

# Predictor of Research Productivity among Married Female Research Scientists in Oyo State, Nigeria

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**Abstract** Research plays significant role in developmental process of any nation of the world. This makes productivity- measured by research publications in research institutes, very crucial. In realization of the pivotal roles of research in development, Nigeria, like any other nations that want development made certain efforts towards transforming her economy from less developed to developing one. One of the efforts in making Nigeria developed is the establishment of research institutes in all the six geo- political zones in the country. This research Institute employs both male and female research scientists because it is a non-gender biased institution like the universities of learning. However, there are challenges that are peculiar to the married female workers. In view of this, this study focused on the influence of some married female research scientists' variables, which are their characteristics (age, household size, age of youngest child, age of oldest child, academic qualification, and years of experience in the institution, rank/grade level and financial stress) on productivity among married female research scientists in Ibadan, Oyo state, Nigeria. The survey research was conducted on 80 respondents selected from four research institute in Ibadan, Nigeria. The results revealed that all the variables jointly predicted the productivity of the married female research scientists. Notwithstanding only years of experience in the institute, academic qualification and financial stress contributed relatively to productivity. Thus the researchers recommend that academic qualifications and years of experience should be the key determinant of job designation, responsibility and tasks given to employee. Also there is the need for financial counseling and education in the workplace, to reduce financial stress among research scientists.

**Keywords:** characteristic variables, financial stress, productivity, married female research scientists

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## 1. Introduction

Research Productivity is a combination of two words "Research" and "Productivity". "Research" means very careful, observant, and vigilant study or investigation of phenomena, particularly to search and find out new particulars, information and facts, while "Productivity" means production or output, produced in duration of time. With reference to higher education, research productivity means, publications of papers in professional journals, in shape of books or presentation of research papers in conference proceedings [1]. Research institutes and other academic institutions have constantly served as feeder institutions in the overall development of nations through scientific research [2]. Some countries rank higher education institutions according to their research publications (Chepkorir Licensed under Creative Common Page 610 research performance [3]. Reference [4] observed that research publication in the university is a

major or most significant indicator of academic staff productivity, and that research attainment is determined by the number of published articles in refereed journals and conference proceedings of repute. Research productivity in research and academic institute is reflected in the number and quality of articles published by the affiliated faculty. Often, departments evaluate their institutes on their "publication count" [5]. The married female research scientists are expected to be as productive as their male counterpart for the repute of the institute

One of the many factors that have enhanced the survival of research institute has been the individual(s) who work in the institute (the employees) The personal factors or characteristic variables of the employee will go a long way in affecting their productivity. Several studies have been conducted to examine the relationship between research output and the factors that support researchers in their efforts to publish. Different variables were identified that correlate with research output. Earlier studies primarily focused on analyzing association of productivity with variables such as institutional size, academic

rank, age, gender, etc. More recent studies incorporate psychological and other latent variables in analyzing productivity. According to [6], education is a priceless asset of fundamental value to the individual and the society. It provides a sound basis for individuals to develop their potentialities. It is a powerful instrument for effecting national development and a dynamic instrument of change; educational status invariably dictates the academic rank of an employee. Reference [7] pointed out that rank is a significant predictor of research productivity. Reference [8] also found that departments with higher ranked faculty International Journal of Economics, Commerce and Management, United Kingdom Licensed under Creative Common Page 613 resulted in higher research productivity [9]. Reference [1] also observed that inadequate skills in statistics and research methodology accounted for low research productivity amongst academic staff. In addition, Study by [10] reported that the consistent research output of the department studied could be attributed to the researchers' qualifications. He found that a higher level of research productivity was more prevalent among senior academics. This was also supported by the existence of postgraduate programmes, where Master's and Doctoral students graduated annually and converted their theses into publications.

The researchers concluded their study by saying that success in scholarly productivity could be enhanced by a good interaction between senior and junior staff as well as a culture of research evident from the successful postgraduate programme and publication output. If the research productivity among junior academics was to be improved, strategies such as mentoring of junior academics by senior academics in the form of joint publications needed to be put in place. Women's employment outside the home generally has a positive rather than negative effect on marriage. Reference [11] studied the effects of family life on women's job performance and work attitudes. The Work-Life Balance among Married Women Employees result revealed that women with children were significantly lower in occupational commitment relative to women without children; contrary to expectation, women with younger children outperformed women with older children. Reference [12] studied psychosocial determinants of stress and well-being among working women. Women with some sorts of social support are more productive than women without social support.

Financial stress can be defined as a condition that occurs whenever income is less than desired spending [13]. It may also be defined as the inability to meet one's financial obligations, and can also include psychological or emotional effects [14]. Researchers have estimated that 10 to 15% of the workforce is affected by financial problems to the extent that they negatively affect job productivity [15]. Financial stress differs from one from one class to an individual and may lead to absolute neglect of cheap but vital aspects of family well-being. The current focus on productivity and employee wellness upholds the necessity to examine financial problems, stress, and programs. An assessment of the relationship between financial concerns or stress and aspects of productivity behavior can provide justification

for employee benefit program development, financial education endeavors, and financial counseling services. Financial stress is prevalent among married female employee in research institutes in Nigeria. According to [16], there were almost 3.5 million female-headed households in Nigeria, posing serious challenges for such households in terms of support systems. People who are under a lot of financial stress also tend to put aside less money for their own self-care. Since they are in a tight budget, they sacrifice the portion for their health care for a more basic need like food, water bills, and housing payments [17]. Financial problems affect productivity both directly and indirectly. Based on information from managers in U.S. corporations who worked with EAPs, [18] estimated that financial problems cost U.S. companies a minimum of \$40 billion each year. Financial stress can have an everlasting effect on an individual in a very many ways. Some financial problems may be identified as sources of concern. When these concerns are perceived by the worker as an especially troublesome or grave problem, that perception may contribute to personal physical or emotional conditions which, in turn, may be associated with a decrease in productivity.

The consequence of financial stress, is that workers' productivity will be affected and it is obvious that productivity moves an establishment forward. In order to avoid this unhealthy situation of poor job performance and low productivity, a comfortable and appropriate working environment that reduces financial stress and suits humans' needs should be provided. There have been studies conducted on financial stress and job performance among employees [19] but it has not been researched to the same extent with married female researchers. Hence this study examined the influence of some characteristic variables and financial stress on productivity among married female research scientists in Oyo State.

## 1.1. Objective

The main objective of this study is to examine the influence of some characteristic variables and financial stress on productivity among married female research scientists in Oyo State

## 1.2. Specific Objectives

1. To examine the relationship between some characteristic variables and financial stress of the married female research scientist

2. To investigate the relative contribution of some characteristic variables and financial stress on the productivity of the married female research scientist

The study also answered two research questions

## 1.3. Research Questions

- 1: To what extent do financial stress and research scientist characteristics variables combined predict research scientists' productivity?

2. What are the relative contributions of the components of financial stress and research scientist characteristics on their productivity?

## 2. Methodology

Correlational survey was adopted for this study. Correlational survey seeks to establish the relationship that exists between two or more variables. It does not involve manipulation of variables, rather, it entails the collection of data to describe existing phenomena. The study was carried out in four (4) research institutes in Ibadan, namely Forestry Research Institute of Nigeria (FRIN), National Horticultural Research Institute (NIHORT), Nigeria Social and Economic Research Institute (NISER) and Cocoa Research Institute of Nigeria (CRIN). The target population for this study comprised all married female research scientists. The reason for this chosen population is because they form the group supposed to be most affected by role conflict. Random sampling procedure was used to select four (4) research institutes in Ibadan. 20 married female research scientists were selected from each research institute, making a total of eighty (80) married female research scientists.

A structured questionnaire known as Female Research Scientists Characteristics, Financial Stress and Productivity (FRSCFS&P) was used in collecting data. The questionnaire consisted of three (3) sections, A, B and C. Section A consisted of respondent's demographic variables. Section B consisted of 13-items focused on measuring the level of financial stress in respondents. While Section C consisted of 12 items measuring the level of productivity of the respondents. Section B and C were measured on a four-point scale (strongly agree, agree, disagree and strongly disagree). The instrument was subjected to face and content validity and empirical validities were ensured also. Lawshe Content Validity (CVI) was used to establish the content validity and the value obtained was 0.76. The internal consistency and reliability of the instrument in sections B and C, were established using Cronbach Alpha to get the values of 0.82 and 0.80 respectively. The instrument was then taken to the sampled research institutes. However, two of the instrument were invalid

and were not used, so seventy-eight (78) questionnaires were used. Married female research scientists' responses were scored and data collated were analysed using regression analysis.

Table 1 showed the correlation matrix of the predictor variables (age, household size, age of youngest child, age of oldest child, academic qualification, years of experience in institution, Rank/Grade Level financial stress) and the criterion variable (married female research scientists' productivity). It was observed from the table that there was no multi-collinearity among the variables of the study. The correlation coefficient of independent variables and criterion variable revealed a significant positive relationship between academic qualification and productivity while years of experience and financial stress showed significant negative relationship each with married female research scientists' productivity.

**Research Question 1:** To what extent do married female research scientist characteristics and financial stress combined predict research scientists' productivity.

Table 2 showed that the multiple correlation coefficients (R) of all the combined independent variables with married female research scientists' productivity gave the value of .698. this implies 69.8% association between independent variables (age, household size, age of youngest child, age of oldest child, academic qualification, years of experience in institution, financial stress) and married female research scientists' productivity where R square is 0.487. The adjusted R square which estimated the variance on dependent was 0.413. This means that all the independent variables (age, household size, age of youngest child, age of oldest child, academic qualification, years of experience in institution, rank/financial stress) made a 41.3% contribution to the variance in married female research scientists' productivity. Regression ANOVA produced ( $F(8,63) = 6.530, P < 0.05$ ). This implies that the joint contribution of all the independent variable investigated in this study to the married female research scientists' productivity is statistically significant.

**Table 1. Correlational Matrix Table of Predictor Variables Variable (Age, Household Size, Age Of Youngest Child, Age of Oldest Child, Academic Qualification, Years of Experience in Institution, Rank/Grade Level, Financial Stress) and Criterion Variable**

	Age	HSize	YngWard	OldWard	AQual	YEXP	Rank	Fin Stress	Producty
Age	1								
HSize	.208	1							
AgYchild	.351**	.250*	1						
AgOchild	.465**	.247*	.421*	1					
AQual	.188	.073	.363**	.313**	1				
YExp	.500**	.208	.356**	.464**	.065	1			
Rank	.533**	.147	.237*	.258	.390**	.564**	1		
Fin Stress	.138	-.079	-.273	-.281	-.421	-.059	-.258	1	
Producty	-.056	-.121**	.131	.124	.431**	-.226**	.088	-.338**	1

Keys: HSize-Household Size, AgYchild-Age of Youngest Child, AgOchlld-Age of Oldest Child, AQual-Academic Qualification, YExp-Years of Experience in Institute, Fin Stress-Financial Stress, Producty-Productivity

**Table 2. Regression Summary and ANOVA of The Predictor Variable (Age, Household Size, Age of Youngest Child, Age of Oldest Child, Academic Qualification, Years of Experience in Institution, Rank/Grade Level, Financial Stress) on Married Female Research Scientists' productivity.**

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	826.999	8	103.375	6.530	.000
Residual	870.751	55	15.832		
Total	1697.750	63			

Multiple R= .698

R Square = .487

Adjusted R Square = .413

\*\*significant @p,05: n = 78.

**Table 3. Relative contribution of independent variables (age, household size, age of youngest child, age of oldest child, academic qualification, years of experience in institution, financial stress) on married female scientists' productivity**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Age	-.550	.726	-.091	-.757	.452
Household size	2.026	1.102	.188	1.839	.071
Age of oldest child or ward	.849	.755	.224	1.124	.266
Age of youngest child or ward	.173	.675	.051	.257	.798
Academic Qualification	1.587	.743	.276	2.136	.037
Year of Experience in the Institute	1.551	.476	.422	-3.259	.002
Rank/Grade Level	.058	.344	.023	.169	.867
Financial Stress	.324	.120	.317	2.698	.009

\*\*significant @p,.05: n = 78.

Table 3 showed the relative contribution of independent variables to the criterion variable. Only three independent variables contributed significantly to married female research scientists' productivity. The contributions of the variables were; Academic qualification ( $\beta_5 = 0.276$ ,  $t = 2.136$ ,  $p < 0.05$ ), Years of Experience in the Institute ( $\beta_6 = -0.422$ ,  $t = -3.259$ ,  $p < 0.05$ ) and Financial Stress ( $\beta_8 = -0.317$ ,  $t = -2.698$ ,  $p < 0.05$ ). However, the other five variables (age, household size, age of youngest child, age of oldest child, academic Rank/Grade level) did not contribute significantly to married female research scientists' productivity.

### 3. Discussion

As shown in Table 1 all the variables correlate with each other, though some are positive while others are negative. The table equally revealed that not all the correlations are significant and the relationship that existed between the criterion variables and the predictors could be described as moderate. The result also revealed in Table 2 that there was composite significant contribution of the eight variables (age, household size, age of youngest child, age of oldest child, academic qualification, years of experience in institution, Rank/grade level and financial stress) to research scientists' productivity. This study is in line with the study of [20] on employee productivity which discovered that institutional, environmental and personal characteristics variables affect workers' productivity. It also in agreement with [21] who argued that the performance of an individual in an organization is a function of certain characteristics of such an individual.

The result of the findings as shown in Table 3 revealed relative significant contribution of only four variables which are Household size, academic qualification, years of experience and financial stress to the productivity of the married female. The study further revealed that out of the four that were significant, years of experience in the institute contributed most, this might be as a result of the fact that those researchers who have stayed long in the institutions have accumulated skills and strategies in carrying out research work. The finding also gives credence to the study of [22] which confirmed that job experience has some impact on staff productivity. Also staff qualifications positively influenced research output, this finding supports the finding of [23], that the staff

qualifications could predict significantly the research output by the university staff. The finding is in consonance with work of [24] on the impact of employee training and development on employee productivity, they reported that training and development is vital to the productivity of organisation's workforce.

Financial stress also contributed significantly in the prediction of married female research scientists. This result supports the finding of, [15] who conducted research in the Department of Defense in Virginia, which reveals that productivity loss is caused by the poor personal financial behaviour of employees. It is also in line with the finding of [25] that when wages and salaries are sufficient and timely paid will propel a worker to work hard. Household size contributed to married female scientists' productivity

### 4. Conclusion

The study assessed the influence of some characteristic variables and financial stress on productivity among married female research scientists in Oyo state, Nigeria and revealed that the characteristic variables and financial stress predict the productivity of the married female research scientists. The findings also revealed that there is a relative significant contribution of only four variables which are household size, academic qualification, years of experience and financial stress to the productivity of the married female. The study further revealed that out of the four that were significant, years of experience in the institute contributed most.

### 5. Recommendations

Research institutes and the government must improve the hire qualified staff in order to improve research output in the research institutes.

Academic qualifications should be the key determinant of the job designation, responsibilities and tasks given to employees since the more one is academically qualified, the better the employee performance on the job.

The research institute should encourage and support staff to pursue higher academic qualification so as to strengthen the capacity to improve performance.

More studies should be conducted to identify other ways of dissemination research output other than



publications and other measures of research productivity such as optimization of funding, as well as comparative studies which will give more comprehensive results to guide further improvement.

There is the need for financial counseling and education in the workplace, to reduce financial stress among research scientists.

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