

EFFECTS OF DEMOGRAPHIC CHARACTERISTICS ON WORK STIMULATED STRESS AMONG EARLY CHILDHOOD EDUCATORS USING STRUCTURAL EQUATION MODELLING

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Abstract

Work stimulated stress has emerged as a pervasive global issue that needs to be investigated by specialists around the world. Work stimulated stress is a condition of pressure brought on by one's occupation and it occurs when the demands of the job outpace the worker's abilities or resources. This study was therefore carried out to investigate the effects of demographic characteristics on work stimulated stress among early childhood educators using structural equation modelling. The demographic variables considered in the study were teachers' age, gender, experience, marital status, income and educational qualification. The sample comprised of three hundred and fifty (350) early childhood educators across six (6) states in Nigeria. The study adopted an ex-post-facto research design. A stratified random sampling technique was used to select the early childhood educators for the study. One validated instrument developed by the researchers on work stimulated stress and associated demographic variables was used to collect data for the study. The reliability index of the instrument using Cronbach's Alpha was 0.83. Data collected for the study was analyzed using Coefficient of determination (R^2) to answer the research questions that guided the study while path analysis and multiple regressions analysis were employed in hypotheses testing. The findings of this study showed that age, marital status, gender and religion predicted work stimulated stress among early childhood educators more than the other variables. Conclusion was drawn and it was recommended among others that employers of labour should take in cognizance the demographic variables as it influences work-stimulated stress. The implications of these findings for education policy makers, administrators and teachers are discussed.

Keywords: Demographic characteristics, Early Childhood, Early childhood Educations, Stress, Structural Equation Modelling.

1 INTRODUCTION

Work-related stress has appeared as a widespread global problem that requires investigation by experts throughout the world. Work stress is defined as a state of pressure brought on by one's profession, and it happens when the demands of job are insufficient for the workers' skills or resources. Stressful conditions at work result in work-related stress [1]. Work and stress go hand in hand since an excessive amount of work causes people to become stressed out and as a result, both the employers' and the employees' health suffer. Stress can often be a powerful and a motivating tool for individuals to better their performance in an institution, however, a research by [2] have shown that there are several negative implications of stress that may affect the individual's productivity. These negative implications include; negative emotions, low motivation to work, lack of concentration on the job, among others. These negative implications have both physical and psychological effects on the employees (the preschool teachers).

Work stress has been defined in different ways over the years. Originally, it was conceived of as pressure from the environment, then as strain within the person [3]. The generally accepted definition today is one of interaction between the situation and the individual. Work related stress is the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressures of the situation [3]. Stress is also defined as an environmental stimulus that affects individuals and can provoke physical and psychological reactions [4]. It occurs because of objective demand and subjective reaction imbalance in certain professional conditions [5], [6] and [7]. Thus, work stress is more likely in some situations than others and in some individuals than others.

In educational sector, it is a commonly held belief that teaching can be a highly stressful profession. It is discovered that more than 80% of teachers surveyed from a variety of schools said their jobs were very or extremely stressful [8]. According to National Union of Teachers (NUT), stress is one of the most pressing issues confronting teachers today, and it is the primary health and safety concern in four out

of five schools evaluated [8]. This means that teachers, in comparison to other occupations such as doctors, lawyers, and engineers etc, experience more stress at work. Teacher stress is characterized as unpleasant, negative feelings such as anger, irritation, worry, despair, and nervousness experienced by teachers as a result of some part of their work as teachers. Teacher stress has become a key research topic in many nations as the amount of research on the subject has continuously expanded.

According to [9], factors that may induce work stress among teachers and especially early childhood educators include; irregular payment of monthly salaries, lack of adequate resources to carry out their job, difficulties dealing with children of 1-6 years, making decisions that affect their job without involving them by the school management, demand of official work on their private time, having challenges dealing with pupils' disciplinary problem and difficulty identifying the teaching method suitable for children aged 1-6 years among others.

Other factors that may contribute to work related stress according to [10] include; job uncertainty, lesser opportunities for career growth, work dissatisfaction, time pressure, office culture, bad management and lack of support and control. However, [10] stated that demographic factors such as age, gender, race marital status, income and educational qualification among others can also induce work related stress among teachers.

Several studies [11], [12] and [13] have been carried out on the influence of other related variables on work related stress, but literature on causal modelling of the effect of demographic variables on work related stress especially among preschool teachers remain scarce. Other researchers have concentrated on the direct influence of demographic variables on work related stress, but if the direct and indirect effects and the causal linkages among the demographic variables on work related stress especially among preschool educators are well known, it may help to reduce the stress experience by preschool teachers especially those from demographic factors. In view of this gap in literature, this study, therefore, sought a causal modelling of the effect of demographic variables on work related stress among early childhood educators.

A study was carried out on relationship between teacher's burnout, occupational stress, coping, gender and age. Results indicated that female teachers experience the lack of support from the administrators more than men. Men experienced depersonalization more than women. Older teachers reported a higher level of exhaustion and occupational stress than other groups, but they indicated higher personal accomplishment. It was also found that the difference between the stress experience by male and female teachers was statistically significant which implies that gender had a significant effect on work stimulated stress among teachers [14]. [15] carried out a study to identify the work-related stress and its subsequent problems among teachers of the public schools which operated the school-based Violence Reduction Program (VRP) in the governorate of Tulkarm during the second semester of 2015-2016. The results showed that variables of gender, specialization, qualification, and work experience were not significant predictors of work-related stress among teachers.

In the majority of studies, it was discovered that work-related stress had significant correlations with educators' gender, educational background, and age [17]. Age, gender, and marital status all had a substantial impact on the stress brought on by work [18]. The level of stress preschool instructors experience at work is significantly influenced by their age and educational background. After adjusting for other factors such as age, marital status, and other job responsibilities, it was shown that gender was significantly associated with work-related stress in teachers. Similar research revealed that women face more workplace stress than their male colleagues.

Gender and stress at work among teachers have been linked by research. According to a study by [19], men and female teachers experience psychological and physical stress in significantly different ways. Female teachers reported concerns about the essential aspects of their employment, whereas male instructors showed concerns about money. Males were found to experience more stress and anxiety than females. More female teachers than male teachers typically voice burnout complaints. In a previous study, [18] found that female instructors had worse mental health than male teachers, making them more vulnerable to stress.

The amount of stress teachers experience at work is correlated with their age. In their study on job satisfaction and occupational stress, [19] found that teachers in their forties experienced higher levels of stress than those in younger age groups. But according to a study by [20], older teachers were less stressed than their younger counterparts. According to [20], the older teachers are more seasoned, environment-adaptable, and stress-ready, which is the justification presented for this claim. In light of these diverse situations, it would be interesting to determine the effect of demographic variables on work stimulated stress among early childhood educators.

1.1 Research questions

The following research questions were posed to guide the study

- 1 What are the estimates of the strengths of the causal paths of the variables in the model?
- 2 What is the causal model involving demographic variables and work stimulated stress?
- 3 Hat demographic variable has most significant effect on teachers' work-related stress?

1.2 Hypotheses

It is assumed that demographic variables can cause work related stress as experienced by the preschool educators. Based on this assumption, the following null hypotheses were formulated to guide the study.

- H₀₁:** Age of the preschool educators does not significantly affect their work stimulated stress (WSS).
H₀₂: Gender of the preschool educators does not significantly affect their work stimulated stress.
H₀₃: Experience of the preschool educators does not significantly affect their work stimulated stress.
H₀₄: Marital Status of the preschool educators does not significantly affect their work stimulated stress.
H₀₅: Income of the preschool educators does not significantly affect their work stimulated stress.
H₀₆: Educational Qualification of the preschool educators does not significantly affect their work stimulated stress.

HYPOTHESE MODEL

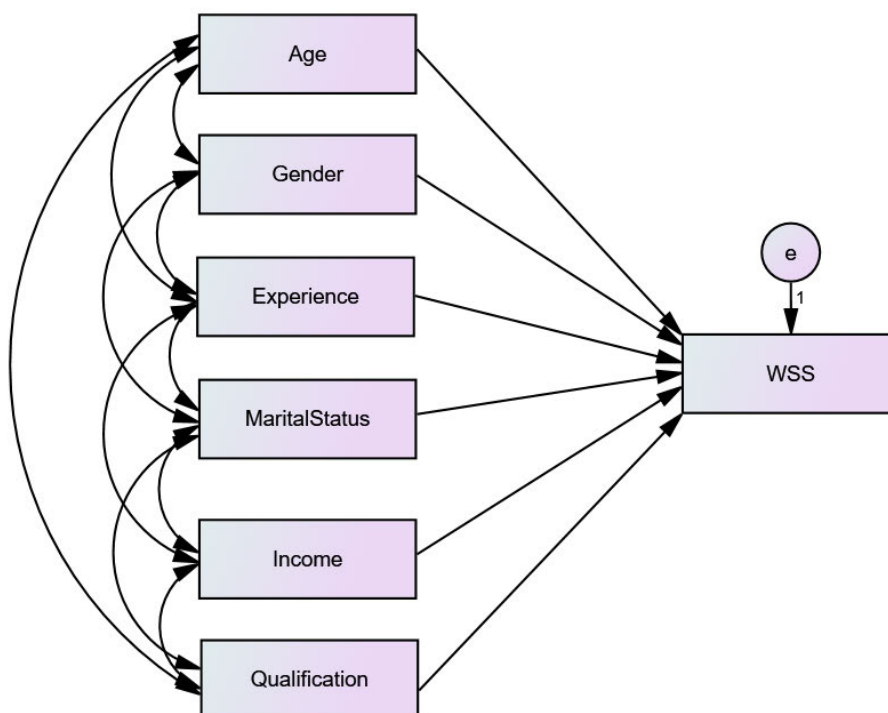


Fig. 1: Hypothesize input model.

The diagram in figure 1 shows the direct linkage between teachers' demographic variables and work stimulated stress (WSS). From the model, the researchers intended to estimate the direct effect of age, gender, experience, marital status, income and educational qualification on early childhood educators' work stimulated stress. The estimates of the strengths of the causal paths of the variables in the model and the most meaningful causal model involving demographic variables and work stimulated stress is shown in the output model.

2 METHODOLOGY

An ex-post-facto research design was used in the study. Ex-post-facto design is the kind of design that resembles experimental study in that it tries to identify cause-and-effect relationships, but differs from experimental study because the researcher typically has no control over the variables of interest and cannot thus influence them. The only links that the researchers make are to some variables that are already known to be causal factors. The study used a sample of 350 preschool teachers. To choose the 350 preschool teachers who participated in the study, a stratified random sampling procedure was adopted. The strata were developed based on shared attributes or traits among members due to stratified random sampling.

Data on teachers' work-stimulated stress were gathered using the Early Childhood Educators' Work Stimulated Stress Questionnaire (ECEWSQ). The 20-item ECEWSQ included four rating categories: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD), each with a numerical value of 4, 3, 2, and 1, respectively. Age, gender, experience, marital status, income and early childhood educators' educational backgrounds are among the demographic factors on the questionnaire. Experts evaluated the instrument to make sure it measures the things it was intended to measure. Using Cronbach Alpha, an internal consistency reliability index of the items was calculated to be 0.83.

Before the commencement of the survey by the researchers, written permission to carry out the survey was gotten from each of the sampled school authorities. Informed written consents to participate in the survey were also obtained from early childhood educators and head teachers. All the early childhood educators who participated in the study were given a copy of the questionnaire on work stimulated stress to fill. Direct administration and retrieval method was employed by the researchers in order to ensure 100 percent return rate. All the administered questionnaires were duly filled by the participants and returned to the researchers on the spot.

The data were analysed using Analysis of Moment Structure (AMOS) to answer the research question and test the hypotheses that guided the study. A structural equation modelling statistical approach was used to develop the causal model for explaining the effect of teachers' demographic variables on work stimulated stress. It is pertinent to note that early childhood educator's demographic variables used in the study were regarded as the non-referenced categories or exogenous variables in the causal model, while work stimulated stress was the only referenced or endogenous variable for this study. The exogenous variables were coded as categorical or classificatory scale while the work stimulated stress data were coded as ordinal scale.

3 RESULTS

Research Questions 1: What are the estimates of the strengths of the causal paths of the variables in the model?

Table 1: Standardized beta coefficients of the estimates of the strengths of the causal paths of the variables in the model.

			β	S.E.	C.R.
WSS	<---	Age	.291	.056	5.184
WSS	<---	Gender	.333	.046	7.305
WSS	<---	Experience	.104	.119	.877
WSS	<---	Marital Status	.238	.049	4.881
WSS	<---	Income	-.010	.057	-.179
WSS	<---	Qualification	-.022	.068	-.322

The result in Table 1 shows the standardized beta coefficients of the estimates of the strengths of the causal paths of the variables in the model. The result shows a positive and significant effect of age on early childhood educators work stimulated stress, β (350) = 0.291. Result also shows that early childhood educators' gender had positive effect on work stimulated stress, β (350) = 0.333. Early childhood educators' work experience had a positive effect on early childhood educators' work stimulated stress, β (350) = 0.104. Result further shows that early childhood educators' marital status had positive effect on work stimulated stress, β (350) = 0.238. Early childhood educators' income had a

negative effect on work on work stimulated stress, $\beta (350) = -0.010$. Early childhood educators' educational qualification had a negative effect on work stimulated stress, $\beta (350) = -0.022$. These results indicated that early childhood educators' age, marital status and gender had statistically significant effects on work stimulated stress.

Research Questions 2: What is the causal model involving demographic variables and work stimulated stress?

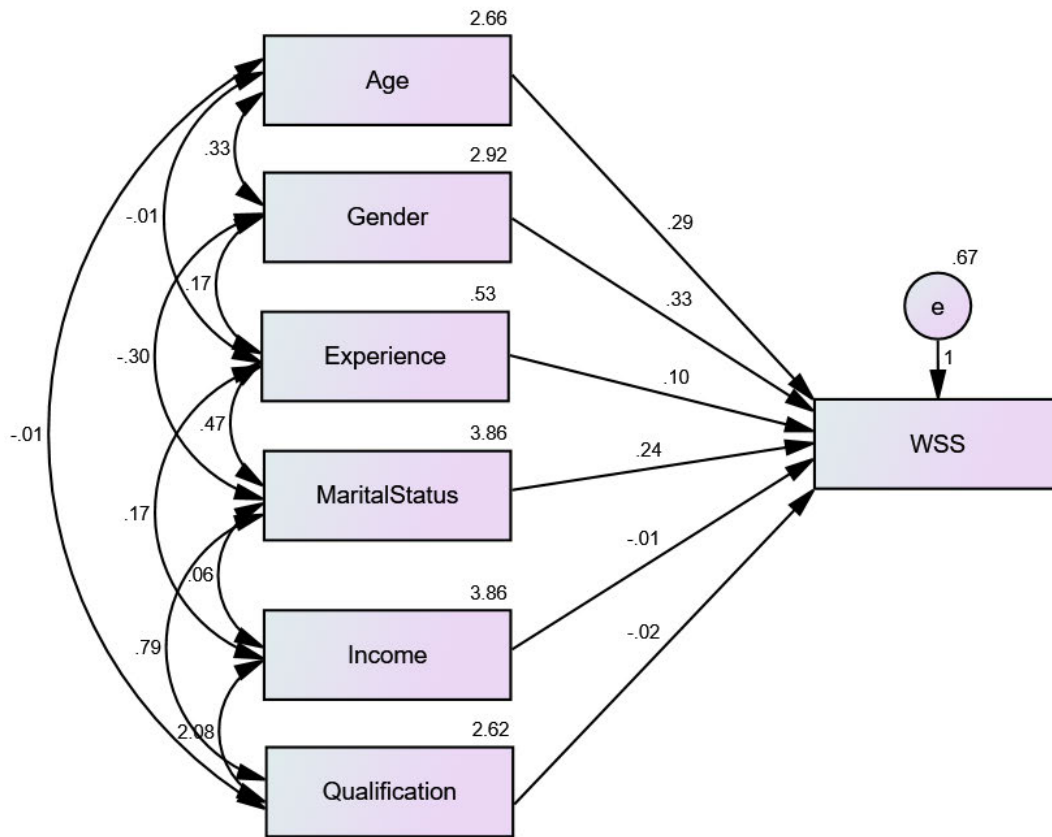


Figure 1: A causal model showing the path coefficients of the influence of demographic variables on early childhood work stimulated stress.

The coefficients in the output model as shown on figure 1 suggested strong causal effects among the predictor variables (especially early childhood educators' age, gender and marital status) and with criterion variable. The directions of the pathways in the model are positive for age (0.29), gender (0.33), experience (0.10) and marital status (0.24) but negative for income (-0.01) and educational qualification (-0.02). The association between income and qualification of early childhood educators and work stimulated stress is inverse as shown in the causal model.

Research Questions 3: What demographic variable has most significant effect on teachers' work-related stress?

Table 2: Standardized coefficient of the demographic variable with the most significant influence on teachers' work stimulated stress.

			β	Rank
WSS	<---	Gender	.333	1 st
WSS	<---	Age	.291	2 nd
WSS	<---	Marital Status	.238	3 rd
WSS	<---	Race	.104	4 th
WSS	<---	Income	-.010	5 th
WSS	<---	Qualification	-.022	6 th

The result in table 2 shows that early childhood educators' gender ($\beta = 0.333$) has the most significant effect on teachers' work-related stress, followed by age of the respondents ($\beta = 0.291$), marital status ($\beta = 0.238$), race ($\beta = 0.104$), income ($\beta = -0.010$) and lastly educational qualification ($\beta = -0.022$). This result shows that gender is the most significant demographic variable than can affect work stimulated stress among early childhood educators.

3.1 Test of Hypotheses

Table 3: Estimates of the strengths and significance of the causal paths in the model

			β	S.E.	C.R.	P
WSS	<---	Age	.291	.056	5.184	0.00
WSS	<---	Gender	.333	.046	7.305	0.00
WSS	<---	Experience	.104	.119	.877	0.38
WSS	<---	Marital Status	.238	.049	4.881	0.00
WSS	<---	Income	-0.010	.057	-.179	0.85
WSS	<---	Qualification	-0.022	.068	-.322	0.74

The result in Table 1 shows the standardized beta coefficients of the estimates of the strengths of the causal paths of the variables in the model. The result shows a positive and significant effect of age on early childhood educators work stimulated stress, $\beta (350) = 0.291$, $p = 0.00$. this implies that hypothesis one is rejected. Inference drawn is that age of respondents has significant effect on their work stimulated stress. Result also shows that early childhood educators' gender had positive and significant effect on work stimulated stress, $\beta (350) = 0.333$, $p = 0.00$ implying that hypothesis two is also rejected. Early childhood educators' work experience had a positive but no statistically significant relationship with work stimulated stress, $\beta (350) = 0.104$, $p = 0.38$. The implication is that, statistically, work experience of respondents does not affect work stimulated stress significantly therefore hypothesis three is not rejected. Result further shows that early childhood educators' marital status had positive and significant effect on work stimulated stress, $\beta (350) = 0.238$, $p = 0.00$ implying that hypothesis four is rejected and inference drawn is that marital status of respondents is a significant factor that can affect work stimulated stress. Early childhood educators' income had a negative and no significant effect on work on work stimulated stress, $\beta (350) = -0.010$, $p = 0.85$. This means that hypothesis five is not rejected. Early childhood educators' educational qualification had a negative and no significant effect on work stimulated stress, $\beta (350) = -0.022$, $p = 0.74$. Since the p-value is greater than 0.05, hypothesis six is not rejected. These data indicate that early childhood educators' age, marital status and gender had statistically significant effects on work stimulated stress.

3.2 Discussion of the Findings

This study was carried out to determine the effect of demographic variables on work stimulated stress among early childhood educators in Nigeria using causal modelling. The result of the study revealed that early childhood educators' age, gender and marital status had statistically significant influences on work stimulated stress, while early childhood educators' race, income and educational qualification were not found to have significant influence on work stimulated stress. These findings imply that age, gender and marital status of early childhood educators are significant factors in determining work stimulated stress. Perhaps, female respondents may express work stress more than their male counterpart or the other way round. Similarly, older early childhood educators may experience work stress more than younger ones as result of their age and the strength to carry out daily activities as expected. In the same, married educators may experience stress more than the single educators. The result of the study is consistent with [14] who carried out a study on relationship between teacher's burnout, occupational stress, coping, gender and age and found that the difference between the stress experience by male and female teachers was statistically significant which implies that gender was a significant factor in predicting work stimulated stress among teachers. Similarly, [18] found that female instructors had worse mental health than male teachers, making them more vulnerable to stress. On the other hand, the result is not in agreement with [15] who found that variables of gender was not a significant predictor of work-related stress among teachers.

The amount of stress teachers experience at work is correlated with their age. The finding of the study is also consistent with [19] who found that teachers in their forties experienced higher levels of stress

than those in younger age groups. But according to a study by [17], older teachers were less stressed than their younger counterparts which makes the present result to disagree with the earlier findings. According to [20], the older teachers are more seasoned, environment-adaptable, and stress-ready, which justifies the result of the present study.

The study's findings also indicated that respondents' marital status plays a significant role in influencing how much stress is generated at work. According to studies, this demonstrates a relationship between teacher stress and marital status. Stress levels were significant for people who had experienced divorce, separation, or widowhood. Researchers such as [15] and [20] found that married teachers were less stressed than single educators. Contrarily, as demonstrated by other studies, married working women reported higher levels of stress at work than single working women. As mothers, wives, and homemakers, they were expected to perform extra duties due to cultural expectations, as well as traditional role classification tendencies.

The result of the study also showed that early childhood educators' educational qualification is not a significant factor in determining work stimulated stress, but early findings showed that occupational stress and qualifications are associated. For instance, compared to undergraduate and graduate instructors, postgraduate teachers showed "much lower job satisfaction on job role item" [20]. The researchers [20] found that there was a decreased in work stress among instructors with higher academic degrees, such as a bachelor's or higher, compared to teachers with lower degrees, such as a diploma. Studies revealed that experience in teaching was linked to teacher occupational stress in addition to qualifications. The summary of this study therefore shows that early childhood educators' age, gender and marital status are significant factors that induce work stimulated stress.

4 CONCLUSIONS

The findings of this study as shown in the model indicated that early childhood educators' demographic variables play important role in determining their work stimulated stress. Specifically, three (i.e. age, gender and marital status) out of the six demographic variables used in this study had statistically significant effect on work stimulated stress among early childhood educators. The researchers therefore concluded that out of the demographic variables of the early childhood educators explored in this study, only age, gender and marital status had significant effect on work stimulated stress.

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