

## **PREDICTION OF STUDENTS' FINANCIAL ACCOUNTING PERFORMANCE BY THEIR FAMILY BACKGROUND VARIABLES**

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### **Abstract**

*This study examines the family background variables as predictor of students' achievement in mathematics. Three hypotheses were posed and formulated respectively to guide the study. The study adopted a correlational survey research design. A total of 324 senior secondary school II students were used as sample for the study. Pro-forma which contained students' three consecutive end of term examination results of the sampled students were used as a measure of their academic achievement in Mathematics. The hypotheses were analyzed using regression analysis and regression analysis of variance (ANOVA). Results of the study revealed that: there was a significant positive relationship between parents' level of education and students' academic achievement in Mathematics; there was a significant positive relationship between parents' level of occupation and students' academic achievement in Mathematics; and there was a significant positive relationship between parents' level income and students' academic achievement in Mathematics. It was recommended among other things that government should therefore provide adequate reading materials and conducive learning environment for the less privilege so they can also compete favourably with their counterparts from high socioeconomic status.*

### **Introduction**

Science and technology are important tools for development and productivity in any nation. Development of any nation is a measure of her development in the area of science and technology. Technological growth of a nation leads to its social and economic development. In the world today, science and technology has become a dominant power development indicator (Agbaje & Alake, 2014). Science has been regarded as the base of modern day technological breakthrough. It is a search for evidence in order to answer questions or solve problems. Science is a great enterprise which nations depend on, in-order to advance technologically (Ghumdia, 2016). Igwe (2003) defined science as a systematic study of the nature of the behaviour of the

material and physical universe through observation, experimentation, measurement and recording.

At the moment, countries all over the world, especially the developing ones like Nigeria, are striving hard to develop technologically and scientifically, since the world is turning Scientific and all proper functioning of lives depend greatly on Science. The British Science Council (2009) defined science as the pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence. According to Ogunleye (2002), Science is a dynamic human activity concerned with understanding the workings of our world. This understanding helps man to know more about the universe. Without the applications of science, it would have been difficult for man to explore the other planets of the universe.

In Nigeria, the study of science is of so great importance, that a lot of emphasis has been laid on the teaching and learning of science with the major aim of science education, as contained in the National Policy on Education, being to equip the students to live effectively in this modern age (FME, 2004). This can be achieved by the inculcation in the learners the necessary scientific skills and attitudes. The inculcation of scientific skills and attitudes in students can only be achieved through the proper teaching of the various science subjects like mathematics.

Mathematics play a fundamental role in the scientific and technology progress of any nation and as such taught at all levels of education in Nigeria. Mathematics is an interdisciplinary language which explains the relationships, structures, quantities, properties and forms of objects, constructs time and space (Richard & Robbins, 2013). Similarly, Asikhia (2014) maintained that mathematics is a broad domain addressing the measurement, properties and relations of quantities as expressed in numbers or symbols. The knowledge of mathematics is applicable to all areas of human activities and consequently, determines the level and rate of national development (Iji, 2008). Mathematics therefore, plays a major role for proper understanding of other science subjects. This may be the reason why Anastacio (2007) described mathematics as the supporting knowledge of modern sciences and a legitimacy label for all scientific knowledge.

The usefulness of mathematics in everyday living cannot be overemphasized. It serves as a means of sharpening man's reasoning ability and developing man's personality. In today's technology-driven society, greater demands have been placed on individuals to interpret and use mathematics to make sense of information and complex situations. The study of mathematics generally is considered as been basic for preparation of every

informed citizen and serve as a gateway into numerous career choices in life (Ogbole & Uka, 2014). Mathematics plays an indispensable role in realizing a nation's dream of rapid scientific and technological development. Indeed, no nation that wants to develop scientifically and technologically neglects the mathematical component of her school curriculum.

Mathematics has an important role to play in a modern society as it has become an indispensable tool in many disciplines that are important to modern life. Badmus (2002), emphasizing the importance of mathematics, stated that mathematics has become an important social factor and that it is no longer tenable to think that mathematics is still an exotic good for only an exclusive group of people. The significance of mathematics is further strongly expressed through the Federal Government's policy of making mathematics a compulsory subject at both primary and secondary school levels (Eniayeju, 2010).

The main objectives of studying mathematics at senior secondary school level according to Nigerian Educational Research and Development Council (NERDC) (2008) are to: generate interest in mathematics and provide solid foundation for everyday living; develop computational skills and foster the desire/ability to be accurate to a degree relevant to the problem at hand; develop precise, logical and abstract thinking; develop the ability to recognize problems and to solve them with related mathematical knowledge; and provide necessary mathematical background for further education and encourage creativity.

Despite the importance and relevance of mathematics to individual and the nation in general, it is very disappointing to note that students' achievement in the subject has been fluctuating and appears to be consistently low in both at internal and external examinations. The annual reports of the West African Examination Council show a discouraging picture of students' achievement in mathematics at the Senior Secondary School level. For instance, students' achievement in mathematics at the SSCE for the past six years has been fluctuating. Chief examiners' report revealed that the percentages pass in mathematics was 23.36%, 30.9%, 38.81%, 36.57%, 31.28%, 38.68% and 53% for 2010, 2011, 2012, 2013, 2014, 2015 and 2016 respectively.

Several factors have been adduced for students' poor achievement in mathematics. Some of these factors include; students' poor study habit (Okeke, 2006); lack of instructional resources (Yara & Otieno, 2010); instructional techniques (Olulonye, 2010) among others. Despite these factors that may make it impossible to achieve the objectives of Mathematics, Osuafor and Okonkwo (2013) opined that family has the potential to influence a child's

academic achievement. This according to the authors is because; family is the first environment of the child.

Family background refers to all the conditions and circumstances in the family which influence the child physically, intellectually and emotionally. According to Osuafor and Okonkwo (2013), family background is a collective terminology comprising of social class/status, economic status, family size, family structure, socio-economic status (parents' level of education, occupation and income) and other factors pertaining to family life. Family background in this study will focus on socio-economic status. The choice of socio-economic status among other component of family background is because the major family background influencing pupils' academic achievement are parents' level of education, occupation and income (Jacob & Harvey (2005). Socioeconomic status is a sociological classification indicating the close relationship between someone's relative wealth and that person's social status. It is also regarded as an economic and sociological combined total measure of a person's work experience and of an individual's or family's income and social position in relation to others, based on income, education and occupation, (Kraus, 2008). It is also a categorization of people according to their economic, education and occupational characteristics (Santrock, 2004). In support of the above statement, Keltner (2008) opined that when analyzing a family's socioeconomic status, the household income, earner's education and occupation are examined, as well as the combined effect.

The level of educational attainment of parents could influence the academic achievement of their children. There is evidence that parents' level of education will affect students' academic achievement in mathematics. According to Grissmer (2003), parents' level of education is the most important factor affecting students' academic achievement. This, according to Taiwo as cited in Adeyemo (2010) is because parents would be in a good position to be performing well in education and provide the necessary materials needed by him/her. This was supported by Musgrave (2000) who opined that a child that comes from an educated home would like to follow the steps of his/her family and by this, work actively in his/her studies. Musgrave further stated that parents who have more than a minimum level of education are expected to have a favoured attitude to the child's education and to encourage the child to show examples in activities of intellectual type such as reading of newspapers, magazines and journals. They are likely to have wider vocabulary by which the children can benefit and develop language fluency.

According to European Union Monitoring Report (2013), those students whose parents have a tertiary level of education perform, on average, significantly better in tests of science, reading and mathematical ability than

do those whose parents have only basic schooling. In a family where both the father and mother are educated, their children are always taken good care of in their academic activities. Such parents know the importance of getting educational materials for their children is school. They may go through their children's exercise books after school, or even employ a private teacher to teach them after school. By so doing, their academic performance will be improved; whereas in the case of illiterate family, the need to supervise the children's exercise books is not there, hence their children's low academic performance in school. Educated parents may also have library at home, stocked with novels, encyclopedia and other educational books and educational audio visual tapes. When children make use of these materials, it will enhance their intellect.

Onoch as cited in Akinsanya, Ajayi and Salomi (2014) concludes that a child from a well-educated family with high socio-economic status is more likely to perform better than a child from an illiterate family. This is because the child from an educated family has a lot of support such as a decent and good environment for academic work, parental support and guidance, enough textual and academic materials and decent feeding. The child is therefore, likely to be sent to good schools where well-seasoned teachers will handle the subjects, thereby, influencing students' academic achievement in mathematics. In addition to parents' level of education, parents' level of income and occupation may also influence students' achievement in mathematics.

Family income according to Simiyu (2001) refers to wages, salaries, profit, rents and any flow of earnings received which can come in form of unemployment or workers' compensation, social security, pensions, interests or dividends, royalties, trusts, alimony, or other governmental, public, or family financial assistance. Income can also come in the form of unemployment or workers' compensation, social security, pensions, interests, royalties, trusts, other governmental, public or family financial assistance. Income is a commonly used measure of socio-economic status because it is relatively easy to figure for most individuals (Kraus, 2008).

There is evidence that students who come from low-income and occupation have significantly less school success than students from high socio-economic (Adeyemo, 2010). This may be as a result of low monitoring of children's school work and less overall supervision of social activities compared to students from high socio-economic (Jacob & Harvey, 2005). Rothstein (2004) opined that parents of different occupation classes often have different styles of child rearing, different ways of disciplining their children and different ways of reacting to their children. These differences do not express themselves consistently as expected in the case of every family;

rather they influence the average tendencies of families for different occupational classes.

In line with the above assertion, Hill et al. (2004) had also argued that socio-economic status of parents does not only affect the academic performance, but also makes it possible for children from low background to compete well their counterparts from high socio – economic background under the same academic environment. In a previous local finding in Nigeria, Oni (2007) and Omoegun (2007) had averred that there is significant difference between the rates of deviant behaviour among students from high and low socio-economic statuses. The health status of the children which could also be traceable to parental socio – economic background can be another factor that can affect the academic performance of the students. Adewale (2002) had reported that in a rural community where nutritional status is relatively low and health problems are prevalent, children academic performance is greatly hindered. This assertion is again hinged on nature of parental socio-economic background. Moreover, Eze (2002) had opined that when a child gets proper nutrition, health care, stimulation during pre-school years, the ability to interact with take optimal advantage of the full complement of resources offered by any formal learning environment is enhanced.

The foregoing discussion had established that family background variables which focused on socio – economic status of the parents and host of other factors relating to home environment of students. It is therefore, important to examine whether there is any significant relationship between family background variables (socio-economic status) and students' academic achievement in mathematics.

Over the years, societies have been recording a persistent increase in the rate of poor performance of students in mathematics despite the importance and objectives of studying mathematics. Research has shown that the blame for lack of good performance has been as a result of neglect and carefree attitude towards academic work by students and parents. Home is the first school for a child where the child is taught the basic norms and values by the parents before the child leaves for the formal education. Contrary to the opinion that learning and reading begins in school, the first foundation of the child begins at home. A good and conducive family background with adequate learning facilities would help to boost the intellectual and academic capability of the child.

Family with good socio economic status (well educated parents, high income and occupation) would always have good attitudes towards education and provide learning materials such as television, instructional video tapes, novels, books and journals that could facilitate the learning process. The

motivation of any intelligent child towards learning is being accelerated by the positive influence of his/her environment while others are negatively affected in terms of their non-stimulating home environment. It is a general believe that parental socioeconomic status has much to contribute to the students' academic achievement. But the assumption that the higher the socioeconomic status of parents, the higher the students' academic achievement is questionable, debatable and arguable, because students whose parents did not attend any level of education, have no reasonable income and have no good occupation equally have high academic achievement. This contradicts the findings of the numerous researchers that socioeconomic status and education environment of the home have high positive correlation with the students' academic achievement.

Thus, there is need to investigate family background variables which will focus on parents' level of education, income and occupation on students' achievement in mathematics. This study therefore, sought to investigate the relationship between family background variables and students' academic achievement in mathematics. The general purpose of the study is to examine family background variables as correlate of students' academic achievement in mathematics. Specifically, the study intends to determine the;

- relationship between parents' education and students' achievement in mathematics.
- relationship between parents' occupation and students' achievement in mathematics.
- relationship between parents' income and students' achievement in mathematics.

The following hypotheses tested at 0.05 level of significance guided the study

- There is no significant relationship between parents' level of education and students' achievement in mathematics.
- There is no significant relationship between parents' level of occupation and students' achievement in mathematics.
- There is no significant relationship between parents' level of income and students' achievement in mathematics.

### **Method**

This study employed correlational survey research design. Correlational survey research design according to Nworgu (2015) establishes the relationship that exists between two or more variables. Ali (2006) defines correlational research design as a general approach to research that focuses on assessing the co-variation among naturally occurring dependent and

independent variables. The design is considered appropriate because it will enable the researchers to obtain responses concerning the relationships between the predictor variables (that is, family background variable, that is, socio-economic status of parents which include; parents' education, occupation and income) and criterion variable (students' achievement in mathematics).

The population of the study comprised all the one thousand two hundred and twenty-seven (1227) SS2 mathematics students in all the 32 government owned senior secondary schools in Ankpa local government area. The sample size of this study was 324 SS II mathematics students. Simple random sampling technique was used to sample twelve senior secondary school two students offering mathematics in Ankpalocal government area. The number of SS2 mathematics students in the twelve sampled schools constituted the sample size.

A data collection format of students' academic achievements in mathematics (pro-forma) was used by the researchers to collect the existing three consecutive ends of term examination results from the students in the sampled schools. The average performances of the students in the three consecutive ends of term examinations were used to measure the academic achievements of the students in mathematics. The pro-forma consists of two sections, section A and B. Section A contained demographic data of the respondents which focused on Students' class, name of school, parents' highest qualification, parents' occupation and parents' highest income per month while section 'B' is on the pro-forma where students' performance were written.

The pro-forma was subjected to face validity by giving the instrument to three experts in Measurement and Evaluation Unit, University of Nigeria, Nsukka. These experts were requested to undertake face validity of the pro-forma and to ascertain if the elements are capable of providing the needed information. The experts' comments and suggestions helped in modifying the pro-forma to suit the problem under investigation. One of the major comments of the experts was to include the average scores of the students in the proforma. The reliability of the pro-forma was not determined since the instrument was structured to collect already existing data. Therefore, no reliability was estimated.

To collect the pertinent data for the study, the average scores of students in mathematics in the three consecutive end of term examination results were collected from the sampled schools using students' academic data format (pro-forma) designed by the researchers. The average performance of

the students in the three consecutive ends of term examinations was used to measure the academic achievements of the students in mathematics.

The data collected was analyzed using linear regression analysis. The regression analysis of variance (ANOVA) was used to test the formulated hypotheses at 0.05 level of significance.

## Results

**Table 1: Regression ANOVA of parents' education and students' academic achievement in mathematics**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.226	1	14.226	77.876	.000 <sup>a</sup>
	Residual	247.530	322	.183		
	Total	261.757	323			

$R = 0.45$ ;  $R^2 = 0.20$

The result in Table 1 shows that an F-ratio of 77.876 with associated exact probability value of 0.00 was obtained. This exact probability value of 0.00 was less than 0.05 level of significance set as bench mark and it was found to be significant. The null hypothesis was therefore rejected and inference drawn was that, there was a significant relationship between parents' education and students' academic achievement mathematics.

**Table 2: Regression ANOVA of parents' occupation and students' academic achievement in mathematics**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.167	1	6.167	93.697	.000 <sup>a</sup>
	Residual	255.589	322	.189		
	Total	261.757	323			

$R = 0.52$ ;  $R^2 = 0.27$

The result in Table 2 shows that an F-ratio of 93.697 with associated exact probability value of 0.00 was obtained. This exact probability value of 0.00 was less than 0.05 level of significance set as bench mark and it was found to be significant. The null hypothesis was therefore rejected and inference drawn was that, there was a significant relationship between parents' occupation and students' academic achievement in mathematics.

**Table 3: Regression ANOVA of parents' income and students' academic achievement in mathematics**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	51.553	1	51.553	232.316	.000 <sup>a</sup>
Residual	210.204	322	.155		
Total	261.757	323			

R = 0.62; R<sup>2</sup> = 0.38

The result in Table 3 shows that an F-ratio of 232.316 with associated exact probability value of 0.00 was obtained. This exact probability value of 0.00 was less than 0.05 level of significance set as bench mark for testing the hypothesis and it was found to be significant. The null hypothesis was therefore rejected and inference drawn was that, there was a significant relationship between parents' income and students' academic achievement in mathematics.

### Discussion

The study showed that the correlation coefficient between parents' education and students' academic achievement was 0.450 and the coefficient of determination associated with it was 0.52 indicating that 53% of students' achievement in mathematics is accounted for by parents' education. This is an indication that parents' education is a predictor of students' academic achievement in mathematics ( $P > 0.05$ ). This finding is in agreement with Chikwelu (2005) who found out that parents' education to some extent predicts students' achievement in school. Also in agreement with the findings of this study are the findings of Ugwuja (2010) and Muruwei (2011) that reports that students from educated parents achieve more than those from uneducated parents in academics. In disagreement with the findings of the study were the findings of Orji (n.d) whose result revealed no significant difference in the performance of students with high parental academic qualifications and those with low parental academic qualifications. Further analysis also revealed that an f-ratio of 77.876 with the exact probability value of 0.00 showed that there was a significant relationship between parents' education and students' academic achievement which led to the rejection of hypothesis one which stated that there was no significant relationship between the variables. This implies that to some extent, the education of parents contributes to the achievement of students academically in mathematics since the correlation between them was positive and moderate.

The correlation coefficient between parents' occupation and students' academic achievement which provided answer to research two was 0.52 and the coefficient of determination associated with the coefficient was 0.57. This indicates that parents' occupation positively influences students' academic achievement. Result in Table 2 also showed that there is a significant relationship between parents' occupation and students' academic achievement which led to the rejection of hypothesis two which stated that there was no significant relationship between parents' occupation and students' academic achievement. The finding of the study is consistent with Chikwelu (2005) who found that, parents, irrespective of their occupational background give affordable support to their adolescent wards in school and guide them toward attaining higher educational standards which they see as a sure means of improving the socioeconomic status of the family. Also in agreement with the findings of this study are the findings of Udida, Ukwai and Ogo (2012) and Osuafor and Okonkwo (2013) whose separate studies report that students whose parents had better jobs and higher levels of educational attainment and who were exposed to more educational and cultural resources at home tended to perform better than their counterparts without such opportunities. This finding also implies that the type of job parents does some extent influence their children's academic outcome. This is because the correlation coefficient has direct and positive effect on students' academic achievement in mathematics.

The finding of this study as presented in Table 3 also showed that the correlation between parents' income and students' academic achievement was positive and moderate. The coefficient of determination indicated that 62% of students' academic achievement is accounted for by parents' income. This showed that parental income has direct and significant positive effect ( $P=0.00$ ) on students' academic achievement. This finding is in agreement with the earlier findings by Bryman and Crammer (1990) who found that parents' income to a greater extent determines students' academic achievement.

This accounts for the reason why most poor children are educationally disadvantaged because of the poor condition of their parents. This also showed why most children from poor homes are not able to attend good schools because of the financial condition of their parents. No doubt, most children do not attend school at all and some dropout because of financial difficulty.

## **Conclusion**

Results of the study revealed that: there was a significant relationship between parents' education and students' academic achievement in mathematics; there was a significant relationship between parents' occupation

and students' academic achievement in mathematics; and there was a significant relationship between parents' income and students' academic achievement in mathematics. The implications of the above findings were examined and it was recommended among other things that parents should provide adequate fund for their children while in school. This will help in providing the necessary reading materials that may enhance students' academic achievement in mathematics. It was also recommended that the government should provide adequate reading materials and conducive learning environment for the less privilege so they can also compete favourably with their counterparts from high socioeconomic status. The limitations of this study were highlighted and suggestions were made for further studies.

### **Recommendation**

The following recommendations are made based on the findings of the study.

1. Result of the study showed that there was a positive correlation between parents' income and students' academic achievement. Parents should therefore provide adequate fund for their children while in school. This will help in providing the necessary reading materials that may enhance students' academic achievement.
2. The finding of the study also revealed that students from high socioeconomic status performed better than students' from low socioeconomic status. The government should therefore provide adequate reading materials and conducive learning environment for the less privilege so they can also compete favourably with their counterparts from high socioeconomic status.
3. Government and non-governmental organizations (NGOs) should provide pupils from poor homes with scholarships and necessary learning materials needed for schooling for enhancement of academic achievement.

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