

**PATH ANALYTICAL MODEL OF HOME ENVIRONMENT AND  
SCHOOL ADJUSTMENT OF SECONDARY SCHOOL STUDENTS IN  
BORNO STATE, NIGERIA**

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**Hamman, Mathew Joseph PhD**

*Directorate of Innovations, Research and Development, Nigerian Army University Biu, Borno State, Nigeria.*

[josephhamman@yahoo.com](mailto:josephhamman@yahoo.com)

**Amakiri, Hager Atisi Eremina PhD**

*Department of Educational Psychology, Guidance and Counselling. Ignatius Ajuru University of Education, Rumuolumeni, Port Harcourt, Rivers State, Nigeria.*

[hager.amakiri@iaue.edu.ng](mailto:hager.amakiri@iaue.edu.ng)

**Abstract**

*This study investigated Path Analytical model of Home Environment and school Adjustment of Secondary School students in Borno State. The study adopted survey research design and was carried out in three educational districts of Borno State, Nigeria. The population of the study comprised of 4,670 public school students across the educational districts. Multi-stage sampling techniques were adopted for the study. Purposive sampling techniques was used in selecting 20 schools due to insurgency threat in the state while simple random sampling techniques were used to select 200 students (10 students each from 20 schools). The instrument used for data collection was a structured questionnaire titled "Student's Knowledge on the relationship between Home environment and School Adjustment Questionnaire" developed by the researchers. The questionnaire comprised two sections. Section A contains demographic information of the students while section B contains 28 items on home environment and school Adjustment in terms of physical environment, social environment, psychosocial environment and educational environment. The instrument developed by the researchers was subjected to expert's judgement and their comments and suggestions were harmonized and adopted for this study. To determine the reliability of the instrument, it was administered on 20 respondents outside the study area, using test re-test method after a considerable period of one week. Pearson Product Moment Correlation was adopted to harmonize the administrations and a reliability coefficient of 0.75 and 0.76 were obtained. The overall reliability of the instrument was 0.76. Descriptive and inferential statistics were adopted for data analysis. The findings of this study revealed that, the more*

*tractable path model that encompasses five direct and two indirect paths could well explain the school adjustment of students in Borno State, Nigeria. This means that home environmental variables which include physical, social, psychological, educational environments and family dynamics make a positive and meaningful direct contribution to students' school adjustment. Therefore, it was recommended among others that, schools and educational policymakers should work with parents so as to enhance the home environment, specifically regarding the physical safety and positive emotional support for schooling and positive family relationships.*

**Keywords:** Path Analytical Model, Home Environment and School Adjustment.

## 1. Introduction

Path analytical model is a statistical tool that uses a series of linear equation to represent relationship between variables in a closed system. It is a method for analysing how sets of variables impact a specific outcome through multiple causal pathways (Ashley, 2019). The causative analysis in this context focuses on the identification of direct and indirect effects of variables on an outcome and as well test the strength of hypothesized causal relationship. In other to get possible outcome based on the dynamics of our changing academic world, there is the need to look at home environment and school adjustment that are key variables of interest that form the basis for this study. Consequent to the statement above, home environment refers to the overall conditions and factors present in a house holds including some variants like emotional warmth, provision of stimulating and learning experiences, physical surroundings such as safety and cleanliness as asserted by Internal Encyclopedia of the social and behavioural sciences (2001). Based on the perspective of the United Nations International Children's Emergency fund (2024), student's home environment is a key factor in their development in conjunction to the physical surroundings, emotional climate and opportunities for learning and play in an environment. This implies that, a good home environment for a developing child can help them develop a solid foundation for the future and positively impact on their academic achievement and behavioural outcomes. As a result, nurturing process in schools can help young learners feel valued and accepted whereby promoting good model for healthy social relationships which will in turn contribute to the later academic and employment successes (Sarsour et al, 2011).

Academic successes in schools are achievable if the composite of materials and psychosocial elements necessitate interactions among students. In a conducive home environment, fostering of effective communication and interaction with sensitive and responsive caregivers among students leads to emerging abilities that are central to socio-emotional, formative influences and cognitive development (UNICEF,2024). Home environment in its utilitarian must have a significance influence on a child in adapting to school adjustment.

School Adjustment is a concept that deals with the process of adapting to the role of being a student and various aspects of school environmental factors that influences one's physical, mental and moral development (Pulak & Payal,2017). In another development, some researchers see school adjustment as the multi-causal construct that is manifested academic performance indicators together with those linked to social relations and other aspects associated with educational and school

tasks (Motal de la Rubia et al,2010; Leon et al,2024).

## **2. Statement of the Problem**

Adjustment is one of the important problems that affect secondary school students in Borno State of Nigeria. Some students experience significant difficulties in the process of entering a school environment, their academic performance decreases, mental and social adjustment problems appear. These challenges are usually associated with a range of home environmental factors – physical and psychological, social and family, education environment. Lack of or unfavourable conditions in any of these areas especially with the impact of insurgency may pose a barrier to the student's transition into the academic environment. Despite these challenges, progressive attempts have been made to foster school improvements, teachers' communications with learners and psychosocial support, yet students experience challenges in transitioning to school life. This clearly indicates that there is inadequate assessment of the mediating and confounding influence of various home environmental aspects on school adjustment. It is for this reason, that, if the approach employed does not factor in both the school and home setting, it becomes almost impossible to prevent factors that may hamper school adjustment.

The problem is compounded by inadequate focus on the relationship between home environmental factors and school adjustment. Similarly, where some intervention is aimed at changing academic performance or social interactions in school, the impact of home environment which students spend most of their time in is not fully considered. Previous research has not captured all the causal relationships between these variables that exist and thus lacks sufficient treatments that may solve the problem. This is the gap the present study intends to fill. If not addressed, the problem of poor school adjustment could have negative impacts on students' future academic achievement, psychological well-being as well as their carrier development. These challenges may also lead to poor performance, high dropout rates and therefore low educational achievements for the region. It's on this premise that the study using path analytical model, investigated home environment and school adjustment of secondary school students in Borno State, Nigeria.

## **3. Methodology**

The study adopted survey research design. It was carried out in three educational districts of Borno State, Nigeria. The population of the study comprised of 4,670 public school students across the educational districts. Multi-stage sampling technique was adopted for the study. Purposive sampling techniques was used in selecting 20 schools due to insurgency threat in the state while simple random sampling techniques were used to select 200 students (10 students each from 20 schools). The instrument used for data collection was a structured questionnaire titled "Student's Knowledge on the relationship between Home environment and School Adjustment Questionnaire" developed by the researchers. The questionnaire comprised two sections. Section A contains demographic information of the students while section B contains 28 items with responses based on a 4-point Likert scales ranging from strongly agree, agree, disagree and strongly disagree. The items covered home environment and school adjustment in terms of physical environment, social environment, psychosocial environment and educational environment. The instrument developed by the researchers was subjected to expert's judgement and their comments and suggestions were harmonized and adopted for this study. To determine the

reliable of the instrument, it was administered on 20 respondents outside the study area, using test re-test method after a considerable period of one week. Pearson Product Moment Correlation was adopted to harmonize the administrations and a reliability coefficient of 0.75 and 0.76 were obtained. The overall reliability of the instrument was 0.76. Descriptive and inferential statistics were adopted for data. The instrument was administered direct to the respondents using two research assistances after permission was sort from the school administrators as students were briefed on the purpose of the research and were given utmost assurance of their confidentiality. Descriptive and inferential statistics were adopted for data analysis.

### **Aim and Objectives of the Study**

The aim of the study using path analytical model, investigated home environment and school adjustment of secondary school students in Borno State, Nigeria. Specifically, the objectives of this study are to:

Find out the parsimonious path model for providing explanation of students' school adjustment given home environmental variables (physical environment, social environment, family dynamics, psychological environment, and educational environment.

Examine the proportions of the total effects are (i) direct and (ii) indirect.

### **Research Questions**

The following research questions guided the study:

What is the parsimonious path model for providing explanation of students' school adjustment given home environmental variables (physical environment, social environment, family dynamics, psychological environment, and educational environment?

What proportions of the total effects are (i) direct and (ii) indirect?

### **Hypothesis**

The following null hypothesis was tested:

There is no significant relationship among physical environment, social environment, family dynamics, psychological environment, and educational environment and school adjustment.

### **Results**

#### **Research Question One**

What is the parsimonious path model for providing explanation of students' school adjustment given home environmental variables (physical environment, social environment, family dynamics, psychological environment, and educational environment?

To answer the research question, the fitness indices of Chi-square to degree of freedom ( $\chi^2/\text{d.f.}$ ), Goodness-of-fit Index (GFI), Adjusted Goodness-of-fit Index (AGFI), Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA), as specified by Hooper, Coughlan and Mullen (2008), were evaluated. The information is presented in Figure 1 and Table 1.

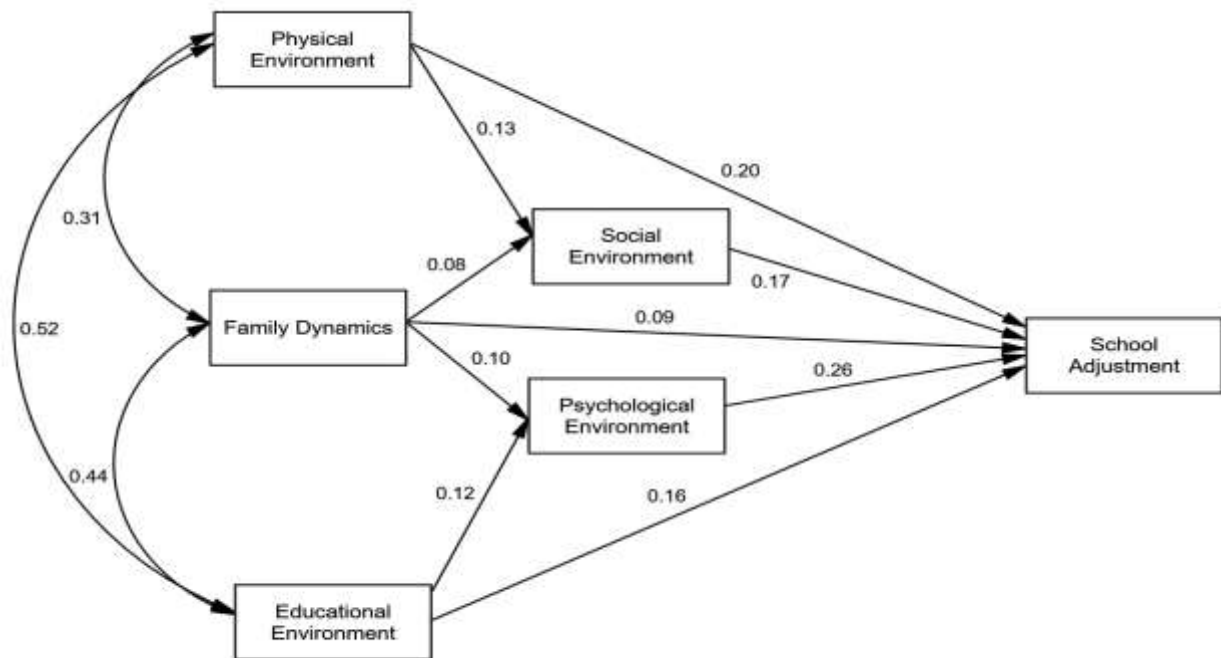


Figure 2: Parsimonious path model for providing explanation of students' school adjustment given home environmental variables.

The Goodness-of-fit indices and other information regarding Figure 1 are presented in Table 1.

Table 1: Summary Statistics for Goodness-of-fit of the Parsimonious Model

| Fit Index                     | Recommended Value | Observed Value |
|-------------------------------|-------------------|----------------|
| Chi-square/degrees of freedom | $\leq 3.0$        | 2.89           |
| GFI                           | $\geq 0.90$       | 0.96           |
| AGFI                          | $\geq 0.90$       | 0.93           |
| NFI                           | $\geq 0.90$       | 0.94           |
| CFI                           | $\geq 0.90$       | 0.95           |
| RMSEA                         | $\leq 0.06$       | 0.05           |

GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index;

NFI = normed/normal fit index; CFI = comparative fit index;

RMSEA = root mean square error of approximation.

Figure 1 and Table 1 shows the parsimonious path model for providing explanation of students' school adjustment given home environmental variables (physical environment, social environment, family dynamics, psychological environment, and educational environment. According to Lawal (2023), in establishing parsimonious model, any path with beta coefficient that is less than 0.05 should be considered insignificant and thus removed while paths with up to 0.05 but insignificant should be retained based on meaningfulness. In the present analysis, path trimming was not necessary since all the path coefficients were statistically significant and the meaningfulness. Also, the ratio of Chi-square ( $\chi^2$ ) to its degrees of freedom (df) was 2.89 and was within the acceptable range of  $\leq 3.0$ . As specified by Hooper,

Coughlan and Mullen (2008), the other goodness-of-fit indices were also within the acceptable ranges which indicated a good fit. As such, the more parsimonious path model that explained students' school adjustment is the model with five direct and two indirect paths whose path weights were significant and meaningful.

### Research Question Two

What proportions of the total effects are (i) direct and (ii) indirect?

To answer the research question, the total effects of home environmental variables (physical environment, social environment, family dynamics, psychological environment, and educational environment) on students' school adjustment were decomposed into direct and indirect effects. The proportions of the total effects that are direct and indirect are presented in Table 2.

Table 2: The Proportions of the Total Effects that are Direct and Indirect

| Pathways                      | Total effects | Direct (β) | Effects Indirect Effects |
|-------------------------------|---------------|------------|--------------------------|
| To Entrepreneurial Intentions |               |            |                          |
| Physical Environment          | 0.22          | 0.20       | 0.02                     |
| Family Dynamics               | 0.13          | 0.09       | 0.04                     |
| Educational Environment       | 0.19          | 0.16       | 0.03                     |
| Social Environment            | 0.17          | 0.17       | -                        |
| Psychological Environment     | 0.26          | 0.26       | -                        |
| Total                         | 0.97          | 0.88       | 0.09                     |
| Percent (%)                   | 100%          | 90.72%     | 9.28%                    |

Results in Table 2 show the proportions of the total effects of home environmental variables (physical environment, social environment, family dynamics, psychological environment, and educational environment) on students' school adjustment that are direct and indirect. Based on the analysis, 90.72% of the total effects were direct while 9.28% were indirect. This means that home environmental variables (physical environment, social environment, family dynamics, psychological environment, and educational environment) exert direct influence on school adjustment more than indirect influence.

### Hypothesis One

There is no significant relationship among physical environment, social environment, family dynamics, psychological environment, and educational environment and school adjustment.

To test the hypothesis, joint causal relationship (R-value) and the R<sup>2</sup> value of the causal relationship among physical environment, social environment, family dynamics, psychological environment, and educational environment and school adjustment were extracted from path analysis and the tested hypothesized model in Figure 1. The joint relationship is presented in Table 3.

Table 3: Causal Relationship among physical environment, social environment, family dynamics, psychological environment, and educational environment and school adjustment

| R    | R Square | Std. Error of the Estimate | p-value |
|------|----------|----------------------------|---------|
| 0.53 | 0.28     | 6.22                       | 0.00    |

Results in Table 3 show that there is causal relationship among physical environment, social environment, family dynamics, psychological environment, and educational environment and school adjustment with the correlation (R) value of 0.53 which is significant at p-value of 0.00. On the basis of the results, the null hypothesis is rejected. Furthermore, the R-square value of 0.28, as contained in the table, means that the independent variables jointly predicted school adjustment by 28%; which, therefore, means that 72% of variations in students' school adjustment is accounted for by variables not considered in this study.

To examine the contributions of the independent variables (physical environment, social environment, family dynamics, psychological environment, and educational environment) together, the unstandardized estimates, standardized estimates, standard errors, and t-values of the variables in the study were extracted from path analysis and the tested hypothesized model in Figure 1. The result is presented in Table 4.

Table 4: Relative Contributions of physical environment, social environment, family dynamics, psychological environment, and educational environment to school adjustment

| Variables                 | (B)   | Std. Error | (Beta) | t-values | p-values |
|---------------------------|-------|------------|--------|----------|----------|
| Physical Environment      | .954  | .238       | .20    | 4.01     | .00      |
| Family Dynamics           | .728  | .488       | .09    | 1.49     | .12      |
| Educational Environment   | .785  | .211       | .16    | 3.72     | .00      |
| Social Environment        | .842  | .218       | .17    | 3.86     | .00      |
| Psychological Environment | 2.980 | .544       | .26    | 5.78     | .00      |

Results in Table 4 show the contribution of each of the independent variables to the model. It reveals that physical environment contributed Beta weight of .20 and the t-value of 4.01 which is significant at .00. Educational environment benefits contributed Beta weight of .16 and the t-value of 3.72 which is significant at .00. Furthermore, social environment contributed Beta weight of .17 and t-value of 3.86 and it was significant; and psychological environment contributed Beta weight of .26 and t-value of 5.78 and it was significant to school adjustment at .00. However, the contribution of family dynamics was not significant with Beta weight of .096 and t-value of 1.49.

### Discussion of Findings

The analysis of the study showed that the more tractable path model that encompasses five direct and two indirect paths could well explain the school adjustment of students in Borno State, Nigeria. This means that home environmental variables which include physical, psychological, educational environments and family dynamics make a positive and meaningful direct contribution to students' school adjustment. The path weights of these variables were statistically significant and model fitness indices as well as goodness of fit measures were in line with the standards set by Hooper et al., (2008); Lawal (2020) and Lawal (2023). This result is achievable when the model explains the home environmental factors and school adjustment accurately to show they have a more direct effect than the indirect effect on school life. This finding supports Lawal (2020) and Lawal (2023), whose SEM analysis of academic variables in Nigerian students acknowledged the role of context in student success. Furthermore, the findings dovetail with Ashley's (2019) outline of

theoretical assumptions that path analytical models can potentially identify causal pathways between different variables to determine how factors in the environment impact students' performance and the way they adapt.

The study result showed that the proposed path analytical model with five direct and two indirect paths, helped in the prediction of secondary school students' school adjustment in Borno State Nigeria. Therefore, physical environment social environment, family, psychological environment and educational environment which are home environmental factors have a higher direct impact on the school adjustment of students than the indirect factors. The direct impact contribution was 90.72 percent while the indirect impact contribution was 9.28 percent; this means that the proximal home environment has a larger impact on students' ability to adapt to school. This may be expected if home backgrounds provide for affective emotional climate, safety and learning which are vital in enabling students to cope with life in school and schooling. This finding supports Sarsour et al (2011)'s assertion that home environmental support for development of socio-emotional and cognitive development coupled with UNICEF (2024) assertion on importance of nurturing home conditions in predicting academic and behaviour outcomes. More so, the findings are consistent with the claim of Lawal (2020) who showed how these non-cognitive factors impacted on the students' performance and level of adjustment.

Another revelation from the study was that there is an inferential relationship between the home environment factors and school adjustment indices whereby both the physical and psychological characteristics of the home environment increases the chances of a student in responding to the challenges of school life. This implies that when such factors are positively structured in environment students are likely to get better school adjustment outcomes. Such result is achievable only if the home environment offers the students the necessary support to gain social and academic skills. The study stands in support of Pulak and Payal (2017) that school adjustment is a multi-causal construct, which depends on the number of factors apart from the home environment, and therefore supports the finding of the study that the family dynamics and the psychological environment impact on school adjustment. This result also supports the study done by Motal de la Rubia et al (2010) who concluded that other than academic performance, the home and school environment have an important bearing on the student's performance and socially in school context. Hence, this study underscores the importance of home environment as a source of school adjustment thereby extending the literature on the importance of home and school environments in student functioning and academic achievement.

#### **4. Conclusion**

The study also showed that a simple path model provides a good account of school adjustment of secondary school students in Borno State, Nigeria. This model yielded five direct and two indirect effects and demonstrated significant and meaningful path coefficients. The fitness and goodness-of-fit indices supported the model. The analysis also revealed that home environment antecedent factors including the physical environment, social environment, family environment, psychological environment and educational environment have a direct influence on the students' school adjustment than indirect influence. The study also showed a causal relationship between these home environmental factors and school adjustment. These results therefore support the proposition that the different facets of the home

environment directly influence students' ability to adapt to schooling thus corroborating the hypothesized direct positive impact of home support on students' academic and social learner sequences in school.

## 5. Recommendations

Based on the findings of the study, the following recommendations were made.

Government agencies, schools and stakeholders should work with parents so as to enhance the home environment, specifically regarding the physical safety and positive emotional support for schooling and positive family relationships. Further, parents should be taken through workshops and seminars in order to enable them understand how to create a proper home atmosphere that will enhance learning.

Since family factors and educational climate were found highly influential in school adjustment, school administrators and teachers should foster better relationship and cooperation with parents. More often parents-teachers' meetings and other community related activities could enhance understanding and support required by students in their adjustment.

Given the fact that psychological and social environments occupy a central place, schools should foster programmes that will enhance the well-being of students socially. Guidance counsellors, support groups, should collaborate with the schools and parents through trainings in order to guide and assist students to learn as well as cope with pressures at home, in school and create improved or new relationships with family, friends and teachers.

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