

Determinants of Female Labour Force Participation in Nigeria: The Rural/Urban Dichotomy

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Abstract

Cultural and traditional beliefs that determine husband's willingness to permit their spouse work are predominant in rural areas and this motivated the study to investigate the determinants of labour force separately in urban and rural sectors of Nigeria. The study employed the logistic regression on a house hold survey data of employment and discovered that the determinants of female labour participation were not the same in urban and rural areas. The results suggested that marital status, religion, poverty rate and per capita income were significant determinants in the rural sector, while age and literacy rate were the significant determinants in the urban sector. Since the determinants in the urban and rural regions were completely different, the study recommends that, discriminate policies be encouraged when designing measures to improve female labour participation.

Key words: Female, Labour, Participation, Logistic regression, Rural, Urban, Nigeria

1. Introduction

The debate on female labour force participation has been on stage for over three decades in many countries around the world. An interesting development in the labour market is the increasing proportion of female labour participation in both developed and developing countries. The increasing participation of women in paid work has been driving employment trends and gender gaps in labour force participation rates have been shrinking. In the developed industrialized countries, increasing female labour force participation has been linked to the completion of the fertility transition. In many developing countries, however, fertility decline has been slow or stalled (Lim, 2002). Lawanson (2008) argues that women constitute more or less half of any country's population. However, he opined that in most countries, women contribute much less than men towards the value of recorded production both quantitatively in labour force participation and qualitatively in educational achievement and skilled manpower.

In the last three decades, the global economy has witnessed the increasing visibility of women, which is partly an outcome of social and political movements that have championed women's rights (Ruwanpura, 2004). Along with women's increasing visibility, it is necessary to analyse the constraints and conditions within which women contribute to the economy. Improvements in the wellbeing of women are not measured merely in terms of access to resources but also in terms of their sense of worth and dignity. Forms of employment, quality of employment and access to social security conditions are also invariably linked to welfare of women. Employment opportunities available to women need to realize their potential capabilities (Ruwanpura, 2004).

The Nigerian situation shows that between 1971 and 2004, the rate of increase of female participation rose from 12% to 70% of the work force due to women's participation in further and higher education (Women and Work Commission, 2005). However distinct differences exist in the types of occupation entered by women and men. Women got more jobs in administrative, clerical, personal services and sales occupation, Apart from moving into law, medicine and accountancy, there was no similar movement into science, engineering, Information Communication Technology (ICT) and the skilled trades. Women were not found in managerial occupations: overall, women make up only 32% of managers and senior officials (Women and Work Commission, 2005). Equally, Okoro (1991) notes that apart from traditional humanist professions like nursing, teaching, catering and law, the percentage of women who venture into professions like engineering, architecture are low compared to men. In the same light Umar & Karofi (2007) observed that female employment in the Nigerian civil service was historically tended to be lower than male.

The National Bureau of Statistics publications (2010) showed that despite the great improvement over the years very few women relative to men secure jobs. Out of these few, a sizeable number of them are temporarily employed. The female Labour participation rate (% of female population ages 15 and above) in Nigeria was 38.90 in 2008, 39.20 in 2009, (World Bank, 2010). These figures show that, though there has been great improvement yet much still needs to be done. The Federal Civil Service in Nigeria is regarded as the government employed staff in Nigeria and this is being used as a proxy to depict the employment situation in the country. The analysis also indicates that the number of males employed far outweighs the number of females during the period under investigation. Several policies have been formulated to further increase female participation in the labour market with the most predominant being the Millenium Development Goals, Hence the need for empirically informed policy formulation.

Oladejo et al (2011) also noted that several factors, both economic and non-economic are responsible for low female participation. Traditionally, women are regarded as homemakers, who oversee and coordinate the affairs and activities at home. (Oladejo et al 2011) explained that previously in Africa, women worked at home while their husbands and sons went out to the farm to work. This is generally induced by the cultural, religious and traditional beliefs of most developing countries. This is evident in Chaudhry & Nosheen (2009) who conclude that women empowerment is considerably influenced by the socio-cultural norms of the community, job of women and household participation rate.

This situation is worse-off in rural areas given that cultural beliefs are more intense in rural areas with women seen as inferior beings. The advent of western education, industrialization and paid employment, has neutralised this cultural beliefs in urban areas. Several studies have examined female labour participation from different perspective and different areas, but seldom examined the determinants separately for urban and rural sectors. It is on this premise that this study examines the determinants separately to inform discriminate policy formulation and implementation.

2. Empirical Evidence

Empirical evidence abound on the determinants of labour force participation across the globe. They include Jaumotte (2003) who employed econometric analysis using a panel data of 17 OECD countries over the period 1985-1999 to investigate the determinants of female labour force participation and found that that there is a positive impact of neutral tax treatment of second earners on female participation. Similarly, Lisaniler & Bhatti (2005) investigated the determinants of female labour force participation in North Cyprus for the year 2001 and the result show that that women's education is the main factor increasing women's likelihood of participation while age and the residence are also significant factors influencing the women's labour supply. Their findings further showed the effect of patriarchy and cultural factors on the labour supply decisions of North Cypriot women.

Also, Ntuli (2007) uses decomposition technique devised by Even and Macpherson (1990) to show that female participation responds positively to education which has been the prime factor. The study finds that non-labour income, marriage, fertility and geographical variations in economic development persistently stifled participation. Correspondingly, Ackah et al (2009) investigated the determinants of female labour force participation in Ghana at two points in time, 1991 and 2006. They opine that both women's educational attainment and fertility determine women's labour force participation in Ghana. The study showed that women with primary school education or above are more economically active than those with no education. While, Pastore & Verashchagina (2008) investigated the determinants of female labour force participation in 1996 and 2001 using data from the Belarusian Household Survey. The selectivity corrected wage equation suggest that the estimated elasticity of female participation to wages is low, at about 0.45 in 1996 and 0.41 in 2001. Moreover the data allows detecting poverty trap mechanisms, whereas women in low-income households have much lower than average participation rates.

In the same way, Chaudhry and Nosheen (2009) explored the possible determinants of women empowerment using regression analysis based on primary data from a district of Southern Punjab. They construct a cumulative index for women empowerment using four indices of personal autonomy, family decision making, domestic economic decisions and political autonomy. The empirical analysis show that women empowerment is considerably influenced by education, access to media, socio-cultural norms of the community, job of women and household participation rate. Surjit & Kaur (2011) investigated the labour force participation of women in India and discovered that different ethnic and socio-cultural groups tend to concentrate in various sectors of the labour market. Studies in the area of gender and migration also point out that marriage migration often leads to entry into the labour force and the two processes are not mutually exclusive. Equally, Ejaz (2011) analyzes the determinants of female labour force participation (FLFP) across rural and urban Pakistan. The probit model was used to estimate variables, while the instrumental variable (IV) approach was used to tackle the issue of endogeneity. Their results suggested an inverse and significant relationship between FLFP and both fertility and the gender-wage gap; and a direct and significant relationship between FLFP and ownership of home appliances and co-residence.

Faridi et al (2011) investigated the factors that influence women's participation in self-employment in Pakistan. Their study used primary data and Logistic regression technique to estimate the women self-employment model to show that age and experience positively affects women's self-employment. They concluded that education, location and number of dependents significantly reduce the women's work participation as self-employed workers. Similarly, Bibi & Afzal (2012) examined the factors which affect the decision of married women to participate in the labour force. They found education of the respondent, number of off springs, number of dependents, family size, income of husband, monthly expenditures of the family, positive attitude of husband and family towards the job of women, job satisfaction to have a positive impact on the labour force participation of married women. While age of the respondent, living with husband, strong relationship with spouse before marriage, satisfaction of house wives with their current life, restrictions from family regarding job, other earners in the family negatively affect the decision of married women to participate in the labour force. They also suggest that the rate of inflation prevailing in the economy of a country largely influences the labour force participation of married women.

Evidence from Nigeria was pioneered by Baridam (1996) who examined the determinants of female labour force participation He opines that participation in labour force is due to economic agents and love for children. The result also revealed that women avoid the effect of their employment on their family by employing house-helpers. Similarly, Olusoji (2006) investigated the determinants of female labour participation in Nigeria, using a Survey carried out between January and October 2001. The findings of his regression analysis on differences in hours put in by both women formal and informal sectors separately suggested that the number of hours worked were determined by the respondents' income, family size, relationship with household head, sector of participation, education and location. The researcher also opines that women with tertiary education work fewer hours than older and married women. Also, Umar and Karofi (2007) examined the impact of non-work factors on labour turnover among female employees in Kebbi State Civil Service. Their result indicated that non-work factors are statistically significant determinants of female labour turnover. Their finding further suggest that pressures from the matrimonial homes are very strong, standing out as the strongest of all the non-work factors responsible for female labour turnover.

Chukuezi (2010) examined the participation of women in household labour in Nigeria. A survey of married women in Owerri, Nigeria revealed that women do most of the housework and childcare within the family. The study explains that cultural expectations about gendered responsibilities in the home despite their level of education and earnings are mainly

responsible for women doing more household work than men. She concludes that both structured and cultural factors should be examined for an appropriate explanation of gendered inequity in household labour in Nigeria. Oladejo et al., (2011) analysed women participation in agricultural production in Egbedore Local Government Area of Osun State, Nigeria. Their results revealed that household size, marital status and local taboos had significant impact on the women participation in agricultural production; all at 5% probability level with a log likelihood of -96.160222, pseudo R2 of 0.0875 and LR statistic of 18.44 which showed that the model has a good fit. They noted that most of the respondents were illiterate with non-formal educational status which directly informed their participation in agricultural production. Their study concluded that there is high rate of involvement of women in agricultural production in the study area; hence the role of some socio-economic variables as well as assets such as social capital, landed property, cash as well as savings are central in determining the participation level in agricultural production. The empirical studies outlined above examined female labour participation from different perspective and different areas. This study investigates female labour participation separately for rural and urban sectors, covering the whole of Nigeria.

3. Analytical Framework

This study uses the logit function in its analytical tool and was based on a binary random variable. For instance, let's say Y has a Bernoulli distribution and could be related as stated below;

$$Y \sim B(1, \pi(x))$$

That is, the variable Y takes either the value 1 or the value 0 with probabilities $\pi(x)$ or $1 - \pi(x)$ respectively. $X \in R^p$ is a vector of p exogenous variables and $\pi: R^p \rightarrow [0,1]$ a real-valued function. In fact, $\pi(x)$ represents the conditional probability $P(Y=1/x)$ of $Y=1$, given x.

Let $r = Y - \pi(x)$, which allows us to rewrite our model as

$$Y = \pi(x) + r$$

where r has an expectation of

$$E(r) = E(Y - \pi(x)) = E(Y) - \pi(x) = \pi(x) - \pi(x) = 0$$

and a variance of

$$\text{Var}(r) = \text{Var}(Y) = \pi(x)(1 - \pi(x))$$

For the forthcoming analysis we are going to define the so-called logistic transformation designated as;

$$L(z) = \frac{\exp z}{1 + \exp z} = \frac{1}{1 + \exp(-z)}$$

which allows us to specify the probability function π as

$$\pi(x) = L(x^T \beta)$$

with a vector $\beta \in R$ of unknown parameters. This specification yields the logistic regression model with parameter β .

If we denote the inverse function of L, referred to as the logit transformation, by

$$\text{Logit} \pi = \ln \left(\frac{\pi}{1 - \pi} \right)$$

The model is therefore further specified below;

4. Model Specification

Since a female is either participating in the labour force or not, labour force participation is a yes or no decision. Hence the response variable, can take only two values; 1, if the woman is in the labour force and 0 if she is not (Guajati, 2009). Following Afaredi et al (2011) the study will employ the logit model in this study.

The logit model equation takes the following form:

$$FLF = X_i \beta + u_i, \quad \forall i = 1, \dots, n,$$

where FLF represents the female labour force participation, X is a vector of explanatory variables given as follows: ageyrs1 for age of respondent above 18 years old, marstat for marital status, religion, hhsz for Household size, pov for Poverty rate, lit for Literacy rate, state, pccexp for Per capital expenditure, and lowage for Lowest wage willing to start up work with, while β is a vector of parameters or coefficients to be estimated and μ is the error term.

Model 1: Logistic regression to ascertain female participation in rural areas

$$\text{logit}(y_i) = \ln \left(\frac{\hat{\lambda}}{1 - \hat{\lambda}} \right) = \beta_0 + \beta_1 \text{ageyrs1} + \beta_2 \text{marstat} + \beta_3 \text{religion} + \beta_4 \text{lhsize} + \beta_5 \text{pov} + \beta_6 \text{lit} + \beta_7 \text{state} + \beta_7 \text{pccexp} + \beta_7 \text{lowage} + \mu$$

Model 2: logistic regression to ascertain female participation in urban areas

$$\text{logit}(y_i) = \ln \left(\frac{\hat{\lambda}}{1 - \hat{\lambda}} \right) = \beta_0 + \beta_0 + \beta_1 \text{ageyrs1} + \beta_2 \text{marstat} + \beta_3 \text{religion} + \beta_4 \text{lhsize} + \beta_5 \text{pov} + \beta_6 \text{lit} + \beta_7 \text{state} + \beta_7 \text{pccexp} + \beta_7 \text{lowage} + \mu$$

Y_i in both cases is the female labour participation in either rural or urban areas.

The data for the analysis was the household survey employment data for 2010/2011. The data contains 57,372 observations from 36 states and Abuja the country's capital. The data set contained relevant information such as individual's demographic and social characteristics, characteristics of main occupation, total earnings, sector of employment, number of hours worked and educational attainment. The survey covered both urban and rural areas and portrays a fair share of the national scope based on the fact that samples were gotten from all the 774 local governments in Nigeria. This helped in analysing the role of location on labour force participation.

5. Results and interpretation

5.1. Logit results for female participation in rural areas

The logit regression result that is aimed at examining the determinants of female labour participation in the rural sector is presented below;

Logistic regression	Number of obs = 781
LR chi ² (9) = 45.53	Prob> chi ² = 0.0000
Log likelihood = -35.044563	Pseudo R ² = 0.3938

Table 1: logit regression for rural female participation

Rural female labour part.	Coef.	Std. Err.	Z	P> z
Age>18	-.0127553	.0215002	-0.59	0.553
Marital status	.5660326	.1872876	3.02*	0.003
Religion	-3.020461	1.190427	-2.54*	0.011
Household size	-.6809934	.687956	0.99	0.322
Poverty rate	2.177998	1.00529	2.17*	0.030
Literacy rate	-1.036897	1.145607	-0.91	0.364
State	-.0139326	.2045547	-0.43	0.666
Per-capita exp.	-3.482486	1.145607	-3.04*	0.002
Lowest wage willing to start up work with	.0155558	.2045547	0.08	0.939
cons	30.47918	10.06343	3.03	0.002

Coefficients with * denote significance at 95% confidence interval.

Prob> chi² gives the probability that the null hypothesis is true and as we can see, Prob> chi² = 0.0000 shows that we should reject the null hypothesis as there is no statistical probability that the null hypothesis occurred. Hence the model is statistically significant.

From the coefficients we see that age coefficient is negative with the value -.0127553. This means that for a one-unit increase in age, we expect a 0.0127553 decrease in the log-odds of the female participation in urban areas holding all other independent variables constant. In other words, the exponential of 0.0127553 ($e^{0.0127553} = 1.012836996$) gives us the odds ratio of female labour participation with respect to age, that is a unit increase in age decreases the odds or probability that a female would participate by about 1.013. This suggests that the older a female who lives in the urban area is, the less likely is she to participate in the labour force and the female labour force is likely to increase with the younger generation. We note however that the age coefficient is not significant with a z-value of -0.59.

This could be attributed to the fact that women could work at whatever age in rural areas and therefore would not play a significant role in determining whether women work, rather other factors could be able to determine this such as marital status. Marital status has a strong positive effect in determining whether women in rural areas decision to take up paid jobs. Marital status a coefficient of 0.5660326 that suggest that a unit increase in every woman that gets married increases the probability that she takes up paid jobs by about 1.76 ($e^{0.5660326}$). This is very surprising as we expect that due to the cultural beliefs in Africa which is stronger in the villages, marriage should prevent women from taking up paid jobs as the case maybe. However we understood equally that these rural sectors are characterised by relatively poor families that the men may not have a choice than to let their spouses take up paid jobs in order to increase the total household income to meet the challenges of this new age.

Religion also appears to be one of the significant determinants of female labour participation as portrayed by our findings, though it suggests a negative relationship. The results show that a unit increase in women becoming Muslims or traditionalists reduces the probability that a woman would take up paid jobs by 20.5 ($e^{3.020461} = 20.50074035$). This also implies that regions with more muslims and traditionalists would have a lower probability for women to participate in the labour force which is expected as these religious groups give priority to men than women in most aspects of life.

Equally surprising is the fact that household size is not significant given the p-value of 0.322 which is higher than 0.05 considering a two-tailed test at 5% level of significance. Therefore a unit increase in household size reduces rural female labour participation with the log-odds ratio of -0.6809934, or the odds or probability of 1.976 ($= e^{0.6809934}$). The negative relationship between household size and female labour participation is however expected, given that the higher the household

the higher the domestic responsibilities for the woman. Nevertheless, the household size coefficient is insignificant and could be attributed to the fact that rural areas tend to practice child labour such that even very young children participate in paid jobs and thereby reducing the number of people dependent on the woman's assistance.

The poverty rate has a significant positive impact on female labour participation. The higher the poverty rate the higher the probability that a woman would take up paid jobs. In fact our results suggest that for a unit increase in poverty level the probability that a rural woman would participate in active labour force increases by about 8.829 ($e^{2.177998}$). This is expected a priori based on the fact that the poorer one is, the more he is compelled to take up paid jobs, and in fact it becomes more a matter of obligation than choice. However what is most surprising is that literacy rate has an insignificant impact on female labour participation. Our results show that a unit increase in literacy rate decreases the probability that a woman would participate in labour force by about 2.82. This could only be explained by the fact that most people may not really work according to their educational qualifications due to the scarcity of available jobs, and on the other hand some of the jobs do not even necessary need educational qualifications, so at the end of the day it is no longer a question of being educated or not but other factors could contribute to female labour participation as we have discussed. The inverse relationship could be attributed to the fact that if you are too qualified then you may be come overqualified for the jobs in the rural areas.

Per-capita expenditure was seen as a very strong determined of female labour participation in rural areas with a z-value of $-3.04 > 2$ and a low p-value of 0.002. However what was surprising about this is that it had a negative relationship with female labour participation. The results show that a unit increase in per-capita expenditure would reduce the probability that a female participates by the probability of 32.5 ($e^{3.482486}$). While the lowest wage they were willing to start up paid jobs with, was not significant according to the findings. A unit increase in the amount of wage willing to start up paid jobs with increases the probability that a female would participate by 1.0157 ($e^{0.0155558}$). This is definitely expected a priori given that economic theory projects remuneration as an incentive to work. So wage willing to start up paid jobs and female labour participation have a positive direction though it's not a significant determine in the rural areas.

The expected value of the log-odds of female participation in rural areas when all of the predictor variables equal zero is 30.47918, with a very strong significant level. On a general note we therefore state that the significant determinants of female labour participation in rural areas at 5% level of significance are; marital status, religion, poverty rate and per capita income, as has been discussed above.

5.2. Logit results for female participation in urban areas

The logit regression result that is aimed at examining the determinants of female labour participation in the urban area is presented below;

Logistic regression	Number of obs = 781
LR chi ² (10) = 24.62	Prob> chi ² = 0.0034
Log likelihood = -22.877447	Pseudo R ² = 0.3499

Figure 2: logit regression for urban female participation

Urban female labour part.	Coef.	Std. Err.	Z	P> z
Age>18	.1023051	.0483931	2.11*	0.035
Marital status	.686181	.3156097	0.85	0.395
Religion	.0860819	.9740589	0.09	0.930
Household size	-1.000363	.9489482	-1.05	0.292
Poverty rate	-2.280907	1.983212	-1.15	0.250
Literacy rate	3.119392	1.222911	2.55*	0.011
State	.0368884	.079485	0.46	0.643
Per-capita exp.	.5510093	1.761261	0.31	0.754
Lowest wage willing to start up work with	-.0854893	.2519644	-0.34	0.734
_cons	-14.89962	15.52144	-0.96	0.337

Coefficients with * denote significance at 95% confidence interval.

Just like in the regression result for rural we see that Prob> chi² = 0.0034, this shows us that we should reject the null hypothesis as there is no statistical probability that the null hypothesis occurred. We note that there are so many differences in urban female determination of labour force from the rural. Strangely, while the factors that prove to be the determinants of female labour participation in rural areas are not those that determine those in the urban areas. In the urban areas age proves to be a very serious determinant of female labour participation according to our results which was not the case in the urban areas. Age has a coefficient of 0.1023051 that suggest that as a woman's age increases per unit the log of odds that a woman participates in the labour force is 0.1023051. That is for a unit increase in age, the probability that a female would participate is 1.108 ($=e^{0.1023051}$). The fact that there is a positive relationship between age and female labour participation is what is expected a priori, because the older one gets all things being equal, the more educated/qualified she becomes. It is not surprising however that this is more apparent in urban areas or cities considering their level of exposure and development.

On the other hand, marriage which was significant in the rural areas appears not to be significant in the urban areas, which is expected given their level of exposure. A unit increase in women getting married increases the probability that a woman

participates in labour force by 1.99 ($=e^{0.686181}$) but note that this is not significant so we can't count on it. However there exist a positive relationship between married women and their decision to participate in the labour force just like in that of the rural sector. This is in line with the age factor as women tend to get married as they grow old so we expect a positive relationship for age and marital status. Just like marital status, Religion and poverty rate appears not to be significant in the urban regions unlike in the rural areas. However, just like we explained for rural areas, some of these factors are influenced more in rural areas by their customs and traditions while something like religion would no longer count in the urban areas due to their level of westernisation and development, this might not be the case with the rural sectors. We however expect poverty rate not to be a significant determinant of female labour participation, as a majority of the inhabitants of urban areas live above the poverty threshold value, so poverty might not really be the major force of inducing a woman to work or not.

Household size was not significant in both cases. This is rather strange and different from many other works that show that household size is a determinant of female labour participation. The fact that it is insignificant in both urban and rural according to our results only guides us to suggest that household is not a determinant of female labour participation, so policy makers should take note and pursue more serious determinants. However the negative coefficient of household size still aligns with a priori expectation due to the fact that the bigger the household, the higher the woman's domestic responsibilities and consequently might hinder her from taking up paid jobs.

Literacy rate shows a significant positive relationship with female labour participation which is highly expected more importantly in urban areas. Our result indicates that for a unit increase in women becoming literates or learned, the log of odds that a woman participates is 3.119392. That is a unit increase in literacy rate increases the probability that women participate in labour force by 22.633 ($e^{3.119392}$). This is very high and makes sense as the z-value is 2.55 with a very low p-value of 0.011 at 5% level of significance.

The state of residence and lowest wage willing to work do not really appear to be female labour determinants according to our results as they both have a z-value of 0.46 and -0.34 respectively, which is very low compared to the reference point magnitude of 2. In the urban regions this could be explained by the fact that most urban areas tend to be the same as development and competition increases, which may expose the women to the same experiences such that women in different states turn to think alike with respect to participating in female labour force. While the lowest wage willing to start up with might not also be significant in urban regions because most employers rather look for those who can deliver based on their level of qualification, and once they have that, how much one is ready to start up with becomes a smaller issue to tackle.

Per-capita expenditure just like the other determinants in rural areas doesn't seem to be a determinant according to our result. The per-capita variable records a z-value of 0.31 and a high p-value at 0.734 suggest that it is not a significant determinant of female labour participation. An increase in per-capita expenditure increases the probability that females participates by 1.735 ($e^{0.5510093}$) which is not significant. On the other hand, the fact that the coefficient is positive also aligns with expected outcome as per-capita expenditure might provoke a woman to take up paid jobs. The expected value of the log-odds ratio of female participation in urban areas when all of the predictor variables equal zero is -14.89962, however this appears to be insignificant with evidence in the z-value = -0.96 and a high p-value at 0.337. On a general note we therefore state that the insignificant determinants of female labour participation in rural areas at 5% level of significance are; age and literacy rate while the insignificant determinants are marital status, religion, household size, poverty rate, state, per capita expenditure and lowest wage willing to start up work with.

6. Policy implications and Conclusion

The relevance of this study cannot be overemphasized. Marital status is significant in rural areas and has a direct relationship with female labour participation. This maybe associated to the fact that rural families have awoken to the reality of combining efforts to cover household expenditure and children upkeep, which is therefore encouraging and means that sensitisation could also be improved on the unmarried females to take up paid jobs and not only wait for marriage to start work. Age is highly significant in the urban sectors and not in the rural sectors which suggest that age is somehow proportionately related with qualification of women in the urban sectors which is expected, however the reverse is the case in the rural sector which suggest that residents in rural areas should keep up improving on their educational and professional qualifications as they grow old. This can be done through setting up institutions that could offer such qualifications that may adapt to their household-duty schedule, so as to induce them to improve on their qualifications even as they grow old.

Religion appears to have a negative significant effect on female labour participation in rural areas which suggest that some religious cultures seriously restrict some women into participating in gainful employment. This is very important when we consider the government's objective to improve female participation in labour force. Policy instrumentalists should therefore find a way of sorting out these religions that negatively influence participation, to sensitise them and expose them to the benefits of women participating in gainful employment amongst their negative ones. On the other hand the fact that religion is not significant only shows that these residents have been able to look at the relevance of a female participating in female labour beyond the religion which further strengthens our recommendation on the exposure and sensitisation of rural residents to participate. However based on the dummy regressor for religion, the significance was from the Muslim religion which is not very surprising following their underlying principles for a female Muslim faithful.

What is most surprising is that household size had an insignificant effect in both rural and urban sectors that leads us to suggest that most households have found ways of contending their responsibilities without this affecting the labour force participation of the woman. However though not significant, household still has a negative relationship with labour force participation meaning that the higher the household size the lower the participation in some few cases.

Poverty rate has a significant positive relationship with female labour force participation, which is expected a priori though it insinuates a very sad situation, stating that the higher the poverty rate the higher the participation in rural sectors. Though we

expect to improve on female labour participation we cannot infer that we should expect women to become poor so that they participate, rather it shows us that poverty rate is very high in rural regions such that they are compelled to work and not under choice. Policy makers should therefore ameliorate that standards of living in these areas and encourage the poor. This however is not the case in the urban regions where poverty rate appears to be insignificant.

Literacy rate further strengthens our argument on age in urban sectors, implying that on the general sphere as women grow old they get more qualified and hence have access to jobs, which is not the case with rural areas who are relatively less qualified in terms of educational attainment. This only suggests that the government can create a special fund only for female scholarships in diverse fields in order to boost female labour participation and set them a par with the men. State also appears to be insignificant in determining female labour participation in both rural and urban sectors. Per-capita expenditure however is significant in determining female labour participation in rural areas and this is expected a priori. Nevertheless we note that there exists a negative relationship between per-capita expenditure and female labour participation in the rural sectors which show that richer individuals are unlikely to participate in the labour force as we can assume that individuals with high per-capita expenditure are mostly relatively richer.

On the other hand per-capita expenditure is not significant in urban regions as most people are rich and motivated to work not only for the income, but for other factors like health, growth and development. In rural and urban areas the lowest wage an individual is willing to work is not significant, which suggest that there are many other factors that determine if a female would participate in the labour force but her choice of “starting income” is not a determinant factor.

In conclusion, we noted that the finding of this study are very enriching and contributes to knowledge significantly. The Nigerian government has as major objective to improve on female representation nationally and primarily this impact must be felt in the labour market. The Nigerian government has done a lot over the years to improve female labour participation but a lot more need to be done. The determinants of female labour participation in the rural sector is mainly marital status, religion, poverty rate and per capita income are significant determinants in the rural sector, while in the urban sector is age and literacy rate. This therefore connotes that the determinants in urban sectors are completely different from that of rural sectors. Researchers, policy analysers, policy makers, and policy implementers should take this into consideration when designing policies to improve labour force participation, thereby reducing unemployment rate in the country.

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