

EVALUATING THE INFLUENCE OF SCHOOLING, FAMILY, AND POVERTY ON CHILDREN'S ATTAINMENT, POTENTIAL, AND CONFIDENCE: INSIGHTS FROM KINONDONI, DAR ES SALAAM, TANZANIA

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ABSTRACT

This study examines the potential relationships between teacher beliefs, experience, school characteristics, background, and wealth and students' academic achievement, attitude, and self-confidence. 1857 impoverished kids from Kinondoni, Tanzania, provided test results, family information, school and teacher statistics, and peer and teacher opinions. Certain outcomes are anticipated, such as the highly and favorably associated test scores, the teachers' assessment of strong readers as having high ability, and the notable congruence between peer and teacher nominations for students' abilities. Richer families are less likely to have children who perform better on tests other than reading. All scores are negatively impacted by teacher experience, with the exception of Kiswahili. Generally speaking, children's self-confidence and positive attitude toward learning are negatively impacted by school and teacher aspects.

Keywords: Tanzanian Poverty Achievement both the home and school environments Africa below the Sahara Regression both linear and logistic

I. INTRODUCTION

In developing country contexts research shows that children from poorer backgrounds are disadvantaged concerning their development, learning and attaining potential (Bradley & Corwyn, 2002; Kamper & Mampuru, 2007; Kamper, 2008; Powers, 1996; Zorn and Noga, 2004). Kay (2000) suggests that 'children are simply much more likely to achieve success if they come from a certain type of family'(p. 151). There seem to be three main reasons provided for this assumption. First, that poor parents have a

limited amount of time to spend with their children, partly due to the lack of financial resources and the need to deal with day-to-day basic survival issues (Bradley, Rock, Caldwell, Harris, & Hamrick, 1987; Coleman, 1969; Gottfried, Gottfried, Bathurst, & Guerin, 1994; Murphy, 1986; Robinson, Lanzi, Weinberg, Ramey, & Ramey, 2002; Rosenbaum, Kuliek, & Rubinowitz, 1987; Sampson, 2002). This lack of time heightened by the inability of poor parents to provide support owing to their own levels of attainment hampers nurturing from within families. Indeed this is found to be the case around the growth of reading trajectories in a longitudinal study in the US carried out with young children from kindergarten to 3rd grade (Aikens & Barbarin, 2008). Second, poverty impacts negatively on children's motivation. A study from Zimbabwe with children from poor families aged 9–12 years shows that personal beliefs about capabilities influences their motivation and learning (Gwirayi & Shumba, 2007). Student's personal beliefs about their own capacity and self-esteem have been shown to impact greatly on motivation and hence learning in school. Studies from South African townships with undergraduates show correlations between hope and motivation (Maree, Maree, & Collins, 2008). Poverty cultivates inequalities in aspirations with higher proportions of poor children believing they are unable to achieve. A study from nine provinces in South Africa with 4409 young people between the ages of 12 to 22 years, shows that marginalized groups lack confidence in their futures being unable to achieve the objectives and goals they set themselves (Leoschut, 2009). In some poor context girls rate themselves more motivated than boys possibly owing to the need to assert their position in a traditionally male dominated society (Furnham & Akande, 2004). Third the

attitudes of the schooling community (at both primary and secondary levels) towards children living in poverty where schoolteachers have become demotivated, are typically absent and have removed themselves from their educationalist roles and responsibilities, allows children to be left in teacher-less classrooms to idle the day away without learning (Chireshe & Shumba, 2011; Dixon, Humble., & Counihan, 2015; Dixon, 2012; Frasier, 1987; Humble 2015; Iyer & Nayak, 2009; Kremer, Muralidharan, Chaudhury, Hammer, & Halsey Rogers, 2006; Tooley, 2009). Poverty then impacts on family nurturing, children's motivation and learning in school. The consequences therefore are of disadvantage. According to Bloom (1985) there is:

‘strong evidence that no matter what the initial characteristics (or gifts) of the individuals, unless there is a long and intensive process of encouragement, nurturance, education and training, the individuals will not attain extreme levels of capability’ (Bloom, 1985; p. 3).

The beliefs of teachers, families and children themselves around capabilities and ability are far reaching. There are a number of studies that show children throughout the age range (4–18 years) from poor backgrounds are greatly underrepresented when it comes to extra curricula or enrichment programmes (Bernal, 2002; Lee, Matthews, & OlszewskiKubilius, 2008; Worrell, 2007; Wyner et al., 2007). Teacher nomination tends to focus on children who are good readers with good comprehension skills, memory and advanced vocabulary. Children from illiterate homes are thus disadvantaged (Hernández-Torrano, Prieto, Ferrándiz, Bermejo, & Sáinz, 2013; Hodge & Kemp, 2006; Siegle, Moore, Mann, & Wilson, 2010). Card and Giuliano (2013) state that when the identification process for potential giftedness within the elementary school system in the US changed to a universal screening programme the impact on racial equity was large. 130 per cent and 80 per cent more Hispanic and Black students respectively were entering gifted programmes in the third grade. According to Card and

Giuliano their ‘study suggests that there is a lot of talent out there that people are missing’ (2013, p. 23). Indeed Colombia University through their Project Synergy programme worked with parents and teachers to identify ways of recognising high ability children from disadvantaged backgrounds in alternative ways. However owing to the time and labour intensiveness of the procedures of identification the practicality of carrying out such processes is questioned in a typical school setting (Borland & Wright, 1994; Wright & Borland, 1993).

With the lack of nurturing at school, and the inability of illiterate parents to support their child, underachievement (failure to develop or utilise latent potential) may ensue. That is children will fail to self actualize (Reis & McCoach, 2000). This can translate into poor student attendance and increased dropout rates (UNESCO, 2011). UNESCO (2011) state that in Tanzania graduation is low and examination pass rates are dropping at both the primary and O-Level standards. According to BEST.1 (Basic Education Statistics Tanzania) around 60 per cent of children made the transition from primary to secondary education passing the Primary School Leaving Exam. However, only 23 per cent complete the last grade of the secondary school cycle.

When activities and opportunities arrive within schools and peers are involved in the nomination process these are often associated with mutual beneficial goals and friendship links (Heyman & Dweck, 1998). However, peer and teacher nominations do show statistically significant correlation suggesting children and teachers alike have preconceived ideas and belief structures around capabilities and ability (Blackshear, 1979; Kaya, 2013).

This research therefore explores some of the issues highlighted by previous research around the influences (if any) of family and school environment on children's achievement and the likelihood of being identified for enrichment programmes or extra curricula activities. Children from poor areas need to receive appropriate schooling or support from teachers and family in order to reach their

potential. The literature reviewed here has highlighted two major issues: that poverty can affect children's confidence, motivation and achievement and that teachers often believe that poor children, typically first generation learners, are incapable of reaching their potential. Therefore the questions to be explored around these issues are:

- How closely do the teachers identification of high ability children correspond to test scores?
- Does the likelihood of being identified as being high ability in a school context vary according to family background and school characteristics?
- How much variation in attainment is seen across schools and how much of the variation is associated with pupil and school characteristics?

II. METHOD

2.1. Research context

The research took place in Kinondoni, a poor municipality in northern Dar es Salaam. The areas chosen to carry out the research were the poorest of Kinondoni, which lacked infrastructure, with roads in very bad repair and no piped water to housing. Collection of refuse is sporadic resulting in the 'tipping' of rubbish in streams and streets; latrines are inadequate and flooding during monsoon season adds to health risks² Education in Tanzania is compulsory at the primary level and the medium of instruction in government schools is Kiswahili. Primary school fees were eliminated in 2002 followed by secondary school fees in 2015. Currently children are required to pass the Primary School Leaving Examination at the end of Standard VII to gain entry into a public secondary school. Dar es Salaam has the highest pass rate for this leaving examination in the country at around 70% (Kassile, 2014).

2.2. Participants

All grade 4 and 5 students in 17 opportunistically sampled government schools participated in this project (1857). No student

declined participation however the children were told they could withdraw from the process at any time. This age group of pupils was targeted to allow for a follow up study and longitudinal research with the same population. These primary school students were asked to complete a questionnaire as well as undertake tests as part of an ESRC funded project, which looked to identify high potential children living in poverty. All students and their parents were informed through their schools that the purpose of the assessment exercise was to assess the strengths or talent areas of the students, that participation was voluntary, and that the results of the assessment would be kept strictly confidential and for research use only. All class teachers (form tutors) completed a teacher questionnaire, 24 in total, one quarter being male. These teachers taught their class in at least one subject area and would have been responsible for their class for a minimum of six months prior to the data gathering. The number of years a teacher had been at a particular primary school (mean and median 11 years, mode 12 years) would imply the teacher could have been aware of the grade 4 and 5 students for all of their primary education. Data were gathered on the 17 government schools in the sample, these included pupil and teacher numbers, facilities (library, playground, computers, musical instruments, desk, chairs, CCTV, electricity) and the numbers of boys and girls in the class and in the whole school.

2.3. Measures

Students in groups of 40–50 completed a series of tests and a questionnaire. Tests included one of three IQ tests.³ standardised to UK norms, mathematics, English reading and Kiswahili tests. In order to address issues around cross cultural transportability of tests, pilots were carried out in Morogoro schools, west of Dar es Salaam. Changes were made after the pilots through discussions and in collaboration with local Tanzanian teachers. The questionnaire included a set of background questions, thoughts around and nomination of high ability pupils in the same

class, and a self-perception questionnaire, the Student Multiple Intelligences Profile (SMIP)4 The study also included a teacher questionnaire and a teacher semi structured interview carried out with each class teacher (24 in total for each). Regarding the teacher interviews, questions around the meaning, the identification process and the cultural/social contextual beliefs around ability made up the core of the semi-structured interview. An inventory of school facilities was gathered through an observation schedule as well as a school questionnaire.

2.4. Procedure

Testing took place within the children's own class in their own school, and occurred in the morning for all participants. Education Masters students from the University College Dar es Salaam administered the tests. They had been given special training by the research principal and co-investigators specifically for the project. The training was carried out over a twoday period specifically focusing on the research protocols and their administration. The principal investigator, co investigators and research associates from the UK were present at all times in each school that participated in order to oversee the data collection. This overall testing and interview procedures in each school lasted for about 3 hours.

Table 1
Descriptive statistics of the data set

	Min	Max	Mean	SD	T	S _e
IQ achievement score	58.88	89	73.09	10.41	1043	0.327
English reading score	58.88	89	73.09	10.77	1031	0.344
Mathematics score	59.07	89	73.09	9.76	1037	0.374
Household score	59.07	89	73.09	10.33	1039	0.346
Age in years	6.07	7.09	6.64	0.51	1039	0.016
No of teachers and status	6.07	6	6.09	0.00	1.23	0.000
Teacher education level	6.07	6	6.07	0.00	1039	0.000
Teacher education level	6.07	6	6.07	0.00	1039	0.000
Teacher years of experience	0	17	7.04	5.87	1032	0.181
Teacher Qualification	0	1	0.07	0.26	1031	0.017
Age of the teacher	24	58	40.06	9.55	1035	0.302
Teacher/teacher ratio	17	121	22.07	20.00	1040	1.000
Average size of class	17	38.46	23.67	10.04	841	0.322

T = (Mean - S_e) / Standard Error

III. DATA AND EMPIRICAL MODEL

3.1. Empirical model

The empirical model used for this research builds upon human capital and household production theory which link the educational attainment of children to the backgrounds of their parents, family resources and socioeconomic factors (Becker, 1993). Since the Coleman report (Coleman et al., 1966) theoretical models have associated student attainment with observable characteristics of teachers and schools, including class size,

teacher education and teacher experience (Rivkin, Hanushek, & Kain, 2005). Linear and logistic regression is used to estimate the following equation:

$$y_i = \alpha + \beta D_i + \gamma P_i + \epsilon_i$$

D_i is the vector controlling for household, parent and child demographic characteristics. These include gender, age, birth order, English fluency, family size, parental education and three wealth factors for child i . P_i is the vector of school characteristics including teacher characteristics, school facilities, class size and ϵ_i is the unobserved factors. y_i is the dependent vector variable in the linear regression student outcomes and in the logistic regression an identifier. By estimating this model it is tested whether family factors and observable characteristics of teachers and schools affect student attainment or identification.

3.2. Descriptive statistics

Table 1 below provides descriptive statistics around the test scores as well as family and school characteristics. A description of the variables used in the regression analysis is found in Table 2.

3.3. Data reduction

As this dataset contained a relatively large number of variables, many of the background variables are likely to be highly correlated with each other. This type of multicollinearity can lead to erratic or spurious results, and needs to be dealt with using a data reduction technique, which ensures, as far as possible, that background variables are not highly correlated with each other. A data reduction strategy based on rotated principal factor analysis was therefore adopted, and this is described in more detail below.

This research used an adapted version of Chan's model of SMIP, a self-report checklist designed to assess student strengths in each of Gardner's intelligences (Chan, 2006; Gardner, 1983). The pupil questionnaire included 22 items asking the pupils to describe themselves, on a 5-point scale ranging from 1 ('least like

me’) to 5 (‘most like me’). Exploratory factor analysis of these items indicated that a two-factor model explained 22% of the variance. The table below shows rotated factor loadings for this model, with loadings less than 0.3 blanked for clarity (Table 3).

From the above, it is clear that the first factor (Factor 1) is related to having a self-confident and outgoing personality and a positive attitude towards learning (reading, writing and numbers). The second factor (Factor 2) has some overlapping items, but mainly relates to being musical and dexterous. Factor scores were estimated for each pupil, and standardised to have a mean of 50 and standard deviation of 10.5 Only Factor 1 is used in subsequent analysis owing to the focus of the paper around self confidence and attitudes to learning.

Table 3
List of variables

Variable name	Label
score1	Identified by at least 100 of your peers as being able to
score2	Identified by the teacher as being able to
score3	In the top 10% on combined test scores (SAT)
score4	Self-confident and a positive attitude to learning, reading, writing and math (0-1)
score5	IQ standardized score
score6	English reading standardized score
score7	Mathematical score
score8	Knowledge score
score9	Legal studies score
score10	The school has a playground, TV and a computer
score11	The school has desks, chairs and musical instruments
score12	The teacher's age
score13	Average age in the class
score14	Teacher years of experience
score15	Teacher qualifications
score16	Child's gender (0=1)
score17	Child's age
score18	The child's IQ score (0-1)
score19	A member of the family is fluent in English (0-1)
score20	Number of brothers and sisters
score21	The father's education level
score22	The mother's education level
score23	Health as determined by a health score
score24	The family home has indoor amenities (i.e. toilet, gas stove)
score25	The family home has electricity in the house

Table 4
Rotated factor analysis of 25 items

Item	Factor 1	Factor 2
I enjoy reading and doing well at school	0.277	
I enjoy writing, I am fluent and expressive	0.286	
I read a lot for pleasure		0.282
I sing and have a lot of fun		0.280
I enjoy learning new things	0.278	
I play an instrument		0.280
I usually search for answers		0.280
I prefer to explore and study things		0.278
I remember facts easily	0.271	
I know directions	0.271	
I enjoy drawing		0.271
I handle objects dexterity		0.271
I understand and like myself	0.266	
I am well coordinated	0.266	
I show understanding and appreciation to others	0.266	
I am kind and being self caring	0.266	
I know and repair other things	0.266	
I like to make friends	0.266	
I describe a lot of pictures from looking at individual phenomena	0.266	
I have a really clear memory	0.266	
I have to search for an answer	0.266	0.266

Before fitting a model to predict test scores from pupil background factors, 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. The pupil questionnaire asked a number of questions around family possessions and their home environment. These have been combined into a smaller set of measures using principal factor analysis, rotated using the Varimax procedure. A 3- factor solution was found to be optimal. The table below shows the rotated

factor loadings for the factors on the initial variables loadings less than 0.3 in absolute value have been omitted for clarity of interpretation (Table 4).

The combined factors were given the following descriptions:

Factor 1 wealth: The quantity of material goods a family possesses;

Factor 2 amenities: The family home has indoor amenities (i.e., toilet and gas stove);

Table 4
Rotated factor loadings for pupil background items

Variable	Factor 1	Factor 2	Factor 3
The family owns a car or van	0.428		
The family owns a garden or terrace	0.367		
The family owns a bicycle	0.358		
The family owns a car stereo			0.312
The family has electricity			0.280
The family has a TV			0.278
The family has a gas stove	0.278		
The family owns land	0.278		
The family owns a boat	0.278		
The family has a computer			0.278
The family has a greenhouse			0.278
The family has a central hall or area of land			0.278
Number of rooms in the family home		0.278	
Type of building in the home		0.278	
The toilet is inside the premises		0.278	
The toilet is outside the premises		0.278	
The house has a separate kitchen		0.278	

Factor 3 electric: The family has mains electricity and a TV.

These three factors explain 29% of the variation in this set of data. Factor scores were derived for each pupil, and standardised to a mean of 50 and standard deviation of 10. This principal factor analysis technique was also used to reduce the number of school factors to collapse them into a smaller set of combined factors. The school-level data collected yielded two factors:

schfact1: The school has a playground, TV and a computer

schfact2: The school has desks, chairs and musical instruments.

Again factor scores were standardised to a mean of 50 and standard deviation of 10. These pupil and school factor scores were used as independent variables in the modelling which follows along with those as set out in Table 2.

IV. RESULTS

4.1. Background

Of the 1857 children 64% were Muslim and 36% Christian, 52% were girls and the mean age was 11 years (standard deviation 1.1 years). Just over half of the children lived in a

family where an elder member could speak or write English fluently. Regarding possessions, 91% of the families owned a mobile phone, about half the homes had a separate kitchen, 44% had a toilet outside the premises. The great majority of the fathers had an income (90%) with around two thirds of the mothers also in work. Regarding the research participants, the average number of people living in the 'household' was nine. Regarding the father's employment, the largest category was 'cleaner or helper' followed by 'market trader' and 'service worker'. One third of the father's had either no schooling or primary only. Half of the mothers were cleaners or helpers with around one third having no education at all.

4.2. Teacher and pupil nomination

Pupils and teachers were asked to nominate three children in their class they believed were high ability in order to explore the first research question:

How closely do the teachers' identification of high ability children correspond to test scores?

In total the pupils and teachers nominated 73 children. However the peers and teachers only agreed on the identification of 19 out of the 73. The Cohen's kappa measure of exact agreement is highly significant at 0.398 ($\chi^2(1) = 294.512, p < 0.001$), but only indicates fair agreement between teacher and pupil identification (Altman, 1999). Average test scores for pupils identified by teachers and those who were not, are given in the table below. All of the mean scores for those 'not identified' by the teacher are statistically significantly lower than those 'identified' (Table 5).

Table 5
Comparison of teacher identification with test results

Test	Teacher identification	Mean	Std. Deviation	Range of Effect size
IQ standardized score	Not identified	61.03	14.269	0.84
	Identified	76.33	14.367	
Standardized reading score	Not identified	47.66	10.860	1.00
	Identified	71.58	9.081	
Mathematics score	Not identified	37.67	12.777	0.87
	Identified	70.64	8.706	
Knowledge score	Not identified	23.65	7.221	0.76
	Identified	56.68	8.782	
Overall score	Not identified	4.90	1.807	0.76
	Identified	8.40	1.712	
	Mean	5.83	1.817	

$\chi^2(1) = 294.512, p < 0.001, \kappa = 0.398, \kappa_{adj} = 0.371, p < 0.001, \kappa_{adj} = 0.349, p < 0.001, \kappa_{adj} = 0.271, p < 0.001, \kappa_{adj} = 0.182, p < 0.001, \kappa_{adj} = 0.181, p < 0.001$

The final column, labelled 'Effect size' (Hedges' d), is a dimensionless measure of the difference in average test scores between those identified as high ability and the rest. It is

equal to the difference in mean scores as a fraction of the overall score standard deviation. The highest value is for the reading score, but values for other tests are also high.

Looking at peer identification of high ability, in all cases there is an increasing trend in average scores relative to the percentage of peers identifying a pupil. The effect sizes are similar to those for teacher identification (Table 6). Semi-structured interviews also addressed the issues around ability. What seems very important regarding an impact on children's ability as far as the teachers were concerned was family background. For example one teacher stated that 'it's right from birth which parents assist them and if the parents are keen enough'. Others believed that 'family background matters', 'family has got an impact', and ability is 'inherited from parents'. It's typically those from better families who show ability in that 'the ones who come from a poor family somehow will not do as well as the ones who come from the less poor family'. The child's environment plays a big part too where poor illiterate parents have a negative impact as stated by one teacher: 'it's about the community, yeh, the community surrounding us, especially the parents . . . they are having a negative perception . . . it is because they did not go to school or their level of education'.

Table 6
Comparison of Peer Identification with test results

Test	Peer identification	Mean	Std. Deviation	Range of Effect size
IQ standardized score	Not identified	62.00	14.23	0.79
	Identified	76.02	14.367	
Standardized reading score	Not identified	47.96	10.860	1.04
	Identified	71.31	9.138	
Maths score	Not identified	37.64	12.776	0.81
	Identified	70.64	8.707	
Knowledge score	Not identified	4.90	1.806	0.76
	Identified	8.22	1.667	
	Mean	5.83	1.817	

$\chi^2(1) = 230.414, p < 0.001, \kappa = 0.406, \kappa_{adj} = 0.381, p < 0.001, \kappa_{adj} = 0.354, p < 0.001, \kappa_{adj} = 0.271, p < 0.001, \kappa_{adj} = 0.181, p < 0.001$

Table 7
Gender and school characteristics and the likelihood of identification

Independent variable	Year 11		Year 12		Year 13		Total		
	B	SE	B	SE	B	SE	B	SE	
gender	-0.064	0.036	0.045	0.037	0.098	0.037	-0.027	0.038	0.608*
school	0.00012	0.00012	-0.0001	0.0001	0.0011	0.0001	-0.0001	0.0001	0.0001
schooltype	0.0001	0.0001	0.0001	0.0001	0.0011	0.0001	-0.0001	0.0001	0.0001
age			-0.0001	0.0001	0.0001	0.0001	-0.0001	0.0001	0.0001
schoolid			-0.0001	0.0001	0.0001	0.0001	-0.0001	0.0001	0.0001
gender (ref)									0.779*
school (ref)									1.000*
age (ref)									1.000*
schooltype (ref)									1.000*
constant	-0.107	0.166	0.468	0.166	-0.258	0.176	0.167	0.167	0.167
variance									0.201
schooltype									0.001
school									0.001
age									0.001
gender									0.001
total									0.001
no. of obs.	661		661		661		661		661
no. of identified	661.000		661.000		661.000		661.000		661.000
Model Chi-Square	12.01		12.01		12.01		12.01		12.01
Model Sig.	0.001		0.001		0.001		0.001		0.001
Adjusted R Square	0.018		0.018		0.018		0.018		0.018

Unstandardized coefficients (B), Standard errors (SE), and odds ratio (OR) = exp(B), CI = 95%
* p < 0.05
+ p < 0.10

4.3. Logistic regression modelling results

Logistic regression is used in this part of the paper to explore the second of the research questions:

Does the likelihood of being identified as being high ability in a school context vary according to family background and school characteristics?

The logistic modelling approach was applied to four indicators of ability:

1. Tiden: identified by teacher as high ability;
2. Peer15: identified by more than 15% of peers as high ability;
3. Top15: in top 15% on combined test score. This indicator provides a single scale combined score created by combining IQ standardised score, reading standardised score, math and Kiswahili using principle component analysis;
4. Selfind: identified by self-completion questionnaire. The top 20% of the children in the factor relating to self-confidence and positive attitude to learning reading, writing and mathematics using Factor 1 from the SMIP.

Table 7 summarises the results of the modelling in terms of significant coefficients for each variable expressed as an odds ratio (Hosmer, Lemeshow, & Sturdivant, 2013). The ordinary modelling used a 'step up' approach, in which significant variables were added to an initial null model.

Only one independent variable has a significant effect on the likelihood that a peer identifies a child. The more experienced the teacher (number of years teaching) then the less likely your classmates will identify you. There are seven independent variables that have a significant effect on the likelihood that you will be in the top 15% of test scores. In terms of negative factors it is interesting that the better your teacher's qualifications, if the teacher is female and your class is larger then the less likely you are to be in this subset of children. Being older or the eldest or youngest in the family again negatively affects the likelihood to be identified in this category. The

only positive factor is the provision of electricity in the home where living in a home with electricity implies 1.507 times more likely to be in the top 15% of test scores.

Looking at the children's own self-confidence, there are a number of negative factors. Three teacher variables are included here: gender, qualifications and experience. The more experience and qualifications your teacher has and if they are female the less likely you are to define yourself as very self-confident. Other negative relationships are with both school factors (TV/ computer, desks/musical instruments) and average class age. Looking at the positive independent variables, if you are a girl, the more brothers and sisters you have, if someone in the family can speak English and if there is electricity in the home the more likely you are to identify yourself as self-confident. The multiplying factor for gender is 1.532. This means that you are 1.532 times more likely to report being self-confident if you are a girl as opposed to a boy, all other factors being equal. This might be regarded as surprising from a western cultural perspective, and could be worth further research into the factors which appear to make girls more likely to be identified based on their own self-confidence.

V. DISCUSSION

The analysis of this data has helped to illuminate the complex interplay of school and family factors that relate to pupil achievement and identification as high ability. This research set out to answer three questions:

How closely do the teachers' identification of high ability children correspond to test scores?

Does the likelihood of being identified as being high ability in a school context vary according to family background and school characteristics?

How much variation in attainment is seen across schools and how much of the variation is associated with pupil and school characteristics?

The following discussion considers each in turn. First, teacher identification shows that children's test scores are highly correlated with nomination, reading having the highest effect size (Table 5). The literature agrees that teachers focus on reading when identifying children for advancement programmes (Hernández-Torrano et al., 2013; Hodge & Kemp, 2006; Siegle et al., 2010). Teacher interviews supported this point around reading. They often spoke about children who could help others in the class and act as leaders when the teacher left the class unattended, which typically implies standing at the front reading. The teacher interviews also highlighted the belief that family background and environment was important, having an impact on the child's ability. This seems to support the literature that shows school stakeholders' preconceived ideas around first generation learners and their incapacity for possessing talent (Dixon, 2012; Frasier, 1987; Humble, 2015; Iyer & Nayak, 2009). This research supports the finding that some teachers believe that high ability students come from wealthier families (Humble, 2015; Worrell, 2007; Wyner et al., 2007). The teacher interviews also suggested that teachers believed that girls 'at this age' were more likely to be focused on their studies than boys owing to their commitment. This is partly supported from the logistic regression analysis, which shows that girls have a higher likelihood of being self confident with a positive attitude to learning and more likely to score more highly in Kiswahili. Teachers tend to agree with peer identification and vice versa as shown in the literature (Blackshear, 1979; Kaya, 2013). This research provides no indication that peers nominate their friends as suggest by Heyman and Dweck (1998).

Second, the logistic regression that explores question two shows that being a girl, having a larger family and having family members that can speak English increases the likelihood of children to report themselves as self-confident and having a positive attitude towards learning (reading, writing and numbers). In a study of Zambian school children, girls also rated themselves more highly than boys (Furnham & Akande, 2004). All school factors have a

significant negative likelihood on the reporting of self-confidence and positive attitude. For example, the more experienced your teacher the less likely you are to identify yourself as confident and positive towards learning. Irrespective of the facilities the school possesses (i.e., playground, TV and computer/desk, chairs, musical instruments), there is a negative relationship with this indicator. Wealth indicators seem in general (apart from having electricity in the home) to have no relationship on self-identification, disagreeing with the findings in other literature (Aldridge et al., 1999; Gwirayi & Shumba, 2007). Turning now to the third research question, when looking at test scores there is either no relationship or a negative relationship to family wealth factors wealth, female and male income only one factor, electric, is significantly and positively related to all of the scores. This tends to agree with some of the literature, which states that achievement is not dependent on income, but the quality of home life and time parents spend with their children (Bradley et al., 1987; Coleman, 1969; Murphy, 1986; Rosenbaum et al., 1987). This study however cannot verify the amount of time children and parents spend together or the quality of home life. Home environment is not significantly related to reading scores. Reading ability is also not related to someone in the family being able to speak or read English. This result therefore does not coincide with the findings of Aikens and Barbarin (2008) who state that poor children's literacy development is influenced by parental and home involvement.

This paper set out part of a research project that looked at the ability and self confidence of children living in poor areas of Dar es Salaam, Tanzania. It has become apparent when teachers are asked about ability they tend to recognise this through test taking or lesson learning capability. Also teacher qualifications and experience negatively affect children's self confidence and attitude to learning. Therefore regarding policy implications, it would seem that it might be beneficial for teachers to have the opportunity through teacher training initiatives to explore other ideas of what

ability might mean in such cultural settings. This could include looking at children's task commitment and creativity. Secondly, changing school policy through interventions that focus on children's creativity, motivation, and interests would show teachers and governments how different practices, moving away from rote, can stimulate learning. This could be done through student centred inquiry and project based learning (Renzulli & Reis, 2014). Opportunities would be given to students to apply, deepen and extend their learning through stimulating projects and tasks that engage students they think, reason, evaluate and create. Such an intervention could transform potential into real talents, thus improving the prospects for societies and nations to capitalise on currently underutilised or unrecognised cognitive skills and therefore human capital. This research highlights several interesting areas and therefore ways forward for this type of research. Further investigation could take place around the time children spend in the family home and the involvement they have with their parents. Future work in poor urban settings in sub-Saharan Africa could benefit from exploring the intricate interplay of school environments, teacher beliefs and children's self confidence.

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