

## **Influence of Parental Variables on the Cognitive Readiness of Preschoolers in North Central, Nigeria**

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### **Abstract**

This study examined the influence of parental variables on the cognitive readiness of preschoolers in North Central, Nigeria. Certainly, three (3) specific purposes, three (3) research questions and three (3) corresponding null hypotheses guided the study. A descriptive survey design was used for the study. The population of this study consists of eight thousand four hundred (8,400) parents of preschoolers in both public and private schools. Multistage sampling techniques was used to select three hundred (300) respondents from six schools in three states in North Central, Nigeria. Questionnaire was the instrument used for data collection. The reliability of the instrument was estimated using Cronbach's Alpha and the reliability Coefficient of 0.84 was obtained. Data collected were analyzed using SPSS. Mean and Standard Deviation were used to answer all the research questions, while t-test statistics were used to test the null hypotheses at 0.05 level of significance. The findings of the study among others showed that: there was a significant influence of parents' educational attainment and income on the cognitive readiness of preschoolers whereas, parents' age does not. Based on the findings, it was concluded that parents' educational attainment and income play significant roles in the cognitive readiness of preschoolers and recommendations were made.

**Keywords:** Parental Variables, Cognitive, Readiness, Preschoolers, North central, Nigeria.

### **Introduction**

The early years of a child's life are crucial for cognitive development, laying the foundation for future academic success and overall well-being. Thus, the home environment plays a crucial role in shaping children's cognitive and school readiness. Cognitive readiness involves the mental preparation required to establish and maintain competence in complex and unpredictable environments. According to Preddy, Stefaniak, and Katsioloudis (2019), it entails the ability to accomplish a mission by making timely, efficient, and effective decisions, often with limited information in a constantly changing and intricate setting. Operationally, cognitive readiness is demonstrated by a child's academic knowledge before entering formal education. Preschoolers' cognitive readiness refers to their cognitive abilities, including language development, problem-solving skills, and social competence, which are essential for a smooth transition into formal schooling.

The environment in which a child grows and the parenting practices employed significantly impact these cognitive aspects. In identifying the qualifications

for cognitive readiness in children, advocates such as Crameri, Hettiarachchi, and Hanoun (2021) delved into various essential elements, such as awareness of one's surroundings, memory, the transferability of training, metacognition, automaticity, problem-solving, decision-making, adaptability and creativity, leadership, and emotional intelligence. These aspects are quantifiable and can be improved through appropriate training. However, Qiu, (2018) which posits that children from families with higher income levels often have access to better educational resources, which positively affects their cognitive development. A child who is mentally prepared and ready for school may exhibit improved academic performance. To prepare for school, children require specific cognitive skills, encompassing language proficiency, numerical

understanding, physical and motor development, and appropriate socio-emotional growth.

Cognitive readiness involves the interconnectedness of skills and behaviours across various developmental domain (Stormont, Cohen, Herman, and Reinke, 2013). The amalgamation of these skills is termed cognitive readiness. Kokkalia, Drigas, Economou, and Roussos (2019) posit that the absence of a unanimous consensus regarding the precise attributes that define a child as cognitively prepared for formal education. However, children require two distinct forms of cognitive readiness. One pertains to academic knowledge, which stems from early accomplishments in literacy and numeracy. The other involves more dynamic cognitive reasoning skills, specifically executive function skills, forming the foundation for reasoning and problem-solving. Morgan, P. L., Farkas, G., Wang, Y., Hillemeier, M. M., Oh, Y., & Maczuga, S. (2019). emphasizes the importance of a supportive educational environment at home. Parents with higher educational levels may possess better resources and knowledge to foster cognitive development in their children, creating a conducive learning atmosphere.

These two categories of cognitive skills may exhibit different connections with behavioral indicators of children's abilities and readiness for school. Academic knowledge denotes the level of instructional content a child has encountered, indicating their ability to absorb and apply new knowledge in the school setting. It correlates with classroom behaviors and pro-social activities (Abenavoli, Greenberg, and Bierman, 2017).

According to DeRobertis and Bland(2020) cognition refers to the area of psychology that has to do with all aspects of thinking. How we attain knowledge in the first place, how that knowledge is stored, how we modify that knowledge. There is no general agreement on the specific feature that qualify a child as cognitively ready for formal schooling (Kokkalia, Drigas, Economou& Roussos, 2019). Two different kinds of cognitive readiness are important to children. One is academic knowledge that is the outcome of early achievements in areas of literacy and numeracy. The other one is involves more fluid cognitive reasoning skills – the executive function (EF) skills that is the basics for reasoning and problem-solving, Kokkalia et al. further stated that these two types of cognitive skills may show varying relationship with behavioural indications of cognitive readiness. The age of parents may not play a crucial role in determining preschoolers'

cognitive readiness. The author further stated other factors, such as educational attainment and income, seem to have a more substantial impact on cognitive development in this specific region (Aransi, 2018). According to Abenavoli, Greenbergand Bierman, (2017), academic knowledge is the level of instructional content the child has been exposed to. It also indicates the capacity of the child to attend to and gain new knowledge in the school context. It is related to classroom behaviours and pro social activities.

In the other hand, the executive function is linked to a child's capacity to solve problems with some level of planning, control and cognitive flexibility. Parents place a crucial role assisting children to achieve this. A parent is a care taker of offspring of their own species. Parents shape the child through interaction in the family (Okondugba, 2015). A parent could be a biological or surrogate parent. A biological parent is a person whose gamete resulted in the production of the child. However, some parents may not be biologically related to the child; they are those surrogate parents who nurture and raise the off springs of other parents who are not actually biologically related to them. Hence, parents are seen generally to as care givers or care takers.

Certain factors affecting child's cognitive readiness for school include parental status, estimate by income, parents' age, and educational attainment, particularly the mother's educational attainment, such as completing second-level or third-level education. Research indicates that children from economically disadvantaged backgrounds may exhibit lower readiness for school (Davies, Janus, Duku, & Gaskin, 2016). Studies also highlight that these parents may face challenges in providing the essential resources and support needed for their children's development (Duncan, Duncan, Stanley, Aguilar, & Halfon, 2020). Lipscomb, S. T., Miao, A. J., Finders, J. K., Hatfield, B., Kothari, B. H., & Pears, K. (2019) propose that such parents are more likely to reside in impoverished neighborhoods, potentially limiting their children's exposure to behaviors and attitudes crucial for cognitive readiness, possibly influenced by the parents' knowledge. Ultimately, in the context of North Central, Nigeria, understanding the influence of parental variables on the cognitive readiness of preschoolers becomes imperative. This research aims to explore the dimensional role that parental variables play in shaping the cognitive preparedness of children entering formal education.

## Research Questions

The following research questions guided the study:

1. What is the influence of parents' educational attainment on the cognitive readiness of preschoolers in North Central, Nigeria?
2. What is the influence parents' income on the cognitive readiness of preschoolers in North Central, Nigeria?
3. What is the influence parents' age on the cognitive readiness of preschoolers in North Central, Nigeria?

## Hypotheses

The following null hypotheses guided the study and were tested at a 0.05 level of significance.

- H0<sub>1</sub>:** There is no significant influence of parents' educational attainment on the cognitive readiness of preschoolers in North Central, Nigeria.
- H0<sub>2</sub>:** There is no significant influence of parents' income on the cognitive readiness of preschoolers in North Central, Nigeria.
- H0<sub>3</sub>:** There is no significant influence of parents' age on the cognitive readiness of preschoolers in North Central, Nigeria.

## Methods

In this study, the researcher adopts a descriptive survey design. This method was chosen because it enable the researcher to identify the characteristics of the target population. These characteristics in the population sample can be identified, observed and measured to guide decisions. The population of this study consists of eight thousand four hundred (8,400) parents of preschoolers in both public and private schools. Multistage sampling techniques was used to select three hundred (300) respondents from six schools in three states in North Central, Nigeria. The North

central was chosen because it is one of the regions in the federation with high number of Early Childhood Education centres that take care of preschoolers with observed backwardness in educational facilities and most children are not cognitively prepared by parents for early schooling rather they are made to roam the street begging. Questionnaire was the instrument used for data collection process. The instrument was validated by three experts (two experts in the Early Childhood Education, Department of Educational Foundations in University of Abuja, Nigeria. Estimate of internal consistency was used to determine the reliability of the instruments. Specifically, Cronbach's Alpha was used to estimate the reliability Coefficient and 0.84 was obtained. Six research assistants who assisted the researcher to administer the instrument. The researcher and the research assistants administered 300 copies of the instrument to the respondents and collect same after completion at PTA meetings. Mean and standard deviation were used to answer all the research questions. Independent sample t-test was used to test the hypotheses at 0.05 level of significance.

## Results

The result in Table 1 shows the mean responses and standard deviations of the influence of parents' educational attainment on the cognitive readiness of preschoolers. The result shows that respondents with NCE& above had a mean response of ( $\bar{x} = 3.19$ ,  $SD = 0.97$ ) while those with below NCE had a mean of ( $\bar{x} = 2.88$ ,  $SD = 1.08$ ). The mean response for respondents with NCE& above is higher than that of their counterparts with below NCE. This is indicative that parents' educational attainment influence the cognitive readiness of preschoolers in favour of those with NCE and above.

**Table 1: t-test analysis of the influence of parents' educational attainment on the cognitive readiness of preschoolers**

Parents' EduAttainment	N	Mean	Std. Deviation	t-val	df	Sig	Dec
NCE& above	192	3.19	0.97	2.55	298	0.011	S
Below NCE	108	2.88	1.08				

**Key:**df = degree of freedom, Sig. = Significant level/Exact probability value, Dec. = Decision, S = Significant

The result in Table 1 shows the t-test analysis of the influence of parents' educational attainment on the

cognitive readiness of preschoolers. The result shows that a t-value of 2.55 with a degree of freedom of 298

and an exact probability value of 0.01 were obtained. Since the exact probability value of 0.01 was less than the 0.05 set as the level of significance for testing the hypothesis, this depicts that the result was significant. For this reason, the null hypothesis was rejected. The inference drawn was that there was a significant influence of parents' educational attainment on the cognitive readiness of preschoolers.

The result in Table 2 shows the mean responses and standard deviations of the influence of parents' income on the cognitive readiness of preschoolers. The

result shows that respondents with NGN50,000 and above had a mean response of ( $\bar{x} = 3.23$ ,  $SD = 0.68$ ) while those with below NGN50,000 had a mean of ( $\bar{x} = 2.66$ ,  $SD = 1.14$ ). The mean response for respondents with NGN50,000 and above is higher than that of their counterparts with below NGN50,000. This is indicative that, parents' income influences the cognitive readiness of preschoolers in favour of those with NGN50,000 and above.

**Table 2: t-test analysis of the influence of parents' income on the cognitive readiness of preschoolers**

Parents' income	N	Mean	Std.	t-val	df	Sig	Dec
			Deviation				
NGN50,000 & above	219	3.23	0.68	5.288	298	0.00	S
Below NGN50,000	81	2.66	1.14				

**Key:** df = degree of freedom, Sig. = Significant level/Exact probability value, Dec. = Decision, S = Significant

Furthermore, the result in Table 2 shows the t-test analysis of the influence of parents' income on the cognitive readiness of preschoolers. The result shows that a t-value of 5.288 with a degree of freedom of 298 and an exact probability value of 0.00 were obtained. Since the exact probability value of 0.00 was less than the 0.05 set as the level of significance for testing the hypothesis, this depicts that the result was significant. For this reason, the null hypothesis was rejected. The inference drawn was that there was a significant influence of parents' income on the cognitive readiness of preschoolers.

The result in Table 3 shows the mean responses and standard deviations of the influence of parents' age

on the cognitive readiness of preschoolers. The result shows that respondents who are 40 years & above had a mean response of ( $\bar{x} = 3.09$ ,  $SD = 1.06$ ) while those who are below 40 years had a mean of ( $\bar{x} = 2.98$ ,  $SD = 1.13$ ). The mean response for respondents who are 40 years & above is slightly higher than that of their counterparts who are below 40 years. This result is indicative that the influence of parents' age for those who are 40 years & above is similar to those who are below 40 years on the cognitive readiness of preschoolers.

**Table 3: t-test analysis of the influence of parents' age on the cognitive readiness of preschoolers**

Parents' age	N	Mean	Std.	t-val	df	Sig	Dec
			Deviation				
40years & Below	171	3.09	1.06	0.865	298	0.388	S
Above 40years	129	2.98	1.13				

**Key:** df = degree of freedom, Sig. = Significant level/Exact probability value, Dec. = Decision, S = Significant

The result in Table 3 shows the t-test analysis of the influence of parents' age on the cognitive readiness of preschoolers. The result shows that a t-value of 0.865 with a degree of freedom of 298 and an exact probability value of 0.388 was obtained. Since the exact probability value of 0.388 was greater than the 0.05 set as the level of significance for testing the hypothesis, this depicts that the result was not significant. For this

reason, the null hypothesis was not rejected. The inference drawn was that there was no significant influence of parents' age on the cognitive readiness of preschoolers.

## Discussion

The results from Table 1 reveal the influence of parents' educational attainment on the cognitive



readiness of preschoolers in North Central, Nigeria. The t-test analysis revealed a significant difference between respondents with NCE and above compared to those below NCE. The mean response for the former was higher, indicating a positive influence of higher parental educational attainment on preschoolers' cognitive readiness. The rejection of the null hypothesis (H01) supports the conclusion that parents' educational attainment significantly affects the cognitive readiness of preschoolers in this region. This finding aligns with the study of Morgan *et.al*, (2019) that emphasizes the importance of a supportive educational environment at home. Parents with higher educational levels may possess better resources and knowledge to foster cognitive development in their children, creating a conducive learning atmosphere.

The result in Table 2 explored the impact of parents' income on the cognitive readiness of preschoolers in North Central, Nigeria. The t-test analysis indicated a significant difference between respondents with an income of NGN50,000 and above and those below NGN50,000. The higher mean response for the former group suggests that parents' income level influences preschoolers' cognitive readiness positively. The rejection of the null hypothesis (H02) supports the conclusion that higher parental income significantly contributes to the cognitive readiness of preschoolers. This result is consistent with the study of Qiu, (2018) which posits that children from families with higher income levels often have access to better educational resources, which positively affects their cognitive development.

The Table 3 revealed the influence of parents' age on the cognitive readiness of preschoolers. The t-test analysis did not show a significant difference between respondents who are 40 years and above and those below 40 years. The non-rejection of the null hypothesis (H03) suggests that parental age does not significantly influence preschoolers' cognitive readiness in North Central, Nigeria. This finding is interesting, Aransi, (2018) as indicated that the age of parents may not play a crucial role in determining preschoolers' cognitive readiness. The author further stated other factors, such as educational attainment and income, seem to have a more substantial impact on cognitive development in this specific region.

## Conclusion

Conclusively, the study has investigated the influence of various parental factors on the cognitive readiness of preschoolers in North Central, Nigeria. The findings revealed significant associations between parents' educational attainment and income levels with preschoolers' cognitive readiness, while parental age did not show a significant impact. The study established that parents with higher educational levels are likely to possess better resources and knowledge, contributing to a conducive learning atmosphere for their children. Similarly, the study affirmed that children from families with higher income levels often have better access to educational resources, positively influencing cognitive development.

Interestingly, parental age did not emerge as a significant factor influencing preschoolers' cognitive readiness in this specific region. This finding contradicts the notion that parental age plays a crucial role in determining cognitive development. Instead, the study suggests that factors such as educational attainment and income have a more substantial impact on preschoolers' cognitive development in North Central, Nigeria.

## Recommendations

Based on these findings, the following recommendations can be made:

1. **Promotion of Educational Attainment:** Educational programs and initiatives should be developed to encourage and support parents in attaining higher levels of education. This can contribute to creating a more supportive learning environment at home, positively impacting preschoolers' cognitive readiness.
2. **Income Support Programs:** Initiatives that focus on improving the economic well-being of families, especially those with lower incomes, can be beneficial. This may include financial assistance, job training programs, or other interventions aimed at raising the overall income levels of families.
3. **Parental Education Programs:** Implementing programs that educate parents, irrespective of their age, on effective ways to support their children's cognitive development can be valuable. These programs can provide information on creating a conducive learning environment and utilizing available resources for the benefit of preschoolers.
4. **Further Research:** Given the unexpected finding regarding parental age, further research is recommended to explore additional factors that

may contribute to preschoolers' cognitive readiness in North Central, Nigeria. Understanding the complex interplay of various elements can lead to more comprehensive strategies for promoting early childhood development in the region.

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## Author's Contribution

The sole author carried out the sponsored research. Designed the methodology, analysed and interpreted the results and, prepared the manuscript.