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HOUSING AND POVERTY IN SOUTHERN ETHIOPIA: EXAMINING AFFORDABILITY OF CONDOMINIUM HOUSES IN HAWASSA CITY

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ABSTRACT This study is aimed at examining the extent of affordability of condominium houses using shelter-poverty approach in one of the fast growing cities of Ethiopia, Hawassa city administration. The data were collected from a representative sample of 180 households drawn from the study population, using a combination of simple random and multistage sampling techniques. Shelter-poverty approach was used to measure affordability of condominium houses, and the key predictors of affordability were identified using Ordinary Least Square regression model.The analysis revealed that 61.7 percent of the household in the study area were shelter poor (spent more than 30 percent of their monthly income on housing expenses) and the remaining 38.3 percent are non-shelter poor. The major housing problems that resulted in shelter-poverty were choosing condominium as rental houses, low household income, high housing and non-housing expenses, large household size, high rental/mortgage cost, changes of housing and non-housing costs, short duration for making down payments, and problems related to bank loans.
Finally, the study recommended that the concerned authorities introduce workable, consistent and solid affordability indices (combining the conventional and shelter-poverty approaches) that accommodate the different social and economic groups of the city, and create enabling environment for the beneficiaries to get access to credit and bank loans.

JEL Classification: I32

Keywords: Affordability, shelter- poverty, condominium, housing, conventional measures.

Introduction

There is no doubt that housing is one of the basic necessities for human beings. However, it has remained a critical problem for millions of poor people in developing countries (Bihon, 2007).

As a result of increasing urban homelessness and the growth of slums, from the 1950s governments throughout the world started to develop various strategies and intervene more directly in the procurement of urban housing (Wakely, 1988). The two decades 1950-1970 saw the political independence of many colonies in Asia, Africa and the Caribbean and a new economic independence, and these brought about significant industrialization and dramatic urbanization in many Latin American countries (Wakely, 1988; Wakely, 1988). In some countries, the government subsidy was redirected from the low-income groups to low-middle income earners and then switched from individual householders to the (profit-motivated) producers of housing -real estate developers and bankers (UN Habitat, 2003).

Today, housing for low-income families is a major component of all towns and cities in Asia, Africa, Latin America and the Caribbean, typically covering 60-80 percent of the developed land area of towns and cities and accounting for 50-70 percent of the value of the fixed capital formation of urban areas of which they are an integral part (UN-Habitat, 2003).

Like most urban centers of developing countries, most cities and towns in Ethiopia face a plethora of problems, including an acute and ever-worsening housing shortage (Solomon & McLeod, 2004). In Ethiopia, until recently, there was no specific legislation that recognized citizens' right to housing or which imposed a duty on the government to recognize that right. Nevertheless, there were few national coordination policies regarding housing and urban development. During the first half of the 20th century, land and housing in Ethiopia were controlled by a few individuals and groups, where housing supply was mainly controlled by the landowning elite who constitute less than one percent of the population but own more than 70% of the arable land (UN-HABITAT, 2007). Following the 1974 land proclamation (No. 47/1975), ownership of all urban land and extra houses were transferred to the government in an effort to enforce a fair distribution of wealth across the country (Teshome, 2008). State sponsored urban housing construction has begun in the late 1980s (Mulugeta, 1995). With emergence of the current government in 1991, Leasehold as a land tenure system was introduced in 1993 and then revised in 2002 and 2011 (UN-HABITAT, 2010).

Since year 2005, Ethiopia has been implementing an ambitious government led low and middle-income housing programme. The programme involves a radical shift from the single-storey detached housing typology (government owned rental housing) to a new condominium typology (private homeownership). According to the programme, all slums would be cleared within ten years. To make the programme feasible, the state transferred the overall responsibility for the housing sector to the regional administrative level. At the regional level, the Bureau of Works and Urban Development (BWUD) is responsible for urban management and development issues.

According to empirical assessment of housing study by HCAFEDO, 52 percent of the total population of the capital city, Addis Ababa, earns a monthly income of less than 167 USD (HCAFEDO, 2011). Based on this observation, it would be obvious that the housing standard of the city is incompatible with the affordability of the majority of the residents to build their shelter. The situation is not different for most towns in Southern Ethiopia, especially to the capital of Southern regional state (Hawassa city administration). In the city administration, high income group earning more than Ethiopian birr 2000 (100 USD) accounts for only 8 percent, middle income getting monthly income of 670 – 2000 accounts 26 percent and low income residents, those getting less than birr 670, account for 56 percent. If we go further in categorizing the low income group, 50 percet of households earn below 450 birr (22USD)/month. Relating this with expenditure items, it could be said that most of the households spend more than 50 percent of their income on food (HCAFEDO, 2011).

According to HCAHDPO (2011), housing needs of low and middle income residents of Hawassa city administration has been increasing. As a result, the city administration introduced condominium housing in the year 2006 and 2007. However, such effort has been

constrained by the fact that it is still not affordable to 26 and 56 percent population segment of the low and middle income residents respectively. For instance, the studio type of condominium houses, which are meant for the low income segment getting below 550 birr/month, cost 67502.50 birr on average that is expected to be paid within 25 years. This seems not affordable to this income group as they are also expected to cover other non housing items for survival.

This study aims at assessing the problem of housing affordability in condominium housing, using the 'shelter poverty' approach of housing affordability measures. Very few studies on housing affordability use the conventional method (i.e the housing cost to income ratio and the residual income approaches) to measure the extent of the problem. This study is thus expected to fill this gap by employing the shelter poverty model so as to consider other variables, other than income, affecting housing affordability.

1. Conceptual Framework

Most studies to date use conventional approaches in measuring the problem of affordability. These approaches are associated with finding the ratio of income a household expends on housing to non-housing items. Although it is simple to calculate and understand, it is not inclusive of other key variables affecting housing affordability. This gives a disingenuous outcome which hardly encompasses possible related items to be included in the analysis of the problem (David, 1995). It is also noted that the conventional measures of housing affordability show no reversal in the affordability situations of small and larger households. Secondly, the conventional ways of measuring affordability stand in a position that one can afford a house but by compromising the minimum requirement needed for non-housing items (Ibid, 1995).

In an attempt to solve these logical flaws in conventional ways of measuring affordability, Stone (1990), developed the notion of shelter poverty as a measure of the housing affordability problem. To address this issue, he defined shelter poverty as occurring when housing costs are so high that households cannot afford non-housing necessities. His sliding scale arises from the recognition that housing costs generally make the first claim on a household's disposable income, with non-housing expenditures having to adjust to what is left. That is, when we say that a household is paying more than they can afford for housing, we mean that after paying for their housing they are unable to meet their non-housing needs at some specified minimum level of adequacy. Since small households on average can meet their non-shelter needs for less than larger households, they can reasonably afford a higher percentage of income for housing than larger households of the same income. Since low and higher income households of the same size and type would on average, need comparable resources to meet their non-shelter needs at a minimum level, lower income households reasonably can afford a smaller percentage of their income for housing than similar higher income households. On this basis, it turns out that some households can afford less than the traditional 25 percent of income – indeed, some can afford nothing for housing-while others can afford more than 25 percent and even more than 30 percent without hardship (Stone, 1990).

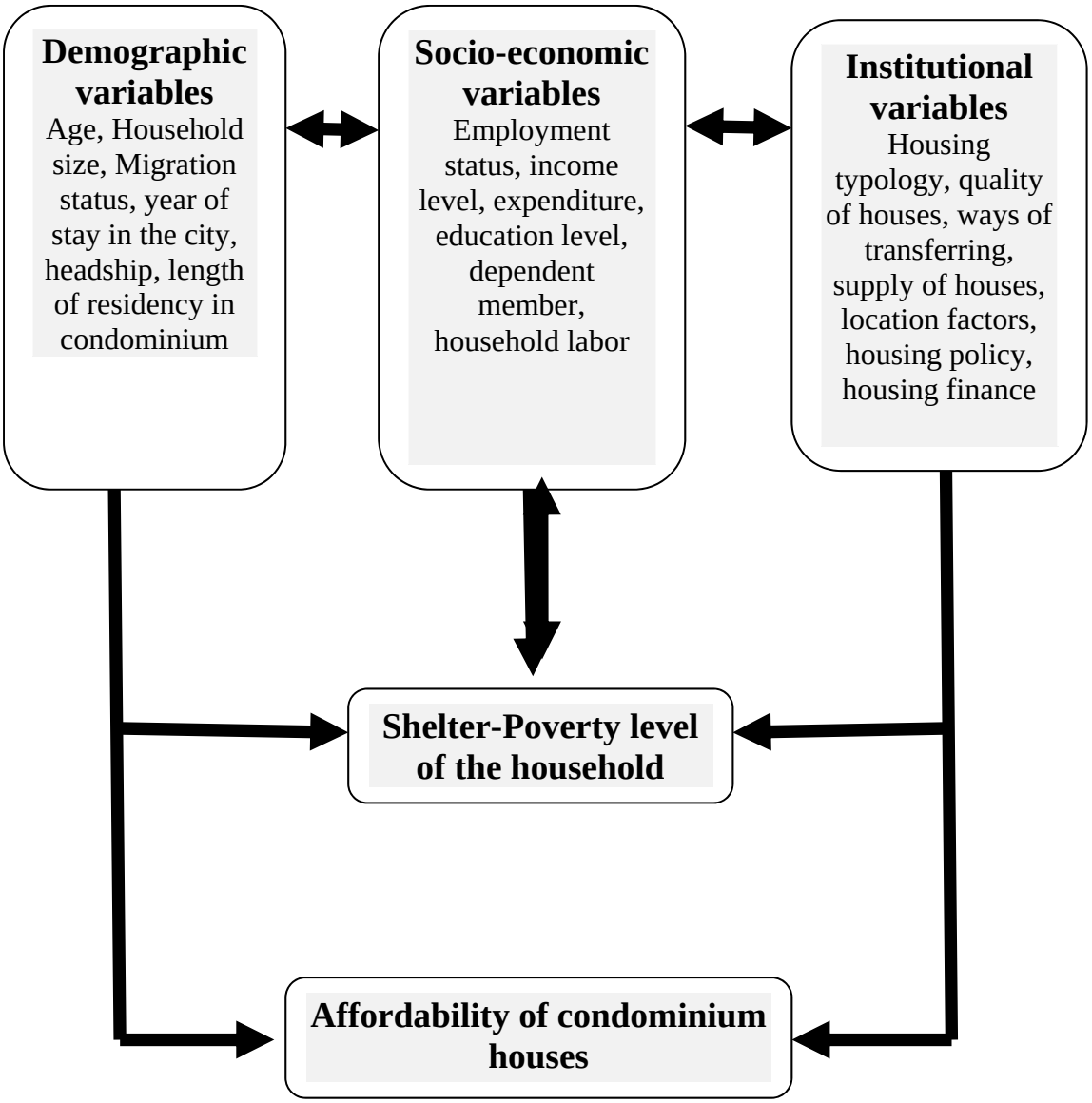

Figure 1. Conceptual framework of the study based on literature review
Source: Adopted from Okey Ndubuez (2007).

Thus, the shelter poverty measures the extent to which a given household's residual income can cover its non-housing needs after deducting incurred housing expenses. It therefore addresses the following main question – to what extent can a given household pay for their basic non-housing needs after deducting their housing expenditure? (Okey, 2007). In this regard, low household income is the major factor that causes unaffordability of condominium houses for both homeowners and renters. There are also other variables working together to affect the level of affordability such as high relative rental prices of houses and high relative cost of owning a house, employment status, housing typology, household size, migration status, headship, length of residency, educational level, expenditure norm and location (see *Figure 1*).

2. Methodology of the Study

The study was conducted in one of the biggest cities and regional capitals of Ethiopia, Hawassa city administration. It is located in the Southern Nations Nationalities and Peoples Region on the shores of Lake Hawassa in the Great Rift Valley; 273 km south of Addis Ababa. Hawassa is the capital of Southern Nations, Nationality and Peoples Regional State (SNNPRS) which enclose an area of 157.2sq.kms (HCAFEDO, 2010).

The city, which is the economic and cultural hub of the region, is divided into 8 sub-cities which includes *Tabor, Hayek Dar, Menaharia, Misrak, Hawella Tula, Bahale Adarash, Addis ketma* and *Mehale Ketema (kifle ketemas)* and 32 small administrative units (kebeles). Hawassa city administration has a Population of 292,533 people growing at a rate of 4.02% per annum (CSA, 2007).

In recent times, there have been increasing demands for housing and housing land in the town, according to the official of the municipality. However, as the *kebele (smallest administrative body within the sub cities)* and public houses constructed by the municipality have been totally inadequate in meeting the housing demand, many people are forced to live in crowded conditions by paying rent for private houses or rooms. In order to solve such inadequate shelter, the city administration launched two round condominium projects in 2005 and 2006 for low and middle income residents. In order to benefit from the project, 18,892 people were registered but it was only 3538 that won the chance of getting condominium houses while the rest 13,354 are still in the waiting list (HCAHDPO, 2011).

The study generated the required data from primary sources using two types of questionnaire (one for renters and the other for home owners). The study employed cross–sectional survey design with the use of both quantitative and qualitative approaches.

A multi stage sampling procedure was used to select the condominium sites and eligible respondents. Hawassa city administration was purposively selected being one of the cities with a high shelter poverty affordability problem in Southern Ethiopia (SNNPR). Out of 11 condominium sites in the city administration, 5 sites were identified since most of them were reported completed and all of the units transferred to beneficiaries. The list of all condominium sites was used as a sample frame to select sample sites. To determine the sample size of respondents from each sites maintaining appropriate tenure type, stratified and probability proportional sampling (PPS) method were used (*Table 1*). Stratified sampling technique was preferred because dwellers in condominium houses were classified in to renters and home owners.

Table 1. Distribution of sampled households by condominium sites in Hawassa city administration (n=180)

	Site	Total houses in sites					Sample population				
		Studio	1 bed	2 bed	3 bed	total	Studio	1 bed	2 bed	3 bed	total
1	Debub 3 & 4	80	120	101	59	360	14	12	13	10	49
2	Debub 5	56	112	78	32	278	9	9	11	8	37
3	Debub 6	68	145	82	38	333	12	12	12	9	45
4	Atena Tera	48	111	78	33	270	10	10	10	8	38
5	Tabor extension	36	45	34	33	148	3	3	3	2	11
	Total	**288**	**533**	**373**	**195**	**1389**	**48**	**46**	**49**	**37**	**180**

Source: computed from own survey data.

Both quantitative and qualitative data were collected to assess the utility of shelter poverty approach to determine affordability of condominium houses. Structured questionnaire designed for this purpose focused at household level and was used to collect data from sampled households. To collect reliable data, appropriate questions were framed and pre-tested. Data were collected by trained field staff.

Ordinary Least Squares (OLS) regression model was used to identify the determinants of household shelter poverty. The dependent variable is affordability and 11 predictors were used. The international poverty line (one dollar per person per day) designed by the World Bank has been used in this study to determine threshold standard of non-housing basic necessities. This is done due to non-availability of a consolidated official family budget standard database at national level and also for Hawassa city administration. Gross household income has also been used instead of net after-tax income due to non availability of after tax household income for all kinds of households.

To determine equivalent value to the "$2 a day" international poverty line, exchanges rates prevailing at the time of data collection is used. This is done to simplify the long process of the conversion method using the consumer price index and purchasing power parity. To cope up with this flaw and get a very similar figure with the official method of conversion, both rates at the formal and informal foreign exchange markets were employed. During a one week data collection one USD has been exchanged for 18.42 birr at commercial banks in Hawassa and with 21.50 birr in the black market and the average is 19.96 birr. This amount was the current equivalent value for one US dollar. As minimum of two dollars is claimed per person per day by the World Bank, the study multiplied it by 30 days to get a monthly threshold of 838.32 birr. Afterwards, it was important to allow deduction of some percentage of this amount for housing costs. Here, the common affordability percentage of a monthly income, 30% was used in the conventional approach was employed to approximate the maximum allowance for housing costs (Taking the maximum will help keep the non-housing essential at minimum).

3. Results

3.1. Background characteristics of respondents

The study was conducted based on 180 sample household heads selected from five condominium sites in Hawassa city, of which 128 (71.1%) were males and the remaining 52 (28.9%) were females. As can be seen from table 1, the average age of the respondents was 36.4, with a standard deviation of 14.2. Of the total respondents, those in the age group 15-24 were 17.8% followed by the age group 25-34 (39.4%).

The percentage distribution of household size (*Table 2*) revealed that 40 percent of the households had medium household size, 1.7 percent large household size and the remaining 58.3 percent had small household size. The computed average household size for the sampled household was 3.2 with standard deviation of 1.6. The majority (56.1%) of the households had 4-6 members in the labor force, 20.6 percent had 7 and above and the remaining 23.3 percent reported a size of 0-3 members. Out of the total respondents, majority (75.6%) was married, 18.9 percent were single, 3.3 percent were windowed and 2.2 percent were divorced.

With regards to migration status, 128 (71.1%) of sample respondents were migrants and 52 (28.9%) of the respondent were non migrants. The survey result indicated that the majority (71.1%) of the respondents were migrants who come to Hawassa city administration from different cities, towns and from the countryside. It is noted that the majority (75.6%) of households were headed by males which commensurate with figures reported by Demographic and Health Survey (DHS) for the country (74%) (CSA, 2011).

Table 2. Percentage distribution of respondents by selected demographic characteristics, Hawassa city administration, (n=180)

Characteristics	Frequency	Percent
Sex of household head		
Male	128	71.1
Female	52	28.9
Age of household head		
15-24 years	32	17.8
25-34 years	71	39.4
35-50 years	49	27.2
51-64 years	28	15.6
>64 years	32	17.8
Household size		
1-3	105	58.3
4-6	72	40.0
>6	3	1.7
Household member in the age group 15-64		
1-3	42	23.3
4-6	101	56.1
>6	37	20.6
Marital status of the household head		
Single	34	18.9
Divorced	4	2.2
Widowed	6	3.3
Married	136	75.6
Migration status of household head		
Migrant	128	71.1
Non migrant	52	28.9
Headship of the household		
Male headed	136	75.6
Female headed	20	11.1
Husband/wife headed due To death	4	2.2
Child headed	17	9.4
Other	3	1.7
Year of stay in Hawassa city		
0-5 years	30	16.7
6-10 years	79	43.9
11-15 years	40	22.2
16-20 years	24	13.3
>20 years	7	3.9
Length of residency in condominium houses		
0-1 year	89	49.4
1-2 years	51	28.3
2-3 years	30	16.7
3-4 years	10	5.6

The percentage distribution of stay in the study area (*Table 2*) leveled that, 43.9 percent of household heads lived in Hawassa for 6-10 years, 22.2 percent lived 11-15 years, 16.7 percent of households lived 0-5 years, 13.3 percent of household heads lived 16-20 years and the remaining 3.9 lived for longer period (more than 20 years).

The length of residency in condominium houses is presented in *Table 2*. It can be seen that 49.4 percent of households have resided in the houses for 0-1 year, 28.3 percent 1-2 years, 16.7 percent for 2-3 years and the remaining 5.6 percent resided 3-4 years. Of the respondents, 35.6 percent were protestants, 44.4 percent orthodox Christians, 17.8 Muslims and the remaining 2.2 percent were Catholics. Ethnic background of sampled respondents shows that, 18.9 percent of respondents were Sidama, followed by 14.4 percent Amhara, 11.6 percent Oromo, 9.5 percent Gurage, 6.1 percent Wollayta. The remaining 39.5 percent were from other various ethnic groups like Harari, Silite, Kefa, Tigire, Hadiya and Kembata. Out of the total respondents, 95 percent were employed and the remaining 5 percent were unemployed (see *Table 3*).

Table 3. Percentage distribution of respondents by selected socio-economic characteristics, Hawassa city administration, (n=180)

Characteristics	Frequency	Percent
Religion of the household head		
Orthodox Christian	80	44.4
Catholic	4	2.2
Protestant	64	35.6
Islam	32	17.8
Ethnic background of household head		
Amhara	26	14.4
Gurage	17	9.5
Oromo	21	11.6
Sidama	34	18.9
Wollayeta	11	6.1
Others	71	39.5
Employment status of household head		
Employed	171	95.0
Not employed	9	5.0
Educational status of household head		
Unable to read and write	26	14.4
Primary first cycle (1 - 4 grade)	9	5
Primary second cycle (5 - 8 grade)	16	8.9
Secondary first cycle (9 - 10 grade)	16	8.9
Secondary second cycle (11 - 12 grade)	10	5.6
Collage certificate	33	18.3
College diploma	38	21.1
Collage degree	25	13.9
Other	7	3.9
Average income of the household		
500 – 1000 birr	57	31.7
1001 - 2500 birr	56	31.1
2501 - 3500 birr	24	13.3
3501 - 5000 birr	18	10.0
More than 5000 birr	25	13.9
Number of dependent members in the household		
No dependent members	60	33.3
1-3	54	30.0
4-6	48	26.7
>6	18	10.0

Source: Computed from own survey data.

Regarding educational status of household heads, 14.4 percent were unable to read and write. However, 5, 8.9, 8.9, and 5.6 percent had joined primary school first cycle (1-4), primary school second cycle (5-8), secondary school first cycle (9-10), and secondary school second cycle (11-12), respectively. Also, 18.3, 21.1 and 13.9 percent were certificate, diploma, collage degree holders, respectively. The mean income of sampled respondents was 1930 birr per month. Of the total respondents 31.6 percent earn between 500-1000 birr, 31.1 percent earn between 1001-2500 birr, 13.3 percent earn between 2501-3500 birr, 10.0 percent earn between 3501-5000 birr and the remaining 13.9 percent earn more than 5000 birr per month. Formal and informal employment were the main sources of income. Remittances, pension anbd asset rents are also important source of income for non-employed respondents.

Household dependency was also surveyed and the result shows that in 33 percent of households there was no dependent member (age 0-14 year and above 64 years), whereas 30.2, 26.6 and 10 percent of households reported small to large number of dependents during the survey, giving a dependency ratio of about 0.31.

3.2. Housing characteristics and expenditure

The type of housing in the study sites were commercial, studio, one bed, two bed and three bed residential, with varying number of floors. The percentage distribution of housing typology on *Table 4* reveals that 26.7 percent of the households live in studio, 25.6 percent in one bed, 27.2 percent in two bed and 20.6 percent live in three bed residential. As shown in the *Table 4*, the size of condominium houses in sampled households varied from 22.02 to 77.71 square meters. Of the total sample households, 26.7 percent of the respondents live in houses with in an area of 22.02 – 41.57 square meters, 26.1 percent live within an area of 45.34 – 51.95 square meters, 26.7 percent live in an area of 53.45 – 70.39 square meters and the remaining 20.5 percent live in an area of 77.1 square meters (*Table 4*).

Table 4. Percentage distribution of respondents by reported housing typology and Condominium size, Hawassa city administration, (n=180)

Characteristics	Frequency	Percent
Housing typology		
Studio	48	26.7
One bed	46	25.6
Two beds	49	27.2
Three beds	37	20.6
Size of condominium houses		
22.02 - 41.57 sq km	48	26.7
45.34 - 51.95 sq km	46	26.1
53.45 - 70.39 sq km	49	26.7
77.71 sq km	37	20.5
Average Expenditure of household		
less than 10%	8	4.4
10 - 20%	28	15.6
21 - 30%	33	18.3
31 - 40%	67	37.2
41 - 50%	32	17.8
More than 50%	12	6.7

Source: Computed from own survey data.

The average monthly expenditure of sampled households is presented in *Table 4*. As it can be seen from the table, the mean monthly expense of the respondents for housing mortgage and utilities was 45% per month. Of the total respondents, 37.2% of them spent average monthly amount of 31-41%, 17.8 percent spent between 41-50%, 15.6 percent between 10-20%, and the remaining 4.4, 18.3 and 6.7 percent reported spending less than 10%, 21-30% and more than 50% respectively from their monthly income for housing expenses mainly for rent/mortgage and costs of housing utilities.

3.3. Household shelter poverty status

As described in section 3 above, shelter poverty approach was used to measure whether housing is affordable or not to obtain shelter poverty status of households. The total housing cost of each household was calculated and the summary of the computed figures are presented in the table below.

Table 5. Percentage distribution of households by shelter poverty status using average monthly expenditure, Hawassa city administration, (n=180)

Characteristics	Percent	Mean	Minimum	Maximum
Shelter poor	61.7	40%	35%	86%
Non Shelter poor	38.3	25%	10%	30%

Source: Computed from own survey data.

The result presented in *Table 5* revealed that the study area could be regarded as comparatively shelter poor given the fact that 61.7 percent of households could not meet their needs like food, clothing, medical care and transportation at some minimal level of adequacy after paying for housing since they spend more than 30% of income only for housing expenses. The remaining 38.3 percent of household meet their needs for food, clothing, medical care and transportation. On contrary, the minimal amount of expense spent by shelter poor households is 35% and maximum 86%. Mean expense for shelter poor and non shelter poor is 40% and 25% respectively. The major housing problems that exposed households to shelter poverty were choosing condominium as rental houses, low household income, high housing and non – housing expenses, large household size, high rental/mortgage cost, changes of housing and non – housing costs, shortage time given to pay down payment, and problems related to bank loans.

3.4. Bivariate Analysis: Association between selected predictors and shelter poverty status

Table 4 presents the association between selected socio-demographic variables and affordability using the Pearson's Chi-square test of independence. The result suggests that five of the eight variables have significant association with affordability of condominium houses at different p values. These variables are age of the household head, household members in the labor force, migration status, educational status of the respondent and typology of the condominium house.

Because the chi-square bivariate analysis indicates effects or associations of an independent variable and that of the outcome variable without controlling the confounding effects, the net effects of each independent variable were further examined using multivariate analysis.

Table 6. Results of person's chi-square on association between sampled households demographic variables and shelter poverty in Hawassa city administration, (n=180)

Variables	Shelter poverty status			Chi –square (X^2) & P – value
	Shelter poor (n=111)	Non Shelter poor (n=69)	Total (n=180)	
	Percent	Percent	Percent	
1	2	3	4	5
Age of household head				
25 - 34 years	11.7	6.1	17.8	
35 - 50 years	26.7	12.8	39.4	X^2 =10.711
51 - 64 years	11.7	15.6	27.2	P = 0 .013***
>64 years	11.7	3.9	15.6	
Total	61.7	38.3	100.0	
Household headship				
Male headed	47.8	27.8	75.6	
Female headed	1.7	0.0	11.1	
Husband /wife headed due to death of ether of the two	1.7	0.6	2.2	X^2 = 4.218 P = 0.377
Child headed	4.4	5.0	9.4	
Other	6.1	5.0	1.7	
Total	61.7	38.3	100	
Household size				
1-3	32.8	25.6	58.3	X^2 = 3.206 P = 0.201
4-6	27.8	12.2	40.0	
>6	1.1	0.6	1.7	
Total	61.7	38.3	100.0	
Household labour				
1-3	12.8	10.6	23.3	X^2 = 7.563 P = 0.056**
4-6	31.7	23.3	55.0	
>6	16.7	3.9	20.6	
Total	61.7	38.3	100.0	
Migration status of the head				
Migrant	41.7	29.4	71.1	X^2 = 1.770 P = 0.018*
Non migrants	20.0	8.9	28.9	
Total	61.7	38.3	100.0	
Year of stay in Hawassa				
0 - 5 years	13.9	2.8	16.7	
6 - 10 years	26.7	17.2	43.9	X^2 = 8.568 P = 0.073
11 - 15 years	11.7	10.6	22.2	
16 - 20 years	7.8	5.6	13.3	
>20 years	1.7	2.2	3.9	
Total	61.7	38.3	100.0	
Educational status of household head				
Unable to read and write	6.2	4.9	11.1	
Grade 1 - 4	5.5	2.3	7.8	
Grade 5 - 8	5.6	2.3	7.9	
Grade 9 - 10	10.6	3.9	14.5	X^2 = 4.544 P = 0.026**
Grade 11 - 12	14.4	9.4	23.8	
Collage certificate	8.3	7.2	15.5	
College diploma	8.3	7.2	15.5	
Collage degree	2.8	1.1	3.9	
Total	61.7	38.3	100	

1	2	3	4	5
Housing typology				
Studio	13.9	12.2	26.1	$X^2 = 26.113$ P = 0.000***
One bed	12.2	13.9	26.1	
Two beds	15.6	11.7	27.2	
Three beds	20.0	0.6	20.6	
Total	61.7	38.3	100.0	

Source: Computed from own survey data.

3.5. Key predictors of condominium housing affordability: Multivariate Analysis

In this section, eleven selected independent variables were entered in to Ordinary Least Squares (OLS) model to examine the major determinants of affordability of condominium houses. These variables were selected on the basis of the result of univariate and bivariate analysis. Prior to the estimation of the model parameters, multicollinearity among the continuous independent variables was checked using Variance Inflation Factor (VIF) (Gujarati, 1995). The average value of VIF for continuous variables was 1.663, which is less than the maximum cut point (i.e. ten).

The dependent variable was regressed separately against independent variables expected to affect it. The regression coefficients are interpreted as the change in the expected value of Y associated with a one-unit increase in an independent variable, with the other independent variables held constant. The beta (B) coefficients of the regression on *Tables 7*, was in the expected sign that signify the magnitude of the contribution of the individual independent variable, that is to say, the larger the value of beta (B), the greater its effect on the dependent variable.

Table 7. Results of OLS regression for determinants of affordability of condominium houses in Hawassa city administration, (n=180)

Variables	Unstandardized Coefficients		Sig.
	B	Std. Error	
Age of the household head	-.039	.099	.694
Household size	-.081	.250	.746
Dependent members in the household	-.059	.130	.653
Headship of the household	-.077	.082	.348
Year of stay in Hawassa	-.117	.084	.164
Migration status of the household head	.444	.192	.022 ***
Length of residency in condominium houses	.055	.092	.553
Income of the household	-.026	.095	.786
Housing typology	.578	.134	.000 ***
Employment status of the household head	-.777	.397	.052 **
Educational level of the household head	.039	.043	.362
(Constant)	2.254	.680	.001
df = 12 F = 4.745 *** & ** significant at 1 and 5%, respectively			
Dependent Variable: Affordability of condominium houses			

Source: Computed from own survey data.

The regression result on *Table 7* shows that out of the eleven independent variables considered in the model, three variables were found to be statistically significantly associated

with affordability of condominium houses. Among these, household size and housing typology were significant at p-value of 0.001 while employment status became significant at p value of 0.05. The rest eight were not found to document significant influence on affordability of condominium houses in the study area.

Migration status is positively related with affordability of condominium houses, being migrants increases affordability by 0.444 units. The relationship between housing typology and housing affordability shows that for a unit increase in housing typology, the situation of housing affordability goes down by 0.578 units. That means the higher change of housing typology, the houses became more unaffordable. Similarly, all other variables remaining constant, a one unit change in employment status increases affordability by 0.777 units.

Discussion and Conclusions

This study has measured household shelter poverty status in Hawassa city administration, Southern Ethiopia. The result indicated that 61.7 percent of the households in the study area were shelter poor (spent more than 30 percent of their monthly income for housing expenses such as rent or mortgage) and the remaining 38.3 percent were non-shelter poor. The major housing problems that exposed households to shelter poverty were choosing condominium as rental houses, low household income, high housing and non – housing expenses, large household size, high rental/mortgage cost, changes of housing and non – housing costs, short time given to pay down payment, constraints associated with bank loans and improvement costs incurred.

The results of the OLS regression revealed that migration status & shelter-poverty status have strong and positive relationship. The positive and statistically significant coefficient of migration status indicates that household heads who migrated into the city, regardless of their years of stay in the city, are more prone to the challenges of shelter poverty. This finding is consistent with the findings of Sisay (2007), who reported that migration is likely to affect shelter poverty negatively.

As expected, housing typology was found to have negative relationship with affordability of housing. The result implies that households with more rooms are found to be more unaffordable houses than households with less rooms (studio and one bed). The result agrees with the finding reported by Stone (1993) in Nigeria. The empirical evidences on housing typology showed that households with more rooms (like two beds and three beds) are more disadvantageous since they are expected to pay high down payment and improvement costs.

Employment status was another important variable that determine housing affordability. As expected, the result of OLS regression analysis revealed a significant positive relationship between employment status and affordability of condominium houses. Probably, those in more rewarding full time employment may have better affordability status.

As a whole, the affordability index is well predicted by migration status, housing typology and employment status, which implies that the concerned authorities should revisit the criteria and adopt more comprehensive measurements to ensure affordability of condominium houses. Put it differently, the findings call for a composite approach, which takes into account both the methodologies of the conventional and shelter poverty approach in order to maximize housing affordability. Also, in view of the higher percentage of shelter-poverty households reported, the government should recognize that the condominium project alone could not solve the housing backlog in the city, and hence, should adopt a multi-prolonged strategy, for example facilitating access to micro finance and construction subsidies for the poor with access to affordable residential land.

As a general remark, governments of developing countries such as Ethiopia should expand their housing program to support 'non-conventional' incremental social housing, that is, the production of good quality public housing that includes socially controlled rental accommodation that is affordable to those households in the lowest income groups who are unable or unwilling to invest in the conventional fixed-capital assets. Given that most of the management and administration of urban housing in most developing countries are handled by the central governments, there should be devolution of authority in the housing sector to the regional and local levels so that the increasing needs of the public can be met in short waiting time.

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