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Socio-Economic Determinants of Labour Force Participation Rate in an Era of Gender Mainstreaming in Nigeria: Responses from Afikpo North, Nigeria

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ABSTRACT: The prevailing gender preferences in employment opportunities in Nigeria's civil service are worrisome. Although by the virtue of Nigeria's population, the potential female labour force is about 50% and the national labour force participation rate is about 67.4%, the male participation rate is 70.3% while that of female accounts for just 29.7%. This paper is an inquiry into the determinants of labour force participation in Ebonyi State civil service and made use of primary data collected through a well structured questionnaires. The data collected were analyzed using simple percentage and the hypotheses formulated were tested using logit regression technique. The findings show that educational attainment, wage rate and age are significant determinants of male labour force participation while wage rate, safety and educational attainment are significant determinants of female labour force participation. The study therefore recommends that government should provide subsidized education, ensure upward review of workers' salaries and provide risk-free working conditions as a means of motivating people to participate actively in the labour force.

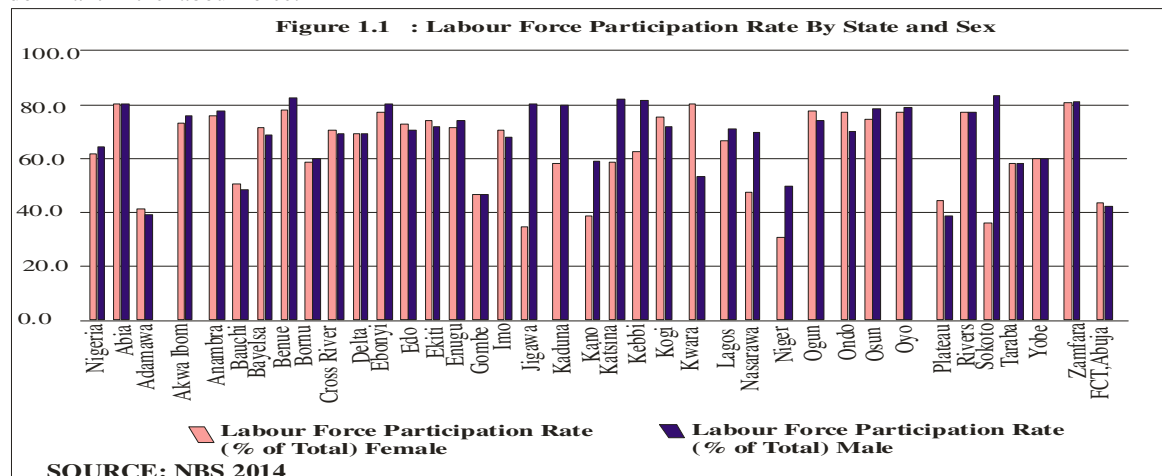
Key words: Civil Service, Ebony State, Labour force, Logit, Participation rate

JEL Codes: J1, J2, J8, C5

1. INTRODUCTION

The most common indices used in measuring the output potentials of an economy are the labour force of such an economy. Having a good labour force in a country can go a long way into making sure that enterprises within that country put out the highest quality product it can. Labour force refers to number of individuals in an economy who either are employed or are seeking employment. Similarly, it is the total number of people who are eligible to work including employed and unemployed people of a country (Ehrenberg & Smith, 1997).

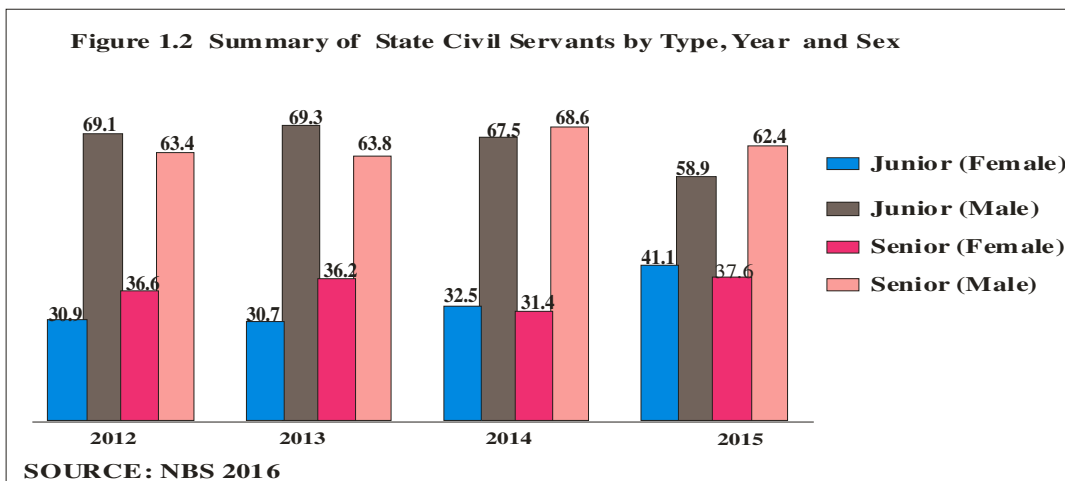
According to National Bureau of Statistics (2013), the labour force participation rate in Nigeria was 54.8 percent for men and 45.2 percent for women. Figure 1.1 below depicts the labour force participation rate by state and sex. The Figure reveals a male dominant labour force in most states of the federation except Abia, Delta, Gombe, Rivers and Taraba, where some measure of equity seem maintained between women and men in the labour force. However, it is interesting to note that in states such as Bauchi, Bayelsa, Cross River, Edo, Ekiti, Imo, Kogi, Kwara, Ogun, Ondo, Plateau and the federal capital territory, Abuja, women are more dominant in the labour force.



In the Beijing Declaration adopted in 1995 by the fourth World Conference on Women, participating government expressed their commitments to advance the goals of equality, development and peace for all women everywhere in the interest of humanity. Nigeria’s population in 2013 was estimated at 174million people made up of 86,121,532.3 females and 87,754,876.7 males (NPC, 2014).

Data from Ebonyi State Ministry of Education show that the proportion of primary school aged girls enrolled increased to 47.9 percent in 2013 from 45.7 percent in 2012. Conversely, the rate decreased for boys from 54.3 percent in 2010 to 53.1 percent in 2013. Completion rate for girls in primary and secondary school dropped slightly from 46.7 percent to 47.1 percent in 2010 to 46.6 percent and 46.8 percent in 2013 respectively. The proportion of girls enrolled in secondary school increased from 45.3 percent in 2010 to 47.3 percent in 2013. However, enrollment into tertiary institutions across the country was male dominated on the average.

Women’s representation in the civil service is among the concerns raised in the Beijing platform for Action. On the average, more than two thirds (64.5percent) of senior positions were occupied by men compared to 35.5 percent by women for the years 2010 to 2013 (Figure 1.2). Similarly, the pattern was the same at the junior level as well as by cadre. The proportion of men employed in the reference period was consistently higher than that of women for both senior and junior categories (Figure1.2) and by cadre and grade levels.



The prevailing cause of gender preferences in most section of the civil service in Nigeria is worrisome. Though by the virtue of the population of Nigeria, the potential female labour force is 50% but the actual value is 31% while that of male is 69%. Statistics indicates that in the federal civil service which is the highest employer of labour in the country, women are mostly found in the junior categories. In some families in Nigeria investing in girls education is regarded as investing for the benefit of the family she will eventually marry into, unlike in the case of boys. The 1999 constitution of Nigeria forbids discrimination on the basis of sex. Furthermore, women employment rights are further protected under the labour act of Nigeria. Nevertheless, the reality is that Nigeria women are far from enjoying equal rights in the labour market mainly due to their domestic burden and low level of educational attainment. This ugly situation or stigmatization has brought a lot of bias in area of gender equality in the civil service when it comes to employment opportunity or job promotion. In the light of the above, this study intends to explore the determinants of labour force participation and problem of gender bias employment policies in civil service in Ebonyi State.

A number of studies for Nigeria including Aminu (2010), Chukuezi (2010), Babatunde et al. (2010), Olowa and Adeoti (2014), Iweagu et al. (2015), and Njimanted and Mukete (2016) have sought to investigate the determinants of labour force participation. Many of these studies produced conflicting results. Plausible reasons for the divergence of the empirical findings include but are not limited to variables of the study, nature of data, scope of study and analytical methodology. This study contributes to this area of interest which has not been given adequate research attention in Afikpo North Local Government of Ebonyi State. Furthermore, there has been very little (if any) evidence on the uses of maximum likelihood estimation technique to study determinants of labour force participation. This study seeks to fill this gap by presenting robust empirical evidence on the determinants of labour force participation in Ebonyi State civil service using Maximum Likelihood estimation technique to verify the following research null hypotheses: Educational attainment, wage rate, family size, marital status, age, and safety have no significant implication on labour force participation. Thus, this paper is structured in a five section layout as follows; while the first section introduces the paper,

section two reviews related literature. Section three looks at the methods and procedures. The results from the data analysis are documented in section four and section five articulates the recommendations and conclusion.

2. LITERATURE REVIEW

2.1. Conceptual Issues

The labour force of an economy is composed of all the people in the economy who are either working or are looking for work. The labour force is a function of the economy's population and of such economic forces as labour demand and wage levels (Attamah, 2001). Labour force or synonymously economically active population is one of the most widely used measures of the labour market. It measures employment and unemployment situation of the economy and the current employment characteristics of the population. A man decision to work or not to work is a function of such variables like family circumstances, age, custom and other conditions (Ezeaku & Ezeaku, 2009). The concept of labor force participation divides the population into three groups: employed, unemployed, and out of the labor force.

Labor force participation rate is conceptualized as the proportion of the population ages 15 and older that is economically active: all people who supply labor for the production of goods and services during a specified period (ILO, 2015). The labor force participation rate is the proportion of people eligible to participate in the labor force who are actually participating in it by working or looking for work. It is usually expressed as a percent of the total labor force-eligible population in an economy. The participation rate refers to the number of people who are either employed or are actively looking for work.

2.2. Theoretical and Empirical Literature Review

The Neo Classical theory of allocation of time give theoretical explanations about how an individual values his time according to his preferences that maximize her utility, and whether he decides to participate or not to participate by comparing the values of the time in the labour market with the values of the time spend on non market activities (Njimanted & Mukete, 2016). If the value of the time spent on market activities is higher than the value of non-market activities the person decides to participate or vice versa. The value of market activities depends on the wage rate prevailing in the market while the value of non market activities is determined by the tastes and preferences of the individual as well as the demands placed on an individual's non market time such as the number of children and dependents in the family and non market income of women. Since women are mostly expected to be the homemaker and the caretaker, the reservation wage (the value woman places on her time at home) has been high for women preventing the participation of women to the labour market (Njimanted & Mukete, 2016). In addition to the neo classical theory of allocation of time, the factors determining the women's labour supply decisions can be explained by patriarchal structures. Walby (1994), patriarchy in household, state and culture is one of the reasons affecting women's labour supply negatively.

With regards to the human capital theory, as investment in human capital increases and as more women participate in the labour market, the fertility behaviour of households is bound to change, in favour of fewer children (Singh, 1994). Human capital assumes that female labour force participation (L) is influenced by women's productive opportunities as reflected by their level of education (E), their non-human capital assets (A), the presence of children and/or the child survival rate (S), and their social environment (T). Women's education is generally expected to have a positive impact on labour market participation, and at the same time to reduce the number of children born to the woman.

The empirical literature on determinants of labour force productivity abounds. For instance, Aminu (2010) used the General Household Survey data of 1998/99 and 2007/2008 to estimate the determinants of labor force participation and earnings in wage employment in Nigeria. The findings revealed that as the presence of elderly female persons increases the probability of labor force participation across all sectors of wage employment for males and females in the 2007/08 GHS data set while it exercised negative and positive influences in private and public sectors respectively in 1998/99 data sets. Chukuezi (2010) examines the participation of women in household labour in Nigeria. A survey of married women in Owerri, Imo State reveals that women do most of the domestic chores at home thus preventing them from engaging in labour. Babatunde et al., (2010) identified determinants of participation in off-farm employment among small-holder farming households in Kwara State of Nigeria using survey data from small-holder farming households in rural areas of the state. Their result indicated that factors related to household composition and characteristics, the amount of productive assets and access to different infrastructural facilities significantly influenced participation in off-farm employment.

Using 26,711 women in the age range of 18 to 55 years in 48 countries, H'madoun (2010) examined the influence of religion on female labor force participation. The study revealed that religious women were

found to participate less in labor market activities than the non-religious women after controlling for other social and economic variables. Oladejo (2011) analyzed women participation in agricultural production in Egbedore Local Government Area of Osun State, Nigeria and the results revealed that household size, marital status and local taboos had significant impact on the women participation in agricultural production. Similarly, Stefania (2012) sought to identify and analyzed the specific household factors affecting labor market participation decision of farmers in South Africa. The finding indicated that liquidity constraint and market imperfections affects labour market participation decision. Bibi and 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 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, negatively affect the decision of married women to participate in the labour force.

Sarwar and Abbasi (2013) analyzed women's labor force participation in Pakistan and the study shows that female labor force participation in Pakistan is low. Olowa and Adeoti (2014) investigated the effect of education status of women on their labour market participation in rural Nigeria. The results of the study show that educational attainment levels significantly affect Women Labour Market Participation (WLMP). Iweagu, Helen, Denis, Nwokolo, Bulus (2015) investigated the determinants of female labour force participation in Nigeria. The study employed the logistic regression on a house hold survey data of employment and found that the determinants of female labour participation were not the same in urban and rural areas.

With the General Household Survey of 2013, Nugac and Nuhu (2016) analyzed the effect of education on the labor force participation of females in Nigeria. The result of their analyses shows that the level of education is one of the factors that influence women's participation in the labor force. Similarly, the age of a woman and marital status has a strong influence on the decision of women to participate in labor force. Adopting a Generalized Method of Moment technique of estimation, Njimanted and Mukete (2016) sought to understand the determinants of female labour force and its influence on the economic growth of Cameroun. The study revealed that dependency ratio, fertility rate, male labour force and per capita income are clear determinants of female labour force in Cameroon. The economic growth equation shows opposite significant between female and male labour supply on economic growth over the period of the study.

Utilising Egypt Labour Market Panel Survey of 2012, Nazier and Ramadan (2016) examined the determinants of female labor force participation. The results show that woman's age, her education and her mother's employment status are the main determinant of female labor force participation in Egypt while the total number of kids a woman has is found to have no significant effect on the likelihood of her labor force participation. Women with high number of kids are less likely to be employed but once she is employed, woman with more kids are more attracted to the public sector, as it is known that it is a family friendly sector.

From the foregoing, it is apparent that attention has not been paid to Ebonyi State labour force considering its stance as one of the economically disadvantaged area in Nigeria. This study therefore bridges this lacuna in knowledge.

3. RESEARCH METHODS AND PROCEDURES

This study utilizes the survey method as the basic approach of the study. The method attempts to be fairly representative of the population of interest in its selection of its sample of study. A survey according to Ezejule and Ogwo (1990) simply consists of collecting data or information about a large number of people by interviewing or contacting a representative sample of them. The target population was therefore limited to local government employee and teachers in Afikpo North Local Government Area of Ebonyi state, Nigeria.

The multi-stage sampling and random sampling techniques was adopted for this study. There are about twenty-two secondary schools, sixteen primary schools, four development centers and the local government headquarters in Afikpo North local government area. With the aid of random sampling technique, the researcher selected twelve secondary school, nine primary schools as well as one development centre and the local government headquarters. Simple random sampling was used to select the respondents from the schools and development centers. Hence to ensure robustness we sampled about 70% of the population. The reason why the researcher cannot study the entire research population is time and financial constraints, 70% was chosen so that the sample size will be close to the total population which is 982 compared to when a sample size of 25% is chosen. Thus the 70% of 982 is approximately 687. Therefore the sample size for this study is 687 respondents. The data collected were analyzed using the logistic tool for testing the research hypotheses.

This study employed a logit model: Equations 1 is the labour participation model in its functional form while Equations 2 comprises the logistic models for explaining male and female labour force participation respectively. The functional forms of the empirical model are expressed as:

$$LP = F(EDA, WR, FAS, RA, MAS, AG, SAF) \quad (1)$$

$$MLP = \alpha_0 + \alpha_1 EDA + \alpha_2 WR + \alpha_3 FAS + \alpha_4 MAS + \alpha_5 AG + \alpha_6 SAF + \mu$$

$$FLP = \alpha_0 + \alpha_1 EDA + \alpha_2 WR + \alpha_3 FAS + \alpha_4 MAS + \alpha_5 AG + \alpha_6 SAF + \mu \quad (2)$$

Where *MLP* and *FLP* are the male and female labour force participation respectively, *EDA* is educational attainment, *WR* is wage rate, *MAS* is marital status, *FAS* is family size, *AG* is age, *SAF* is safety, α_0 is the intercept, $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6, \alpha_7, \alpha_8$ are the regression parameters, and μ is the error term. The a priori expectations are that the coefficients of educational attainment, wage rate, family size, marital status, and safety will be positively signed while that of age will be negatively signed.

4. RESULT PRESENTATION, ANALYSES AND DISCUSSION OF FINDINGS

4.1 Result Presentation

To study the determinants of labour force participation in Ebonyi state civil service, 687 questionnaires were produced and distributed but 682 questionnaires were returned and analyzed. This indicates about 99% response rate. In order to test each hypothesis, the study estimated Equation 2 using the method of ML-Binary Logit. This method was adopted due to qualitative nature of the response variable. The result of the estimation is summarized below on Table 4.1

Table 4.1: Summary of Estimation Result

Variable	MLP REGRESSION RESULT				FLP REGRESSION RESULT			
	Coef.	Std. Err	Z-Stat	Prob.	Coef.	Std. Err	Z-Stat	Prob.
Constant	2.18215	0.845126	2.58	0.010	2.69216	1.15176	2.34	0.019
FAS	0.061357	0.43518	0.14	0.888	-1.06619	0.74799	-1.43	0.154
WR	1.44836	0.382093	3.79	0.000	1.57463	0.42158	3.37	0.000
AG	-0.057239	0.0175077	-3.27	0.001	-0.02038	0.02152	-0.95	0.344
MAS	0.407008	0.4101118	0.99	0.321	-0.34207	0.40307	-0.85	0.396
EDA	1.49212	0.407226	3.66	0.000	2.13849	0.93439	2.29	0.000
SAF	0.481738	0.353187	1.36	0.173	1.26539	0.48328	2.62	0.009
Pseudo R ²	0.74702				0.81230			
LR Stat (6df)	41.830				28.825			
p – Value	0.000				0.000			

Source: Researcher's Compilation, 2016

4.2 Result Analyses

4.2.1 Economic Criterion

(a) Labour Force Participation and Family Size: Family size shows a positive relationship with male labour force participation. The positive coefficient of 0.06137 suggest that a unit increase in family size increases the probability of male labour force participation by about 1.06328 ($e^{-0.061357}$). Family size has a negative impact in female labour force participation. Family size coefficient of -1.06619 suggests that a unit increase in family size, reduces the probability that a woman will take up paid job by about 2.9043($e^{1.06619}$).

(b) Labour Force Participation and Wage Rate: Wage rate was seen as a very strong determinant of male participation with a p-value of 0.000. The result shows that a unit increase in wage rate, on average will increase the probability that man will participation by about 4.25614 ($e^{1.44836}$). Wage rate has a strong positive relationship with female labour force participation. Wage rate coefficient of 1.57463 means that if wage rate increases by a unit, on average the probability of female labour force participation increases by about 4.82895($e^{1.57463}$).

(c) Labour Force Participation and Age: Age coefficient is negative with the value -0.057239. This means that for a one unit increase in age, we expect a 0.057239 decrease in the log-odds of male participation or the probability of male participation goes down by about 1.05891($e^{0.057239}$). On the other hand, age coefficient of -0.02038 shows that age is negatively related to female labour force participation. The result suggests that if age increases by a unit the probability of female labor force participation decreases by about 1.02384 ($e^{0.02038}$).

(d) Labour Force Participation and Marital Status: Marital status suggest a positive relationship with male labour force with the coefficient of 0.407008. The result shows that a unit increase in marital status increases the probability that a man will take up paid job by 1.50232 ($e^{0.407008}$). on the other hand, marital status suggest a negative relationship with female labour participation. Marital status coefficient of -0.34207 means that if marital status increase by a unit the probability of female labour force participation by about 1.41485($e^{0.34702}$)

(e) Labour Force Participation and Educational Attainment: Educational attainment shows a positive relationship with male labour force participation which is highly expected. Our result indicates that a unit

increase in educational attainment increases the probability that man participate in labour force by about 1.63578 ($e^{0.49212}$). Unlike the male, educational attainment has a negative relationship with female labour force participation as shown by the coefficient -2.13849. This means that a unit increase in woman becoming learned, would reduce the probability that she would take up paid job by about 8.48661($e^{2.13849}$)

(f) Labour Force Participation and Safety: Safety has a coefficient of 0.481738 which suggest that a unit increase in safety increases the probability that he takes up paid job by about 1.61889($e^{0.481738}$). Safety has strong positive relationship with female labour force participation. The result shows that a unit increase in safety will increase female labour force participation by about 1.26539 or probability of about 3.54447($e^{1.26539}$).

4.2.2 Statistical Criteria

(a) Coefficient of Determination

This is used to measure the goodness of fit of the regression model. From the result, the value of pseudo R^2 is for male and female is approximately 75% and 81%. These results indicate that about 75% and 81% variation in male labour force and female labour participation respectively is explained by the explanatory variables.

(b) Z-test of significance

This is used to test for the significance of individual parameter in the model. This can be done by comparing Z-value with the table Z-value at a chosen significant level under a hypothesis. The decision rule is to reject H_0 if calculated Z-value is greater than the critical Z-value in absolute term otherwise, we accept it.

Table 4.2 Summary of Z-Test for Significance

Variable	z-critical	MLP			FLP		
		z-cal.	Decision	Comment	z-cal.	Decision	Comment
FAS	1.96	0.14	Accept Ho	Insignificant	-1.43	Accept Ho	Insignificant
WR	1.96	3.78	Reject Ho	Significant	3.37	Reject Ho	significant
MAS	1.96	3.27	Reject Ho	Significant	-0.95	Accept Ho	Insignificant
AG	1.96	-0.99	Accept Ho	Insignificant	-0.85	Accept Ho	Insignificant
EDA	1.96	3.66	Reject Ho	Significant	2.29	Reject Ho	significant
SAF	1.96	1.36	Accept Ho	Insignificant	2.62	Reject Ho	significant

Source: Researcher's compilation, 2016.

4.2.3 Likelihood ratio statistic:

To test the null hypothesis that all the slope coefficients are simultaneously equal to zero, the equivalent of the F-test in linear regression model is the likelihood ration (LR) statistic. Given the null hypothesis, the LR statistic follows the X^2 distribution with degree of freedom equal the number of explanatory variables. $X^2_{0.05}(6) = 12.59$

The decision rule is that if LR statistic is greater than X^2 , H_0 should be rejected but if otherwise, it should be accepted. Our result shows that LR statistic of 48.830 > 12.59 and 28.825 > 12.59, we therefore, reject the null hypothesis and conclude that the parameter estimates are statistically significant at 5% significance level.

4.3 Discussion of Findings

Educational attainment is positively related to labour force participation in both male and female regression result. This is expected because people become more qualified for a job when they have experience through training and education. Wage rate has significant positive relationship with both male and female labour force participation. This is expected a priori given that economic theory projects remuneration as an incentive to work. Safety is positively related to labour force participation, this is so because people always like to work where they safety is guaranteed though not significant determinant of male participation. Family size is negatively related to female labour force participation. This negative relationship is expected given that the higher the family size, the higher the domestic responsibilities for the woman. On the other hand, the relationship is positive with male participation given that increase in family size increases man financial obligation hence his urge to participate. Age is negatively related to labour force participation. This suggest that the older a man or a woman is, the less likely is he or she to participate in the labour force and the labour force is likely to increase with the younger generation. Marital status is positively related to male labour force participation. This is expected a prior as men tend to foot his parental responsibilities and also augment family income. On the other hand, it is negatively related with female labour force participation, this may be as a result of cultural practices which prevent women from taking up paid job.

5. CONCLUSION AND RECOMMENDATIONS

This study investigated the determinants of labour force participation in Ebonyi state. The study employed ML-Binary Logit technique and the findings of the study shows that educational attainment, wage rate and age are significant determinants of male labour force participation while wage rate, safety and educational attainment are significant determinants of female labour force participation.

Wage rate is a very important variable which influences both male and female labour force participation, therefore it is recommended that government should review workers wage rate upward to increase participation. Government effort should also be geared towards provision of sound education to its citizen as a means of equipping it labour force. In terms of safety, government should intensify effort to provide risk free working environment. Government should geared effort towards family planning sensitization in order to curtail the burden of child rearing that will prevent women from participating actively in the labour force. Marital status, though insignificant has positively related with male participation. This study proposes that sensitization could also be improved on the married female to take up paid job to enable them cover household expenditure and children upkeep.

In the light of the above findings and recommendations, this study infer that for effective labour force participation and full utilization of enormous human potential that are available, the Nigerian government should intensify effort ensuring equality on both male and female labour force participation both at the state and national level. Significant determinants of male labour force participation are age, wage rate and educational attainment while female are wage rate, educational attainment and safety. This connotes that there is slight difference in the factors that affect both gender's labour force participation.

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