Dixon P, Humble S, Tooley J.

[How school choice is framed by parental preferences and family characteristics: A study in Poor Areas of Lagos State, Nigeria.](#)

Economic Affairs 2017, 37(1), 53-65

Copyright:

This is the peer reviewed version of the following article: Dixon P, Humble S, Tooley J. [How school choice is framed by parental preferences and family characteristics: A study in Poor Areas of Lagos State, Nigeria.](#) *Economic Affairs* 2017, 37(1), 53-65, which has been published in final form at <http://dx.doi.org/10.1111/ecaf.12214>. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Self-Archiving.

DOI link to article:

<http://dx.doi.org/10.1111/ecaf.12214>

Date deposited:

15/02/2017

Embargo release date:

14 February 2019

How school choice is framed by parental preferences and family characteristics: A study in Lagos State, Nigeria

Pauline Dixon, Newcastle University (corresponding author)

pauline.dixon@ncl.ac.uk

Steve Humble, Newcastle University

steve.humble@ncl.ac.uk

James Tooley, Newcastle University

james.tooley@ncl.ac.uk

Correspondence concerning this article should be addressed to Pauline Dixon,

Newcastle University, Newcastle Upon Tyne, NE1 7RU, England, E-mail:

pauline.dixon@ncl.ac.uk

Submitted: 22nd October 2016

Re-submitted 27th November 2016

Pauline Dixon, PhD - is Professor of International Development and Education at Newcastle University. Her seminal work around school choice, school management types, and international aid in developing contexts has won her awards and honours around the world. (Corresponding author) - pauline.dixon@ncl.ac.uk

Steve Humble, MBE - is a Lecturer at Newcastle University and a Fellow of the Institute of Mathematics and its Applications. His research interests focus on school choice, improving access too and the quality of schooling in developing context as well as creativity, intelligence and gifted education - steve.humble@ncl.ac.uk

James Tooley, PhD – is a Professor of Education Policy at Newcastle University. He is known for his work around low cost private schools and school chains focusing on sub-Saharan Africa and India. – james.tooley@ncl.ac.uk

How school choice is framed by parental preferences and family characteristics: A study in poor areas of Lagos State, Nigeria

Abstract

This research set out to investigate how, in a low-income area of Nigeria, parental preferences and household characteristics affect school choice for their children. Surveys were undertaken in 352 households in Lagos State, Nigeria gathering data for 556 children attending government and low cost private primary schools. Descriptive data shows that poor parents investigate a wide range of sources to inform the decision making process. These include school visits, networks of relatives, friends and neighbours, and school observations. Discrete choice theory is used to model how school choice is framed by parental preferences and family characteristics. The results show a large statistically significant preference for low cost private schools where quality of teaching, proximity to home and strong school leadership are important to parents. The child's order in the family and the older the child the likelihood increases of the parents choosing a government school for that child. Children living in a family unit where the father has achieved a higher level of occupation or education are more likely to attend a private school. Family income and higher mother educational attainment are not significant characteristics in this school choice model.

JEL codes: I21, I24, I28.

Keywords: Nigeria, school choice, low cost private schools, primary education, developing countries

1. Introduction

Lagos State is the geographically smallest of the 36 Nigerian states. With around 15 million people, it is the sixth largest global conurbation. Over the past ten years, research around education provision has burgeoned in Lagos State, owing in part to the seminal work of Tooley and Dixon (Tooley et al., 2005; Tooley et al, 2011; Tooley and Dixon, 2005; REF, 2014). The latest research shows that private schools account for 57 per cent of all enrolments in Lagos State, serving approximately 1.4 million children, half of whom are girls (Härmä, 2011c). Of the 11,226 primary schools 10,235 (91 per cent) are private with 991 (9 per cent) being government.

In many areas of the developing world poor parents are sending their children to a variety of school management types. Over the past few decades research has revealed that in many sub-Saharan African countries as well as in India, low fee private schools have become an option for poor parents (Tooley, 2009; Dixon, 2013; Dixon et al,

2015; Stanfield, 2015; Alderman et al, 2001; Ngware et al., 2009; Rose, 2009; Tooley et al, 2005; Mehrotra and Panchmukhi 2007; Walford, and Srivastava, 2007; Stern and Heyneman, 2013; Härmä, 2015). Parents in developing countries are making decisions and choices about where to educate their children.

There is a paucity of research around choice and schooling in developing contexts. However, a number of studies around household choice and schooling have been carried out in African countries including Nigeria, Ghana, Liberia and Kenya (Härmä, 2013, 2011a, 2011b; Nishimura and Yamano, 2013; Akaguri, 2014; Rolleston and Adefeso-Olateju, 2014; Siaplay and Werker, 2013).

Some research in Nigeria, typically school based interviews with parents, has been carried out in order to investigate perceptions of schooling and the reasons behind private and government school choice (Härmä, 2011a, 2011b). Private school choosers rated quality as a main preference criterion (64% Kwara State and 77% Lagos). Government choosers did not rate quality so highly (21% Kwara and 44% Lagos). Around one third of all parents interviewed in Lagos, and one third in government schools in Kwara, expressed the importance of affordability. In Lagos one third of parents stated the preference for schools being close to their homes. The same study found that a school's reputation and the relationships between school owners and parents were also important when making choices (Härmä, 2011a, 2011b).

Some state that research is mixed around gender and the likelihood of boys and girls being equally represented across school types. According to Day Ashley et al (2014, p.24):

“Several studies reviewed indicated that girls are less likely to access private schools than boys. However, the evidence is context specific with some studies ambiguous on the issue and a minority of studies finding in certain contexts private school reduce the gender gap that is found in state schools”.

Research in Tanzania, Ghana and Kenya found that the proportion of girls attending private schools was roughly equivalent to boys (Hartwig, 2013; Tooley et al, 2007; Tooley et al, 2008).

Affordability is regarded as an issue for choice in rural Kenya and Ghana. Children from poorer households have a lower probability of attending private schools due to low family income (Nishimura and Yamano, 2013; Akaguri, 2014). Parents in Ghana and Nigeria were shown to prefer private over government schools because of perceived quality education (examination results) and the attention children received in

class (Rolleston and Adefeso-Olateju, 2014). Class size has been shown to be important with regards choice in Kenya (Nishimura and Yamano, 2013). As the pupil teacher ratio increased in government schools, there was an increased likelihood of children transferring to private schools.

One piece of research from Liberia considered the association between wealth and the likelihood of attending different school management types (Siaplay and Werker, 2013). Using secondary data from the Ministry of Education and the West African Examination Council the findings show that children from most income quintiles are able to access private and religious schools where standardized test results are stronger than government. Being richer and living in urban areas decreases the likelihood of attending a government school; the opposite is true for the poor in rural areas.

To summarize the literature set out above, parental choice places emphasis on school quality, reputation, proximity to home, and affordability. However, the research shows mixed findings regarding income effects and wealth.

2. Method

This paper presents data that were gathered for a research project funded by the Department for International Development (DFID)¹. This research had two aims:

- first to explore the school choice process undertaken by disadvantaged families;
- second to investigate how school choice is framed by parental preference and household characteristics.

This research differs from the majority of school choice research carried out in developing countries in three ways. First the data were gathered in the household itself with the parent who stated they made the decisions around schooling. Schools therefore were not used as a springboard to find parents from particular school types. Second, this paper sets out a more sophisticated statistical technique than used in previous research carried out in developing countries, that is discrete choice theory, to try to gain a deeper understanding of how, by whom and why schools are chosen. Third this research looks

¹ The data reported in this paper were collected from 556 children from 352 of the 1,001 households who originally participated in the DFID project. The criteria for their inclusion in this paper were as follows: Attending a government or 'low cost' private primary school with costs less than or equal to ₦25,000 (£59.93) per year; a household income that allowed the choice between 'low cost' private or government schooling (i.e., If a child was attending a government school they were only selected for the subsample if their household income was equivalent or greater than that of a household income of a child attending a low cost private school); The households were located in the poor areas of Lagos State.

at the choice process (that is the investigative journey) parents take before making final decisions concerning the school their child will eventually attend.

All parents were informed before the start of the household questionnaire that the purpose of the assessment exercise was to investigate parental choice around different types of school management, that participation was voluntary, and that the results of the assessment would be kept confidential and for research use only.

2.1 Procedure

The data reported in this paper were collected for a total of 556 children from 352 households in poor areas of Lagos State, Nigeria. All households reported in this study were located in poor areas of Lagos State, lacking infrastructure, with roads in poor repair and with insufficient water and sanitation.

A team of survey administrators under the supervision of researchers from Newcastle University collected the data. The administrators had been given training specifically for this project. The enumerators interviewed the person who made the decisions about education within the household. The interview took about 1 hour in total. The administrators read out the household questionnaire to the participants in their local language to avoid any literacy issues.

3. Results

This paper sets out to consider how parents choose schooling for their children. It is therefore divided into two parts. The first part sets out descriptive data to investigate the school choice process undertaken by disadvantaged families. The second uses discrete choice theory to test whether household preferences and characteristics affect the choice of attending different school management types.

3.1 School Choice Process

The first aim of the research was to explore the school choice process undertaken by disadvantaged families. This part of the results section sets out the descriptive statistics to consider the information parents gather in order to make school choice decisions. It also looks at the characteristics of the child's household.

Of the 352 households surveyed all had at least one child of school age. The mean number of children in the household was 3.8 with a standard deviation (SD) of 1.9. The mean age for these children was 8.43 years (SD 2.33 years). Table 1 shows the

school management type attended by gender. The gender split is relatively equal for this set of 556 children. There is roughly an equal proportion of boys and girls attending low cost private schools, but a greater proportion of boys attending government than girls.

Table 1 Gender

Gender	Government		Low cost Private		Total	
	N	%	N	%	N	%
Boy	168	55.0	128	51.0	296	53.2
Girl	137	45.0	123	49.0	260	46.8
Totals	305	100.0	251	100.00	556	100.0

Per capita income was calculated as the sum of the total reported family income for all earning members in the family divided by the number of reported members of the household both adults and children. The caveat needs to be raised that in a questionnaire/interview setting some parents may intentionally or otherwise miss report family income. The diagram below shows similar patterns for government and low cost private school choices with comparable levels at each per capita income. The percentage represents the proportion of total households in each corresponding decile.

Figure 1 School Choice by family income decile

There are a number of characteristics that clearly show that the households attending government and private schools are similar (see table 2). These include the average number of adults in the home (2.5 for both); average monthly household income (N40,400 (£96.84) compared to N39,400 (£94.45)); the percentage having mothers with no schooling (19 per cent for both); the average number of bedrooms (1.8 compared with 1.6); the percentage of households with an outside toilet (70 per cent for

both). Regarding possessions, again households are relatively similar with 98% of families owning at least one mobile phone (mean 2 per household); with 6.8% having computers; less than 10% possessing a motorbike but around 60% owning a generator.

Table 2 Characteristics of Child's Household by Type of School Attending

Item	Low Cost Private	Government	Total
Language spoken at home			
English	16.3	8.2	11.9
Yoruba	54.6	64.6	60.1
Igbo	11.2	13.4	12.4
Egun/Awori	8.4	4.3	6.1
Hausa	0	3.6	2.0
Other	9.6	5.9	7.6
Adults in household #	2.5	2.5	2.5
Children in household #	3.7	3.8	3.8
Household size #	6.2	6.3	6.3
Employment status of father			
Not working	8.0	23.0	16.2
Unskilled	43.8	37.4	40.3
Skilled	48.2	39.7	43.5
Employment status of mother			
Not working	11.6	12.1	11.9
Unskilled	75.7	72.1	73.7
Skilled	12.7	15.7	14.4
Father's highest education level			
None	14.3	26.2	20.9
Primary	15.9	17.7	16.9
Junior Secondary	4.0	8.2	6.3
Senior Secondary	54.2	42.3	47.7
Higher Education	11.6	5.6	8.3
Mother's highest education level			
None	19.1	19.0	19.1
Primary	25.1	31.5	28.6
Junior Secondary	10.4	11.1	10.8
Senior Secondary	40.6	34.8	37.4
Higher Education	4.8	3.6	4.1
Total Monthly Household Income (Naira 10k) #	4.04	3.94	3.98
Meals eaten per day			
Two	4.8	9.3	7.2
Three	84.5	81.5	82.8
More than Three	10.8	9.3	9.9
Bedrooms #	1.8	1.6	1.7
Toilet access			
Shared	0	5.9	3.2
Own (outside)	70.5	70.2	70.3
Own (inside)	29.5	23.9	26.4
Number of TVs #	1.27	1.07	1.16
Number of cell phones #	2.3	2.2	2.2
Other household assets			
Generator	61.0	60.3	60.6
Refrigerator	45.8	37.7	41.4
Computer	6.8	6.9	6.8
Motorbike	11.2	8.5	9.7
Car	15.6	13.1	14.2

Notes: #denotes results that are averages, all others are percentages

There are a few family characteristics that distinguish students in low cost private schools from their peers in government schools. Private school students are more likely to have a father who has up to a senior secondary school education (54.2 per cent compared to 42.3 per cent); a father who is working (92 per cent compared to 77 per cent); and are more likely to speak English at home (16.3 per cent compared to 8.3 per cent).

Most parents concentrate their school search activity within the school sector they ultimately select for their child. Almost 82 per cent of parents of children enrolled in low cost private schools stated that they did not visit any government schools, and 71 per cent of parents of children enrolled in government schools likewise reported they did not visit any private schools (see table 3). For parents of children enrolled in government schools, 54 per cent said they visited at least one government school, with over one quarter visiting two or more. About equal proportions of low cost private and government school parents visited one school in their school sector. However, low cost private school parents were much more likely than government school parents to report visiting more than one school in their chosen sector (41 per cent compared to 28 per cent).

Table 3 Number of schools visited by school attending

	Private (attending)	Government (attending)	Total
Item	%	%	%
Number of Government schools visited			
0	81.7	46.1	62.2
1	12.4	26.0	19.8
2	4.8	19.7	13.0
3	0.8	6.3	3.8
More than 3	0.4	2.0	1.3
Totals	100.0	100.0	100.0
Number of Private Schools visited			
0	35.1	71.1	54.8
1	23.9	19.7	21.6
2	23.5	7.6	14.8
3	14.7	1.3	7.4
More than 3	2.8	0.3	1.4
Totals	100.0	100.0	100.0

With regards to who makes decisions within the family, and in this case for the eldest child attending primary school, mothers are described as education decision makers for about three quarters of private and government school families. Fathers are reported as such for 77.5 per cent of government school families and 86.6 per cent for low cost private school families. Over 65 per cent of all families say that school visits are

an important source of information used in their schooling decisions. Around half of the families report relying on their network of relatives, friends and neighbours to inform their schooling decisions. A third of families say they observe lessons at the school and a fifth report they talk to students already attending the school. Families that choose low cost private schools for their oldest child are similar to families that choose government schools regarding most of the information sources that inform their decisions (see table 4).

Table 4 Schooling Decision Making Process by Type of School Oldest Child Attends – Household Level

Items	Government %	Private %	Total %
Schooling decision makers			
Staff of previous school	0.5	0.0	0.3
Mother	77.0	77.5	77.2
Father	77.5	86.6	81.2
The Child	1.9	0.0	1.1
Grandmother	5.3	2.8	4.3
Grandfather	2.4	0.7	1.7
Other relative	2.9	2.1	2.6
Legal guardian	1.4	1.4	1.4
Other	1.9	4.9	3.1
Sources of information about the school			
Relatives/friends/neighbours	49.8	53.5	51.3
Religious/community leaders	8.6	7.0	8.0
Children who attended that school	26.3	16.2	22.2
School visit	62.7	69.0	65.2
Observed lessons at the school	27.8	36.6	31.3
Talked to teachers at the school	17.7	23.9	20.2
Schools examination performance	14.4	14.1	14.2
School prospectus	7.2	18.3	11.7
Information on the internet	0.0	0.0	0.0
Worked at the school	1.0	0.0	0.6
Attended the school	3.3	0.0	2.0

Out of the 352 households 120 parents indicated they moved at least one of their children in the last two years. They were told they could provide up to a maximum of three reasons regarding their decision to move. However, the majority of parents gave just one reason. Most of the movers originally attend private schools with the majority being moved to other private schools. Children attending government schools tended to move within that sector. Parental dissatisfaction with school quality as highlighted by three of the items (dissatisfaction with the school; poor teachers; poor academic performance) was given for each type of school move. Parents will move between

government and government, and private and private, owing to quality considerations. School cost is highlighted as an issue for parents who move their child either between low cost private schools or from a low cost private school to a government school. The movement of children within the low cost private school system may indicate that some parents are discriminating between private schools on the basis of cost, as well as quality as noted above (see table 5).

Table 5 Reasons for moving a child (three reasons per move)

Reason	Government to Government	Government to Private	Private to Government	Private to Private	Total
School was too expensive	2	0	36	19	57
Moved to a new area	7	0	7	22	36
Dissatisfaction with the school	3	1	4	8	16
School too far	4	3	2	22	31
School overcrowded	1	0	1	0	2
Poor teachers	4	1	2	8	15
School closed	0	0	0	2	2
Poor academic performance	1	4	8	10	23
Poor discipline or safety	1	0	1	0	2
Child expelled	4	1	2	8	15

3.2 Parental Preferences and Household Characteristics

The second aim of the research was to investigate how school choice is framed by parental preference and household characteristics. Parents were asked to select their 'three main reasons' for choosing their child's school. The percentage of parents selecting each one of the eight given preferences is given in table 6. Parents most frequently list 'close to home' as being an important preference (59.5 per cent), followed by four other characteristics 'academic performance' (41.5 per cent), 'quality of teaching' (41.0 per cent), 'affordability' (41.4 per cent) and 'strong disciplinary environment' (39.6 per cent).

Table 6 Parent's preferences for various school characteristics

Preference (important, not important)	Government		Private		Total	
	Yes	No	Yes	No	Yes	No
Academic Performance	38.7	61.3	45.0	55.0	41.5	58.6
Quality of teaching	35.4	64.6	47.8	52.2	41.0	59.0
Affordability	43.9	56.1	38.2	61.8	41.4	58.6
Close to home	58.7	41.3	60.6	39.4	59.5	40.5
Safe school environment	15.1	84.9	15.5	84.5	15.3	84.7
Strong disciplinary environment	47.2	52.8	30.3	69.7	39.6	60.4
Strong School Leadership	0.7	99.3	18.7	81.3	8.8	91.2
School reputation	40.0	60.0	27.9	72.1	34.5	65.5

In order to investigate influences that possibly affect school choice, it is necessary to define household, parent and child demographic characteristics from the given data. The variables used are set out below:

- Gender of the pupil (boy=0, girl=1);
- Pupil's age in years and fractions of a year;
- Order in the family;
- Total number in the family;
- Total earning family members;
- Total Monthly Household income;
- Father's level of education (0 = No Education; 1 = Primary Education; 2 = Junior Secondary; 3 = Senior Secondary; 4 = Further Education);
- Mother's level of education (0 = No Education; 1 = Primary Education; 2 = Junior Secondary; 3 = Senior Secondary; 4 = Further Education);
- Father's occupation (0 = Not working; 1 = Unskilled; 2 = Skilled);
- Mother's occupation (0 = Not working; 1 = Unskilled; 2 = Skilled);

The household survey asked a number of questions around family possessions and wealth. It was necessary to collapse some of them into a smaller set of combined factors, otherwise there would be too many independent variables to fit a sensible model to the data. These have been combined into a smaller set of measures using principal factor analysis, rotated using the Varimax procedure. A 2-factor solution was found to be optimal. The combined factors were given the following descriptions:

- **Factor 1** – Wealth 1 - Electric: Cell Phone, Computer, TV, Fridge, Generator;
- **Factor 2** – Wealth 2 - Transport and farming: Motorbike, Cattle, Farm Animals, Cultivated Land.

These two factors explain 32% of the variation in this set of data. Factor scores for these wealth factors were derived for each pupil and standardised to a mean of 50 and standard deviation of 10.

To investigate how school choice is framed by parental preferences and household characteristics discrete choice theory is used to estimate the following equation:

$$C_i = \alpha + \beta D_i + \gamma P_i + \varepsilon_i$$

C_i is the type of school that parent i has selected for their child. D_i is the vector controlling for household, parent and child demographic characteristics. These include gender, age, number in the household, order of the child in the family, the number of earning family members, parent's occupation and highest education, two wealth factors, and total family income. P_i is a vector of each household's preferences for a set of school characteristics and ε_i is the unobserved factors.

This research sets out the results of the logistic regression model:

$$\Pr(C_i = s) = \frac{\exp(\alpha_s + \beta_s D_i + \gamma_s P_i)}{\sum_{s=0}^1 \exp(\alpha_s + \beta_s D_i + \gamma_s P_i)}$$

where s is the choice of enrolments: Government ($s=0$); Low cost Private ($s=1$).

By estimating this model we can directly test whether the household preferences and demographics affect the choice of attending different school management types. This model assumes that all parents had the option to select either a low cost private or a government school.

Table 7 below displays the coefficient estimates of the logistic regression model² in terms of odds ratios with the base group being government schools. Each coefficient indicates the change in the odds that a parent selects a low cost private school instead of a government school for a one standard deviation increase in the preference for the respective school characteristic³.

² Measures show that the model fits the data well, with the likelihood ratio test ($\chi^2(20) = 201.088$, $p < 0.001$), implying that the model as a whole fits significantly better than an empty model with no predictors. The Pearson statistic for the measure of goodness of fit ($\chi^2(533) = 566.285$, $p > 0.05$) implies that there is no significant difference between the expected and actual values (Train, 2009; Long, 1977; Homser et al., 2013). Pseudo- R^2 likelihood ratio indices: 0.264 (McFadden, 1974), 0.304 (Cox and Snell, 1989) to 0.407 (Nagelkerke, 1991).

³ For continuous independent variables the odds ratio is $\exp[SD \times \text{Coeff.}]$. This gives an estimated odds ratio for an increase of 1 SD. Where a 1 standard deviation is a meaningful change in the respective continuous variable. Within this definition the dichotomous variables were taken to have an standard deviation of 1, giving the odds ratio of $\exp[\text{Coeff.}]$. Each of the coefficients indicates the change in the odds that a parent selects a given type of school instead of a government school for a 1 SD increase in his or her importance rating of the respective school characteristic.

Table 7 Estimates of the Empirical Model

Variable	Coeff.	Std. Err.	$\widehat{OR}$	95% CI	
				Lower bound	Upper bound
Parental Preferences					
Academic Performance	0.324	0.34	1.383	0.710	2.692
Quality of teaching	0.914***	0.337	2.494	1.289	4.828
Affordability	0.117	0.321	1.124	0.599	2.109
Close to home	0.777**	0.332	2.175	1.135	4.169
Safe school environment	0.612	0.385	1.844	0.867	3.922
Strong disciplinary environment	-0.109	0.317	0.897	0.482	1.669
Strong School Leadership	4.652***	0.856	104.794 ^(a)	19.575	561.022
School reputation	-0.293	0.311	0.746	0.406	1.372
Household characteristics					
Gender	-0.076	0.209	0.927	0.615	1.396
Age	-0.408***	0.057	0.420	0.331	0.532
Order in the family	-0.896***	0.185	0.511	0.390	0.671
Total number in the family	0.121**	0.061	1.338	1.003	1.788
Wealth 1	0.021*	0.012	1.231	0.975	1.561
Wealth 2	0.003	0.011	1.030	0.831	1.278
No. earning family members	-0.173	0.201	0.891	0.686	1.158
Total Family Income	-0.048	0.047	0.873	0.674	1.132
Father's level of education	0.34***	0.104	1.545	1.190	2.005
Mother's level of education	-0.057	0.1	0.930	0.726	1.192
Father's occupation	0.323*	0.169	1.227	0.995	1.514
Mother's occupation	-0.068	0.23	0.967	0.774	1.208
Constant	0.92	1.288			

*p<0.10; **p<0.05; ***p<0.01 Base Group Government Schools. OR Odds Ratio = EXP(SD*Coeff.) (a) regarding the size of the odds ratio for 'strong school leadership' One of the cells in the contingency table is small and causes a large OR(Private, Government) = $[47/2] / [204/303] = (47 \times 303) / (2 \times 204) = 34.90$. Coefficient value of $\ln(34.90) = 3.55$ SE = $[1/2 + 1/47 + 1/204 + 1/303]^{1/2} = 0.53$ Diagnostic check showed no sign of collinearities.

Three parental preferences around school choice are shown to be statistically significant. Parents who stated a preference when selecting schools for their children by quality of teaching are more likely to send their children to a low cost private school. The results show that the likelihood of parents selecting a low cost private schools is approximately 2.5 times as large as the likelihood of selecting a government school for every 1 SD increase in the preference rating (p<0.01). Parents who state that the proximity of the school is a preference are more likely to send their child to a low cost private school. All else equal a 1 SD increase in the preference indicator of 'close to home' is associated with an increase in the likelihood of selecting low cost private schools instead of government by a factor of 2.175 (p<0.05). Finally, regarding strong school leadership, parents are more likely to send their children to low cost private

schools rather than government when stating this preference ($p < 0.01$). It must be noted that only 8.8 per cent of parents selected this preference as important. The confidence interval on the odds ratio is wide due to there only being two parents from government schools and 47 from low cost private schools stating this as one of their three preferences.

Individual characteristics show there is a decrease in the likelihood of parents sending a child to low cost private schools, as the child gets older. With regards to birth order there is a decrease in the likelihood of a child attending a low cost private school by a factor of 0.511 ($p < 0.01$). The greater the family size the more likely the child will attend a low cost private school rather than a government one. In developing countries households often include extended family members. Therefore the number of family members may be an indicator of a family's willingness to pay for education. The likelihood of selecting a low cost private school is 1.338 times as large as the likelihood of selecting a government school. The Wealth 1 (the possession of electrical goods) indicator suggest that households are 1.231 ($p < 0.10$) times more likely to select a low cost private school than a government school for every 1 SD in this wealth rating. Finally in households where the father has achieved a higher level of education or occupation children are 1.545 ($p < 0.01$) or 1.227 ($p < 0.10$) times respectively more likely to attend a low cost private school.

4. Concluding Remarks

There is little written about parental choice in developing countries. However, with the growth of the low cost private school sector in many developing countries poor parents are demanding the right to select schooling for their children (Tooley, 2009; Dixon, 2013; Dixon et al, 2015; Härmä, 2011c, 2015; Stern and Heyneman, 2013).

When considering the literature, quality has been shown to be a main preference criterion for private school choosers (Härmä, 2011a, 2011b; Rolleston and Adefeso-Olateju, 2014). The research here from Nigeria agrees, where almost half of private school parents selected this criterion as one of their three main reasons for choosing their child's school. Quality is also shown as significant in the empirical model. Parents are more likely to send their child to a low cost private school than a government school if their preferences indicate they value the quality of teaching.

In other African settings preferences have been found regarding the proximity of school to the household and their location within the community (Härmä, 2011a, 2011b). The school's reputation, and hence the relationship between the school owners and parents, have an effect on choice (Härmä, 2011a, 2011b). In the Nigeria setting

parental preference of 'close to home' and 'strong school leadership' were also highlighted as statistically significantly important regarding the likelihood the child attends a low cost private school.

Certain household characteristics are also indicators of the likelihood of attending certain types of school. In these areas of Lagos State, the older the child the more likely they are to attend a government school. A child's gender does not increase the likelihood of attending different school management types over others in agreement with the literature from sub-Saharan Africa (Hartwig, 2013; Tooley et al, 2007; Tooley et al, 2008).

The increased economic well-being of a family (as indicated by 'wealth1', father's occupation and education) tend to increase the likelihood of the child attending a low cost private school agreeing with the findings of Siaplay and Werker (2013) from Liberia.

This research is unique in that it considers the choice process undertaken by poor parents to inform schooling decisions. Although physical visits are typically to the final management type chosen by the parent, there are a multitude of other sources of information sought during the choice process. This body of information as a whole implies that disadvantaged parents are making informed choices using a variety of evidence. Over 65 per cent of families stated that school visits were an important source of information. Networks of households (both social and community) provided half of the families with information to support school decisions. It is not just one parent making school choice decisions. Both the mother and father were decision makers in three quarters of the households. Finally, in order to look at choice from the aspect of being able to change school provider, data were gathered around reasons for doing so. Affordability and quality were raised as important considerations when making the decision to move a child from an existing provider.

The right to free primary education and compulsory attendance in Nigeria does not seem to have limited parental choice to free fee government schooling. Different school management types are offering education provision to parents. Indeed, some suggest that only between ten and twenty per cent of parents need to be informed in order for the market to be competitive (Thorelli and Engledow, 1980; Deick and Price, 1987); others that it only requires a subset of parent to be informed to allow for an education market to be effective (Schneider et al, 1998). This research has shown that in Nigeria there are parents who are informed and the school market is burgeoning. Regarding policy implications, both nationally and internationally further research could address the following policy questions:

- How could strategies be implemented that could support parents to become better school choosers for their children?
- How can policies be designed to ensure that all families have real choices i.e., through the implementation of school vouchers or cash transfers?
- What policies can governments implement to facilitate the growth in the supply of schools of different management types that provide quality education for all?

This research suggests that parents living in difficult circumstances in Nigeria are active choosers and owing to the grassroots community lead initiative of low cost private schools, have been given the opportunity to do so.

Disclosure statement

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received funding from the Department for International Development (DFID) for this research.

References

- Akaguri, L. (2014). Fee-free public or low-fee private basic education in rural Ghana: how does the cost influence the choice of the poor? *Compare*, 44(2), 140–161. doi:10.1080/03057925.2013.796816.
- Alderman, H., Orazem, P. F., and Paterno, E. M. (2001). School Quality, School Cost and the Public/Private School Choices of Low-Income Households in Pakistan. *Journal of Human Resources* 36(2), 304–326.
- Cox, D. R., and Snell, E. J. (1989). *Analysis of Binary Data*. 2nd ed. London: Chapman & Hall.
- Day Ashley, L., Mcloughlin, C., Aslam, M., Engel, J., Wales, J., Rawal, S., Batley, R., Kingdon, G., Nicolai, S., and Rose, P. (2014). *The role and impact of private schools in developing countries: a rigorous review of the evidence*. Final report. Education Rigorous Literature Review. Department for International Development.
- Dixon, P. (2013). *International Aid and Private Schools for the Poor : Smiles Miracles and Markets*, Cheltenham Gloucester: Edward Elgar.
- Dixon, P., Humble, S., and Counihan, C. (2015). *Handbook of International Development and Education*. Cheltenham, Gloucester, UK and Northampton, MA, USA: Edward Elgar.
- Härmä, J. (2011a). *Household Survey on Private Education in Lagos*, DFID Education Sector Support Programme in Nigeria, Report LG503. Retrieved from www.esspin.org
- Härmä, J. (2011b). *Study of Private Schools in Kwara State*, DFID Education Sector Support Programme in Nigeria, Report KW326. Retrieved from www.esspin.org
- Härmä, J. (2011c). *Lagos Private School Census 2010-2011 Report*, DFID Education Sector Support Programme in Nigeria, Report LG501. Retrieved from www.esspin.org
- Härmä, J. (2013). Access or quality? Why do families living in slums choose low- cost private schools in Lagos, Nigeria? *Oxford Review of Education*, 39(4), 548–566. doi:10.1080/03054985.2013.825984

- Härmä, J. (2015). Private schooling and development: an overview, In P. Dixon, S. Humble, and C. Counihan (Eds.), *Handbook of International development and Education* (pp. 171-199). Cheltenham, Gloucester, UK and Northampton, MA, USA: Edward Elgar.
- Hartwig, K. A. (2013). Using a social justice framework to assess educational quality in Tanzanian schools. *International Journal of Educational Development* 33(5): 487–496.
- Hosmer, D. W., Lemeshow, S., Sturdivant, R. X. (2013). *Applied Logistic Regression (Third Edition)*, Toronto: John Wiley and Sons, Inc.
- Long, J. S. (1997). *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage.
- McFadden, D. (1974). Conditional logit analysis of qualitative choice behavior. In P. Zarembka (Ed.), *Frontiers of econometrics* (pp. 105-142). New York: Academic Press.
- Mehrotra, S., and Panchamukhi, P.R. (2007). Universalising elementary education in India: Is the private sector the answer? In P. Srivastava & G. Walford (Eds.), *Private schooling in less economically developed countries: Asian and African perspectives* (pp. 129–151). Oxford, UK: Symposium Books.
- Nagelkerke, N. J. D. (1991). A note on a general definition of the coefficient of determination. *Biometrika*, 78, 691-692. doi:10.1093/biomet/78.3.691
- Ngware, M. W., Oketch, M., Ezech, A. C., and Mudege, N. N. (2009). Do Household Characteristics Matter in Schooling Decisions in Urban Kenya? *Equal Opportunities International*, 28(7), 591-608. doi.org/10.1108/02610150910996425.
- Nishimura, M., and Yamano, T. (2013). Emerging Private Education in Africa: Determinants of school Choice in Rural Kenya, *World Development*, 43, 266-275. doi:10.1016/j.worlddev.2012.10.001.
- REF. (2014). *Low-cost private schools in developing countries: how research and research-based advocacy has changed policy, awareness and understanding and raised investment to improve educational opportunities for the poor*, REF Impact Case Studies, Retrieved from: <http://impact.ref.ac.uk/CaseStudies/CaseStudies.aspx?Id=21710>
- Rolleston, C. and Adefeso-Olateju, M. (2014). De facto privatisation of basic education in Africa: a market response to government failure? A comparative study of the cases of Ghana and Nigeria, in I. Macpherson, S. Robertson, and G. Walford, G. (Eds.) *Education, Privatisation and Social Justice: Case Studies from Africa, South Asia and South East Asia*, (pp.25–44). Oxford, Symposium Books.

- Rose, P. (2009). Non-State Provision of Education: Evidence from Africa and Asia. *Compare: A Journal of Comparative and International Education*, 39(2), 127-134. doi:10.1080/03057920902750350.
- Schneider, M., Teske, P., Marshall, M., and Roch, C. (1998). Shopping for Schools: In the Land of the Blind, The One-Eyed Parent is Enough, *American Journal of Political Science*, 42(3), 769-793.
- Siaplay, M., and Werker, E. (2013). *What Role for the Private Sector in Liberia's Public Education Policy?* London: International Growth Centre.
- Stanfield, J. (2015). Affordable learning: transforming education at the bottom of the pyramid, In: P. Dixon, S. Humble, and C. Counihan (Eds.), *Handbook of International development and Education* (pp. 131-148). Cheltenham, Gloucester, UK and Northampton, MA, USA: Edward Elgar.
- Stern, J., and Heyneman, S. (2013). Low-fee private schooling: the case of Kenya, In P. Srivastava (Ed.), *Low-Fee Private Schooling: Aggravating Equity or Mitigating Disadvantage?* (pp. 105-128), Oxford: Symposium Books.
- Thorelli, H., and Engledow, J. (1980). Information Seekers and Information Systems: A Policy Perspective, *American Economic Review*, 64(3), 373-390.
- Tooley, J. (2009). *The Beautiful Tree: A Personal Journey into how the world's poorest people are educating themselves*, Viking: Penguin.
- Tooley, J., and Dixon, P. (2005). Is there a conflict between commercial gain and concern for the poor? Evidence from private schools for the poor in India and Nigeria. *Economic Affairs* 2005, 25(2), 20-26.
- Tooley, J., Dixon, P., and Olaniyan, O. (2005). Private and Public Schooling in Low Income Areas of Lagos State, Nigeria: A Census and Comparative Survey. *International Journal of Educational Research* 43(3), 125-146. doi:10.1016/j.ijer.2006.05.001.
- Tooley, J., Dixon, P., and Amuah, I. (2007). Private and Public Schooling in Ga, Ghana: A census and comparative survey, *International Review of Education*, 53(3-4), 389-415.
- Tooley, J., Dixon, P., and Stanfield, J. (2008). The Impact of Free Education in Kenya: A case study in private schools in Kibera, *Educational Management, Administration and Leadership*, 36(4), 449-469.
- Tooley, J., Bao, Y., Dixon, P., Merrifield, J. (2011). School Choice and Academic Performance: Some Evidence From Developing Countries. *Journal of School Choice: International Research and Reform*, 5(1), 1-39.
- Train, K. E. (2009). *Discrete Choice Methods with Simulation*. New York, NY: Crambridge University Press.

Walford, G., and Srivastava, P. (2007). Examining private schooling in less economically developed countries: Key issues and new evidence. In P. Srivastava and G. Walford (Eds.), *Private schooling in less economically developed countries: Asian and African perspectives* (pp. 7–14). Oxford, UK: Symposium Books.