The value of education:

Perceptions of parents and teachers on school achievement and impeding factors in a Nairobi slum

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Abstract

Background: Over the past decades, there has been a dramatic population shift from rural to urban areas in Kenya. Especially, Nairobi's large and growing population due to in-migration increased the demand for land and resulted in the development of informal settlements. Informal settlements are heavily populated hubs of poverty characterized by substandard housing and a lack of public facilities. Education is regarded as a powerful tool for reducing poverty and improving the individuals' earning potential. Residents in the slum live in poor conditions in which desire and motivation are not enough to achieve education. They face barriers and subsequently are the ones with the worst school opportunities and outcomes. It is therefore of fundamental importance to gain more in depth knowledge of specific factors that negatively influence the educational achievement of children in the developing world.

Objective: The objective of this study is to contribute to the body of literature on factors, which impede on school achievement of children living in slum areas, by exploring perceptions of parents with school going children and their teachers in the Lunga slum in Nairobi, Kenya on the children's school performance.

Methods: The study used the overarching method of action research, of which the model of Stringer was applied as a recurrent theme throughout the research process. The first phase of 'setting the stage' consisted of tours and village mapping to get acquainted with the study site. In the second phase 'thinking', non-directive interviews were conducted with mothers, fathers and teachers to obtain their perspectives regarding school performance. The third phase 'looking' consisted of a focus group discussion in which factors impeding on school achievement were appointed, complemented with ranking measurements. Further, discussion was sought to crosscheck the results of the Argumentative policy analysis of the researcher. A final meeting filled the fourth phase, 'acting' in which critical discussion on proposed solutions and requirements for implementation were reviewed. Data triangulation was done by respondent validation and peer debriefing sessions with the research team.

Results: The findings revealed that both parents and teachers value education for intrinsic reasons, instrumental purposes and pivotal to leave the poverty trap. All factors mentioned were sorted in the five following categories: poverty, peer pressure, environment, health and ignorance of parents. Ranking during the discussion showed that ignorance of parents was perceived most important. Parents' belief in the value of education, their interest in education and their attitudes toward education accounted to the greatest extent for variation in children's school achievement. Actions in terms of an neighbourhood initiative and a community based skills training were needed to decrease the ignorance of parents by equipping them with skills and knowledge and instilling the importance of education.

Discussion and conclusion: Ignorance of the parents was regarded as the most prominent factor, which was actively generated by multifaceted personal and social difficulties. The participants were consciousness on the strong relationships between parental education levels, household poverty and children's educational achievements, together resulting in the poverty cycle in which they reside. The techniques of 'Think, Look, Act' and Argumentative Policy Analysis have contributed to the development of a community specific, appropriate strategy for the community and could be applicable to use in solving unstructured problems in both the developed and developing world. These techniques could also be applied in

other studies to assess the achievability and acceptability of the solution in the community before action is taken. Given the high value placed by different stakeholders in the Lunga slum, the underreported influence of ignorant parents on school achievement should be emphasized in future studies. The findings further suggest the need for research exploring school level and environment factors impeding on school achievement of children in slum.

1. Introduction

Nairobi, the capital city of Kenya, has been changing quickly pertaining to population growth. The level of urbanization in 2015 was 25.6 per cent with an estimated annual growth rate of 4.3 per cent between 2010 and 2015.[1] The local authorities could not handle the migration flow and were unable to provide social services., forcing the poor to settle in informal settlements.[2] It is estimated that between 60 and 70 per cent of the residents live in slum or slum like conditions.[3,4] These informal settlements are hubs of poverty in which high population density, poor housing, high levels of unemployment, security issues and poor public service provision are common. The poor public service provision consists of both health and education facilities.[5] The schools located in the area are characterized by non-formal education, shortages of teachers, overcrowded classrooms and lack of school equipment.[6] As a result of this, schools hinder children's progress and potential.

There is a growing body of literature that recognises the importance of education. Education is an investment that brings great rewards and is mentioned as a powerful tool for reducing poverty.[7] Furthermore, it is considered a means to empower people and to improve the individuals' earning potential, which consequently are regarded as ways to promote a healthy population.[8,9]

Despite substantial progress, still millions of young children in Sub Saharan Africa do not attend primary education. In Kenya, the overall primary education enrolment rate in 2012 was 84 per cent.[10] Nevertheless, the 2014 Kenya Demographic and Health Survey (KDHS) has estimated that only about one-quarter of women and men have completed primary school.[11] Furthermore, research showed that only 46 per cent of primary-school children residing in informal settlements in Nairobi transitioned in secondary education.[12] These findings indicate that children living in urban slums face barriers to accessing and remaining in primary school education.

Before continuity in education can be ensured, the fundamental aspect of school performance needs to be considered first. Educational achievement is regarded of importance, because it can lift individuals out of poverty and guard them against falling back into poverty.[13] According to the Ministry of Education, the Kenya national level primary completion rate has declined from 83 per cent in 2009 to 77 per cent in 2010.[14] This implies some pupils drop out of school before completion. It further indicates that although the country has implemented Free Primary Education (FPE) in 2003, which provides free and compulsory education at primary level[15], there are serious challenges especially in education achievement.

The influence of the child's family and social environment on school progress and performance has been the subject of universal interest.[16-23] For instance, the study of Ondieki, Abobo and Ordoho (2015) examined household determinants of primary school performance in Kenya. This study demonstrated that poverty, language barrier and parent involvement could all be of importance regarding school attainment.[17] In that same year,

Ondieki reported that school-based factors could also be important, especially inadequate teaching and learning resources and poor attitudes amongst pupils and teachers.[18]

1.1 Relevance of the study

It is of fundamental importance to gain more in depth knowledge of specific factors that negatively influence the educational achievement of children in the developing world. Despite overall enrolment increases, large disparities in primary school performance persist between communities and across countries. Furthermore, the United Nations has set new sustainable development goals that directly address health disparities of which education is one. The goal mentioned is considered a powerful vehicle for sustainable development and described as: "to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all".[24] Although some research has been done on this subject, previous studies did not consult with and involved community members at the grassroots level. This is relevant, because it will contribute to achieving universal primary education for all. The World Bank recognized community participation as one of the strategies to improve educational access and quality.[25] These would both lead to achieving the goal of "Education for all".

1.2 Objective of the study

Therefore, the objective of this study is to contribute to the body of literature on factors, which impede on school achievement of children living in slum areas, by exploring perceptions of parents with school going children and their teachers in the Lunga slum in Nairobi, Kenya on the children's school performance.

1.3 Research questions

In order to accomplish the aim, this resulted in the following research questions:

-What are the perceptions of parents with school going children and their teachers in the Lunga slum in Nairobi, Kenya on the children's school performance?

-Which factors, both positively and negatively, influence the children's school performance and which linkages can be drawn between these factors, health and school performance?

-What actions, according to parents and teachers, need to be taken in order to realize academic achievement?

2. Contextual background

This chapter gives insight in the background of the study area.

Over the past decades, the Nairobi has grown at a tremendous rate, which resulted in informal settlements. Since the 1970s, the governments' policy changed from eradication to avoidance of demolition of the settlements.[26] This led to the stark contrasts of wealth that characterize the city. Particularly, the government has not invested in improving the settlements as of today. Furthermore, the needs of the still growing urban population were not met in turns of fast development of formal housing.[26] These factors contributed to the proliferation and expansion of the informal settlements.

Lunga, formerly known as Mukuru is one of the many informal settlements on the outskirts of Nairobi. It is located between the city centre and Kenyatta airport along Mombasa Road. This informal settlement is a network of villages located near heavy industries providing employment opportunities.[27] According to Gullis et al. (2004) the community of Lunga experienced all characteristics of a slum. First of all, overcrowding is clear due to the population of 70,000 residents living in an area of about 2.3 sq.km. Furthermore, the houses are poorly structured with weak building materials as iron sheets, and poor spacing and insufficient ventilation. The illegality of this and other informal settlements contributes to scarce water resources. Lunga has no access to urban sanitation services or solid waste disposal facilities.[28,29] Open channels are flooded with human waste. This environment poses a great danger to health.[28]

It is recognized that conditions of the slum have a direct impact on the health and wellbeing of the residents. An overview of the most profound adverse health outcomes is listed in appendix 1. Several studies have highlighted the pivotal disadvantage of slum residents regarding morbidity[3,25], access to health services [2,30,31] and mortality[32,33] .
For instance, cough, fever, diarrhoea, skin problems and eye diseases were mentioned the top five causes of morbidity in children in informal settlements in Nairobi.[31] Besides, the overall mortality rates for children under five in Nairobi slums were 2.5 times greater than for Nairobi city as a whole.[3]

The residents of Lunga also experience poor public infrastructure, including education facilities. This is one of the factors that give them a disadvantage in obtaining education at all. A recent study of Gulyani (2010) noted that only 79 per cent of slum residents have completed primary school.[29] Unfortunately, the focus of the past years on education was mainly on enrolment and not on achievement.
Many countries have recognised disparities in educational access within communities and subsequently have devised various strategies for expanding access and increasing school participation. Since the adoption of the Millennium Development Goals (MDGs) in 2000, substantial accomplishments have been noticed worldwide in achieving universal primary education.

The government of Kenya also recognized the importance of education and consequently introduced the free primary education policy in 2003. Whence they guarantee all children the right to education, free and compulsory basic education.[15] The NER has improved tremendously from 67.8 per cent in 2000 to 95.9 per cent in 2013.[34] As can be noticed, this led to an improvement of equity in education for all citizens.

Noteworthy, it is mentioned that access to education for all is a fundamental approach of accomplishing other developmental goals. Research indicates that due to free access to education, the government of Kenya increases the likelihood to reduce poverty, promote economic growth, lower child and maternal mortality and achieve social inclusion.[35,36]

Despite the efforts made by the Government of Kenya, disadvantages are still noticed regarding educational achievement, especially for children residing in the poorest regions of the country.

3. Theoretical background

This chapter discusses theories that are considered important for understanding educational achievement of children, and to understand this achievement in the context of children who live in slum areas.

3.1 Important theories

One theory profoundly of interest is the Classical Liberal Theory, because the theory acknowledges the ability of people, regardless of where they come from. This theory recognises that educational opportunities should be available to all, placing emphasis on one's desire and motivation.[37] By studying what the perceptions are of the residents and their specified factors on school performance, this study aimed to explore their values and motivation. This Classical Liberal Theory affirms that every person is born with a particular extent of competency and abilities. Individuals should accomplish the educational cycle at different levels from primary to secondary levels to which access would be determined on the basis of an individual's merit. Furthermore, the theory states that barriers of economic, gender, demographic kind that inhibit individuals from developing their competencies, should be assessed in educational systems.[37] The current study hypothesized that several factors influence pupil achievement. This theory also recognized the existence of barriers affecting education achievement.

One of the barriers that might affect education achievement is explained in the theory of poverty trap. A poverty trap is regarded as: "any self-reinforcing mechanism which causes poverty to persist."[38] It is well recognized that many factors contribute to a poverty trap, which differ between the developed and developing world. Since Kenya is considered a developing country, the following factors could contribute: poor education system, disease ecology, lack of public health care, and poor infrastructure.[39] Marx, Stoker and Suri (2013) further recognised the existence of urban poverty where life in informal settlements constitute a form of poverty trap for a majority of their residents.[40]

To apply this theory to the research area, the concept of informal settlement needs to be explained first. The operational definition of a slum is defined by UN-Habitat as those communities experiencing one or more of the following five characteristics: insecure residential status, overcrowding, poor structural quality of housing and inadequate access to safe water, inadequate access to sanitation and infrastructure.[41] Currently more than 134 informal settlements exist in Nairobi of which Lunga is one.[42]

As Lunga is located on wastelands in the industrial area of the city, the residents of this area are trapped in a so-called spatial poverty trap. Using the framework of the Chronic Poverty Research Centre (2004), the area is known to be ecologically disadvantaged because it is a poor location for a productive environment.[43] As mentioned above, the essential goods and services needed by the residents are not secured (e.g. water and sanitation, public health facilities), while poor employment is common. The residents of Lunga often work nearby in the industries for low wages. Mitlin (2005) reported that the 'urban poor' become trapped in poverty, because they cannot afford to purchase what they need for long-term survival and advancement.[44] Noteworthy, millions of households in Kenya have been trapped in

slums for generations, due to policy failures, neglect of government to invest in these areas and a decrease in the residents' human capital.

The final theory with respect to the study is the Human Capital Theory. This theory assumes that expenses on education are investments in human capital, because the person acquires knowledge, skills and abilities to produce economic value.[45]

Human capital can be measured as an average years of schooling. The average number of years of schooling in Sub-Saharan Africa is 5.43 years.[46] When this number is applied to the population of Kenya with respect to their 8-4-4 curriculum, this means that most of the population does not complete primary school.

The investment of human capital is important, because this can easily transfer to goods and services.[47] Moreover, there is a widespread belief that learning is the core factor to increase the human capital.[48]

Investment in human capital can also contribute to eliminating the poverty trap experienced in the slum. Now, the inequalities in schooling outcomes reinforce the current patterns of income inequality. Therefore, education is regarded as one of the most important investment in human capital.[49] Sifuna (2007) acknowledged that education improves health and productivity, with the most benefits for the poorest people.[50]

3.2 Factors affecting school performance

As we have learned from what has been written previously, the three theories are related to one another. Since residents in the slum live in poor conditions, desire and motivation are not enough to achieve education. They face barriers and subsequently are the ones with the worst school opportunities and outcomes. Thereby human capital will not increase, transfer to goods and services will not be established and the opportunities to leave the poverty trap diminished. It is therefore important to learn what factors are involved in this accumulation of negative events.

After an extensive literature review, several household and individual factors were considered most important in the context of Lunga. Household factors consisted of parental income, parent's educational level, family size, house facilities and house characteristics. Individual factors of importance were age, gender and health status.

Several studies addressed these and more household factors affecting school achievement across countries and between communities. Huisman and Smith (2010) regarded socio-economic status (SES), educational infrastructure and culture the major determinants of educational achievement in India. They stated that cultural factors might play an intermediate role, because they influence the choices made by individuals, through their own attitudes, and those of the people in their close environment.[51] Furthermore, lower levels of parental income, education and occupation are characteristics of SES and have been known to influence educational achievement.[19,52-54] In addition, a larger family size leads to more competition concerning the distribution of money and time.[55] Kombo (2005) further reported that a lack of finances for educational needs, hinder transition of pupils from one level to another.[56] And, research stated that parents did not recognize the importance of education for their children.[17,54]

A more recent study focusing on Kenya has also found that child characteristics are important determinants.[57] One of these factors is susceptibility. . It is hypothesized that

increased vulnerability into pressure to sexual activity, alcohol and drug use[58,59], disabling environment at home[60] and increased child labour[61] act as disincentives for children in the slums.

Another important child characteristics affecting school performance is the health status of the child. Over the past few years, the impact of health on educational achievement is backed up by literature. Accordingly, Breslau (2010) stated that health influences of young people influenced the accomplishment of school. Their abilities were limited due to illnesses that begin early and continue throughout.[62]

According to Leslie and Jamison (1990) nutritional deficiencies including protein energy malnutrition and iron deficiency anaemia exert negative effects on school outcomes. They reported that school-age children with nutritional deficiency scored lower on tests of cognitive function, and subsequently on attendance and achievement.[63] Behrman (1996) acknowledged the positive association between better health and nutritional status on educational achievement, due to less grade repetition, less non-attendance and more grades finished.[64] It is well known that children living in Nairobi slums experience a lower nutritional status. For instance, one study indicated that stunting was found in 47% of the 1310 children studied in Kibera.[65]

Research stated that persistent or recurrent ill health due to infectious diseases had broader effects on child well being, including poor school attendance.[66] It was further reported that delayed school entry affected the likelihood of leaving school early. This was particularly important for girls, because of early marriage.[20,21]

Vice versa, educational achievement affects the community residing in an informal settlement on individual level and community level. Literature revealed that better learning opportunities and outcomes could contribute to a better health. Several studies have addressed education as a fundamental factor of health.[67-69]

As cited by Freudenberg and Ruglia (2007): "education is one of the strongest predictors of health". Additionally, they stated that health is improved when people had more schooling. In the article, they further argued that education wields the strongest influence on health. [67]

A review of Cutler and Lleras-Muney further recognized that by adopting policies aimed to increase educational attainment could have a significant effect on health.[68]

An improvement in educational achievement enables people to earn a higher salary, which further enables them to live in adequate housing in less violent surroundings. Besides, it will also improve their access to healthier food, better health facilities and education. All these factors are associated with improved health. [68-70]

4. Conceptual framework

Different models and theories exist in which determinants of educational attainment are being conceptualised. Interestingly, the Kenya National Examinations Council, described explanations of factors that contribute to pupil achievement in Kenya. The national assessment was established because stakeholders had different concerns regarding access, quality, equity, relevance and efficiency of education in Kenya. In this particular research, a conceptual model illustrated a range of specific factors in both the pupil-level as school level, affecting pupil achievement in general. See fig.1.

At the pupil level, home environment and pupil individual characteristics were hypothesized to directly influence pupil achievement. Home environment characteristics included home possessions and number of siblings, while pupil individual characteristics included sex and age. At the school-level, five categories were hypothesized to directly influence pupil achievement. These are teacher characteristics, classroom environment, school head characteristics, school environment and regional environment. The first included sex, education and professional qualifications, and the second included class sizes, teaching aids, textbooks and homework given. School head characteristics included the factors: sex, education level and experience, while school environment comprised school resources, type of school, pupils' behaviour problems and school homework policy. The province where the school is located is meant with regional environment.[71]
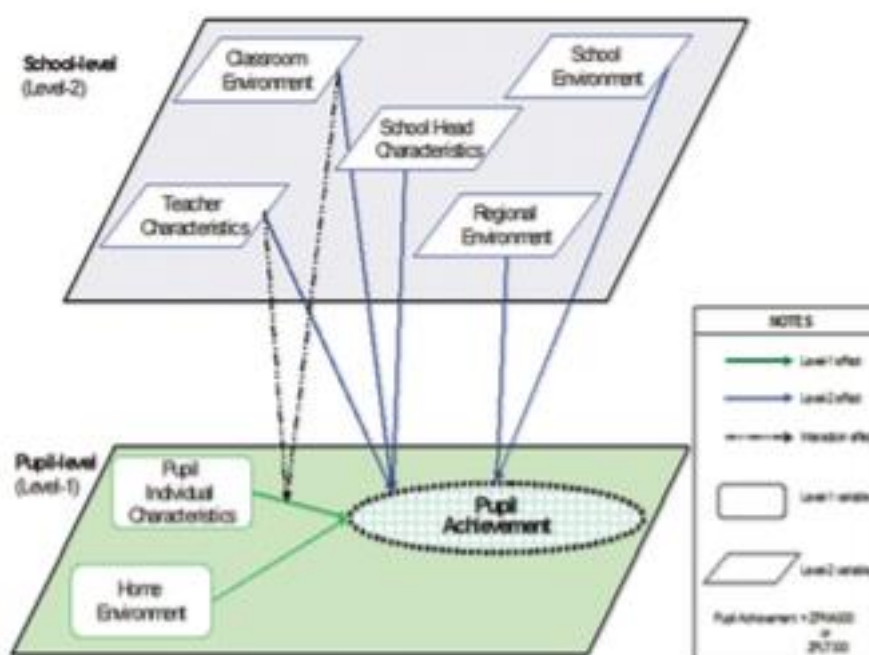
Figure 1 NASMLA Conceptual Model of Pupil Achievement

For the purpose of this study, the conceptual model of the mentioned research provided a respectable foundation, because it captures the key aspects of interest. Furthermore, this model was developed in Kenya, which facilitates appropriateness of the framework for this study. Besides, this model has not been previously used in slums, giving this study the opportunity to apply the framework in this particular setting.

To allow the present study to be feasible in the given time frame, the focus of the study will be on the Level 1 factors mentioned in the conceptual model of NASMLA. Literature supports the assumption that these factors affect these communities. The conceptual framework places the pupil level factors as the central focus for assessment while recognizing that perceptions of the stakeholders have intrinsic value. The theories in the theoretical framework detailed above could also be applied in this model. The theory of poverty trap refers to the environment in which the parents and the child reside. Family and other environmental factors contribute greatly to the development of cognitive skills. Poverty reinforces a cognitive disadvantage because parents, and the lack of resources and stimulation in the home environment influence the child negatively. The poverty experienced in the home environment in this model directly influences human capital. Family factors contribute to market performances.[72] Furthermore the outcome pupil achievement is regarded as a way to measure human capital in which a better outcome can increase human capital. The Classical liberal theory is consistent with this model since the theory regards pupil individual characteristics of importance, focusing on the motivations and desires of the individual. These motivations may vary by age, sex and occupation, making it all more important to examine the perceptions of the stakeholders involved.

5. Methodology

5.1 Research design

The nucleus of the present study is the qualitative analysis of the perceptions of parents with school going children and their teachers centred on school achievement and possible influencing factors. Prior to fieldwork in Kenya, deskwork was conducted with the purpose of finding appropriate techniques that can be applied to answer the research questions. The techniques 'Think, Look, Act' and 'Argumentative Policy Analysis' were considered suitable and will be described, along with a description of how they were applied in this study. A combination of three qualitative data gathering methods was used in this participatory action research in order to obtain a complete view of the proposed situation, including village mapping, interviews and focus group discussions.

This chapter provides information on action research, study sample, data collection and the data analysis of the study.

5.2 Sample

The study was undertaken in the Lunga slum, which is part of the greater informal settlement of Viwandani in the East-Industrial area of Nairobi, Kenya. The community-based organisation Mukuru Talent Development emphasized the importance of conducting a research because it is their mission to "give the youth of Viwandani the chance to take ownership of their futures".[73] Multiple researchers from 7Senses Foundation and two local Kenyan researchers of MTD visited Lunga between the period of March and May 2016.

Several stakeholder groups were considered important: mothers, fathers, teachers and children. Data was collected among residents, with residency defined as a minimum continuous stay of two years. Since school performance affects all children, mothers and fathers of children from all standards of the primary school cycle were included to obtain views from both lower, middle and upper primary school years. In other words, they needed to have children in the primary school age of 5-15 years old. Teachers were included when they worked in the primary schools located in the slum.

5.3 Research approach

The study used the overarching method of action research, of which the model of Stringer was applied as a recurrent theme throughout the research process.

Action research as a method is identified by means of three key elements. It must be participatory, democratic and it must contribute to positive changes of its participants and their communities.[74] The study of Stringer (2014) further acknowledged it to be 'a systematic approach to investigation that enables people to find effective solutions to problems they confront in their everyday lives'.[75] This method focuses on community potencies and concerns and explicitly involves those who live in the community in the research process, making it an bottom-up approach.[76] Although action research requires a lot from the participants, it increases empowerment and engagement, which can result in more applicable and context-specific solutions.

The model of Stringer (2013) consists of four stages: setting the stage, look, think and act.[77] These stages are presented separately, however in reality it is a continuous cycle with the stages often overlapping. Per stage of this model, methodological activities are described in the subsections of this section.

Setting the stage

This preparatory stage of the study includes identifying 'critical reference groups': people who are primarily concerned with the problem. By means of communicating with people, the formal structure of the area is identified and permission to work is gained. In this stage it is important to identify the relationship between the stakeholders and their characteristics. Also essential is to develop a positive relationship with the stakeholders.[77]

5.3.1 Observation and church visit

The study site was visited a number of times in order to get acquainted with the community and other stakeholders. The aim was to build a positive relationship with the villagers, in which the presence of the researcher is accepted. Besides, orientation and observation gave data in terms of public and private facilities, infrastructure, cultural aspects, activities during a normal day and hygiene related aspects. Informal talks with different stakeholders of the community occurred in the language of the villagers, Kiswahili, to increase a feeling of comfort and understanding. This provided the first insights into the problems the locals experience living in Lunga. Since, religion is deemed important in the community, a visit to the church was meant to show respect to the community and simultaneously create trust in the researchers and understanding of the purpose of the study.

Before the research questions of this study could be answered, acquaintance with the study site was necessary. Therefore, a village map was designed to highlight the important characteristics in Lunga.

5.3.2 Village map

The final village map is an updated version of an earlier village map created in Google Maps. See Annex 2. The specified dots indicated earlier including health and education facilities, dump sites, water points, public toilets and churches were crosschecked with the help of GPS. Any additions of new facilities were also indicated on the map and discussed with the local researchers as they have expertise on the current state of the slum. The use of recognizable symbols provided clarification on the characteristics. A final meeting with the local researchers was held to check for accuracy of the village map. The local researchers provided additional information on poverty, hygiene and sanitation, education, health, and garbage policy. With this information, topics could be identified to be of great importance to the villagers. As a preparation for the interviews, the researcher could assess these sub topics to be discussed in the interviews.

Looking

According to Stringer, the identification of the problem is central in this stage. Information about the problem is gathered, defined and described by the stakeholders. The information is context specific and also important to consider, since this affects how people's lives are influenced.[77]

5.3.3 Non-directive interviews

The non-directive interviews were used to get at deep attitudes of the person interviewed concerning school achievement. The format of the interviews acknowledged respondents to talk freely around the subject, while the method of active listening was sought to pick up significant markers to get to the deeper causes of the problem. Markers covered include school achievement and the possible influence by home, school environment and the surroundings or characteristics of the child. At the end of the interview, a summary was presented by the interviewer to check on any doubtful points and for accuracy of understanding.

Along with the local researchers, stakeholders were asked to participate in the study, as people more frequently gave permission.

In this research, personal interviews were held with the following stakeholders: ten parents of which eight mothers and two fathers, and three teachers. Stakeholders were interviewed until data saturation in answers was achieved. Interviews were preferably conducted when the interviewee was alone to reduce the interference of family members. However, when family members joined, the purpose of the interview and the importance of only the interviewee speaking were expressed. The interviewee chose the setting of the interview, to increase the respondent's feelings of comfort. Therefore, mostly taking place in their homes. Prior to conducting the interviews, rapport was build with the participant by providing information on the collaboration with MTD, the purpose of the interview, coverage of confidentiality and anonymity throughout and after the study to decrease information bias. One local researcher attended the interview to diminish language difficulties. Interviews were recorded after approval of the participants and ranged from 45 minutes to two hours, depending on the free time of the participant and the participants' non-verbal communication.

Instantly after each interview, a meeting was held with the local researcher present at the interview to discuss the interview and cross check whether the answers written down were of good quality or a second interview was needed to clarify even more. The same day each interview was transcribed from spoken English/ Kiswahili to written record.

> **Thinking**
>
> The next stage is comprised of analysing and interpreting the situation, in which each person develops their own construction and understanding of the situation.[77]
>
> In this stage, stakeholders come together in a focus group to discuss the problems at hand and share their own perspective on education and school performance. Prior to the focus group, the Argumentative policy analysis technique was used to enable the researcher with identification of themes and issues to guide the focus group discussion.

5.3.4 First focus group discussion

A focus group discussion (FGD) was chosen to elicit a multiplicity of perspectives and experiences from different stakeholders on the problems. Further, the FGD was particularly useful as the study sought to explore the degree of consensus on school performance

among participants with power differences. And the method was used complementary for triangulation and validity checking.

Prior to the FGD, the Kenyan researchers were trained in guiding FGDs, because the stakeholders did not have a good command of the English language. Nine out of thirteen interviewees participated in the FGD of which seven mothers, one father and one teacher. The participants were provided with information on ethics, and safety issues.

Following steps were carried out:
- Introduction of participants: The FGD started with giving the participants the opportunity to introduce themselves and their expectations of the meeting.
- Open discussion: An open discussion was held on the problems concerning school performance. All the problems were written on a large sheet. Once no new problems were identified, the facilitator presented the 5 main themes derived from the analyses of the interviews. Similarities or differences between these themes and the problems mentioned earlier were discussed.
- Ranking: The importance of each theme was measured and discussed. This tool was used to reduce wrong interpretations on what the stakeholders consider the most important theme.
- Solutions: After the discussion of the main themes, solutions for the most important theme were discussed, followed by questions to get a deeper understanding of the solutions.

During the session, data generation and analysis was concurrent to guide the stakeholders in finding a suitable solution. Feedback to the participants was also a continuous process in order to validate the emerging themes and to increase engagement.

The researchers maintained a written account of the discussion including notes of participants responses, important statements and remarks, and facilitator observations. The focus of each researcher's note-taking efforts was different (e.g. nonverbal behaviour, group dynamics, emergent themes). The session was not recorded, because the participants felt uncomfortable with the registration in this permanent form.

> ***Acting***
> The final stage of the study refers to the development, implementation and evaluation of solutions.[77] A final focus group discussion was arranged in which discussion of several solutions resulted in a solution that was suitable for all participants involved at both individual and collective levels.

5.3.5 Final focus group discussion
For this focus group, the thirteen interviewees and twenty-six participants interviewed by the other researchers of the Education & Talent Challenge were invited. A total of fifteen were present until the end. The previous focus group sessions on education, health and talent were presented and discussed. An open discussion was held to explore whether the participants noticed similarities and whether the different outcomes could be combined. The final phase of the focus group consisted of asking the participants to develop an action plan based on what they thought was needed to take action. After the identification of the

necessities, the participants were divided in two groups and asked to specify each mentioned topic. Necessities mentioned were space, sponsor/donor, commitment and interest, facilitators, mobilizers, government and administration for security, organizers, motivation for facilitators and mobilizers, artists, skills and knowledge, and experience. A final discussion was held to create the final joint construct. Each necessity was noted, along with quotes from the discussion.

5.4 Ethical consideration

Verbal consent was obtained from all participants prior to data collection. The consent form was orally translated in the subject's native language, since most parents were illiterate and included the study's purpose, procedures, duration, risks and benefits, and statements regarding the subjects right to confidentiality and right to withdraw from the study.

Although, it was intended to include children in the research, parents declined their child's participation denoting the child's lack of knowledge on the subject.

5.5 Data analysis

Argumentative policy analysis was applied in the last three stages of the study in order to answer the research questions. The method of APA is described below explaining the components in the context of this study.

5.5.1 Argumentative policy analysis

Frank Fischer and John Forester introduced the theory of APA in 1993 that acknowledge the importance of language, meaning and values in the analysis of policy-making and planning.[78] Successful implementations of policy measures require the cooperation of the target populations. The measure may not conflict with their general perceptions and values, but has to resemble with their problem definition.[79-81]

APA comprises a set of four levels to determine a participants view: problem definition, background theories, normative preferences and proposed solutions. The problem definition can be achieved by exploring which factors are important in causing the problem, while the component of background theories can be achieved when the generic situation is considered. Furthermore, the normative preferences are a respondent's view of their general perceptions and values. The proposed solutions derive from a process of social learning in which the focus changes to a perspective of alteration of the situation. These four elements are interrelated and together form the so-called interpretative frame of each stakeholder. Interviews were conducted to determine the participants problem definition. The focus group discussions were necessary to create mutual understanding among all the participants of each other's problem definitions, background theories and normative preferences. This was accomplished by letting the participants share their experiences. It further provided a cross check to determine the accuracy of the analyses.

Analysis of interviews

The researcher performed transcribing of the five tape-recorded interviews. The transcribed material was read a number of times to get a general sense of the material. Key phrases in the text, meaning units, belonging to one of the four elements of APA were identified, condensed and outlined. An overview was created to have a visualisation of people describing the problems, their background theories, normative preferences and proposed

solutions. Codes were ascribed to each meaning unit and grouped into categories. The coding and analysis were first performed by the researcher herself, and then together with the local researchers. In the absence of tape-recordings, the notes of the interviews were elaborated in flowing sentences and subsequently encoded as described above. Peer debriefing sessions and joint analysis by the research team was important to prevent misinterpretation or cultural difficulties, thereby increasing the credibility of the results.

6. Results

The results indicated below are derived from each stage of the Stringer model, from 'setting the stage' to 'acting' in which the technique of Argumentative Policy Analysis was applied. In this section, the results of the village map, the interviews and the two focus group discussions will be described.

6.1 The tour and the village map

According to the latest census of 2009, Lunga has approximately 70,000 inhabitants. However more inhabitants are expected due to high birth rates and declining mortality rates.

The geographical situation of Lunga and the facilities present at the time can be found in Annex 3. The slum is situated in the industrial area, which provides a workplace for most residents of Lunga. Residents also earned money by running small enterprises in Lunga , including restaurants, photocopy shops, hairdressers, butcheries, chemists and small shops selling basic sustenance products, fizzy drinks and candy. Nowadays, the main entry of the slum has a concrete road, while all other roads and paths are from rocks and sand. At the time of the research, the river was a few meters wide, ranging from a narrow part at the bridge to wider parts elsewhere. The local researchers explained that the river was full of life a couple of years ago, but currently it is heavily contaminated with garbage and trash. Furthermore burning of garbage occurred at several points in the slum.

The houses were mainly made of corrugated sheets with an open drainage system dividing the area in blocks. During the informal talks it also became clear that sickness occurred often and is combatted with medicine from the chemist prior to visiting a physician. Interestingly, the local researcher further explained that not many physicians are qualified. In the area, 39 chemists and clinics were registered, while 39 water points were indicated including public and private water tanks, public water sources and 8 toilet facilities.

The area has 9 primary schools, of which 7 are private and 2 public and 4 secondary schools. Each school has a different level of quality with parents preferring private schools to public schools. Some of the primary schools only educate children of the first four standards of the curriculum to decrease the amount of children in a classroom while maintaining a high quality of education.

6.2 Non-directive interviews

The results of the interviews discussed below are based on two themes. The first theme sought to answer the research question: *'What are the perceptions of parents with school going children and their teachers in the Lunga slum in Nairobi, Kenya on the children's school performance?'* The second theme concerns the perspectives on factors impeding with school achievement. At the end of the section, a summary is presented of the constructed interpretative frames based on the factors. The themes are summarized below and illustrated by quotes derived from the interviews.

6.2.1 Importance of education

From the transcripts of the interview and the constructed frames, there was consensus on the importance of education irrespective of sex. This is noticeable, because gender

arrangements of work and care were still present, in which paid employment was considered 'men's work'. Interestingly, nine out of ten women interviewed were employed, while four out of nine husbands were unemployed.

The participants valued education for instrumental purposes as indicated by: *"Education is a key to success"* and *"My children receive education to get a better life away from Lunga."* Education was regarded as a means for improving the future of their children and their own. One unemployed single mother of four elaborated by stating: *"My third child will be successful and take me out of the slum."*

Both parents and teachers agreed that the parents' value of education influenced the children's value of education. They acknowledged the beneficial impact of motivating the children on school achievement, since they experience the negative effects of not having the importance of education previously been instilled by their own parents. Mother 1 about her own experiences: *"Because I had no education, my coping is below standard."* Three parents also recognized that their children value education by noticing that their children enjoy the pursuit of knowledge and being rewarded with high grades. One mother even mentioned that her child puts pressure on them to assist her in raising fees so she can continue studying.

Teachers more than parents valued education for intrinsic reasons such as the acquisition of skills to adapt in society. This is indicated by *"Education is to equip a child with life skills and knowledge. The growing understanding make children able to stand on their own in a community."* On the other hand the parents highlighted the extrinsic benefits of education in which education ensured good profession and prospects for the future. Taken as a whole, all stakeholders perceived children's' education and future as important norms. This gives an indication on the resemblance of their perceptual portrayals on the situation.

Besides, all participants indicated that challenges in the school, home and neighbourhood are affecting school performance. Parents and teachers noticed the great value of the home environment influencing the education process. Especially ignorant parents were addressed as an impeding factor for which several causes were mentioned. This were poverty, low education level, alcohol and drug abuse and the indifference of the parents. Contrary, teachers noted that parents were not always ignorant, rather diligent to provide the children the basic necessities, which indirectly affected the school performance negatively. Teacher 1 expressed both views: *"At home, the child has domestic duties as washing, cleaning or taking care of the siblings. Sometimes, this is because the parents are drunkards, but other times because they need to work all day to earn money."*

Furthermore, concerns emerged regarding influencing factors in the school environment. Parents considered the coping skills of teachers in the classroom essential in exciting interest and enhancing school performance of the children. The teachers acknowledged that their counselling skills ensure motivation in children, while recognizing that after-school tutoring is available.

6.2.2 Main factors affecting school performance

A joint analysis among the research team resulted in five main topics: 'poverty', 'health issues', ' stressing environment', 'peer pressure' and 'ignorance of parents'. The main topics are described below, underpinned with quotations from participants to answer the research question: *Which factors, both positively and negatively, influence the children's school*

performance and which linkages can be drawn between these factors, health and school performance? It is important to note that the factors mentioned and described were only negative oriented.

Poverty

Living in Lunga was considered as residing in poverty because the participants recognised their vulnerability to hazards present in the area and their poor coping capabilities. They further ascribed the influence of poverty on school achievement as the lack of resources available in both the school and home environment. Resources mentioned include physical and financial resources along with role models and support systems.

Socioeconomic disadvantage and low levels of parental education were considered risk factors that negatively influence school achievement. This is indicated as the parents' inability to pay for the school fees, due to unemployment, low wages or the developed health issues from residing in poverty. *"The parent's work hard but no money is the main issue. Some parents cannot pay fee, and their children don't go to school".*

The lack of a support system is a multifaceted problem in which the children are not able to comprehend the subject matter and school performances are affected. One of the causes is that these children are often left home to fend for themselves, without support to help with their homework, while the parents work long hours. Another cause mentioned is the illiteracy of the parents, hindering assistance at home.

One teacher described poverty-related hunger and malnutrition as an impeding factor on school performance. Some parents do not have the financial resources to provide breakfast, allowing hunger and malnutrition to decrease the coping capabilities of the children. As a result, the children cannot properly absorb the information and school performances are affected.

Other participants expressed the negative influence of class sizes on the school achievement of their child. Children residing in informal settlements rely on public facilities, because of poverty. In Lunga, only two public school facilities were present. These public schools apply the Free Education for All policy implemented by the government giving the disadvantaged children an opportunity to receive education. Unfortunately, this has resulted in overcrowding in which children receive inadequate attention and low school performances were noticed. Besides, the majority of children attending private school rely on sponsors. One of the nine private primary schools received money from sponsors to pay the school fees of the children as a solution for school achievement. However, this sponsorship was terminated last year, resulting in many dropouts.

Health

There are different perspectives as regards to health and the impact on school performance. Some remark health as of no influence because health-related knowledge is perceived adequate and the availability and affordability of medicines is secured, while others perceive it as an important factor for missing classes.

Three main diseases were mentioned to be of special importance to not attending school. These were: malaria, typhoid fever and cholera. Illness can also negatively affect the learning potential of children when attending school and consequently impair their school performance. Only two of the thirteen participants mentioned the health of a relative to be

a factor as indicated by: *"We have many cases when parents are sick, HIV, they cannot work. In that situation, the child cannot cooperate."*

Furthermore, the participants were aware of the underlying causes of health-related problems and expressed the environment as the main cause. Environmental risk factors, such as chemicals emitted by the factories, air, water and soil pollution, the open sewage contributed to health issues. Moreover, the social risk factor of poor hygienic precautions was also considered important. In addition, the participants mentioned that diseases could be prevented when environmental and social risk factors were reduced. Examples include constructing a proper drainage system, promoting safe household water storage and utilization and better hygiene measures. One parents explicitly mentioned: *"For the waterborne diseases like cholera, typhoid, malaria we need proper drainage. And you also need to treat the water so it is safe for drinking."*

Parents and teachers perceived health related knowledge of children adequate, because the children received health education at school and at home, in which the basic health principles were communicated.

Besides, ignorance of the parent was linked to the child's health and school performance. Children are more likely to become ill, due to the lack of health knowledge, the unawareness of the consequences and the unfamiliarity with hygienic measures. This in turn can lead to poor school performances.

Environment

The participants defined the environment as natural that encompasses climate, weather and natural resources. The social environment, the society in which people live and the people with whom they interact are discussed under the category peer pressure. Several factors caused low attendance rates at schools. The most prominent cause stated by the majority of the participants was the monsoon season. Two rainy seasons with torrential downpour, lasting perhaps half an hour to an hour, distributed over three months causes the river to burst her banks on several occasions and flood the area. Most of the children experienced troubles reaching the school or the schools were closed due to flooding. As parent 2 stated: *"St. Elisabeth was flooded with water, the children could not attend classes for 2 weeks in a row."* It was further noticed that the flooding of the river also caused other problems to arise, including health issues as malaria and pneumonia. Almost all of the interviewees thought it was nature and addressing the issue was impossible, expect for one. Parent 10 proposed a solution by stating*: "The flooding we cannot stop, the school has a fence. But a possible idea is to widen or deepen the river in places where it is narrow to prevent flooding."*

Ignorance of parents

All stakeholders mentioned ignorance of parents during the interviews. Teachers considered ignorance of the parents as most influential on school performance, while parents also recognized others factors in the school and social environment to exert influence. Yet, both stakeholders attached great value to education and which clashes with the indifferent attitudes of ignorant parents.

Several issues were perceived contributing to ignorance, including low educational level, indifference in school affairs and the lack of assigning value to education. One of the explanations was that the ignorant parents enjoyed a low level of education, whereby the importance of education was not recognized. Another explanation was that people worked

long hours to provide the children with the basic necessities. Most of these parents prefer their children to contribute their share of the fixed expenses and stimulate their children to work. A final explanation was provided in which substance abuse of the parents causes them to become ignorant, because the attention of the parents is focused on their addiction and the resources that are needed to maintain the addiction.

Peer pressure

The social environment was considered an important factor influencing the children in their school achievement. Children were perceived susceptible to persons in their community or the wider society, particularly when these persons are prosperous or manipulative. Friends and family members were cited as influential persons. The overarching term used was peer pressure and often the attitude of the children towards education became negative. As a consequence, the children start to behave badly as indicated by one teacher: *"At the age of 13, they start to have some peer pressure, some of them they drunk, some of them maybe pregnancy. It is hard. Some of them we find them smoking, drinking and drugs."* Education is not longer deemed important, while wealth is considered valuable. Strategies to expand their wealth are implemented, such as collecting plastics and metals and selling these items. Additionally, the parents reported stealing as a quick and effective method and added that peer pressure on children may result in dropout.

Table 1. provides a short summary of the main factors mentioned by the stakeholders and their background theories, normative preferences and proposed solutions. Some of the solutions mentioned were reasonable and achievable, others more difficult to realize. Table 1. would indicate that the stakeholders consider education to be important in their lives and advising others on the importance of education and health could be an approach to reducing the factors.

Table 1. Interpretative frame constructed on basis of the factors

Main factors	Background theories	Normative preferences	Proposed solutions
Poverty	Difficulty coping due to ignorant parents, Hunger/malnutrition, lack of money, big class sizes	Education is a way to get out of poverty	Advise about importance of education
Health issues	The diseases: cholera, malaria, typhoid fever, parents not educated	Wash hands before eating, drink clean water,	Proper drainage system, advise parents about health
Environment	River floods, pollution, health issues,	-	Widen or deepen the river where necessary
Ignorance of parents	Parents not educated, parents working	Education is not important Money is important	Advise parents about education
Peer pressure	Alcohol and drug use, stealing Influence of friends and relatives	-	Public boarding school, advise about importance of education

6.3 Focus group discussion

The first focus group discussion was held to create a mutual understanding between the different stakeholders on factors impeding school performance. The following topics were mentioned during the open discussion and listed in table 2.

Table 2 Factors affecting school performance

Topics	
Little earnings	Ignorance parents
Sickness	Single parents (female household)
Child abuse from community	Community pressure
Domestic violence	Strict teachers
Decision of child	School fees increase without parents knowing
Stealing	No opportunities after school
Parents influence	Peer pressure
Early pregnancy	Drugs (parent or child)
Big family size	Floods
Ignorant teachers	Strict parents
Parents jealous	Education is not important

A cascading effect was observed in which the aforementioned topics and expressions resulted in the emergence of five new topics. These were 'domestic violence', 'ignorant teachers', 'jealous parents', 'strict teachers' and 'strict parents'. Parents were hesitant in their response to domestic violence; they recognized the likelihood of child abuse, however this did not occur in the safety of their own homes. Meanwhile, the teacher noticed that some children receive corporal punishment at home to control or correct a child's behaviour and this contributed to academic failure. This is indicated as: *"The children develop anxiety and obstacles with learning are not reported to the parents out of fear of being punished. We, as teachers do not always have time to help them with the subject matter. The child falls behind in class."*

Subsequently, parents responded that strict parenting and teaching styles set high demands on the children wherein punishment is sometimes applied out of necessity. Parents envy was also regarded a factor affecting school performance. In the past, parents lacked the opportunities to pursue education, which resulted in limited knowledge and skills and therefore the inability to take control over their own lives. Education was regarded important, but through own experiences and ignorance, the importance of employment is emphasized. Furthermore, the ignorance of teachers and the effect on school achievement resulted from the poor coping skills of teachers, dealing with overcrowded classes.

It was further noticed that some topics could be merged. For example, child abuse from community, stealing, early pregnancy, and drugs were regarded as peer pressure. The lack of opportunities after school, low socioeconomic status and the inability to pay the school fees were considered poverty-related issues. The discussion resulted in five main themes affecting school performance of children, which surprisingly corresponded with the five main themes of the APA analysis. These were poverty, environment, peer pressure, ignorance of parents and health issues.

Ranking
The ranking resulted in:
1. Ignorance of parents
2. Peer pressure
3. Poverty
4. Health
5. Environment

Ignorance of parents was regarded as the main problem, because the parents instil the adhesion value of education. The children are therefore dependent on the persuasiveness of the parents. When minor persuasiveness of parents was noticed, the parents perceived this as ignorance. Ignorance was defined as the indifferent parental attitude toward education, derived from being uneducated and unaware. This implies that parents' belief in the value of education, their interest in education and their attitudes toward education accounted to the greatest extent for variation in children's school achievement. Thus, the home environment of the children was considered more important than the school and social environment.

Peer pressure was mentioned second, because the stakeholders agreed peer pressure is an important factor impeding on school achievement, however it is influenced by the ignorance of the parents. The teacher stressed the negative consequences of ignorance on the attitude of the children. The children will feel unappreciated, which results in a decreased awareness of the importance of education, consequently increasing the susceptibility to peer pressure.

Poverty was put in third place. All the participants agreed they were not rich; they were 'hustlers' in which only a small percentage of the people were employed. Nevertheless, not all school going children face problems in achieving their education. Therefore, the problems do not necessarily come from poverty, but more so from other factors like the ignorance of the parents as indicated by: *"Although poverty is at home, education is possible. You have a school here; parents only pay 100Ksh per month. It is because parents do not care."*

Solutions
Since the participants expressed 'ignorance of parents' as the main problem, solutions were only sought for this problem. The participants wished to focus on the root of the problem, to achieve the best results while exerting the greatest influence.
The aim was to ensure that all children attend school on daily basis and achieve their education. The participants raised solutions, which differed in expectations of the influence of different stakeholders and their own abilities to address the situation.

Participants expected governmental influence in ensuring children their basic education. However it became clear that the government was not reaching out to this community, making it a part of the problem instead of a solution. This resulted in a mutual understanding among the participants in which the focus shifted towards their own abilities. A potential solution was only feasible when the community itself started taking actions. Nevertheless, the government was deemed important and the use of media was expressed

as a method in which the community can reach the government. The associated action consists of peaceful strikes to draw the attention of the government.

Besides, the stakeholders indicated that ignorance of the parents was derived from being uneducated and unaware; therefore the importance of education was not recognized. School achievement could only be accomplished with help of the community in forms of advising parents and children on the importance of education. Since, employed parents acknowledge the importance of education more, the ignorant parents should receive education and skills. Community based skills trainings were mentioned to be a good solution in which members share their skills during workshops to those who do not have the skills. Another reasonable and achievable solution mentioned was called neighbourhood initiative, in which the community gets to know each other better. Consequently it is easier to advise others about education, because trust is created.

6.4 Final focus group discussion
The purpose of this final generic meeting was to co-create a format to answer the final research question *'What actions, according to parents and teachers, need to be taken in order to realize academic achievement?'*

The final meeting involved a greater array of stakeholders, including parents, teachers, chemists and adolescents. The researcher presented the aforementioned solutions of the previous FGD. These results were discussed on similarities and differences with the intention to recognise a joint construct. From the discussion it became clear by the intensity of the conversations that the different stakeholders were enthusiastic on the project. They all took part in the discussion, although some stakeholders spoke more than others. Moreover, all stakeholders considered the presented solutions of the previous discussion meaningful.

The community based skills training was deemed important because the stakeholders recognized a similarity among many people in the community, a low educational level. The training is a method to ensure the community with a basic set of skills and knowledge, allowing them to gain control over their lives. Furthermore, the skills training were viewed as a resource to freshen the familiar skills. This in turn could result to the enhancement of quality in various professions, while decreasing the risk of accidents.

The neighbourhood initiative was also considered valuable. The participants emphasized that meetings in which involvement on issues related to education were necessary and aimed to develop mutually beneficial relationships with a long-term prospect. The chemists also recognised the importance to have more knowledge about each other, however this was oriented on health issues only. The parents recognized that the neighbourhood initiative could lead to trust in each other, which offers possibilities in advising parents on the importance of education.

Furthermore, information was gathered through open discussion with the purpose of clarifying the necessities needed to implement the solutions successfully. The following was agreed on: space, sponsor/donor, commitment and interest, facilitators, mobilizers,

government and administration for security, organizers, motivation for facilitators and mobilizers, artists, skills and knowledge, and experience.

The participants expressed their concerns regarding the planning of the solution. They perceived the development and execution of the programs as labour-intensive work, both in terms of the level of effort required from the facilitators, mobilizers and organizers and the number of people needed to do the work. Still, they perceived the solutions as achievable because the need to address the issue was considered more important. All participants working on the front lines of the community initiatives needed commitment and interest. Also, motivation to participate in the project is needed according to the stakeholders. They considered the availability of refreshments, a small reimbursement and the learning of new skills to be most important. However the acquisition of money remained an issue from which the stakeholders recognized the importance of volunteers. In the end, it all contributes to the community and a better future for the children.

It was further recognized that the meetings should be held during weekends, because people were occupied with work otherwise. Sponsors were regarded as anyone willing to support financially. It was perceived important to select for a committee with board members to increase the sustainability of the project.

The use of media was considered a powerful tool to reach more individuals in the community for which the other solutions were intended. The solution was further regarded as a technique to display the subsequent meetings and to motivate other community members to participate in the meeting. Contrary, the face-to-face method was also considered powerful, because of the people who cannot read in the community. However the methods were perceived complementing one another. Whatever method used, the participants believed that increasing recruitment would be beneficial for addressing the problem of ignorant parents. Since, even ignorant parents strive to behave as responsible citizens and good, supportive neighbours in the community.

7. Discussion and Conclusion

As stated in the introduction of the report, the objective of the study was: *to contribute to the body of literature on factors, which impede on school achievement of children living in slum areas, by exploring perceptions of parents with school going children and their teachers in the Lunga slum in Nairobi, Kenya on the children's school performance.*

From the study it became clear that the parents and teachers regarded education important in bringing great benefits for the future of the children. However, many factors influenced the children in their school achievement. These could be categorized in 5 themes, including poverty, environment, health issues, peer pressure and ignorance of the parents. In the FGD, people ranked ignorance of parents as the main factor impeding on school achievement. Parents' belief in the value of education, their interest in education and their attitudes toward education accounted to the greatest extent for variation in children's school achievement. Although health was also regarded important, knowledge of common diseases, the acquisition of preventive measures and the use of medications enabled children to complete primary school. Actions in terms of an neighbourhood initiative and a community based skills training were needed to decrease the ignorance of parents by equipping them with skills and knowledge and instilling the importance of education.

The importance of education was instilled from one generation to the next and parental involvement in the home environment was necessary in their children's education. Taylor et al. (2004) describes parental influence as a process of academic socialization, whereby parents communicate to their children the value and utility of education. It also contains the promotion of occupational aspirations and preparing children for the future.[82] Education was more valued for instrumental purposes, which implies academic socialization. The findings of the study also suggest that the importance that parents and teachers attach to school performance is portrayed by their views on how much effort the teachers should put in the education process. Sanders and Rivers (1996) showed that an effective teacher could overcome impeding factors to student achievement such as the influence of poverty and parental educational attainment. [83]

There is a general acknowledgement that education is part of the solution to get out of poverty. The parents perceived it as a key to success and to a better future. The parents felt that they had a limited amount of capabilities such as knowledge and skills to adapt to the challenging situation. Since, education provides the children with skills and knowledge their future is perceived as one of better quality. School achievement offers the children better chances at employment. The recognition of education for instrumental purposes and thus as a means to get out of poverty corresponds to the linkage between education, the theory of human capital and the poverty trap. The participants were aware that education could increase the quality and quantity of resources. This might be improved housing or the ability to send their children to a private school, but also the opportunity for their children to work and live outside the slum. There is consciousness on the presence of more service and goods outside the slum, however these are still out of reach. The people residing in informal settlements, known to be hubs of poverty, have few services and goods and remain trapped in the situation. But by increasing human capital through school achievement, getting out of

the poverty trap can become a possibility. Research supports this view. Govinda (2003) described that youths from poorer and less well-educated families are more inclined to dropout. Their lower levels of education can be expected to continue their families low socioeconomic status. As a result, intergenerational poverty cycles arise which can persist through several generations. Education is therefore deemed as an instrument of poverty alleviation.[84]

NASMLA conceptual model of pupil achievement appeared to be an appropriate framework for this study particularly in light of the important part played by the parents in the home environment of the child. This study captured the rationale and importance of this factor. Interestingly, literature mentioned ignorance of parents not often as an influencing factor on school performance. The participants cited other home environment characteristics such as the number of siblings as an impeding factor for school achievement. However, it became apparent that the parents did not have the financial resources to send all children to school. Individual characteristic of the child were not mentioned as factors. One explanation could be that in recent years, a transition occurred from gender disparity toward gender equality. Women are nowadays seen as equal to men and therefore enjoy the same privileges. All children, irrespective of sex attend primary and secondary school when possible. Further, age was not considered an impeding factor, because age was regarded as just a number. Still, it became clear that children needed to be at least fourteen years of age before they were allowed to enter the next school cycle. Both parents and teachers felt that the children otherwise were too young to comprehend the material.

Other factors mentioned by the community of Lunga correspond with literature. For example susceptibility to peer pressure and the subsequent behaviour, such stealing and substance abuse is mentioned by all the interviewees as an important factor, even ranked second in level of importance. Several studies have also mentioned peer pressure to be of influence.[58,59] Furthermore, poverty was mentioned the third most important factor affecting school achievement, which agrees with the study of Ondieki (2015).[17] The participants listed poverty and peer pressure as consequences of the ignorance of parents. However, these factors are factors on the environmental level. This implies that the environment in which children are brought up and the interaction among the people in that environment is hindering the development of the children regarding their school achievement.

7. 1 Limitations and strengths
Important stakeholders for this study emerged in the phase of "setting the stage" including parents, children, teachers, heads of schools. Unfortunately, we missed important stakeholders, first and foremost the children themselves, because parents did not agree to let their children participate in the study. They perceived the potential benefits for the children to participate as negligible. Further, the potential burden and disruption of life were also mentioned as discouraging factors for children's participation. It was also not possible to include principals in the study, while none were willing to participate.
Another limitation is that the majority of participants were women, which may have had an impact on the research. Those who have not participated, might have had different

perspectives or perhaps not perceived the factors with the same level of importance. However, mothers were regarded as key persons with the most responsibility with respect to their children's education. Also, the most influential stakeholder in the primary school period of the children participated, whereby the results found can have the most benefit in achieving school.

Another limitation is that not all phases of the model of Stringer were implemented; the stage of acting also acknowledges an implementation and evaluation part. These parts were not possible to execute due to restricted time for the study. As a result, it is not possible to observe the effect of the solutions and to revise the proposed solutions when necessary. Though the effect of the solutions was not observed, from literature it is suggested that neighbourhood initiative with mentoring aspects and community based skills training programs certainly have value. A review of Henderson and Mapp (2002) showed that mentoring parents on more involvement at home were associated with better school performances. They even mentioned that children's educational development is the responsibility of parents, teachers and the community.[85] Besides, the parent mentorship program as described by Delgado-Gaitan and Ruiz views parents as advisers in school related matter in which their knowledge needs to be transferred to their children in order to have the resources and support necessary for academic success.[86] This study has shown that ignorance of parents has far-reaching consequences for the future of the children living in Lunga. The in-depth interviews revealed that underlying this ignorance was the (very) limited education that parents had obtained themselves, which is regarded as a limiting factor to understand the importance of education. The neighbourhood initiative and the community based skills training of parents appear to be respectable approaches to inform these parents about the Importance of education and equipping them with skills so that they can pass the knowledge and skills on to their children.

The techniques of 'Think, Look, Act' and Argumentative Policy Analysis have contributed to the development of a community specific, appropriate strategy for the community. This strategy is perceived as meaningful and achievable in reducing the most prominent impeding factor linked to school achievement.

Another strength was the use of data triangulation to crosscheck findings. Peer debriefing settings with critical discussion upped the research. Furthermore, topic lists for the interviews were discussed beforehand with the local researchers to prevent misinterpretation. Besides the results of the interviews were discussed in FGDs by which the researchers' interpretation of the findings were tested and verified in the group. Further, the findings were strengthened through a next stage of discussion among participants, in which more relevant information was revealed. The study further aimed at generating change to provide solutions for problems in a specific context. Although generalization of the findings is impossible, they can be considered as insights and the lessons learned from the process of doing action research can be incorporated in future research in slums.

7.2 Conclusion

This study has contributed to the body of literature on factors, which impede on school achievement of children living in slum areas. A variety of factors were mentioned at the home, school and environmental level in which the children are brought up. Ignorance of the

parents was regarded as the most prominent factor, which was actively generated by multifaceted personal and social difficulties. Given the high value placed by different stakeholders in the Lunga slum, the underreported influence of ignorant parents on school achievement should be emphasized in future studies.

7.3 Implications for research and practise.

Applying Stringers' action research and argumentative policy analysis has been successful for the development of two solutions, which reduce the negative factor, ignorance of parents, linked to school achievement. Both techniques focussed on clarifying different stakeholders' views and creating a mutual construct to solving the problem at hand. Though this specific solution cannot be generalized to other communities, it is worth trying a combination of these techniques in other communities that deal with complex problems. Since, communities in the world have different perspectives on certain issues, the method of Stringer can be applied in any context. This method emphasizes the importance of the context in which people live and share their perspectives. It is therefore recommended to try these techniques for solving unstructured problems in both the developed and developing world. Also, to assess the achievability and acceptability of the solution in the community before action is taken. This increases the likelihood of their cooperation to the plan.

Addressing the issue and giving people the strength to address the negative factors can lead to willingness and can prevent failure of the intervention. It is therefore recommended to use action research. The research revealed that ignorance of parents is the main factor impeding on school achievement in Lunga. It is necessary to examine whether ignorance of parents is also a key factor in other settings. Further research on the effectiveness of the solution in Lunga would be interesting, since it can provide useful information on the effects of public involvement in decision-making. In addition, further research into school level factors, such as the role of the teacher and the resources available in influencing the children's school performance is necessary. Furthermore, the findings suggest the need for further exploration into influences in the environment that impede on the children's school achievement. It is of pivotal importance to obtain a comprehensive view of factors in the immediate environment affecting school performance of children in slums.

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Annex 1 Operalization of slum definition

Characteristic	Physical or Legal Definition	Physical/Legal Outcome	Adverse Health Outcomes
Insecure residential status	• Households without: o formal title deeds to either land or residence o enforceable agreements as a proof of tenure	• Eviction • Exposure to toxic/chemical waste and pollution • Low service utilization	• Poor access to health care services: traffic injuries • Acute poisoning, respiratory diseases, cancer • Intentional injuries, STDs/HIV, unwanted pregnancy, substance abuse–related diseases
Poor structural quality of housing	• Households residing in hazardous sites: o geologically hazardous (landslide/ earthquake/flood areas) o industrial pollution o unprotected hazards (e.g. dumps, railroads, power lines) • Households living in temporary and/or dilapidated structures: o inferior building materials (cardboard, corrugated tin, mud, low-grade concrete/ bricks) o substandard construction (e.g., inadequate foundation or support structure, insecure joints/connections)	• Land and mud slides • Flooding • Fire • Vertical, multi-story housing construction • Residence in or near dumps; spontaneous combustion of garbage	• Unintentional injuries • Leptospirosis, diarrheal diseases, cholera, malaria, dengue, hepatitis, drowning • Falling injuries • Burn injuries
Overcrowding	• Households with more than two persons per room or less than five square meters per person	• Enhanced opportunity for disease transmission	• Tuberculosis and other respiratory illnesses, meningitis, scabies, skin infections, bacterial pharyngitis, rheumatic heart disease
Inadequate access to safe water	• Less than 50% of households have access: o household connection o access to public stand pipe o rainwater collection	• Contaminated water sources • Water scarcity	• Diarrheal diseases, cholera, typhoid, hepatitis • Scabies, bacterial skin infections, acute glomeulonephritis
Inadequate access to sanitation and other infrastructure	• Less than 50% of households have improved sanitation: o public sewer o septic tank o pour-flush latrine o ventilated improved pit latrine	• Increased rat density • Open or broken sewers • Suboptimal schools • Inadequate/inappropriate health care services	• Typhus, leptospirosis, diarrheal diseases, cholera, malaria, dengue, hookworm, hepatitis, chronic respiratory diseases, growth retardation • Under-utilization of services, maternal health complications, vaccine-preventable diseases, perinatal diseases, rheumatic heart disease, suicide • Poor access to health education • Drug-resistant infections, poorly controlled hypertension, diabetes, and other chronic illnesses

Operational definition of slums adapted from UN sources [1]
Defined as 20 liters/person/day, acceptable collection distance.
Shared by maximum of two households.
STD, sexually transmitted disease

Annex 2 Interview guide

Non-directive interview guide for parents

Date: Location details: Number of person interviewed: Position:
Introduction prior to interview   - Introduce yourself   - Explain objective   - Establish ground rules: participation on voluntary basis, data analysis anonymously   - Build a rapport
Introduction   How does a normal day look like from the moment you step out of bed?   - Follow up questions, bearing the conceptual framework in mind, regarding home environment: children, partner, occupation   What does education mean to you?   - Follow up questions regarding educational level of partner and children   ,
Factors on school performance (possible questions arising from interview)   - Does one of your children miss out on schooldays? (if yes, why?(reasons)   - Do you think this will affect their school outcome? if yes, why?   Pupil characteristics and home environment factors   - Could you think of factors that affect school performance?

Annex 3 Village map

Legenda: = chemist, = primary school, = secondary school, = waterpoint/toilet, = trash/dumpsite, = church