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EFFECTS OF HOUSEHOLD FOOD SECURITY ON THE ACADEMIC PERFORMANCE AMONG PUPILS IN MUKURU INFORMAL SETTLEMENT, IN NAIROBI COUNTY, KENYA

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Abstract

Purpose: The study assessed the effects of household food security on academic performance among pupils in Mukuru informal settlement, Nairobi County.

Methodology: The population of the study consisted of 7565 participants from Mukuru. Stratified, purposive and simple random sampling techniques were used to select a sample size of 205 respondents (100 children, 10 teachers and 85 parents from the study area, and 10 officials from the Ministry of Education), who responded to the households access to food in Mukuru informal settlement, factors hindering the attainment of households food security, effect of household food security on academic performance of pupils. A descriptive research survey was conducted, using a mixed method. Data collected were analysed using the Statistical Package for Social Science (SPSS). Correlation analysis and regression analysis were used to determine the relationships and significance between variables.

Results:The key finding indicated that there is a strong positive relation between the effects of food security and academic performance; it established a positive association between the variables with a significance ‘‘R’’ value of .635 and a coefficient of determination R square of 0.404.

Unique Contribution to Theory, Practice and Policy: From the findings, some recommendations were made, for the government to formulate policies that would help improve food security so as to reduce its effects on pupils’ academic performance, also creation of jobs to increase employment which would offer people opportunities to raise their income.

Key Words: *Academic performance, Adequate Food, Food security, Household.*

1.0 INTRODUCTION

Food security is one of the major concerns of our present world, due to its effects on the physical, social and cognitive aspects of individuals. There are a number of factors affecting the world nowadays, and some of these factors are threatening the lives of many people worldwide, such as war crises and conflicts, natural calamities, industrialization and modern technology, and poverty, all of which could plunge human beings into a state of extreme food insecurity (Norman, 2006). A household experiences food security when all members of the household have access, at all times, to enough healthy food for an active and healthy life (FAO, 2014). Therefore, considerable efforts are needed to achieve the Sustainable Development Goals (SDGs) on hunger which aims at ensuring access to food by all, in particular the poor and people in vulnerable situations, including infants, to have safe, nutritious and sufficient food all year round and end all forms of malnutrition.

According to Pope Paul VI (2012), there are three dimensions to food security: adequate economic access to food, adequate availability (or physical access) to food, and appropriate consumption of food for proper nutrition. In this case, food security is attained when these three above mentioned aspects are met. Kimani (2011) asserts that food security is critical for both human and economic development due to the role of nutrition in healthy growth and human capital development. The situation of food insecurity brings about adverse physical and mental health effects at household level, including being underweight, micronutrient inadequacy, anxiety and depression (Paul VI, 2012).

The research opted to focus its attention on children in Mukuru; being the most targeted population of the study**.** Harrison (2014) quoting Piaget (1986), states that hungry children aged 3-10 years cannot learn as much, as fast, or as well because of chronic under nutrition which harms their cognitive development during this critical period of rapid brain growth. Poor nutrition and poor health in early childhood can have long-term consequences that affect a child's later progress in school. In the view of Bodewes (2015), the population suffering from food shortage and depressed household economy is expected to increase in Kenya by 60% by 2030. It is undeniable that most of the people affected by this world phenomenon are those from developing countries; Kenya being in that category, it ranks 146th in the Human Development Report, with an Index of 0.55, per capita income of USD$2,881 and 78.3% of the population living below a dollar per day (Bodewes, 2015).

The Nairobi City County Report (2016), states that most of the dwellers do not have adequate professional training to secure decent jobs or self-employment which could enable them to face challenges brought about by poverty. Concerning the availability and access to food, majority of Mukuru dwellers have only one meal per day and sometimes none. The food frequency is a serious challenge; families rarely afford two or three meals for its household members. In general the food taken by informal settlements dwellers is poor in diet quality and in quantity; it lacks standardized micronutrients required for a normal energy intake.

It is undeniable that socio-economic conditions such as one's parents' education, job, and economic status affect how well students do in school. This situation tends to be different for children in Mukuru informal settlement of Nairobi County. Between 2014 and 2016 they were 17,250 pupils enrolled as candidates in schools from Mukuru informal settlement. During this

period the statistics show that 10,868 pupils scored below 250 marks. This translates to 63% of the total candidates' population scoring low marks. For the performance to be this low there must be an influencing factor behind it.

Mawere (2013), in his study on the factors affecting school-age children's academic performance in Malawi, the study found out that academic performance of the students is highly associated with socioeconomic status and dietary behaviors among others. According to Gupta (2013), cognitive development and school performance can be impaired by poor nutrition and health conditions, with great consequent losses in productivity during adulthood. Kimani (2011) asserts that food and nutrition security is critical for both human and economic development due to the role of nutrition in healthy growth and human capital development. All these findings have shown that food insecurity is real and still relevant in the research field.

However, the relationship between food security and academic performance of pupils in Mukuru has not been widely investigated; little had been done on the issue of household food security in relation to pupils' academic performance. This research looked at the association between food security and academic performance. Therefore the study sought to assess the effects of Household Food security on Academic Performance among pupils living in Informal Settlement.

This study was framed on two theories: Human Capital Theory and the Hierarchy of Human Needs Theory. The Human Capital Theory with its ramifications on the model of development "response to initiative of the people" will make proposals for action and how people can carry out their projects under their own democratic direction. Regarding the social problem of food security and academic performance of children, the Hierarchy of Human Needs model encourages and supports grass-root groups, community-based organizations working in interaction and moving towards decisions and consciousness raising, which are considered vital tools for curbing the problem of food security.

2.0 METHODS AND MATERIALS

The study adopted a descriptive research design. This design was suitable for this research since provided both qualitative and quantitative data collection methods of selecting samples to analyze and discover occurrences (Oso & Onen, 2009). The study population consisted of 7565 participants who included pupils from public schools within Mukuru, teachers and ministry of education officials. In addition, parents from the households where pupils come from were also considered as part of the study population.

The study adopted the simplified formula of Krejcie and Morgan (1970) to come up with the sample size of 205 respondents. The study used both probability and non-probability sampling techniques in the process of selecting respondents. The sampling techniques included purposive sampling, simple random sampling, and stratified sampling technique. The study used both stratified and simple random sampling in order to select children and parents to be included in the sample. The study also used purposive sampling technique to select the teachers, national officials who participated in the interview schedule for the study. The research instruments used were questionnaires and interview guide.

In this present study all the instruments (both questionnaires and semi-structured interview) were established by consultation with two experts in research from the University. They examined the

items in the instruments in order to ascertain if they had content validity and then revised them accordingly. The researcher used the test re-test method to obtain reliability of the measuring instrument by administering the instrument twice to the same group of 20 respondents (children and teachers). Scores from both testing periods was correlated by the use of spearman rank order co-relation. A co-relation co-efficient r_s=of about 0.75 was considered high enough for this study to judge the reliability of the instrument.

Data analysis was done using the SPSS version 21, and it was displayed and presented in the form of tables which showed the combination of categories, frequencies and percentages. The researcher also used a cross tabulation tool which allowed establishing the relationships between different variables. Pearson's correlation coefficient (P) was used to measure the degree of relationship between food security and academic performance. Statistical tests was done at a margin of error α=0.05. The qualitative data were analyzed thematically according to the way themes were emerging during the interviews.

3.0 FINDINGS AND DISCUSSIONS

The first objective of the study aimed at examining the access to food by households in Mukuru informal settlement, Nairobi. This objective exclusively targeted parents. Table 1 presents the respondents' responses on household food budget in Mukuru informal settlement.

Table 1: Food budget at household level

	Frequency	Percentage
Yes	39	45.9
No	44	51.8
Missing	2	2.3
Total	**85**	**100.0**

Findings of the study in Table 1 show that 46% of the parents answered "Yes" that they have a monthly food budget for the household, while 52% answered "No" that they don't have monthly food budget for the household; 2% did not answer the question. This shows that though some household have an establish food budget, a simple majority (52%) of the respondents do not have food budget. Table 2 presents the respondents position on the relation between food budget and food access in Mukuru informal settlement, Nairobi.

Table 2: Food budget and access to food

	Frequency	Percent
Yes	66	77.6
No	19	22.4
Total	**85**	**100.0**

Results in Table 2 show that 77.6% of the respondents answered "Yes" contrary to 22.4% respondents who answered "No". This means that for the majority 77.6% of Mukuru informal settlement dwellers, lack of food budget affect the household to satisfy it needs of food. However there is a minority who happened to respond to their need of food with or without food budget. Respondents' opinion on the source of food consumed at household are shown in Table 3

Table 3: Source of food consumed at household

	Frequency	Percentage
Buying	140	75.7
Donation	29	15.7
Farming	16	8.6
Total	185	100.0

Data collected revealed that 75.7% of respondents stated that they access their food through buying. 15.7% of respondents said that they get their food through donation; while 8.6 % of respondents answered that their food origin is farming. This shows that majority of respondents (75.7%) buy their daily food. Therefore the household possession of food budget has an important implication on it access to food. Table 4 presents the household food frequency in Mukuru informal settlement, Nairobi.

Table 4: Food frequency at household level

	Number of meals at household		
	1 meal	**2 meals**	**3 meals**
Strongly Agree/Agree	32.5%	60%	18.9%
Uncertain	0.5%	0.5%	17.8%
Disagree/strongly Disagree	67%	39.5%	63.3%
Total	**100**	**100**	**100**

Data in Table 4 show that 60% had access to two meals daily in their household; compared to 18.9% who said do not have any challenge because the 3 meals are available. However 32.5% said have challenges to access to food having only one meal per day, while 67.5% do not face challenges related to the access to food in Mukuru informal settlement as the findings shows. When asked the same question, a teacher noted that majority of people in Mukuru are unemployed which severely affects their monthly income. With low income it is difficult for them to have a full apart budget allocated for food. The second objective of the study explored the factors hindering the attainment of people's food security in Mukuru informal settlement, Nairobi. Table 5 presents respondents opinion on food shortage.

Table 5: Food shortage and occupation

		Occupation Of respondents			
		Employed	**Self-employed**	**Student**	**Unemployed**
Does your household experience any food shortage	Yes	12	17	21	61
	No	18	17	5	34
Total		**30**	**34**	**26**	**95**

From Table 5 findings we see clearly 60% of respondent stated that they are facing the problem of food shortage or absolute lack of food. 40% said are food secure hence they do not have any experience of food shortage. Though this is a reasonable percentage of those who do not experience food shortage, Table 5 Clearly expresses the need for food in Mukuru informal settlement due to the fact that 60% of respondents have food shortage challenges. The challenges people encounter to afford food in Mukuru are stated in Table.6.

Table 6: Challenges in affording food

		Occupation of the Respondents			
		Employed	Self-employed	Unemployed	Student
Do you have challenges in affording food for your house hold	Yes	20	25	20	78
	No	10	9	6	17
Total		**30**	**34**	**26**	**95**

Data in Table 6 show that at a great extent (77.2%) respondents said they have challenges in affording food for their household, while 22.8% of respondents did confirm to have no challenges in affording food. In consideration of the findings percentages, the study would infer that people in Mukuru do face challenges in the process of getting needed food at the household to a great extent. Table 7 presents respondents opinion on relation between food price and household food access.

Table 7: Price increase and food access

		Occupation of the Respondents			
		Employed	Self-employed	Unemployed	Student
Does food price increase hinder access to food at your household	Yes	26	30	20	84
	No	4	4	6	11
Total		**30**	**34**	**26**	**95**

Table 7 shows that 86.4% respondents among which 41% are parents' majority of them employed and 45.4% pupils agreed saying yes to the question that food price increase does affect access to food at the household level. It also shows that 13.6% of respondents taken all together said that the lack of food at the household does not result from food price increase in the market. The third objective of this study sought to analyze the effect of household food security on academic performance of pupils from Mukuru informal settlement, Nairobi. Table 8 presents opinions on the link between lack of food and academic performance.

Table 8: Lack of food and pupils' academic performance

	Frequency	Percent
Yes	160	86.5
No	25	13.5
Total	185	100.0

Results in Table 8 shows that a greater majority of respondents (86.5 %) affirmed that lack of food has high effect on academic performance. Only 13.5 % of respondents were of contrary view saying that academic performance is not affected by lack of food at the household. Looking at the findings the study concluded that lack of food security at the household in Mukuru highly affect the academic performance of pupils from there. Table 9 presents respondents opinion on whether meals time affect academic performance of pupils in Mukuru informal settlement, in Nairobi.

Table 9: Time of meals and pupils 'performance

		Frequency	Percentage
Does the time pupils get meals affects their academic performance	Strongly Agree	41	22.2
	Agree	116	62.7
	Uncertain	11	5.9
	Disagree	16	8.7
	Strongly Disagree	1	.5
	Total	**185**	**100**

Table 9 shows that majority (84.9%) of respondents agreed that the time pupils have their meals influence their academic performance. Only 9.2 % disagreed saying that the time of meals does not have any connection to pupils' academic performance. However 5.9% remained uncertain of the relationship between meals time and academic performance of pupils. Table 10 gives respondents views on about the preferred meal time.

Table 10: Most preferred meal for children in school

		Frequency	Percent	Valid Percent
What is the most preferred meals for children who attend school	Breakfast	62	33.5	33.5
	Lunch	101	54.6	54.6
	Supper	22	11.9	11.9
	Total	**185**	**100.0**	**100.0**

When asked to indicate whether there is the most preferred meal by pupils among the three daily meals time, Table 9 shows that 33.5% of respondents said that for them the meal taken at breakfast is the most important for children in school. 54.6% confirmed that for them lunch time is the preferred meal for children in school. While 11.9% stated that supper meal is the most important for children in school. Regarding the findings of the study whereby majority of respondents 54.6% opted for lunch meal to be most crucial for the academic performance, it

clearly confirms that when pupils are given something to eat at mid-day they gain energy for the coming part of the day. However, no matter how important lunch meal is, the research findings show that breakfast meal together with lunch meal are both important for good performance of pupils. Table 10 presents the performance at school is poor when pupils do not eat adequate food for their well-being.

Table 10: Challenges faced in school due to lack of food

	Respondent's response	Frequencies	Percentages
Lack of food makes pupils loose energy and concentration in class	Yes	162	87.6
	No	23	12.4
Pupils skip or absent from school because they did not get enough food.	Yes	153	82.7
	No	32	17.3
Pupils abandoned school due to lack of food.	Yes	150	81.1
	No	35	18.9
The performance at school is poor when pupils do not eat adequate food for their well- being.	Yes	160	86.5
	No	25	13.5
When the household is food insecure it influences the completion rate of pupils enrolled at school	Yes	173	93.5
	No	12	06.5

Results in Table 10 show that the overwhelming majority of respondents (87.6%) answered saying Yes that lack of food makes pupils loose energy and concentration in class, contrary to 23 12.4% who have not agreed with the statement. On the same Table 11, 82.7% of respondents accepted that pupils skip or absent from school because they did not get enough food to eat against 17.3% who were of different opinion; also 81.1% stated that pupils do abandon school due to lack of food in Mukuru informal settlement, while 18.9% feel that the abandonment of school by pupils is not due to lack of food.

Furthermore, the majority of respondents (86.5%) did agree with the statement that the pupils perform poorly at school when they do not eat adequate food for their well- being against 13.5% who disagreed pupils' poor performance at school is not the result of not having adequate food to eat; also an overwhelming majority of respondents (93.5%) agreed that when the household is food insecure it influences the completion rate of pupils enrolled at school against a few of them at 6.5% who said they are not of the view. In Mukuru informal settlement as the result shows, pupils face different challenges in school due to lack of food; they lose energy and concentration, some skip and absent from school, some abandoned completely. The fourth objective of this study sought to develop strategies that can address the problem of household food security in Mukuru informal settlement, Nairobi. Table 11 presents respondents' opinion on whether the government has a key role in bring up about food security in Mukuru informal settlement.

Table 11: Role of the government in food security

		Occupation of the Respondents			
		Employed	Self-employed	Unemployed	Student
Can the government be a key factor in resolving the problem of household food situation	Yes	25	24	19	79
	No	5	10	7	16
Total		**30**	**34**	**26**	**95**

Table 11 shows that 79.4 % of respondents agreed that the government really plays a key role in resolving the household problem of food insecurity. Only a minority 20.6 % of the respondents said that the government does not play a key role in solving the problem of food security. Table 12 presents respondents opinion on whether the decrease of food price improves the situation of food at the household.

Table 12: Decrease of food price improves food security

		Occupation of the Respondents			
		Employed	Self-employed	Unemployed	Student
Could the decrease of food price improve the situation of food at the household	Yes	27	30	21	84
	No	3	4	5	11
Total		**30**	**34**	**26**	**95**

Table 12 shows that majority (87.5 %) of respondents agreed that the decrease of food price is of great important in resolving the household problem of food; against a minority of 12.5 % respondents who said that the decrease of food price does not contribute much in solving the problem of food at the household. The study has found that the more the price of food stuff at the market decrease this allows people to access food therefore the situation of food at the household becomes better. Table 13 sought to find out if there is any relationship between food security and academic performance.

Table 13: Correlation between food security and academic performance

		Household food access	Academic performance	Factors affecting food security
Household food access	Pearson Correlation	1		
	Sig. (2-tailed)			
Academic performance	Pearson Correlation	.701**	1	
	Sig. (2-tailed)	.025		
Factors affecting food security	Pearson Correlation	.513**	.364**	1
	Sig. (2-tailed)	.012	.023	
	N	185	185	185

**. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

Generally, the result shows that there is a positive relationship between effects of food security and academic performance. Table 13 shows that the more there is household food access, the better the academic performance of pupils. It shows a strong positive connection of .701 between the household food access and effects on academic performance. Similarly, the result shows positive relationships between academic performance and the factors affecting food security even if, the relationship is moderate, 0.364.

The result shows a strong positive relationship of .701 between household food security and academic performance with a significance of 0.025. This means that food security directly affects academic performance of pupils in a strong positive way. Thus, there is a direct link between food security at the household and academic performance. In fact, teachers interviewed acknowledged that the access to food at the household affects positively the performance of pupils at school. This concurs with the Nairobi county commission (2017) report which established that food security affects the performance of pupils; in the sense that, it grants them energy and strength to concentrate in class. From this, we can conclude to say that food security is crucial for pupils' academic performance; it enables them to learn better, by providing them with energy and capacity to achieve good results at school.

The data analysis shows a weak positive relationship of 0.364 between the factors affecting food security and academic performance with a significance of 0.023. This can also be supported by the fact that 65.6% of the respondents, who answered the questionnaire, stated that the factors of food security are highly related to academic performance. The result, therefore, shows that there are other factors that contribute to pupils' performance in school.

Table 14: Regression Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.635[a]	.404	.292	.37639

a. Predictors: (Constant), Strategies for food improvement, Household food access, Factors for food attainment, Food frequency, Food budget, Income.

The results in Table 14 show a correlation *R* value of .635 between the effects of food security variables and academic performance. This signifies a strong positive relationship between the two variables. Thus, the more there is access to food, the more the academic performance is good. This is supported by some studies that established that the higher the level of education, the higher the individual as well as family monthly income or the socio-economic benefits (Kayani & Ghuman, 2011).

Secondly, the result shows *R* Square value of 0.404. This means that the independent variable explains the dependent variables to the extent of 40.4 percent. Thus the effects of food security contribute 40 percent to academic performance of pupils in Mukuru informal settlement. The remaining 60 percent is explained by other factors which were not captured in the study.

4.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The section outlines the summary of the findings in detailed discussion, also it gives the conclusions that were arrived at and the recommendations made.

Summary Discussion

Food is one of the basic needs for all human beings. Everyone needs to eat at least something in order to survive. Therefore, food plays a major role in providing energy to the human body and protecting it from diseases or dysfunction of any kind (Business Dictionary, 2014).

The first objective of the study sought to examine the access to food by households in Mukuru informal settlement. The results of the study in Table 1 indicate that 52% of respondents confirmed that they did not have any money budgeted for food at their household. This was very understandable due to the unemployment status of majority of them and the low level of education among Mukuru dwellers. Majority (77.6%) of respondents as shown in Table 2 confirmed that household food budget heavily affect their access to adequate food for their well-being. Furthermore in Table 3, 60% of respondents perceived that most students took one meal per day compared to 31.4% who perceived that all the students ate two or three meals per day. However**,** looking at the above results on the meals frequency at household, they implicate that the issue of imbalanced diet and academic performance are highly related.

The findings established that majority of respondents had only a meal per day or not at all. Alderman (2014) noted that imbalanced diet affects students' academic performance as students have low energy and poor memory due to poor immunity system development. In such a case, students lacked the energy to do their academic activities. Child Poverty Action Group (CPAG,

2011) agreed with the results that families on low incomes were more likely to eat cheap, highly processed, poor quality food. Therefore, for low-income families maintaining a healthy diet is very difficult due to various factors. The results obtained from the interview with teachers and government officials concur with those obtained from the students and parents, because all the teachers confessed that most students lived on one or two meals per day based on the availability of food at the household level, and some students reported to regularly feeling hungry in the morning hours at school.

The correlation analysis result in Table 13 showed a strong positive relationship of .701 between household food security and academic performance with a significance of 0.025. This means that food security directly affects academic performance of children in a strong positive way. From the findings the study concludes that as long as the problem of household access to food will persist, children coming from Mukuru informal settlement will continue to face academic challenges related to inappropriate or inadequate food to eat.

The second objective sought to find out the factors connected to household lack of food security in Mukuru informal settlement. Results in Table 4 show that 60% of respondents confirmed that they experience food shortage caused by their lack of jobs, low income for those on casual jobs. This means that a household cannot afford having a food stock or purchase adequate food if it did not get reasonable income; food shortage it a reality in most informal settlement. Regarding challenges faced by respondents in affording food at the household, Table 7 shows that for majority (83.2%) unemployment and low income were major factors that led to food insecurity at the household. Furthermore result on Table 6 shows that 86.4% of respondents affirmed that when the price of food increases, it affects to a large extent the household access to food for Mukuru informal settlement dwellers, majority of whom are unemployed and of low income. A teacher noted that the vast increase in population size was also a major factor leading to food insecurity in Mukuru. In line with population increase, the results were supported by Harvest Help (2012) who claimed that poor African and third world countries had the highest population growth rate in the world which put them at increased risk of food crises. This showed that the threat of food insecurity would still persist if the population size continues to increase while people have no employment and high income.

The views of Garcia (2008) agreed with the results confirming that when children have access to the required food for their well-being, they build gradually upon their sum total of human capital to accumulate the stock necessary for school readiness: capacity for future learning and successful physical, social, and psychological adaptation to new environments. Early deficits in household inputs can diminish human capital in young children, predisposing them to failure in school and diminishing their potential for forming and expressing future human capital as successful, productive members of the workforce and society.

The third objective analyzed the effects of food security on academic performance. the results in Table 10 show that majority (87.6%) of respondents agreed that students perform poorly in school because of lack of food at household as they develop lack of energy to participate in the overall activities of the school, such as doing their class assignments, and paying attention to lessons; all of which leads to poor academic performance. still in Table 10, 82.7% of respondents stated that children do skip classes or absent from school because they did not get enough food to

eat at home. Concerning the issue of abandonment, the findings show that majority (81.1%) affirmed that a large number of pupils who enroll to school do not finish due to inadequate food and the poverty state of their households.

Harisson (2014) agreed with the results saying that children from food insufficient households do not perform as well on certain academic achievement tests as do children from food-sufficient households. From the findings, this study concluded that lack of food at household is directly related to academic performance of children. The correlation analysis showed that there was a strong positive relationship between food security and academic performance. This means that the more there is access to food at the household level the better the performance of pupils at school becomes. It also means that pupils from households suffering from food insecurity will have challenges to get good performance at school.

In relation to the study findings, the theories proved clearly that hungry people are more likely to withdraw from other activities apart from the work they are doing or to perform poorly when they are hungry. In the case of children, this impedes their positive achievement in school. In order to increase children's level of academic performance, household are required to have a minimum level of food security which allow them to satisfy their children's need to eat sufficient and adequate food at home or in school.

The fourth objective sought to develop or propose strategies that can address the problem of household food security in Mukuru informal settlement, Nairobi. According to the findings, majority (79.5%) of respondents as seen on Table 11 were in agreement that the government has a key role to play in promoting food security in the country. The findings proved that majority of Mukuru dwellers perceived that good governance lead to formulation of strong policies to sustain food security. This will be possible through formulation of good policies that could be transformed into implementable projects to sustain food security. However, 8 among the 10 commissioners interviewed at Nairobi County said that, Kenya usually developed policies that did not touch people's lives, especially those people who are at the lowest rank in the society, people living in the informal settlement, thus these policies remain mere theories. Also 87.5% of respondents were of the opinion that the decrease in price for food stuff could help household to improve their capacity to provide their members with food as it is seen in Table 12. Concerning the strategy of increasing employment and household income, a high percentage of the respondents agreed that increasing employment and household income could enable people to purchase sufficient and adequate food. Therefore, if employment opportunities increase, people could be able to raise their standard of living.

The two theories that guided the study were found very applicable and confirmed to be very complementary to the study. After confirming that Human Capital Theory was applicable due to economic challenges that household do face as a result of not being able to respond to their needs for food mostly, Maslow' Hierarchy of needs theory was considered crucial to sensitize people of Mukuru informal settlement on the importance for food being the most needed human need for their survival.

Conclusion

Based on the objectives and findings of this study, respondents affirmed that food security affects academic performance of pupils in Mukuru informal settlement. Majority of Mukuru

dwellers lack food budget which influences their low access to food. The frequency of meals is determined by the income capacity of the household, because the main source of food consumed comes through buying. The major factors hindering food security attainment in Mukuru are unemployment, low income, poor level of education of majority of it dwellers. The study clearly showed that majority of children from Mukuru had experienced food insecurity and this has a high risk for them to perform poorly at school because: pupils absent themselves from school very often due hunger; those who attend school do not concentrate well. Majority of respondents stated that the government has a key role to play in the development of strategies that will address the situation of food security among informal settlement dwellers.

Recommendations

Based on the overall findings of this study, the following recommendations were suggested. First for the Kenyan government to formulate policies which are able to meet the requirements for improving food security so as to increase its impact on education and academic performance. There is a need for the government to increase opportunities for employment and regulate the paying system of workers, also create some vocational training centres for people to gain some skills. Second to Parents the study recommended to get some training in some practical skills so that they may be able to employ themselves, also to fully collaborate with the policy makers in the process of seeking the establishment of food security and support the school feeding program. Third to Teachers there is need to pay attention to pupils who report that they are hungry and find ways to assist them, also encouraging parents on the importance of food for the children good academic performance.

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