticians"pp.1.

<sup>ii</sup>The' Nupilan' Women's uprising against Colonial exploitation of British Administration. The two Nupilan have occurred first was against the British order of using Manipuri menfolk as force labour to reconstruct the bungalow of British officials which were burned down by the already discontent people by their policies. in 1904 and second Nupilan(1939) occurred as a résistance against the Export of rice from Manipur Which created scarcity of rice for domestic consumption resulted famine like situation. Many women were brutally injured in the hands of British army but ultimately British Government retreat orders. These two Incidents were landmark in the history of Manipur and till today 12<sup>th</sup> December is observing every year to Honour the courage shown by the Manipuri women in the time of crises and exploitation.(see Arunkumar M.C&ArunIrengbam(2009), 'The Transcendental Role of Women in Manipur', in Sharma H.Dwijasekhar (Ed.),*New Insights into the Glorious Heritage of Manipur*.Akansha Publishing House, New Delhi).

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