

## Influence of Household Income on the Implementation of Affordable Decent Housing Projects in Kibera Informal Settlement of Nairobi County, Kenya

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**H**ousing affordability is subjective implying that what is affordable to one person may not be affordable to another and access to affordable housing is influenced by various factors. The objective of this study was to investigate one of such factors which is the influence of household income on the implementation of affordable decent housing projects in the Kibera informal settlement of Nairobi County in Kenya. The study was based on the theory of planned behavior. Descriptive research design was adopted to achieve research objective. The target population of this study was 919 households from 16 villages in Kibera formal settlement in Nairobi, Kenya. The targeted respondents were household owners. Systematic random sampling procedure was used to select the sample size of 92 household owners from the target population. Questionnaires were used as data collection instrument. Both descriptive and inferential statistics were used to analyze the data collected. Descriptive statistics included measures of central tendency and dispersion while inferential statistics used included correlation and regression analysis. The study was able to establish that household income was a major factor explaining the pattern of demand for housing in Kibera informal settlements. The high cost of housing as reflected on the final price to the consumer is a constraint to affordable housing to the residents of Kibera informal settlements majority of which are lower and middle income earners. The study recommended that Housing should be within the means of low to moderate income households and moderately priced so that low and moderate income earners are able to meet their other essential basic living costs. This can be achieved through appropriate housing technologies that are cheaper, long lasting and affordable.

## **Background to the Study**

Many African countries have experienced a large increase of urban population during the last 50 years. Even though the shortage of low cost housing in urban areas became a problem in Kenya already during the 1960s due to massive urban migration, the population living in informal settlements has increased dramatically ever since. The urban population is expected to reach 80% by 2018, and the proportion of people living in informal settlements is in some cities very high, such as in Nairobi, with an estimated 60% (Mitullah, 2003). Despite numerous efforts from Non-Governmental Organizations (NGOs) and recent governmental activities, the trend is yet to be reversed. In order to meet the accelerating demand for low cost housing, and to improve the living conditions in informal settlements, various organizations are involved in slum upgrading projects. Some are small-scale community initiatives carried out with support from NGOs, while others are large-scale governmental programmes. Unfortunately, some projects provide new accommodation that is unaffordable to many low income households, and thus failing its true cause.

According to UN- HABITAT (2010), Africa is urbanizing rapidly with 38.7% of its population living in cities in 2007 and is now at 50%. By the year 2030, more Africans, about 1 billion people will be living in cities than in the rural areas. East African region is the least urbanized in Africa with North Africa, South Africa and West Africa recording much higher urban populations. This rapid growth in urban growth stretches the demand for urban residential housing, urban services and urban livelihoods. By the year 2030, more than 60% of Kenyans will be living in cities and towns. In Kenya, the estimated current residential urban housing needs are over 150,000 units per year. It is estimated that the current production of new residential housing in Kenyan urban areas is approximately 30,000 units annually, which is only 20% of the demand, leaving a huge shortfall (Government of Kenya, 2007; Kenya Vision 2030; UN habitat, 2013). This situation has given rise to mushrooming of informal settlements, construction of unauthorized extensions in existing residential estates and overcrowding (UN-Habitat, 2003). In Kenyan urban settlements, 59 % of households live in one roomed dwelling units (World Bank, 2006).

Housing Affordability can be defined as being capable to bear the housing cost or costs without acquiring severe consequences (Noppen, 2014). Housing affordability is subjective implying that what is affordable to one person may not be affordable to another. In previous researches, various metrics have been used to measure home affordability key among them being the prices of homes, individuals' disposable income, mortgage loan interest rates, housing price index amongst others. Home ownership is influenced by various determinants such as prices of homes, household or individual income, and disposable income. Others include building expenses, status of an individual, land ownership policies, building materials costs, water supply access, electricity connection access, water connection access, policy or regulatory frameworks, interest rates for shelter finance by financing institutions, access to house finance and other infrastructural restraints (Nabutola, 2014; Arvanitis, 2013).

### **Theory of Planned Behavior (TPB)**

This study was guided by theory of planned behavior (TPB) developed by Fishbein and Ajzen (2000) which is used to assess the effect of belief-driven attitudes, norms, and perceptions about homeownership on the home purchase behavior of low and moderate-income renters. Cohen et al (2009) find that these indicators of beliefs are actually stronger predictors of home purchase behavior than the socio-demographic and financial characteristics of renters. When intention to own is added as a mediating factor between belief-driven attitudes and actual tenure behavior, however, their analysis reveals significant differences in the effect of intentions on purchases among subsets of the sample by race and income. Specifically, the authors find minority and low income households' intentions are less predictive of behavior, relative to whites and high-income households. The authors posit that there may be a large disconnect between the low perceived constraints and higher actual constraints on tenure options among minority and low-income respondents.

Affordable housing should be appropriate for the needs of a range of low to moderate income households and priced so that low and moderate incomes are able to meet their other essential basic living costs. Affordability is a key factor yet a major challenge facing potential homeowners as well as potential developers. The current market is positioned in a way that the bulk of the available units are overly expensive for the middle class. Delivering a new house does not necessarily dictate an end product, but the means of delivery and capacity of the market to easily and comfortably absorb the product. The use of microfinance loans provides a part possible solution for these problems (Centre for Affordable Housing Finance in Africa , 2011).

Regarding federal programs for addressing low-income in the United States, Turner and Kingsley (2012) note that monthly rent or mortgage payments constitute the single biggest expenditure in most family budgets, and many low-income families have difficulty finding housing they can reasonably afford. Although most family-strengthening and community change initiatives recognize the urgency of the housing problems facing low-income families, they often have difficulty figuring out how to constructively address them (Turner & Kingsley, 2012).

Housing is a major problem in Kenya especially in Nairobi city. UN-HABITAT (2010) report show that millions of people are living in the sprawling slums and also in other informal settlements around Nairobi. Informal settlements and slums in Nairobi have continued to grow at an alarming rate in number as well as in population. For example, in the Kibera informal settlement, seventy-five percent of residents do not have formal jobs. The average monthly rent of 500 Kenyan shillings (KShs) for a room is considered very high for this vast majority. Different families have to share common places such as kitchen, bathroom and veranda. Where such facilities are available, the rent for each room can be as high as KShs 1,000 (10 USD) per month which totals to KShs 3,000 for a 3-roomed apartment. This is considered to be out of reach of the residents. Demand for housing far surpasses its supply in Kenya, especially in urban areas that have for long suffered from poor planning, resulting in an increase in informal settlements with poor housing and little infrastructure services (UN-

HABITAT, 2010). Despite some attempts at achieving decent housing for Kenyans, Kenya has, on the whole, failed to address the dire housing conditions of her population. The objective of this study therefore, is to examine the influence of household income on the implementation of affordable decent housing projects in urban settlements in Kenya.

## **Research Methodology**

### **Research Design**

This study was carried out in the Kibera Informal Settlements in Nairobi City County, Kenya. Data was collected using questionnaires from household owners in the Kibera informal settlement. Descriptive research design was employed by this study. This was used to allow the researcher gather information, summarize, present and interpret it for the purpose of classification as prescribed by Orodho (2002).

### **Target Population**

The target population of this study was 919 households in the Kibera informal settlement in Nairobi, Kenya. These households were obtained from 16 villages in Kibera as shown on Table 1.

**Table 1: Target Population**

<b>Category</b>	<b>Population</b>
Kianda	85
Olympic	64
Soweto West	72
Katwekera	32
Karanja	27
Kisumu Ndogo	102
Raila	64
Makina	57
KambiMuru	41
Mashimoni	77
Lindi	61
Laini Saba	35
Silanga	49
Soweto East	36
Forest	29
Dam	88
<b>Total</b>	<b>919</b>

**Source:** County Council of Nairobi Report (2017)

### **Sampling Design and Sample Size**

In a descriptive research, Mugenda and Mugenda (2003) recommends a sample size of 10-50% as being acceptable. Therefore, the study obtained a sample size of 92 respondents which represents 10% of the whole population. The respondents were obtained from 92 households using systematic random sampling procedure to select samples from the target population during administration of questionnaires as shown in Table 2. In every household, the house owner was the respondent.

**Table 2: Sample Size**

Category	Population	Sample Size (10%)
Kianda	85	9
Olympic	64	6
Soweto West	72	7
Katwekera	32	3
Karanja	27	3
Kisumu Ndogo	102	10
Raila	64	6
Makina	57	6
KambiMuru	41	4
Mashimoni	77	8
Lindi	61	3
Laini Saba	35	4
Silanga	49	5
Soweto East	36	4
Forest	29	3
Dam	88	9
<b>Total</b>	<b>919</b>	<b>92</b>

### **Data Collection Instrument**

Questionnaires containing both open-ended and close-ended questions were used as data collection instruments. Open ended questions allowed the respondents to give answers in their own way while closed ended questions on the other hand included questions that were based on 5-point Likert scale.

### **Methods of Data analysis**

Both descriptive and inferential statistics were used to analyze the data collected. Descriptive statistics included measures of central tendency and dispersion. Descriptive statistics was utilized to describe the causal independent variables and the dependent variable. Inferential statistics utilized included correlation and regression analysis. Correlation analysis was used to study the nature and strength of relationship among study variables.

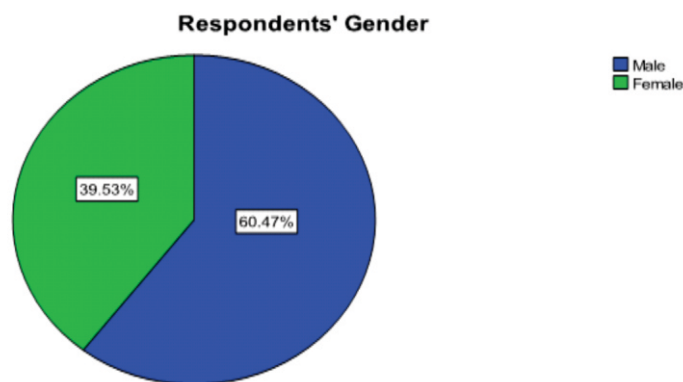
## Results And Discussion

### Response Rate

The study targeted a sample size of 92 respondents. Out of these, questionnaires retrieved from 86 respondents, which forms a response rate of 93.5% were found to be valid. Mugenda and Mugenda (2003) suggested that a response rate of 50% is adequate for analysis and reporting, a response rate of 60% is good and that of 70% and above is very good. This therefore meant that the overall response rate of 93.5% was appropriate for this study.

### Background Information

This study requested information about the respondents' gender, marital status, education level, area of occupation, age and number of people the respondent were living with.



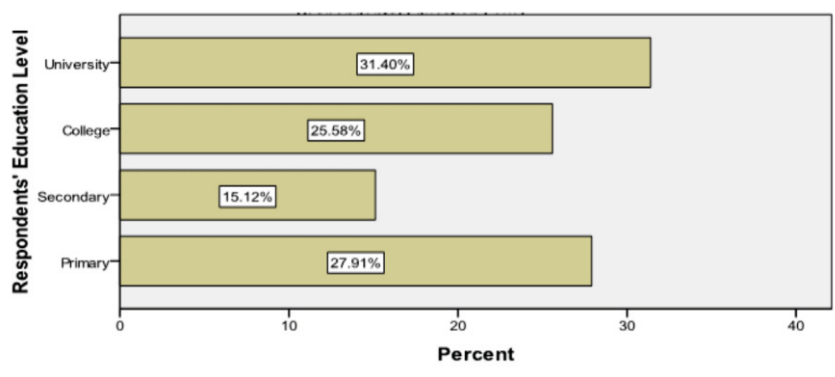
**Figure 1: Respondents' Gender**

The results in Figure 1 show that majority (60.47%) of the respondents were male and female respondents accounted for 39.53%. This shows that both genders were well represented and the study could not suffer from gender bias and majority of household owners in Kibera informal settlement were males.

**Table 3: Respondents' Marital Status**

Category	Frequency	Percentage	Cumulative Percent
Married	46	53.5	53.5
Single	19	22.1	75.6
Widowed	12	14.0	89.5
Separated	9	10.5	100.0
<b>Total</b>	<b>86</b>	<b>100.0</b>	

The results in Table 3 show that majority (53.5%) of the respondents were married, 22.1% were single, 14.0% were widowed and 10.5% separated. These findings show that most of the people who had occupied affordable decent housing projects in urban settlements in Kenya were married.



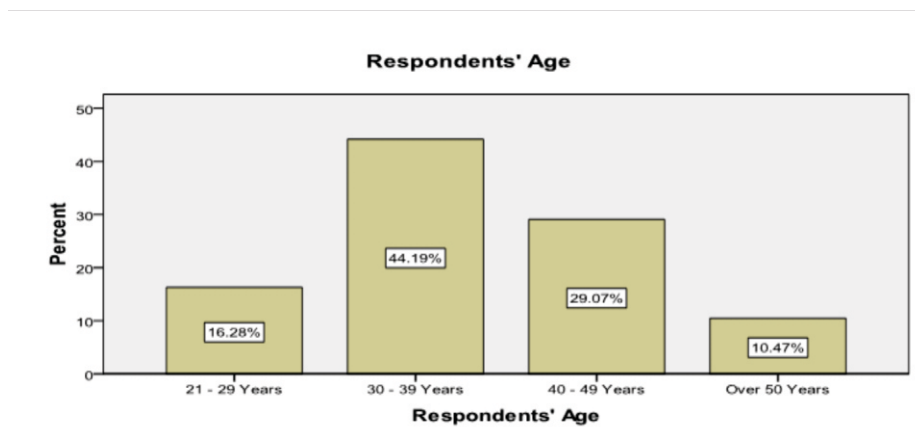
**Figure 2: Respondents' Education Level**

Figure 2 shows that majority (31.40%) of the respondents had attained a university level of education, 27.91% primary level, 25.58% college level and 15.12% secondary level of education. These findings show that majority of the respondents were educated enough to respond the questionnaires and Kibera informal settlement comprise of people of all educational levels.

**Table 4: Respondents' Area of Occupation**

Category	Frequency	Percentage	Cumulative Percent
Self employed	39	45.3	62.9
NGO	18	20.9	91.9
Government employee	5	5.8	100.0
<b>Total</b>	<b>86</b>	<b>100.0</b>	

The results in Table 4 show that majority (45.3%) of the respondents were self-employed, 20.9% were from NGOs and 5.8% were government employees. The rest of the respondents indicated that they were job seekers, casuals, house managers etc.



**Figure 3: Respondents' Age**

The results in figure 3 shows that majority (44.19%) of the respondents were aged between 30 to 39 years, 29.07% aged between 40 to 49 years, 16.28% between 21 to 29 years and 10.47%

aged over 50 years. These findings show that all the respondents who participated in the study cut across all age groups. The respondents further indicated the number of people they are living with ranged from 3 to 8 people.

### **Household Income**

The objective of this study was to examine the influence of household income on the implementation of affordable decent housing projects in Kibera informal settlement in Kenya. The respondents were asked to indicate their estimated monthly income bracket and the results are shown in Table 5;

**Table 5: Estimate Income Bracket**

Category	Frequency	Percentage	Cumulative Percent
Kshs 5000 – 8000 (\$50 - 80)	25	29.1	29.1
Kshs 9000 – 12000 (\$90 - 120)	15	17.4	31.3
Kshs 13000 – 16000 (\$130 -160)	30	34.9	50.0
Above Kshs 16000 (\$160)	10	11.6	87.5
Others	6	7	100.0
<b>Total</b>	<b>86</b>	<b>100.0</b>	

The study established that majority (34.9%) of the respondents indicated that they earned between Kshs 13000 to 16000(\$130 -160), 29.1% earned between Kshs 5000 to 8000(\$50 - 80), 17.4% earned between Kshs 9000 to 12000(\$90 - 120) and 12.8% earned above Kshs 16000(\$160). The remaining number of respondents indicated that they earned below Kshs 5000 (\$50). These findings concur with the findings of Buye (2013) who observed that the average household expenditure on housing in developing countries ranges from 15-25% of income. In some cases, low income earners pay more than 30% of their income for housing.

Furthermore, the respondents were given a list of statements to indicate the extent to which they influence affordable decent housing projects in urban settlements in Kenya. The findings are shown in Table 6;



**Table 6: Household Income and Affordable Decent Housing Projects**

Statement		Large extent	Moderate extent	Small extent	Not at all	Mean	Standard deviation
The low income do not have access to affordable finance for housing	38.4	47.7	10.5	3.5	0.0	4.21	0.769
The provision of decent shelter is further undermined by the inability of potential tenants to pay for it because of their limited incomes	41.9	47.7	10.5	0.0	0.0	4.31	0.656
Cost of building materials is high hindering low income from constructing their houses	32.6	42.2	12.8	5.8	4.7	3.94	1.056
Housing developers have focused on high income housing as they are profit making institutions by nature	31.4	36.0	15.1	5.8	11.6	3.70	1.298
Cost of housing units is unaffordable for the low income	70.9	3.5	1.2	24.4	7.0	4.01	1.294
<b>Aggregate Score</b>	<b>43.0</b>	<b>35.8</b>	<b>10.0</b>	<b>7.9</b>	<b>4.7</b>	<b>4.03</b>	<b>1.014</b>

From the results in Table 6, the mean of 4.31 shows that the provision of decent shelter is further undermined by the inability of potential tenants to pay for it because of their limited incomes to a very large extent with a significance variance of 0.656. These findings concur with the findings of Rosman (2012) who in a study on Australia's low income earners noted that buying a house and even renting close to a major city had become unaffordable for most of Australia low income earners. Affordable housing should be appropriate for the needs of a range of low to moderate income households and priced so that low and moderate incomes are able to meet their other essential basic living costs.

The mean of 4.21 indicates to a very large extent that the low income earners do not have access to affordable finance for housing with a significance variance 0.769. This is in line with Hassanali (2009) who observed that low income housing projects are sited in areas of low land cost and high density building permissibility. This allows reduction of the land cost constituent of each residential component, facilitating sale at lower prices. In looking for areas with lower land costs, developers have had to undertake low income housing schemes in locations that are peripheral to urban centers where benefit is gained from the nearness to cities but land costs are significantly lower.

The mean of 3.70 indicates that housing developers to a moderate extent have focused on high income housing as they are profit making institutions by nature. This varied significantly as indicated by standard deviation of 1.293. These findings contradict with the findings of Njathi (2011) who carried out a study on the challenges facing house developers in Kenya among the low-income earners. He established that housing is a major problem in

Kenya due to high land costs, complicated land acquisition processes, outdated planning, and building regulations, lack of adequate infrastructure among others.

### **Affordability of Decent Housing in the Kibera informal Settlement**

On the measurement of dependent variable which is the implementation of affordable decent housing projects, the respondents were given a list of statements relating to the affordability of decent housing projects in the Kibera informal settlement. The findings are shown in Table 7.

<b>Statement</b>		<b>Large extent</b>	<b>Moderate extent</b>	<b>Small extent</b>	<b>Not at all</b>	<b>Mean</b>	<b>Standard deviation</b>
Rent rates influences affordable decent housing projects in urban settlements in Kenya	38.4	45.3	0.0	1.2	15.1	4.07	1.003
Sanitation influences affordable decent housing projects in urban settlements in Kenya	20.9	61.6	7.0	10.5	0.0	3.76	1.178
Social amenities influences affordable decent housing projects in urban settlements in Kenya	32.6	44.2	12.8	5.8	4.7	3.94	1.056
<b>Aggregate Score</b>	<b>30.6</b>	<b>50.4</b>	<b>6.6</b>	<b>5.8</b>	<b>6.6</b>	<b>3.92</b>	<b>1.079</b>

From the results in Table 7, the mean of 4.07 indicated that rent rates influences affordable decent housing projects in the Kibera informal settlement to a large extent with a significance variance of 1.003. Social amenities influence affordable decent housing projects in the Kibera informal settlement to a moderate extent as indicated by mean of 3.94 and a significance variance of 1.056 and sanitation influences affordable decent housing projects to a small extent as indicated by mean of 3.76 and a significance variance of 1.178. Buckley, (2011) observe that a strategy package to overcome barriers for delivering housing opportunities affordable to the urban poor found out that the city was struggling with a housing deficit that was compounding each year and creating market distortions that threaten to derail recent economic success and destabilize the social fabric of the community.

### **Conclusion**

The study established that household income had a positive and significant influence on access to affordable decent housing Kibera informal settlement to a large extent. It was established that majority of the respondents are low income earners, who indicated that the provision of decent shelter is being undermined by the inability of potential tenants to pay for it because of their limited incomes. This study therefore concludes that the number of households, price of housing and income are the major factors explaining the pattern of demand for housing in Kibera informal settlements. The price of housing just like those of other goods and services would influence the aggregate demand level and resource utilization in the economy.

## **Recommendations**

Inadequate housing for low income earners is determined by their inability to rent or purchase better and decent dwelling units. Therefore, this study recommends that when planning for housing, there is need to consider the factor of affordability. This study focused on the influence of population, household income, government housing schemes and land on access to affordable decent housing projects. Therefore, the study recommends that further studies should be carried out on other factors that influence access to affordable decent housing projects in other informal settlements in Kenya. There is need for a study on appropriate housing technologies that are cheaper, long lasting and affordable.

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