

## **CHILD FARM LABOUR AND SCHOOL EFFICIENCY IN RELATION TO ACADEMIC PERFORMANCE IN NIGER STATE, NIGERIA.**

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### **Abstract**

*The agricultural sector has been the largest employer of labour in developing countries. In rural areas, agricultural labour is mostly dominated by children, which affects their academic performance. Children engaging in farm labour usually experience low school attendance, which eventually affects their academic success. This study looks at child labour envisaged by farm activities and the efficiency level of schools on academic performance in Niger State. The school census data were obtained from the State Ministry of Education and household survey data was obtained from three (3) Zones of Niger State and applied Data Envelopment Analysis (DEA) and Ordinary Least Square (OLS). Findings show that the majority of schools in the three zones are generally inefficient, while child participation in farm labour negatively affects their academic performance. This study, therefore, recommends greater participation of government and stakeholders in providing adequate school facilities, as well as banning labour participation of children, especially during school hours in the communities.*

**Keywords:** Academic Performance, Child Labour, Efficiency, Farm, School

**JEL Classification Code:** I21, Q12

### **1. Introduction**

Over the years manual labour has continued to form a significant part of the agricultural workforce, which is mostly dominated by adults and to a larger extent by children in many rural areas. Households that lack access to funds to cultivate farmland usually engage their children in all forms of farm work (Kamga, 2010). Children working under

this category are usually engaged in unpaid labour, with most of their work being regarded as domestic work. The intensity of work they do can to some extent be regarded as child labour. It refers to hours of work performed by a child which are harmful as he/she participates in work to escape extreme poverty (Basu & Zarghamee, 2005; Edmonds, 2008). However, Islam *et al.* (2009) see child labour as work that affects human development especially having access to education. The International Labour Organization (ILO) Conventions of 1973 and 1999 see children who participate in labour under the age of 12 who are economically engaged or working under hazardous conditions which will affect their mental health.

The issue is still a complex problem in developing countries like Nigeria (Ibrahim *et al.*, 2018; Holgado *et al.*, 2014). Evidence shows that 43% of children in Nigeria are trapped in various labour, both in private and family establishments (Business and Human Right Resource Centre, 2019). These child labourers are prone to a variety of work in the short run, which does endanger their academic future in the long run (Kumar & Babu, 2018). In rural areas, low school attendance leads children to participate in the labour force, which usually results in poor academic performance (Adnot *et al.*, 2017). Addressing this issue is very important to many African children, as well as to the future of Sub-Saharan African countries (Schrijner & Smits, 2018). Despite its advantages (i.e. Contribution to family income, participation in family business and cost of labour reduction), the adverse effect is more than the advantage, as it normally affects a child's ability, especially when their work is in form of a production chain (Busquet *et al.*, 2021). The general phenomenon is that child labour adversely affects the child's school attendance rate (Alfa *et al.* 2012; Alfa & Karim 2017), and evidence has shown a high association between child school attendance and performance, as absence from school leads to poor performance and achievement (Balfanz & Byrnes 2012; Taylor, 2012; Scanlan, 2014). Although, the academic performance of a child is determined by the availability of school infrastructure, and the teacher-student ratio (Kadandani *et al.*, 2016). In light of these, the present study examines the issues concerning child farm labour activities with child academic performance, as well as the efficiency of school facilities and how it affects child performance in Niger State. It is eminent that children prefer work to school, especially with the present public schools having inadequate facilities. Thus, this study determines child participation in farm labour and how school performance is been ascertained by the efficiency level using schools' available facilities.

## **2. Literature Review**

The Educational Production Theory propounded by Hanushek (1971) was emphasized, in discussing the efficiency level of schools. The model consists of some sets of inputs with academic performance as output. The theory encompasses child, household and community characteristics with some sets of school variables (Rainey & Murova, 2004). Given the set of school variables, some schools are either efficient or inefficient, which further warrants the decision of a child. Most believe that most inefficient schools will not give a child a sound education, as such children engage in traditional household occupations, which might give the child more advantages in the future (Alfa & Karim, 2018). But many forms of labour carried out by children always serve as a detriment to them, as it normally denies them the right to quality education (Elijah & Okoruwa, 2006;

Nkamleu, 2009; Dinku 2019; Tang *et al.*, 2019). Quite some earlier studies have emphasized child labour's relationship with school performance (Heady, 2003; Kambhampati & Rajan, 2005; Kruger, 2007; Guarcello *et al.*, 2008; Dammert, 2008; Bezerra *et al.*, 2009; Dumont *et al.*, 2009; Zapata *et al.*, 2010; Emerson *et al.*, 2017) based on variables such as hours of work, school achievement and household wealth. The interrelation of these variables is in such a way that the conditions that warrant a child to enter the labour market are the same conditions that lead to their low performance in school (Cavalieri, 2001). For example, Kambhampati and Rajan (2005) used growth on 356,352 individuals to see the increase or decrease in children that engage in labour and schooling, findings show Bihar and Kerala to have low participation in child labour, while higher levels of child schooling were seen in Kerala only. Studies like Heady, 2003; Guarcello, *et al.*, 2008; Bezerra *et al.*, 2009 show that child work and educational performance are competing, as the probability of school attendance decreases, hours of work spent increase. Lee *et al.* (2021) found child labour to undermine academic achievement regardless of age, gender and subject taken, as such, it lowers child performance

The relationship between hours of work and school achievement has to do with the gender and age of a child. Dammert (2008) using the Peruvian Living Standard Measurement Survey (PLSMS) found hours of work for boys to be higher in 1997 than in 2000, while for girls it is lower. Zapata *et al.* (2010) used Bolivia's national household survey and found working girls to be higher than boys as well as less likely to enrol in school than boys. But Dumont *et al.* (2009) found that grades 9 students that work more hours per week perform lower academically than those who work fewer hours per week. On the income level of households, Cockburn (2001) revealed that access to assets decreases a child's tendency toward work with school turnout. Johannes (2005) who used rural areas of Cameroon found that income does not increase child schooling because many households are not engaged in any income-generating activities due to their low income. For altruistic parents, any increase in income will increase the tendency of attendance and decreases child work (Elijah & Okoruwa, 2006). Although Ersado (2005) used the education of parents from Nepal, Peru and Zimbabwe and findings revealed that parent education in the family decreases child labour and improves child education in the three countries. Also, Badmus and Akinyosoye (2008) used Child Labour Survey (CLS) on 32,308 and their result entails that child labour decreases and the education of a child increase as parents become more educated. For community characteristics, Kruger(2007) found boys in rural areas to engage more in work and less in school when compared with their urban counterparts, due to inaccessibility and inadequate school supply in remote areas. Contrarily, Ersado (2005) used community rural/school facilities and the finding shows that a greater number of school supplies in rural areas result in high attendance rates when compared to child employment rates.

To determine the efficiency level of schools Casalprim *et al.* (2014) used school operating expenses and academic staff as input, with some students as output. The schools were grouped into A, B, C and D and the result shows that group C was found to be most efficient than the others, due to differences in the school's educational system. Blackburn *et al.* (2014) used test scores as output, while income, family employment and

student expenditure for the year 2010 were in putin New South Wales. They found four regions to have high average efficiency scores, while three have low-efficiency results. Burney *et al.* (2013) used capital and labour for input and graduates<sup>1</sup>as output and found location to have a partial effect on efficiency.

However, studies by Agasisti and Zoido (2018), Gronberg *et al.* (2012) and Flaker (2014) concentrated on donors by studying the traditional public school and charter school's efficiency. Gronberg *et al.* (2012) used a stochastic cost frontier model and employed teachers' and student skills as input, while students' enrollment and gain scores as output. The result shows traditional schools to be less efficient when compared to chartered schools given the comparable size factor. Similarly, Flaker (2014) used the difference in differences and showed charter schools to be performing more than traditional schools both in Maths and reading ability. Yahia and Essid (2019) used DEA and Tobit model in their study of Tunisian secondary education and found students' number in class to have a positive effect on the efficiency scores, while students' socioeconomic background negatively influences school efficiency. Though, limited studies in Nigeria emphasize efficiency as most of them concentrated on internal efficiency mostly on teacher quality (Alfa & Karim, 2018; Akinsolu, 2017; Adeyemi & Adu, 2012; Fan *et al.*, 2013; Adeyemi & Oyetade, 2011; Kadandani *et al.*, 2016). Adeyemi and Adu (2012) used pupils, teachers, furniture, equipment and facilities as input, with the number of graduated pupils' as output to investigate teachers' quality and efficiency level of primary schools in Nigeria; the multiple regression results showed that an increase in on teachers quality enhances the efficiency of primary schools. Fan *et al.*(2013) used t-test statistics in their study and found public school principals perform better in their administrative work than their private school counterparts.

### **3. Methodology**

In determining child participation in farm labour and school performance, as well as child performance from available school facilities, this study used socio-economic data obtained from the primary source. The state has 274 districts with 2922 public primary schools, while the population of households and children 10 - 14 years of age in the state are 730,264 and 443, 402 respectively (NBS, 2010; NSBS, 2011; NSBS, 2012). Following Saunders, Lewis and Thornhill's (2007) sample size selection criteria, 150 districts with 320 public primary schools were used for the entire state given a 95% level of certainty. This study randomly selected 5 districts per local government with 15 districts from each zone totalling 45 districts for the entire state (see Adeyemi & Oyetade, 2011; Idowu *et al.*, 2013). For public schools, 10 schools were selected from each local government with 30 schools per zone totalling 90 schools for the entire state. From the sampled population, a total of 1,075 households were drawn from 730,264 households for the whole state. This study obtained data from the rural areas of the state through a multi-stage technique. Firstly, the state was divided into three strata using the three geo-political zones. Then three local governments from each zone were selected using a simple random technique. Thirdly, households with children 10 and 14 years of age were purposively selected, and lastly, an availability sampling technique

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<sup>1</sup>number of pupils satisfactorily completing school

was adopted to obtain a response from those schooling and as well engaged in farm labour.

Child labour and schooling are driven by certain characteristics which are either child, household or community-driven. In line with the literature reviewed (Kambhampati & Rajan, 2005; Kruger, 2007; Dammert, 2008; Bezarra *et al.*, 2009; Dumont *et al.*, 2009; Zapata *et al.*, 2010; Alfa & Karim, 2018; Akinsolu, 2017; Adeyemi & Adu, 2012; Fan *et al.*, 2013; Adeyemi & Oyetade, 2011; Kadandani *et al.*, 2016), child performance is measured by the academic outcome of a child, child labour measured in terms of hours of labour supplied per day. The efficiency scores of 0 to 1 are used to measure the status of a school, with a dichotomous outcome of 0 and 1 at the individual level (given efficient=1 and inefficient = 0). For age and gender of a child and household, they have measured in years one lived with one for male and zero otherwise. The parent education is dichotomous with zero as non-formal education while one to three signifies a household with at least, a primary, secondary or post-secondary certificate respectively. Also, household welfare is based on daily estimated expenditure. The biological child variable is measured with one being the biological child and zero otherwise. The number of siblings and family size are measured in number per household. Likewise, for community characteristics, distance to school is measured based on the number of minutes it takes to school per child.

In analyzing the data, a data screening was conducted to avoid outliers and clear of multicollinearity problems (see Afshartous & Preston, 2011; Erkoç, Emiroglu & Akay, 2014; Osborne & Overbay, 2004; Tabachnick & Fidell 2007). This study used DEA (Data Envelopment Analysis) and OLS (Ordinary Least Square) in achieving its objectives. To measure the hours of work effect on child performance, the OLS was used to determine the parameters of the regression models as indicated by Kimhi (2007); Dammert (2008). The model is expressed as:

$$\gamma_i = \alpha_0 + \beta_1 X_{1i} + \mu_i \dots\dots\dots 1$$

Where  $\gamma_i$  is the natural log of the child's academic performance, to achieve the normality assumption on the linear regression model,  $\alpha_0$  indicates the intercept of the equation,  $\beta_1$  indicates the parameters,  $X_{1i}$  refers to the vector of explanatory variables (such as farm labour, efficiency level, child household and community characteristics), and  $\mu_i$  signifies disturbance term.

DEA was employed in estimating the efficiency of schools. The model consists of maximization and minimization which measures outputs expansion with a given input, and inputs required given a level of output respectively (Coelliet *al.*, 1998; Katanbutra & Tang, 2006). In this study, minimization was emphasized to efficiently minimize the number of inputs required (see Alfa & Karim, 2018; Burney *et al.*, 2013; Kadandani *et al.*, 2016). The schools are considered DMU (Decision-Making Units) with the given condition that all DMUs are less than or equal to one. The school  $i$  relationship can be written as:

$$\gamma_i = \mathcal{F}(x_i), i = 1, \dots, n \dots\dots\dots 2$$

Where  $\gamma_i$  is reflecting our output measure, and  $x_i$  are relevant inputs in the school  $i$ . In line with Ruggiero (2003) and Blackburn *et al.* (2014), the DEA is

$$\left. \begin{array}{l}
 \theta^* = \text{Min}\theta \\
 \text{Subjectto} \\
 \sum_{j=1}^n \lambda_j X_{ij} \leq \theta X_{io} \quad i = 1, 2, \dots, m \\
 \sum_{j=1}^n \lambda_j Y_{ij} \geq Y_{ro} \quad r = 1, 2, \dots, s \\
 \sum_{j=1}^n \lambda_j = 1, \quad \lambda_j \geq 0 \\
 j = 1, 2, \dots, n
 \end{array} \right\} \dots\dots\dots 3$$

Where the input consists of the number of teachers, furniture and classrooms, while the output is the student enrollment rate.  $\theta^*$  refers to the optimal enrollment rate and  $\theta$  is the efficiency score.  $\theta X_{io}$  and  $Y_{ro}$  refer to *DMU* and *MU* respectively under evaluation.  $X_{ij}$  and  $Y_{ij}$  are the observation of the inputs and output of all the *DMUs* and  $\lambda_j$  are the ways going to be decided. That the convex combination ( $\lambda_j = 1$ ) requires that the sum of the weight ( $\lambda$ ) equals one. The DEA is therefore subject to three constraints, such that each school (*ith*) is facing  $m + s + 1$  constraint.  $m$  and  $s$  constraints are input and output each and are all equal to one to attain efficiency. To obtain the relative efficiency score, the DEA is run  $n$  times for all the *DMUs* (Toloo & Nalchigar, 2009).

**4. Results**

From the descriptive result obtained (see Table 1), the majority of children perform at least more than one and a half hours of work per day, these children either work on the farm for commercial purposes or on the family farms. The contribution of child work to farming is more pronounced in Niger East than in any other zones. The efficiency per school shows the majority of schools are inefficient, they lack some basic facilities, the scenario is more prevalent in Niger North than in any other region (see Table 2), similar results were obtained by Agasisti and Zoido (2018). Most schools suffered from the inadequacy of classrooms and shortage of manpower especially when teacher-student ratios are considered.

No table of figures entries found.: **Descriptive Statistics**

| Variable                               | Mean  | Std. Dev. | Min   | Max   | N  |
|--|-------|-----------|-------|-------|----|
| School Level Data                      |       |           |       |       |    |
| Child Farm Labour (Average per School) | 1.98  | 0.82      | 0     | 3.69  | 90 |
| Efficiency per School                  | 0.75  | 0.23      | 0.18  | 1     | 90 |
| Child Performance (Average per School) | 52.96 | 10.16     | 32.20 | 75.28 | 90 |
| <i>Input</i>                           |       |           |       |       |    |
| No. of Teachers                        | 9.88  | 5.87      | 4     | 23    | 90 |

|                   |      |       |   |     |    |
|-------------------|------|-------|---|-----|----|
| No. of Classrooms | 5.73 | 4.08  | 0 | 19  | 90 |
| No. of Furniture  | 70.9 | 66.33 | 9 | 342 | 90 |

*Output*

|            |        |       |    |     |    |
|------------|--------|-------|----|-----|----|
| Enrollment | 155.13 | 71.71 | 42 | 335 | 90 |
|------------|--------|-------|----|-----|----|

Individual Level Data

|                             |        |        |      |     |      |
|-----------------------------|--------|--------|------|-----|------|
| Farm Labour                 | 2.01   | 2.39   | 0    | 7   | 1075 |
| Efficiency Status           | 0.75   | 0.23   | 0.18 | 1   | 1075 |
| Academic Performance        | 38.06  | 11.74  | 2.5  | 72  | 1075 |
| Child age                   | 11.92  | 1.37   | 10   | 14  | 1075 |
| Child gender                | 0.55   | 0.49   | 0    | 1   | 1075 |
| Biological child            | 0.73   | 0.44   | 0    | 1   | 1075 |
| Number of siblings          | 2.48   | 1.53   | 0    | 6   | 1075 |
| Household head age          | 46.98  | 10.85  | 25   | 80  | 1075 |
| Household head gender       | 0.80   | 0.40   | 0    | 1   | 1075 |
| Family size                 | 10.25  | 3.64   | 4    | 20  | 1075 |
| Education of household head | 1.06   | 1.08   | 0    | 3   | 1075 |
| Household head occupation   | 0.23   | 0.42   | 0    | 1   | 1075 |
| Household head income       | 457.65 | 154.06 | 100  | 800 | 1075 |
| Distance to school          | 22.05  | 13.57  | 2    | 60  | 1075 |

*Source: Authors Computation, 2022.*

This affects their overall performance as the majority of their performance is just within the margin of average. For the school input, the number of teachers, classrooms and furniture can be seen to be inadequate, with some schools not having the required number of teachers or even classrooms and furniture, especially schools within the Niger South zone. But looking at the enrollment rate, the majority of schools across the three zones are seen to be overpopulated given the available facilities. The enrollment rate across all the zones is always high in rural areas due to free education declared by

the government and the current school feeding programme initiative of the federal government.

At the individual level, the majority of pupils do partake in farm labour with an average of two hours per day. Most of these farms' labour is regarded as a daily routine in the case of some families. Sometimes, the pupils have to work on the farm before going to school, especially in those schools with afternoon sessions. The lack of adequate facilities made many schools not to be efficient, which warrant them to have two sessions. Many schools in rural areas do operate both in the morning and afternoon where the sessions are sharing the same infrastructural facilities. This facility sharing affects child school attendance, which invariably does affect their academic performance.

From the descriptive statistics in Table 1, the majority of pupils perform below average with the minimum and maximum being 2.5 and 72 respectively. The average age of pupils is 11 with the majority of them being male children, which are mostly biological children. Fostering children in rural areas is not common, because the practice is more common in urban areas. So in this case, the majority of pupils are biological children with an average of 2 siblings. For the household head, the mean age is 47 years with the majority being male heads with an average family size of 10 members per family. The majority of family heads have acquired at least a primary certificate, which made them predominately unskilled labourers with an average daily expenditure of less than ₦500 Naira (less than \$2 US dollar daily). The pupils also do work a long distance from their schools, as it's only a few villages that have presence of schools in their community. The majority of pupils have to walk for 22 minutes on average on daily basis to school. This leads to high fatigue and less attention by pupils in schools.

Table 2: Results of Efficiency Status of Schools

|             | <i>All</i> |       | <i>Niger South</i> |       | <i>Niger East</i> |       | <i>Niger North</i> |     |
|-------------|------------|-------|--------------------|-------|-------------------|-------|--------------------|-----|
|             | Freq.      | %     | Freq.              | %     | Freq.             | %     | Freq.              | %   |
| Inefficient | 69         | 76.67 | 23                 | 76.67 | 22                | 73.34 | 24                 | 80  |
| Efficient   | 21         | 23.33 | 7                  | 23.33 | 8                 | 26.66 | 6                  | 20  |
| Total       | 90         | 100   | 30                 | 100   | 30                | 100   | 30                 | 100 |

Source: Authors Computation, 2022.

Table 3 results show that the regression analysis has child academic performance at the school level as the dependent variable, with child farm labour and efficiency status of schools as the independent variable. The result shows that farm labour by children negatively influences child performance, even in all categories of schools though not significant. The situation is worse for pupils whose schools are not efficient, an increase in labour hours decreases performance by 1.47, which is in line with the study of Alfa and Abd-Karim (2018).



Table 3: Regression Result of Child Performance (Average per School)

|  | <i>All</i>      | <i>Eff = 1</i>  | <i>Eff &lt; 1</i> | <i>Niger South</i> | <i>Niger East</i> | <i>Niger North</i> |
|--|-----------------|-----------------|-------------------|--------------------|-------------------|--------------------|
| Child Farm Labour (Average per School) | -1.06<br>(1.31) | -0.54<br>(2.28) | -1.47<br>(1.68)   | 2.57<br>(2.25)     | -4.01<br>(2.80)   | -1.36<br>(2.14)    |
| Efficiency per School                  | -0.72<br>(4.52) | -               | -                 | -6.81<br>(6.78)    | -6.80<br>(10.48)  | 5.77<br>(7.50)     |
| N                                      | 90              | 21              | 69                | 30                 | 30                | 30                 |

Notes: Robust standard errors are in parentheses; P values significance at \*10%, \*\*5%, \*\*\*1%.

Source: Authors Computation, 2022

Similar results are obtained in Niger East and North except for Niger South which has a positive relationship, indicating that most of the pupils engaged more in paid labour on other farms than the family farms. This money gotten in most cases are used either by the pupils or their parent to provide some personal basic needs for their education. The inefficiency of the schools is negatively related to child performance in all zones, as well as Niger South and East of the state though not significant. But an opposite result was obtained in Niger North, as the coefficient positively related to child performance at the school level. The reason could be that schools in that zone are not populated when compared to other zones.

Table 4: Regression Results of Child Performance at the Individual Level

|                    | <i>All</i>         | <i>Eff = 1</i>     | <i>Eff &lt; 1</i>  | <i>Niger South</i> | <i>Niger East</i>  | <i>Niger North</i> |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Child farm labour  | -2.53***<br>(0.28) | -1.87***<br>(0.62) | -2.73***<br>(0.31) | -2.20***<br>(0.47) | -3.05***<br>(0.56) | -2.57***<br>(0.42) |
| Efficiency status  | 0.72<br>(2.63)     | -                  | -                  | -4.76<br>(4.09)    | -10.67**<br>(5.25) | 16.62***<br>(4.41) |
| Child age          | 1.31***<br>(0.47)  | 1.74*<br>(1.03)    | 1.20**<br>(0.52)   | 1.36*<br>(0.80)    | 2.14**<br>(0.84)   | 0.82<br>(0.76)     |
| Child gender       | 1.01<br>(1.26)     | 2.60<br>(2.76)     | 0.38<br>(1.42)     | -2.99<br>(2.05)    | 4.55*<br>(2.38)    | 1.47<br>(2.05)     |
| Biological child   | 6.69***<br>(1.43)  | 5.58*<br>(3.02)    | 7.26***<br>(1.63)  | 1.49<br>(2.37)     | 10.54***<br>(2.75) | 6.30***<br>(2.28)  |
| Number of siblings | -1.95***           | -3.04***           | -1.69***           | -2.56***           | -1.19              | -2.10***           |

|                             |                    |                   |                    |                   |                    |                    |
|-----------------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|
|                             | (.41)              | (0.94)            | (0.46)             | (0.68)            | (0.77)             | (0.69)             |
| Household head age          | 0.08<br>(0.06)     | 0.26*<br>(0.15)   | 0.04<br>(0.07)     | -0.16<br>(0.11)   | 0.41***<br>(0.12)  | 0.05<br>(0.10)     |
| Household head gender       | 1.87<br>(1.63)     | 2.75<br>(3.61)    | 2.26<br>(1.86)     | -0.11<br>(2.77)   | 5.30*<br>(2.91)    | 1.01<br>(2.65)     |
| Family size                 | -0.50**<br>(0.20)  | -1.03**<br>(0.44) | -0.40*<br>(0.22)   | -0.15<br>(0.34)   | -0.86**<br>(0.38)  | -0.37<br>(0.32)    |
| Education of household head | 1.87**<br>(0.80)   | 3.96**<br>(1.72)  | 1.15<br>(0.91)     | 1.26<br>(1.26)    | 3.05*<br>(1.63)    | 1.75<br>(1.27)     |
| Household head occupation   | 2.26<br>(2.00)     | 2.06<br>(4.52)    | 3.14<br>(2.24)     | 0.47<br>(3.16)    | 2.63<br>(3.65)     | -0.57<br>(3.63)    |
| Household head income       | 0.02***<br>(0.01)  | 0.03***<br>(0.01) | 0.02***<br>(0.01)  | 0.03***<br>(0.01) | 0.03***<br>(0.01)  | 0.02***<br>(0.01)  |
| Distance to school          | -0.22***<br>(0.04) | -0.02<br>(0.10)   | -0.26***<br>(0.05) | 0.09<br>(0.07)    | -0.40***<br>(0.09) | -0.32***<br>(0.07) |
| N                           | 1075               | 255               | 820                | 370               | 346                | 359                |

Notes: Robust standard errors are in parentheses; P values significance at \*10%, \*\*5%, \*\*\*1%.

Source: Authors Computation, 2022

For individual level with child academic performance as the outcome variable in Table 4. The estimation was carried out in three phases which include all, at efficiency level and on zones. The result shows that for all the estimations child farm labour supplied is negative in all categories and significant at a 1% level of significance, indicating an increase in farm labour decreases child performance, which conforms with the findings of Kambhampati and Rajan (2005). The coefficient for efficiency is positive in the general estimation and Niger North, meaning that the schools' efficiency increases academic performance, but negative in Niger South and East signifying inefficient schools decrease child performance, this is similar to the findings of Yahia and Essid (2019). The age and gender of a child are positive, but only significant in the case of age, while gender followed the argument of Emerson *et al.* (2017) as it shows non-significant negative effects in Niger South. That is, the more the age of the child, the more the child's performance increases in school. The biological children coefficient is positive, while the number of siblings is negative but all are significant except for Niger East. Although the majority of children stay with their biological parents only a few of them are fostered or orphans. Most of these biological children have at least 2 or more siblings (see Table 1).

The result for household characteristics shows household head age and gender are positive, but only significant in Niger East. Likewise in line with the findings of Badmus and Akinyosoye (2008), the educational and income level in this study is positive and significant. That is an increase in educational level increases child performance, because further interaction shows that most educated parent do guide their wards or do involve in extra coaching of their children. Family size is significant though negative, indicating that having a large family affect child performance. In most rural settings, large families have more time for fun as they usually engage in tales by moonlight. Families tell their wards many stories and histories, which end up occupying children's time for extra moral lessons and practice. Similarly, for community characteristics, distance to school is negative and significant, signifying the more the distance of the school from the pupils' home, the lower their academic performance. With most rural settlements being dispersed in nature, schools are always located in rural areas with a large population. This made other rural areas take a long walk before accessing the schools, as it was stressed by Kruger(2007) that most schools are inaccessible and inadequate in terms of their supply in remote areas.

## **5. Conclusion And Recommendations**

This study examines farm labour supplied by the child as well as the efficiency of schools concerning child academic performance in rural areas of Niger State. Given a large number of observations the study concludes that hours of labour supplied to either family farm or hired labour tends to affect child academic performance, inclusive of all the zones. The problem is more prevalent in schools with inadequate facilities because most schools don't have the required personnel. This warrants lots of schools to be inefficient with an efficient score of less than one. At the individual level, the age of a child, being a biological child, education and household head income is positive and significant. But the number of siblings, family size and distance to schools are negative and significant.

This study, therefore, recommends the government's role in providing adequate school facilities, especially through the state's Universal Basic Education Board. The board can re-evaluate most of the facilities, particularly those schools in remote and rural areas. Also, the government through the board can issue a ban on labour supply to farms, especially during school hours in the communities. Similarly, moderate homework should be regularly given to pupils to engage them at home as obtainable in most schools in urban areas. Proper campaigns on the danger of labour participation by children can be launched by the government to parents, most especially through mass media like radio programmes and leaflets.

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