Assessment of Factors Influencing House Price of the Affordable Houses and Role of Government

Joseph Muturi[1], Juma Mohamed[2]

[1]University of Dar es Salaam, College of Engineering and Technology, Department of Mechanical and Chemical Engineering, Dar es Salaam, Tanzania
[2]University of Dar es Salaam, College of Engineering and Technology, Department of Mechanical and Chemical Engineering, Dar es Salaam, Tanzania

Abstract: Urban cities in Africa are characterized with high population growth rate of urbanization. The rate of urbanization does not match the available housing stocks. The available houses are characterized by high rent costs and renting inconveniences as a result giving rise to desire of owing a house. These desires are not easily fulfilled as they constantly encounter constrains such as high price. Price of house has been viewed to be affectected by factors from demand and supply side. Purposive sampling technique was used in this study. This assessed factors influencing house price of the affordable houses and role of government. 70no participants drawn from different professional background participated in this study by filling the questionnaires. Analysis was done using both descriptive and inferential statistics. Exploratory principal component analysis was done to check out factors influencing demand and supply of housing industry using SPSS. Analysis reveals that demand and supply of houses can be explained by four components and 3 components in the role of government. The study recommends that there is need for the government to review the laws governing VAT and government to provide already serviced land (roads, water electricity and sewage) for development among others.

Keywords: House price, affordable houses, demand factors, supply factors.

1.   INTRODUCTION

Most countries in the African continent have high population growths and high rates of urbanization. Tanzania population growth rate is 3% p.a. while the urban population increases by about 5% p.a. In consequence, urbanization increased from 5.7% in 1967 to 29.1% in 2012 [4]. Dar es salaam is city in Tanzania that have high urban growth rate. Dar es salaam have experienced growth of 5.6% (4,364,541) in the span of the year 2002 -2012 from 4.3% in the span of the year 1998-2002 [4]. The ever growing population scrabbles for available housing stocks that are not enough. This deficit has been stated to be 3 million housing stock units with annual growth of 200,000 units [5]. The housing stocks produced are few than the ever growing targeted group. Pension funds and government institutions such as NHC have played a great role in trying to reduce the ever growing demand of the affordable houses.

The aim of this paper is to assess the factors that Influencing house Price of the affordable houses. Housing price, like any other goods and services in a market economy are determined by the interactions of demand and supply [6]. As with the demand for most goods, there is an inverse relationship between the quantity demand for housing and the cost of housing. Higher prices lead to a fall in real incomes which means that consumers reduce their quantity demand. Other factors influencing demand for housing are population, income, social trends, interest rates and the availability of credit [6]. On the supply side, the key factors determining housing prices are the availability of housing that is vacated or offered for sale and the cost of new construction. The Increase in cost of new homes due to rise in inputs costs affects the price of existing homes since they are close substitutes for one another [6]. When the price lowers, buyers will want more of an item, so as the price of housing drops, residents will demand more housing [1].
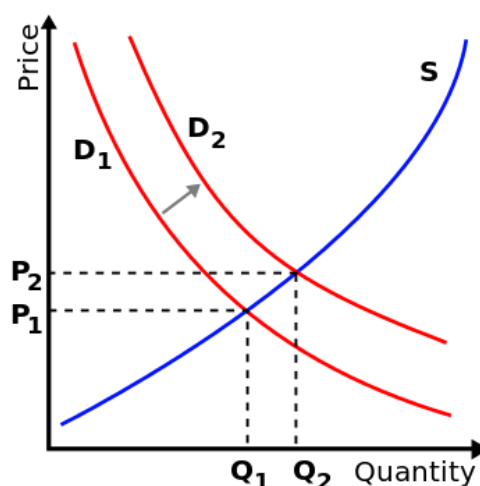
Page | 5

Figure 1: Demand and Supply theory

The supply and demand model describes how prices vary as a result of a balance between product availability and demand. The graph depicts an increase (that is, right-shift) in demand from D1 to D2 along with the consequent increase in price and quantity required to reach a new equilibrium point on the supply curve (S).

The law of supply tells us that at lower prices fewer goods will be supplied. Developers (investors) will opt to develop property based on expected profits and costs. There is a need to enable the drivers that will stimulate the housing sector so that the supply of affordable housing can be increased. The interaction of both demand and supply factors influence the price of housing which in turn affects affordability. Basic economic theory postulates that, all things being equal, a rise in the price of housing leads to a fall in housing demand, giving a downward-sloping demand curve for housing as shown in Figure 1. An increase in housing price will, however, lead to an increase in housing supply as developers will be motivated to construct more houses to benefit from the higher price.

2. MATERIAL AND METHODS

2.1 study area:

Dar es Salaam has been selected as a study area which is the largest urban metropolitan city in Tanzania and is one of the rapidly urbanising cities in the country and has a bigger population of 4,364,541 inhabitants in 2012 and grows at a rate of 5.6%. [4].

2.2. Research design:

This study has used qualitative design with semi-structured questionnaires that were distributed to the participants.

2.3 Sampling technique and Sample size:

Purposive sampling technique is used in this study.

John (2016) illustrates consideration to be taken during the establishment of the sample size in non probability sampling as illustrated in table 1.

Table 1: Sample size

Nature of study	Minimum sample size
Semi-structured, in-depth interviews	5 – 25
Ethnographic	35 – 36
Grounded theory	20 – 35
Considering a homogeneous population	4 – 12
Considering a heterogeneous population	12 – 30

The population under study is a heterogeneous population and as recommended by [2] it should be 12-30 size. The researcher targeted 80 sample size populations in order to make sure that data saturation or redundancy has been achieved

2.4 Data analysis:

The quantitative data was analyzed using both descriptive and inferential statistics. The descriptive statistics was used to describe and summarize the data inform of tables, frequencies and percentages. The inferential statistics was used to help make inferences and draw conclusions. Statistical tests including; Cronbach Alpha to test Reliability, Kaiser Meyer Olkin (KMO) Measure of Sampling Adequacy, Bartlett's Test of Sphericity, Exploratory principal component analysis and R-matrix to check for multicollinearity. All tests of significance was computed at $\alpha = 0.05$. The Statistical Package for Social Sciences (SPSS) was used to analyze the data.

3. RESULTS AND DISCUSSION

3.1 Demographic characteristics:

Only 70 no. filled and returned the questionnaires out of targeted 80no. respondents making a response rate of 87.5%. As shown in table 2, 71.4% of the respondents were male while 28.6% female thus the finding of the study did not suffer from gender biasness. Marital status of the respondents was that 71.4% were married while 28.6% were single. Respondents were drawn from different professionals as follows; Engineer (25.7%), Business (21.4%), Quantity surveyor (14.3%), Architect (12.9%), Consultant (4.3%) Interior design (2.9%), Project manager (1.4%), University lecture (1.4%), Administrative officer (1.4%), Driver (1.4%), and others (12.9%).

Table 2: Summary demographic Characteristics of the Respondents N=70.

Variables	N	%
Occupations		
Interior design	2	2.9
Project manager	1	1.4
University lecture	1	1.4
Administrative officer	1	1.4
Quantity surveyor	10	14.3
Business	15	21.4
Driver	1	1.4
Engineer	18	25.7
Architect	9	12.9
Consultant	3	4.3
Other	9	12.9
Gender		
Male	50	71.4
Female	20	28.6
Age		
18-30	9	12.9
31-40	39	55.7
41-60	22	31.4
Marital Status		
Married	59	84.3
Single	11	15.7

3.2 Factors Influencing Demand and Supply of Affordable Houses:

Exploratory principal component analysis was done to check out factors influencing demand and supply of housing industry in Tanzania. The exploratory principal component performed in which all communalities were greater than 0.5 and there was no complex structure. Kaiser Meyer Olkin (KMO) Measure of Sampling Adequacy was 0.61 and Bartlett's Test of Sphericity was having a $p<0.001$. Multicollinearity was done which could be detected by looking at the determinant of the R-matrix. To avoid multicollinearity, determinant should be greater than 0.00001. The R-matrix for this analysis is 0.075. Therefore this exploratory principal component analysis reveals that demand and supply of houses in Tanzania can be explained by four components as shown in Table 3. All four components retained were able to explain 69.42% of the total variance.

Component I (4 variables)

i)   Zero rating VAT on building materials used to construct affordable houses can lower the price of the houses.

ii) Low income earners will most prefer houses that are located near their place of work.

iii) Unemployment or lack of steady job greatly affects the affordability of the affordable houses to the low income.

iv) Macroeconomic factors i.e. inflation, exchange rate, interest rate and GDP affects the affordability of the affordable houses to the low income earners.

Table 3: Components Matrix for Demand and Supply of houses in Tanzania

Variables	Component		
	1	**2**	**3**
Responses on Reviewing of the building code to allow for use of modern and appropriate technology would lower the price of houses			0.775
Responses on Providing planned and serviced plots (roads, water electricity and sewage) would increase the supply of the affordable houses.		0.843	
Responses on Tax exemption on the building materials used to construct affordable houses would lower the price of the houses.			0.804
Responses on Introduction of incentives to the real estate developers to develop more affordable houses would increase the affordable housing supply.		0.768	
Responses on Providing government assisted affordable houses to the low income would increase affordability of the houses to the low income.	0.725		
Responses on Encouraging private and public partnership at municipal council government level in developing of the affordable houses would increase the supply of affordable houses.	0.636		
Responses on Allowing access to pension benefits (like NSSF, PSSF, GEPF…etc) for payment of down payment of mortgage for the house would increase the number of people able to obtain mortgage loans.	0.7		
Responses on Increasing efficiency and transparency in the registration of land transfers and charges would encourage developers to construct more units of affordable housing.	0.742		

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 7 iterations.

Component II (2 variables)

i)   The high cost of the affordable housing discourages the high number of low income earners who can't afford them

ii) High cost of land and infrastructure make the affordable houses more expensive.

Component III (3 variables)

i) Letting out the affordable houses instead of selling them would increase they affordability to the low income earners

ii) Population increase affects the affordability of houses to low income earners

iii) Increasing the number of the people able to qualify for mortgage loans will increase the affordability of housing to the low income earners.

Component IV

i) Increasing the supply of the affordable houses would help alleviate selling price pressures.

3.3 The Role of Government in Improving the Provision of Affordable Housing:

Exploratory principal component analysis was also run to check for the role of government in improving the provision of affordable housing in Tanzania. The exploratory principal component analysis was appropriate for the data since KMO (0.69) and Bartlett's (p=0.001) tests were significant, and communalities greater than 0.5.The exploratory principal component analysis explained variation in role of government in improving the provision of affordable housing by 61.24% of the total variances. Multicollinearity was done which could be detected by looking at the determinant of the R-matrix. To avoid multicollinearity, determinant should be greater than 0.00001. The R-matrix for this analysis is 0.275.Therefore about three components were appropriately describing the role of government in improving the provision of affordable housing as indicated on the table 4.

Component I

i) Government to provide assisted affordable houses to the low income would increase affordability of the houses to the low income.

ii) Encouraging private and public partnership at municipal council government level in developing of the affordable houses would increase the supply of affordable houses

iii) Allowing the access to pension benefits (like NSSF, PSSF, GEPF…etc) for payment of down payment of mortgage for the house would increase the number of people able to obtain mortgage loans.

iv) Increasing efficiency and transparency in the registration of land transfers and charges would encourage developers to construct more units of affordable housing.

Component II

i) Providing planned and serviced plots (roads, water electricity and sewage) would increase the supply of the affordable houses

ii) Introduction of incentives to the real estate developers to develop more affordable houses would increase the affordable housing supply.

Component III

i) Reviewing of the building code to allow for use of modern and appropriate technology would lower the price of houses.

ii) Tax exemption on the building materials used to construct affordable houses would lower the price of the houses.

Table 4: Component Matrix for Government in Improving the Provision of Affordable Housing.

Variables	Components			
	1	2	3	4
Responses on increasing the supply of the affordable houses would help alleviate selling price pressures.				0.738
Responses on Letting out the affordable houses instead of selling them would increase they affordability to the low income earners.			0.644	

Responses on if population increase affect the affordability of houses to low income earners			0.814	
Responses on increasing the number of the people able to qualify for mortgage loans will increase the affordability of housing to the low income earners.			-0.562	
Responses on the high cost of the affordable housing discourage the high number of low income earners who can't afford them.		0.759		
Responses on high cost of land and infrastructure make the affordable houses more expensive		0.852		
Responses on if zero rating VAT on building materials used to construct affordable houses can lower the price of the houses.	0.841			
Responses on low income earners will most prefer houses that are located near their place of work.	0.62			
Responses on un employment or lack of steady job greatly affect the affordability of the affordable houses to the low income.	0.66			
Responses on Macroeconomic factors ie inflation, exchange rate, interest rate and GDP affects the affordability of the affordable houses to the low income earners.	0.852			

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 5 iterations.

4. CONCLUSION AND RECOMMENDATION

4.1. Conclusions:

Based on the findings, the study concludes that the variables affecting the demand and supply of the affordable housing are as follows;

1) Zero rating VAT on building materials used to construct affordable houses.

2) Low income earners will most prefer houses that are located near their place of work.

3) Unemployment or lack of steady job greatly affects the affordability of the affordable houses to the low income.

4) Macroeconomic factors i.e. inflation, exchange rate, interest rate and GDP affects the affordability of the affordable houses to the low income earners.

5) The high cost of the affordable housing discourages the high number of low income earners who can't afford them.

6) High cost of land and infrastructure make the affordable houses more expensive.

7) Letting out the affordable houses instead of selling them would increase they affordability to the low income earners.

8) Population increase affects the affordability of houses to low income earners.

9) Increasing the number of the people able to qualify for mortgage loans will increase the affordability of housing to the low income earners.

10) Increasing the supply of the affordable houses would help alleviate selling price pressures.

The study also revealed that government also has a role in Improving the Provision of Affordable Housing. The following are ways that a government can help alleviate this problem of housing.

1) Government to provide assisted affordable houses to the low income would increase affordability of the houses to the low income.

2) Encouraging private and public partnership at municipal council government level in developing of the affordable houses would increase the supply of affordable houses

3) Allowing the access to pension benefits (like NSSF, PSSF, GEPF…etc) for payment of down payment of mortgage for the house would increase the number of people able to obtain mortgage loans.

4) Increasing efficiency and transparency in the registration of land transfers and charges would encourage developers to construct more units of affordable housing.

5) Providing planned and serviced plots (roads, water electricity and sewage) would increase the supply of the affordable houses.

6) Introduction of incentives to the real estate developers to develop more affordable houses would increase the affordable housing supply.

7) Reviewing of the building code to allow for use of modern and appropriate technology would lower the price of houses.

8) Tax exemption on the building materials used to construct affordable houses would lower the price of the houses.

4.2. Recommendations:

The study recommends that there is need for the government to review the laws governing VAT and see the possibilities on how the affordable projects can be exempted or reduced as it will have much effect on the reduction of the selling price. Incentives provided by the government to affordable houses developers can help boost the provision of the houses. This can also be done by encouraging Private public partnership with win-win situation.

There is a need of government to review laws governing pensions fund schemes to allow the members to access their contribution and pay for the house mortgage. Developers should let out the houses instead of selling them.

There is a need of the government to provide already serviced land (roads, water electricity and sewage) for development. The cost of infrastructure development if it is not developed by the government and it's done by the developer himself will eventually be paid by the buyer thus adding up to the selling price.

Establishment of housing policy and real estate guidelines will greatly regulate the real estate industry by state how affordable house should be, type of materials to be used and provide a guideline of how much the affordable house be sold to sojourn the developers who extort the low income earning and make super profits.

REFERENCES

[1] Bejamin et.al (2004), "Housing Supply and Affordability: Do Affordable Housing Mandates Work?" Reason Public Policy Institute.

[2] John (2016), "The Ultimate Guide to Writing a Dissertation in Business Studies: A Step-by-Step Assistance,

[3] Urban solution (2012), "Study on the housing sector Tanzania"

[4] URT (2013), "2012 population and housing census" National Bureau of statistics Publication.

[5] URT (2002),"The National Human Settlement policy", Ministry of Lands and Human settlement Development Dar es salaam January 2002.

[6] Zainal (2010). "House Price and Affordability in Malaysia" University of Kebangsaan Malaysia, Faculty of Economics and Business.