

Determinants of Homeownership in the Condominium Housing Sites of Ambo, Ethiopia

Abenezer Wakuma Kitila^{1*}

¹Urban Planning Department, School of Geography and Environmental Studies, College of Social Sciences and Humanities, Haramaya University, Dire Dawa, Ethiopia

*Corresponding author's email: 57662746@mylife.unisa.ac.za

Received: 08 May 2019

Accepted: 14 November 2019

Available online: 28 December 2019

ABSTRACT

This study investigated the determinants of homeownership among the residents of the condominium housing sites of Ambo town, West Shewa Zone, Oromia Regional State, Ethiopia. It employed a descriptive research design, mainly using cross-sectional and correlational studies. A total sample of 230 respondents were selected through a random sampling method. The logistic regression model output showed that homeownership was determined by respondents' gender, age, monthly income, saving practice, loan and credit services, marital status, and household size, while education level, occupation type, and land produced insignificant results. The chi-squared test and independent samples *t* test results also revealed significant associations and differences among and between different variables. The absence of land, lack of capital, bureaucratic system of land provision, limited loan and credit services, and high interest rates were also mentioned as determinant factors of homeownership. Moreover, mean values were computed to determine the adequacy and accessibility of basic amenities between the two sites. Therefore, the study recommends that the government should reformulate a profound housing policy that would improve the efficiency of the housing provision system and reduce the cost of homeownership.

Keywords: Homeownership, Housing, Condominium, Ambo, Sites

1. INTRODUCTION

One of the consequences of rapid population growth that outstripped economic growth and development is the incidence of poverty.

Urban explosion—a situation where the size of urban populations exceeds the capacity of social and physical services—is a common problem in many developing countries.

The rapid rural-urban influx, accompanied with the rate of natural population increase and stagnant economic growth, has brought considerable problems. Thus, the urban areas of developing countries are suffering from problems with basic amenities such as housing, water supply, health services, education, waste collection and disposal, traffic congestion, and public open/green spaces. The resultant stagnant nature of economic development and rapid population growth made it difficult for municipalities to provide adequate physical and social services to residents. Prominently, one of these services is housing.

Access this article online

DOI:10.25079/ukhjss.v3n2y2019.pp1-18 e-ISSN: 2520-7806

Copyright © 2019 Kitila. Open Access journal with Creative Commons Attribution Non-Commercial No Derivatives License 4.0 (CC BY-NC-ND 4.0).

Housing is incontestably the leading component of urbanization. It is more numerous, more extensive, and represents more investment than any other single use (Paradza, 2007). Housing is a human necessity, but it remains a critical problem plaguing most cities within developing countries (Bihon, 2006). The rapid rates of urbanization have led to massive housing shortages and qualitative deficiencies. The rapid urban growth associated with the accelerated tempo of socioeconomic development has seriously aggravated the shortage of dwelling units. This has resultantly facilitated overcrowding, increased rents, and the proliferation of slums and squatter settlements—which are common features of the urban scene in developing countries (Ozo, 1990). Housing shortage is a major component of the third-world urban housing problem (Odongo, 1979). The need for basic shelter through the provision of sustainable and affordable housing is also a global problem (Fisher, 2002).

Housing has become an essential public concern across Ethiopia and across different economic classes. Studies have documented the role of housing in socioeconomic development. It appears that there is a strong positive relationship between housing and the level of development. Hence, the status of housing within a nation is reflective of the country's socioeconomic development level. Housing also affects the maintenance of privacy, health, and the development of normal family living conditions (Abelti et al., 2001). Jiboye, 2011, also notes that housing has come to be a critical component in the social, economic, and health fabric of every nation. Housing is fundamental to the health and well-being of families and communities. For this reason, access to adequate and affordable housing is critical in any society. Watcher et al., 2018, claim that housing is also the anchoring component in the construction and expansion of cities and the main driver that catalyzes sustainable and resilient territorial development through land use, infrastructure, and transport sectors.

The importance of the homeownership to the individual and society is widely acknowledged. It has become important to consider the ownership

of a home as an investment from which the homeowners will receive lucrative and positive financial returns. The financial returns from residential housing take the form of income and capital growth (Tan, 2008). People who own home are not only for shelter but owning of home is considered as an asset and fulfills the psychological and social need (Abdullah et al., 2012). The rationale is that greater home ownership would improve the general level of housing quality and facilitate savings and wealth accumulation within households (Lim et al., 1980). As cited in Okeyinka, 2014, homeownership confers exchange value, opportunities to raise money through the rent of a house, a nexus for a family, and a base for urban accumulation for present and future generations (Paradza, 2007).

Homeownership policy is believed to have significant financial and social benefits for both individuals and communities (Rohe et al., 2002). While homeownership generates healthy benefits related to key variables such as property upkeep, public safety, and school quality, from a macroeconomic perspective, it also represents an enormous store of wealth (Painter and Redfearn, 2002). Jayantha, 2012, mentioned that studies empirically justified that owning a home (relative to renting) leads to the creation of a greater level of individual wealth (e.g., Belsky et al., 2007). Demographic variables and socioeconomic characteristics are crucial factors in explaining individual housing tenure choices (Gyourko and Linneman, 1996; Gyourko et al., 1999; and Gabriel and Rosenthal, 2005). In fact, globally, homeownership rates tend to be higher in poorer countries. Countries with typically lower income per capita, less wealthy residents, and fewer children per household have higher home ownership rates (Hilber, 2007).

Ethiopia has yet to formulate and reinforce a comprehensive housing policy that aims at benefiting the middle and low-income sections of the society. One of the problems is related to the absence of a flexible and diversified housing finance sector that provides loans for the construction of housing. In particular, improving access to housing finance so that a majority of low-income urban households can afford

homeownership remains a serious challenge. Other challenges include the absence of clear land use planning and management approaches. Hence, the illegal grabbing of land remains a formidable challenge for the state and urban administrators. Furthermore, the fluctuation of the market has affected the supply of construction materials. To make matters worse, widespread poverty accompanied with wider income inequality has increased poverty and has led economically less fortunate households to live in the slums.

At present, about 20% of the population is estimated to be living in urban areas. About 60% of the urban areas are estimated to be slums devoid of basic services. Weak economic growth, poor housing quality, weak environmental linkages, shortcomings in urban governance, weak institutional capacity, deficiencies in human and material resources, lack of access to credit, and inadequate strategic and planning interventions have been cited as the main reasons for the proliferation of slums in urban Ethiopia (MoUDHC, 2014).

The government has endeavored to formulate and implement various housing policies and programs at different times. One of these policies was the construction of condominium housing. The effort to build low-cost condominium houses that are affordable for low-income residents through the government's large-scale Integrated Housing Development Program is an experience that deserves close examination. In this regard, while the construction of the condominium houses was at a marginal cost, it seems that many low-income urban residents cannot afford to own these houses (MoUDHC, 2014). The implication from these statements is that the housing policies have passed through a series of successes and failures. What is least disputable, however, is that there have been slight improvements in almost all the social and physical infrastructure—including the housing sector—of the country. It is necessary to recognize the most important factors behind the poor performance of the housing sector and the determinants of homeownership. Not enough work has been done recently to identify the major determinants of homeownership. The scant literature that is available on the determinants of

homeownership in Ethiopia motivated this study. In view of these facts, this study aims to examine the determinants of homeownership among the condominium housing residents of Ambo. It also investigated the overall status of the housing sites in terms of accessibility and availability of the infrastructural services.

2. RESEARCH METHODS

2.1. Description of the Study Area

Ambo was established in 1888 and is the capital town of the West Shewa zone in Oromia Regional State, Ethiopia. The geographical (astronomical) location of Ambo is approximately between 8° 56'30" N and 8° 59'30" N latitude and between 37°47'30" E and 37° 55'15" E longitude. Relatively, the town is located 114 km west of Addis Ababa (Finfinne), 60 km northwest of Weliso town, and 12 km east of Guder town. The town has six administrative Kebeles. The total population of Ambo is estimated to be 125,763. This number is comprised of about 66,455 men and 59,308 women. According to ATMO (2018) report, in the town there were about 26,066 residential houses, 3815 commercial (business) houses, and 319 other type of houses. With regard to land use, the town has a total of about 8578 hectares of land for residential (26%), commercial (3.9%), industrial (4.3%), service (5.2%), and green spaces and recreational (49.4%) purposes (ATMO, 2018).

2.2. Research Design and Data Collection Methods

A descriptive type of research design was used to investigate the major sociodemographic and socioeconomic determinants of homeownership in the case of condominium housing sites in Ambo. Specifically, the correlational study was widely utilized to trace the relationships among two or more variables to gain greater situational insight. To this end, both primary and secondary data were used in this study. The primary data were collected from the household heads through a questionnaire survey that was filled upon utilizing a face-to-face data collection approach, whereas the secondary data were gathered mainly using published sources, internet sources, and from the Ambo Town Housing Development Office (ATHDO).

2.3. Sampling Procedure and Sample Size

The study was delimited geographically, by the subjects of the study, thematically, and in terms of sectoral foci. Geographically, this study was confined to Ambo. The town has four condominium housing sites—namely *Awaro*, *Kisose*, *Gosu*, and *Ketero*—that were constructed in 1999 and 2000. The sites incorporate housing types ranging from business houses (houses for

commercial use) to houses with 3 bedrooms. As indicated in Table 1, the total number of dwelling units is about 781, and the *Awaro* site has the most housing units (348). It is followed by the *Kisose* site—which has 188 units. The target population of this study are the condominium housing residents of Ambo, who are represented by the 536 household heads.

Table 1: Number and type of condominium houses in Ambo

Type	Awaro	Kisose	Gosu	Ketero	Total
Business	42	0	0	0	42
Studio	94	35	29	16	174
1-bed room	86	40	23	36	185
2-bed rooms	46	75	55	40	216
3-bed rooms	80	38	35	11	164
Total	348	188	142	103	781

Source: ATHDO, 2018

Table 2: Study's population and sample size

Site's Name	Total Population (Household Heads)	Sample Size
Awaro	348	50
Kisose	188	80
Total	536	230

Source: Field Survey, 2018

The study purposively selects the *Awaro* and *Kisose* condominium housing sites owing to a number of reasons. The two most important reasons were as follows. First, these sites consist of a large number of households and dwelling units unlike *Gosu* and *Ketero*. Second, their homeowners or renters come from diverse economic backgrounds, unlike *Gosu*, which is owned by Ambo University and serves as a residential area for its instructors; and *Ketero* - where the residents are mainly from relatively high-income groups owing to its locational advantages. Accordingly, a total sample of 230 respondents were selected from the two sites

(150 from *Awaro* and 80 from *Kisose*) using a simple random sampling method (see Table 2).

The following formula was adopted to determine the sample size.

$$n = \frac{N}{1+N(e)^2} \quad n = \frac{536}{1+536(.05)^2} \quad n = \frac{536}{1+1.34} = 229.65 = 230$$

2.4. Data Analysis Methods and Model Specification

The collected data were carefully organized, classified, coded, and entered into the computer using Statistical Package for Social Sciences (SPSS) version 21. The data was analyzed quantitatively using both descriptive statistical methods such as frequency distribution, mean, standard deviations, and percentages and inferential statistical methods—namely the independent *t* test, the chi-squared test, and the logistic regression model. They were tested at a significance level of 0.05. If the value computed from this statistic is less than 0.05, it indicates a significant association between the variables. If the resultant value is greater than 0.05, it indicates that there is no association between the categorical variables.

A binomial logistic regression model was used mainly to determine the factors influencing homeownership. The dependent variable is a dummy variable, which is 1 if the household owns

their home and 0 otherwise. On the contrary, the independent variables are those factors expected to determine homeownership such as gender, age, monthly income, education level, savings, availability of loan or credit, marital status, household size, occupation, and land provision.

The goodness-of-fit test (statistical significance) of the logistic regression model in this study was analyzed using the following:

1. The Omnibus test, which is a likelihood ratio chi-square test that tests whether the coefficients of the variables in the model are all jointly equal to zero
2. The Hosmer & Lemeshaw (H-L) goodness-of-fit test, which examines the null hypothesis that the model adjusts well to the data
3. The Cox and Snell (1989) and Nagelkerke (1991) -to understand how much variation was in the independent variables, the Cox and Snell R square and Nagelkerke R square values were explained

The adopted model assumed the following statistical formula:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + u_i$$

- Y = the probability of the residents to be homeowners (measured on a dichotomous scale: homeowner or non-homeowner)
- X₁ = Age (in years, continuous scale)
- X₂ = Gender (1. Male 2. Female, dichotomous scale)
- X₃ = Monthly income (in Birr, continuous scale)
- X₄ = Household size (in number, continuous scale)
- X₅ = Marital status (1. Single 2. Married, dichotomous scale)
- X₆ = Occupation type (1. Private organizations 2. Government employee 3. NGOs 4. Self-employed, Nominal scale)
- X₇ = Education level (1. Elementary school complete 2. Secondary school complete 3. College/University complete, Nominal scale)
- X₈ = Land (1. Not owned 2. Owned, dichotomous scale)

- X₉ = Loan (1. Not obtained 2. Obtained, dichotomous scale)
- X₁₀ = Saving practice (1. No 2. Yes, dichotomous scale)

3. RESULTS AND DISCUSSION

3.1. Respondent's Background Information

This study involves a total of 230 sample respondents to gather relevant data pertaining to the determinants of homeownership. As the socioeconomic profiles of the respondents could determine homeownership, the study investigates the gender, age, monthly income, marital status, educational level, occupation type, and household size of the respondents (see Table 3). Studies found that the decision to own is associated with household income, wealth, family size, marital status, race, and the age of the head of the household (Tan, 2008; Hilber, 2007; and Abdullah et al., 2012). As indicated in Table 3, the study involved a greater number of male respondents (158), who accounted for 68.7% of the sample. The 72 female respondents represented the remaining 31.3%.

The age distribution of the respondents indicates that the majority of the respondents (110) fell in the age bracket of 36 to 45 years, which represented 48% of the sample. Following that, the 95 individuals in the 25 to 36 age range comprised 41.3% of the sample. The least number of respondents were older than 56 years. The mean value of the respondents was 37 years. Regarding their occupations, a majority of the respondents were government employees (132 = 57.4%), whereas a nearly equal number of respondents were employees of private organizations (52 = 22.6%) or self-employed (44 = 19.1%). The educational level of the respondents showed that a majority (132 = 57.4%) of the respondents possess a college- and university-level education, while 25% and 17% of them attended secondary and primary schools, respectively. This implies that the study fortunately selected educated respondents and it helped obtain quality data. With regard to the respondents' marital statuses, about 153 (66.5%) of the respondents were married, while 77 (33.5%) of the respondents were single at the time of the study. The monthly income of the respondents indicated that a majority (93 = 40% and 87 = 38%) of the

respondents fell in the income bracket ranging from 2000 to 4000 ETB and from 4001 to 6000 ETB. The lowest percentage (7%) of respondents had a monthly income of greater than 8000 ETB. The mean value is about 5005 ETB, with a standard deviation of 1993 ETB. Looking at the respondent's household size, the result shows that most of the

respondents (170 = 73.8%) had a household size ranging from 1 to 3 members. Those who had a family size of 4 to 6 members represented 33%. The mean value is 2.83, with a minimum of 1 and a maximum of 8 members.

Table 3: Respondents' Profile

Variables	Characteristics	Frequency	Percentage
Ownership	Homeowner (HO)	65	28.3
	Non-Homeowner (NHO)	165	71.7
Gender	Male	158	68.7
	Female	72	31.3
Age	25-35	95	41.3
	36-45	110	47.82
	46-55	12	5.21
	>55	8	3.47
Occupation	Private organizations	52	22.6
	Government employee	132	57.4
	NGO employee	2	0.9
	Self-employed	44	19.1
Education Level	Primary schools	40	17.4
	Secondary school	58	25.2
	College and university	132	57.4
Marital Status	Single	77	33.5
	Married	153	66.5
Household Size	1-3	170	73.8
	4-6	57	32.9
	>6	3	1.3
Monthly Income	2000-4000	93	40.43
	4001-6000	87	37.8
	6001-8000	34	14.78
	8001-10000	12	5.21
	10001-12000	4	1.73

Source: Field Survey, 2018

3.2. Sociodemographic and Economic Determinants of Homeownership

3.2.1. Factors Associated with Homeownership (Chi-squared Test Results)

As indicated in Table 4, the chi-squared test result is statistically significant that the occupation type, obtaining land and loan, savings, and housing type were associated with ownership. It revealed that the majority (64.8%) of the non-homeowners were government employees, followed by private organization employees (18.2%). An almost equal percentage of homeowners was government employees and private organization employees and the result ($X^2 = 14.978$; $P < .002$) was statistically significant. Additionally, a majority of the homeowners (87.7%) have not owned land than those of the non-home owners (66.7%) and the

result ($X^2 = 10.365$; $P = <.001$) was statistically significant.

The result produced from the chi-squared test revealed that most of the homeowners (81.5%) were able to save money, while a majority of the non-homeowners (72%) never practiced saving, and the result ($X^2 = 54.766$; $P < .001$) was statistically significant. Many of the homeowners (81.5%) had obtained loans while a majority of the non-homeowners (59.4%) had not obtained loans, and the result ($X^2 = 24.608$; $P < .001$) was statistically significant. Most of the homeowners (50.8%) lived in houses with 2 bedrooms, while a majority of the non-homeowners (40%) lived in the houses with 3 bedrooms, and the result ($X^2 = 53.281$; $P < .001$) was significant.

Table 4: Association of socioeconomic variables with homeownership

Variables	Characteristics/Respondents	HO	NHO	X^2	Sig.
Occupation	Private organizations	33.8	18.2	14.978	.002
	Government employee	38.5	64.8		
	NGO employee	0	1.2		
	Self employed	27.7	15.8		
Education level	Primary schools	20	16.4	5.023	.081
	Secondary school	33.8	21.8		
	College and university	46.2	61.8		
Land	Owned	12.3	33.3	10.365	.001
	Not owned	87.7	66.7		
Loan	Obtained	76.9	40.6	24.608	.000
	Not obtained	23.1	59.4		
Saving	Yes	81.5	27.9	54.766	.000
	No	18.5	72.1		
Type of housing	Studio	21.5	21.2	53.281	.000
	1 bedroom	23.1	27.9		
	2 bedrooms	50.8	10.9		
	3 bedrooms	4.6	40		

Source: Field Survey, 2018

Table 5: Association of marital status with type of housing

Marital status	Type of housing				X ²	Correlation coefficient
	Studio	1 bedroom	2 bedrooms	3 bedrooms		
Single	34	21	9	13	40.777; P = .000	.372; P = .000
Married	15	40	42	56		
Total	49	61	51	69		

Source: Field Survey, 2018

The chi-squared test was computed to see whether there is any association between the housing type of the respondents and their marital status. The result ($X^2 = 40.777$; $P < .001$) shows that their marital status is significantly associated with the housing type (see Table 5). Thus, married respondents are more likely to dwell in houses with 2 and 3 bedrooms than unmarried (single) respondents. In addition to this, there appears to be a weak positive correlation between marital status and housing type. Hence, the correlation coefficient is .372, $P < .001$. As revealed in Table 6, the chi-squared test was computed to see whether there is any association between the respondents' savings and their monthly income. Accordingly, the study found that saving is positively associated with the monthly income of the respondents. Hence, a chi-

squared test result of 58.243, $P = .000$ was statistically significant.

Thus, respondents with a high monthly income are more likely to practice saving than the respondents with a low monthly income. Besides this, the Spearman rho correlation coefficient of .338, $P < .001$, indicates a positive correlation between monthly income of the respondents and saving. However, the relationship is weak. Similarly, there was a statistically significant association between the monthly income of the respondents and their housing type with a chi-squared result of $X^2 = 139.982$, $P = <.001$ (see Table 6). This implies that the respondents with a high monthly income are most likely to live or rent houses with 2 and 3 bedrooms than the respondents with a low monthly income, who tend to live or rent smaller houses such as studios and 1 bedroom houses.

Table 6: Association of monthly income of the respondents with saving and type of housing

Monthly Income	Saving		X ²	Correlation Coefficient
	YES	NO		
2000-4000	26	67	52.483, P = .000	.328, P = .000
4001-6000	38	49		
6001-8000	21	8		
8001-10000	11	6		
10001-12000	3	1		

Monthly Income	Housing Type				X ²	Correlation Coefficient
	Studio	1 bedroom	2 bedrooms	3 bedrooms		
2000-4000	33	33	10	17	139.982, P = .000	.370, P = .000
4001-6000	10	17	18	42		
6001-8000	5	7	13	10		
8001-10000	1	4	5	1		
10001-12000	0	0	4	0		

Source: Field Survey, 2018

Table 7: Association of type of housing with household size

Type of Housing	Household Size								X ²	Correlation Coefficient
	1	2	3	4	5	6	7	8		
Studio	27	18	4	0	0	0	0	0	171.718, P = .000	.385, P = .000
1 bedroom	0	21	26	10	2	1	1	0		
2 bedrooms	0	6	13	18	12	1	1	0		
3 bedrooms	0	31	24	10	3	0	0	1		
Total	27	76	67	38	17	2	2	1	230	

Source: Field Survey, 2018

As shown in Table 7, the result, $X^2 = 171.718$, $P = <.001$, was statistically significant and indicates that an increase in the household size of the respondents is associated with an increase in the chance of them renting or living in houses with 2 or 3 bedrooms.

3.2.2. Differences in the Factors Affecting Homeownership (*t* Test Results)

The study attempted to compare the household size, monthly income, rental price, and the rent increase between the two condominium housing sites (see Table 8). The *t* test value indicates that there was a statistically significant difference in the mean value of rent increase for the non-homeowners of the Kisose site ($X = 831$, $SD = 167$) and the non-homeowners of the Awaro site ($M = 683$, $SD = 190$); $t(163) = 4.905$, $P = <.001$). This implies that there is a significantly greater increase in the rental price of the houses in Kisose than those in Awaro. This is associated with the accessibility of the sites, which is linked to their locations. Kisose is in the center of the town, unlike Awaro. Similarly, there was a difference in the mean value of the rental price between Kisose ($M = 808.75$, $SD = 924.6$) and Awaro ($M = 755.33$, $SD = 879$; $t(228) = .431$, $P = .667$). However, the result was statistically insignificant.

Furthermore, though the result was insignificant, there was a difference in the household size of residents from the Kisose and Awaro sites. Accordingly, respondents from Kisose had a greater mean value ($M = 2.85$, $SD = 1.223$) than the respondents from Awaro ($M = 2.82$, $SD = 1.270$); $t(228) = .173$, $P > .05$). The *t* test was computed to see

any statistically significant difference among the respondents' savings and homeownership based on rental price and monthly income (see Table 9). The result revealed that there was a statistically significant difference in the mean value of the rental price for those respondents who save money ($X = 535.35$, $SD = 888.755$) and those who did not save money ($X = 954$, $SD = 846.6$); $t(228) = 3.611$, $P <.001$). This implies that the respondents who have paid a relatively small amount of money for rent are more likely to save their money than those who paid higher rents. On the contrary, there was a statistically significant mean difference in the monthly income between homeowners ($X = 7092$, $SD = 2071$) and non-homeowners ($X = 4184$, $SD = 1212$); $t(228) = -13.209$, $P = <.001$.

Table 8: Differences in the household size, monthly income, and rental price between the housing sites

		Site's Name		t test for equality of means		
		Kisose	Awaro	t	df	Sig.
Household size	Mean	2.85	2.82	.173	228	.863
	SD	1.223	1.270			
Monthly income	Mean	4923.75	5049.33	-.454	228	.650
	SD	2218.692	1868.774			
House Rental Price	Mean	808.75	755.33	.431	228	.667
	SD	924.654	879.028			
Rent Increase	Mean	831	683	4.905	163	.000
	SD	167	190			

Source: Field Survey, 2018

Table 9: Differences in saving and ownership among the residents based on rental price and monthly income

		Savings		t test for equality of means		
		Yes	No	t	df	Sig.
Rental Price	Mean	535.35	954.20	3.611	228	.000
	SD	888.755	846.640			
		Ownership				
Monthly income	Mean	7092.31	4183.64	-13.209	228	.000
	SD	2071.330	1212.148			

Source: Field Survey, 2018

3.2.3. Determinants of Homeownership (Logistic Regression Model Result)

The main purpose of this study was to identify the determinants of homeownership in Ambo in the case of condominium housing sites. One of the statistical models used was the logistic regression model to determine whether the dependent variable "homeownership" is predicted based on the independent variables such as gender, age, monthly income, marital status, household size, educational level, occupation type, land, savings, and loans.

The statistical significance of the model (goodness-of-fit tests) was determined. As indicated in Table 11, the Cox & Snell R Square value is .616, and the

Nagelkerke R Square value is .885. This means that the explained variation in the dependent variable based on the model ranges from 61.6% to 88.5%, and shows that between 61.6% and 88.5% of the variance in the dependent variable is explained by

the model. This is very good. In addition, the omnibus tests of model coefficients show a result of $X^2(13, N = 230) = 220.070, P < .001$, which is a significant value; and the Hosmer and Lemeshow test result was $X^2 = 1.244, P > 0.05$, which is an insignificant value - implying that there is not enough evidence to conclude that the model does not fit the data (see Table 10).

Table 10: Omnibus tests of model coefficients and Hosmer and Lemeshow test

Model Test	Chi-Square	df	Sig.
Omnibus tests of model coefficients	220.070	13	.000
Hosmer and Lemeshow Test	1.244	8	.996

Source: Field Survey, 2018

Table 11: Cox & Snell and Nagelkerke results

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	53.815	.616	.885

Source: Field Survey, 2018

Table 12: Sociodemographic and economic determinants of homeownership (logistic regression model)

Variables	β	S.E.	Wald	df	Sig.	Exp(β)=O R
Gender(1)	3.265	1.385	5.558	1	.018	26.169
Age	.288	.075	14.643	1	.000	1.334
Occupation			.675	3	.879	
Occupation(1)	.712	1.033	.475	1	.491	2.038
Occupation(2)	-18.871	26121.315	.000	1	.999	.000
Occupation(3)	-.128	1.173	.012	1	.913	.880
Education			4.342	2	.114	
Education(1)	2.418	1.236	3.829	1	.050	11.228
Education(2)	.851	1.234	.475	1	.491	2.341
Marital(1)	2.076	1.008	4.247	1	.039	7.975
Household size	.844	.379	4.966	1	.026	2.325
Income	.002	.000	13.790	1	.000	1.002
Owning land(1)	-2.631	1.041	6.389	1	.011	.072
Saving(1)	2.937	.987	8.849	1	.003	18.861
Obtain loan(1)	2.305	.967	5.688	1	.017	10.028
Constant	-30.761	6.548	22.067	1	.000	.000

Source: Field Survey, 2018

The results of the logistic regression model have shown that a majority of the variables were statistically significant in the determination of homeownership at a significance level of $P < .05$ (see Table 12). The model has correctly classified 71.7% cases. The result revealed that out of 230 of the surveyed residents in both condominium sites, most of the residents (71.7%) were non-homeowners. The explanation from the model is

that a male-headed household is 26 times more willing to commit to homeownership than a female-headed household (OR = 26.169, $P = .018$). In this regard, a study conducted by Lauridsen and Skak, 2007, confirmed that homeownership increases when the breadwinner is a man and that the odds ratio shows that the probability of homeownership increases by 23% when the breadwinner is a man. Similarly, a study by Lim et al., 1980, showed that

a female-headed household is less likely to be a homeowner, all other things being equal.

An increase in the age of the respondents is associated with an increase in the probability of them being homeowners. ($\beta = .288, P < .001$). Though it is not perfectly connected to this study, previous studies have explored the effect of household age—noting that the cohabitation of young adults with their parents should increase homeownership rates. This is because younger individuals living on their own typically rent, while middle-aged and older individuals typically own their homes (Hilber, 2007). The household size of the respondents also determines homeownership. Accordingly, a higher household size is positively associated with the probability of being the owner of a home ($\beta = .844, P = .026$). In this regard, couples with children are more often homeowners than single individuals with or without children and couples without children. Couples with children presumably desire ownership because of their greater need to (or welfare from) adapt their homes when there are children in the family (Lauridsen and Skak, 2007). Similarly, these authors added that more people in a household increases its financial capacity, and in turn the probability of homeownership. However, households that are loaded with children are typically high-wear households, which - because of adverse selection - tend to be renters (Lauridsen and Skak, 2007). Lim et al., 1980, also affirmed that on average, doubling the household size, with other things being equal, will increase the probability of homeownership by 0.43. Conversely, Jayantha, 2012, claimed that the relationship between household size and the rate of homeownership is expected to be negative. This implies that the smaller the household size, the higher the homeownership rate, and vice versa.

An increase in the monthly income of the respondents was associated with an increase in the probability of becoming a homeowner. Hence, more respondents who earn a high monthly income are homeowners than those who earn a low monthly income ($OR = 1.002, P < .001$). In this regard, a study conducted by Hilber, 2007, disclosed that the household income and household (and perhaps parental) wealth are expected to have a significant impact on individual homeownership outcomes because income and wealth help overcome barriers

to homeownership. Besides this, Lauridsen and Skak, 2007, noted that with the credit rating of individuals increasing with (expected future) their annual income level, one can expect ownership rates to increase with household income. What is more, Lim et al., 1980, confirmed that if a household doubles its permanent income, the probability of owning a home is increased by 0.19.

Furthermore, married respondents were 7.975 times more likely to become homeowners than respondents who are single ($OR = 7.975, P = .039$). Lauridsen and Skak, 2007, showed that when the breadwinner is divorced or single, the probability of homeownership falls compared with that of married or cohabitating breadwinners. Households who practiced saving were 18.861 times more likely to become homeowners than those who did not practice saving ($OR = 18.861, P = .003$). Obtaining a loan is more likely associated with the probability of becoming a homeowner. This means households who obtained a loan are 10.028 times more likely to become homeowners than the households who have not. Owning land, however, was negatively associated to home ownership. Hence, owning land is less associated with being a homeowner with an odds ratio of 0.072 ($OR = 0.072, \beta = -2.631$). A study conducted by Tan, 2008, found that households with a higher education background, where careers tend to be more established, have high valence on most of the homeownership externalities. However, this study found that the education status of the respondents have not determined homeownership, hence a greater number of homeowners were only secondary school graduates. Finally, the model predicted that the type of occupation of the respondents was less important in determining homeownership.

3.3. The Housing Site's Status of Basic Infrastructural Services and Problems

One measure to assess the adequacy of the provision of a habitable home is to calculate the number of habitable houses. Meaning, the nature of housing not only covers the house structurally, but covers all the supporting facilities both inside and outside the house. These include the environmental safety system, the drainage system, roads, the power grid, and the telephone network (Kusuma, 2018). This study examined the adequacy of some basic services in the selected housing sites based on

the report obtained from the respondents. As showed in Table 13, the result indicates that there are an inadequate number of health centers, early childcare centers, waste collection and disposal facilities, and green spaces and playing grounds (the mean values are less than 0.5, which is close to “0”, indicating inadequacy).

The issue of waste collection and disposal was reported as a major problem that affects the residents’ health and reduces the aesthetic value of the sites. The respondents have also mentioned the absence of green spaces and playing ground which affects the social interactions, entertainment, and the development of the children. However, there

was an adequate water supply, an adequate number of primary schools, shops, protection and security (the mean values are close to “1”, which indicates adequacy). The sites have shown few variations in the adequacy of some services. Accordingly, a relatively greater number of primary and secondary schools, health centers, and early childcare centers were found to be in the Kisose site than in the Awaro site. Similarly, Kisose has more adequate protection and security than Awaro. On the contrary, both access to transportation and shopping facilities were found to be better in Awaro than Kisose.

Table 13: Adequacy of basic services in the selected housing sites

Serial No.	List of infrastructures	Mean	
		Kisose	Awaro
1	The number of primary schools	.8000	.6267
2	The number of secondary schools	.6000	.5533
3	The number and types of shops	.75000	.9000
4	The number of health centers	.3350	.2567
5	The number of early childcare centers	.4375	.3300
6	Transport	.6250	.7000
7	Water supply	.9050	.7000
8	Waste collection and disposal facilities	.0522	.0300
9	Protection and security	.9275	.6700
10	Electricity and power supply	.5875	.6200
11	Green space	.2000	.1867
12	Playing grounds	.4375	.2533

Source: Field Survey, 2018

Table 14: Distance of housing sites from basic services

Serial No.	List of infrastructures	Mean	
		Kisose	Awaro
1	The distance from primary schools	1.90	1.80
2	The number of secondary schools	1.34	1.23
3	The number of health centers	2.00	1.98
4	The number of early childcare centers	1.35	1.10
5	Transport	2.34	2.26
6	Workplace	1.45	1.20
7	Market	1.34	1.04
8	Shops	2.00	2.45

Source: Field Survey, 2018

As shown in Table 14, the distance of the sites from the services and work places, the mean values (close to “2” and greater than “2”) for the distance to health centers, transport terminals, primary schools, and shops indicate that these services are found to be nearest to the housing sites. Whereas distance to secondary schools, early childcare centers, workplace, and markets were found to be furthest away.

The two sites, however, showed little variation in the mean values for most of the services. As a result, the Kisose site is located relatively at center of the town, while the Awaro site is located in the suburban area of the town.

The report obtained from Ambo Town Municipality Office revealed that the residential areas of Ambo were characterized by their narrow access, unsafe living and working conditions, occupation of prime

land of the town, lack of playgrounds and greenery, vulnerability to different hazards like fire and epidemic out breaks, etc. (ATMO, 2018). So, planning intervention is required to ameliorate these conditions. The illegal settlements and black land-market are also concerns that are greatly present around the periphery or at the fringe areas. These residential areas are characterized by a lack of basic services and infrastructure, loss of land resource, insecurity of tenure, and other such issues. These also require planning interventions (ATMO, 2018). A study conducted by Bihon, 2006, also revealed that the complementary part of housing, which is the accessibility to basic services such as sanitation, transportation, communication, education, and health is not adequate. Most of the residents are suffering from a lack of these basic facilities, and it makes the existing housing problem of the city worse (Bihon, 2006).

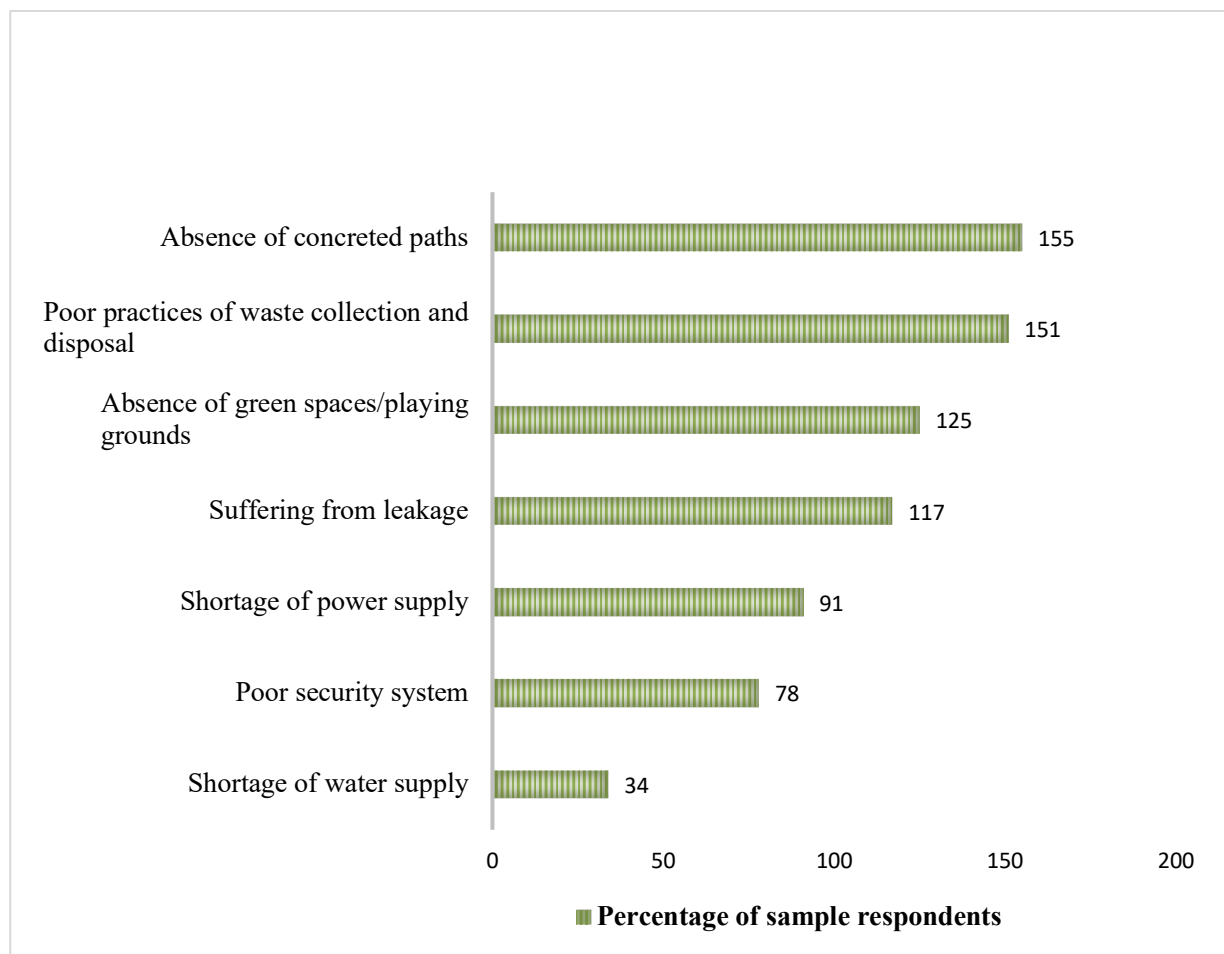


Figure 1. The major problems prevailing in the housing sites

Similar to what has been said, the major problems existing in the housing sites include the absence of concreted paths (68%), improper waste collection and disposal (66%), the absence of green spaces/playing grounds (55%), leakages (51%), the shortage of power supply (40%), poor security systems (34%), and the shortage of water supply (15%).

The non-homeowners were asked about the major reasons that keeps them from homeownership. Accordingly, they have reported that the absence of land (75%), the lack of capital (71%), the bureaucratic nature associated with land (67%), the absence of loan and credit services (62%), the high interest rates (61%), and the increasing cost of construction materials (59%) are the major reasons governing their choice. In this regard, Bihon, 2006, mentioned the low level of income of the residents as the other main challenge of housing supply by the municipality. Kenny, 1999, also revealed that real household income has been one of the important determinants of the homeownership movement in most of the studies.

With regard to the problems related to land, MoUDHC, 2014, indicated that the key sources of inefficiencies of land management and transaction have remained the major impediments in land management in Ethiopian urban centers. This is due to the absence of an independent system of registering or recording real estate transactions, where city administrations are in charge for recording transactions, certifying property rights, and maintaining records and files. An integrated urban level address system - the lack of which has created enormous obstacles in the identification of properties and the availability and reliability of information about prices and professions - is at an initial stage of development. Kenny, 1999, stated that the higher rates discourage new housing developments simply because the cost of finance is a significant part of total construction costs. In studies that explore the effects of interest rates on home ownership, their effect is found to be either marginally negative (Green, 1997; Painter and Redfean, 2002) or even slightly positive (Kenny, 1999).

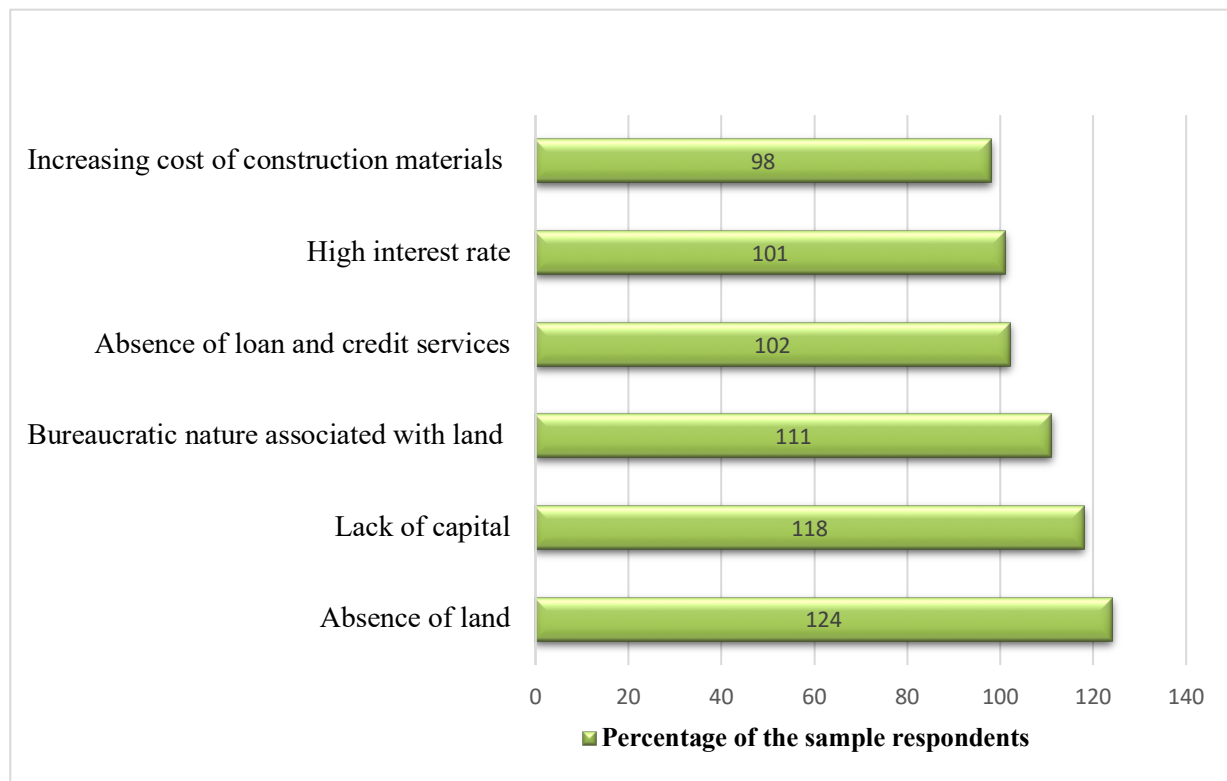


Figure 2. Reasons for not becoming a homeowner

4. CONCLUSIONS AND RECOMMENDATIONS

Housing is one of the essential components of urban infrastructures that requires strong policy for its efficiency and effectiveness. Housing shortage, which is a typical problem of a developing country, poses a formidable challenge to the efforts of improving the life of urban community. Housing becomes an indicator of the level of development. It appears that greater homeownership would improve the general level of housing quality and facilitate savings and wealth accumulation within households. The principal objective of this study was to assess the determinants of homeownership among the condominium housing residents in Ambo. A total of 230 household heads from two condominium sites filled the survey that was utilized for this study.

The study disclosed that homeownership was determined by an individual's gender, age, household income, marital status, education status, household size, use of loans, and saving practices. Accordingly, male-headed households were more likely to be homeowners than female-headed households. Homeownership was influenced by the household's age distribution, as a higher household age was associated with a high probability of becoming homeowners. On the contrary, a greater number of homeowners were found among the household heads who earned a high monthly income and had a high household size. Similarly, the households who practiced saving and acquired loans and credit services were more likely to become homeowners than those who did not. It was found that homeownership was also associated with the educational level of the residents. Furthermore, the other determinants of home ownership were the absence of land, the lack of capital, the bureaucratic nature associated with land provision, the absence of loan and credit services, and high interest rates. The sites had an inadequate number of health centers, early childcare centers, waste collection and disposal facilities, green spaces, and playing grounds. More importantly, the issue of waste collection and disposal was reported as the key problem that considerably affects the residents' health and reduces the aesthetic value of the sites. The absence of green spaces and playing grounds were mentioned as problems that affect the social

interactions, recreational activities, and the children's social and psychological development. What is least disputable, however, is that there was adequate water supply, an adequate number of primary schools, shops, and protection and security. In terms of the distance of the sites from those services, it was found that health centers, transport terminals, primary schools, and shops were situated nearest to the sites. However, secondary schools, early childcare centers, workplaces, and markets were found to be the farthest.

On the basis of these findings, the study strongly recommends that the government and the private sector should work collaboratively to ensure that there is an adequate supply of affordable housing for the working class and middle-class individuals. As high interest rates discourage housing development and homeownership, they should be readjusted and subsidized to enhance homeownership. This could be done through financial assistance with down payment and mortgage interest payments. Third, organized saving and credit services exclusively for housing development and improvement programs should be promoted. Fourth, there is a need to have a clear and flexible system that aims to regulate the urban land provision and management for housing construction and development. Additionally, the municipality should strive to either facilitate efficient transportation alternatives to increase the accessibility of the housing sites or it should attempt to place critical infrastructure nearer to the sites. Moreover, there must be a strong commitment to ensure proper waste management in the housing sites to minimize its impact on residents' health and improve the aesthetic value of the sites. Therefore, the government should formulate a profound housing policy that would improve the efficiency of the housing provision system and reduce the cost of homeownership. This study provides a holistic picture of the determinants of homeownership, and the overall status of the housing sites in terms of their adequacy and their infrastructural accessibility. This is done so that the municipality, the government, and other stakeholders can work toward minimizing the problem. It can also inspire other researchers and scholars in this field to further investigate this issue through future research.

ACKNOWLEDGEMENTS

The author thanks the participants, officials of Ambo Town Housing Development Office and Municipality Office. He also thanks the reviewers and copy editors of the journal for their unreserved role to maintain the quality of this manuscript.

REFERENCES

- Arthur, I. I. (2013). "Streetism": A Socio-Cultural and Pastoral Theological Study of a Youth in Ghana. Bloomington: Author House.
- Abdullah, L., Mohd, I. B., Jumadi, N., & Arshad, H. (2012). *First-Time Home Buyers: Factors Influencing Decision Making. International Conference on Innovation and Technology for Sustainable Built Environment (ICITSBE 2012)*27. Perak, MALAYSIA. Ref No.EE-09.
- Abelti, G., Brazzoduro, M., & Gebremedhin B.: (2001). Housing Conditions and Demand for Housing in Urban Ethiopia. *Italian Multi-Bi Research Project ETH/92/P01, Central Statistical Authority (CSA) Addis Ababa, Ethiopia Institute for Population Research - National Research Council (Irp-Cnr) Roma, Italy*
- ATHDO-Ambo Town Housing Development Office. (2018). *A Report on the status of the condominium Housing of Ambo town.*
- ATMO-Ambo Town Municipality Office. (2018). *The Physical and Socio-economic profile of Ambo town.*
- Belsky, E. C., Retsinas, N. P., & Duda, M. (2007). The Financial Returns to Low-income home ownership, in Rohe, W. M. and Watson, H. (Ed.), *Chasing the American Dream*, Ithaca, New York.
- Bihon, A. K. (2006). *Housing for the Poor in Addis Ababa.*
- Cox, D. R., & Snell, E. J. (1989). *Analysis of Binary Data, Second Edition. Volume 32 of Chapman & Hall/CRC Monographs on Statistical & Applied Probability.* CRC Press.
- Fisher, T. (2002). *The ethics of Housing the Poor Implications* Vol. 4, Issue 01. www.informeddesign.umn.edu
- Gabriel, S. A., & Rosenthal S. S. (2005). Homeownership in the 1980s and 1990s: aggregate trends and racial gaps, *Journal of Urban Economics*, 57(1), 101-127.
- Green, R. K. (1997). Follow the Leader: How Changes in Residential and Non-residential Investment Predict Changes in GDP? *Real Estate Economics*, 25(2), 253-70.
- Gyourko, J., & Linneman P. (1996). Analysis of the Changing Influences on Traditional Households' Ownership Patterns. *Journal of Urban Economics*, 39, 318-341.
- Gyourko, J., Linneman, P., & Wachter, S. (1999). Analysing the relationship among race, wealth and home ownership in America, *Journal of Housing Economics*, 8(2), 63-89.
- Hilber, C. A. L. (2007). The Determinants of home ownership across Europe: Panel Data Evidence London School of Economics Presented at the 54th Annual North American Meetings of the Regional Science Association International Savannah.
- Jayantha, W. M. H. (2012). *Factors Affecting Long-run home ownership Rates in Hong Kong 2nd International Conference on Management, Economics and Social Sciences (ICMESS'2012) Bali.*
- Jiboye, A .D. (2011). Achieving Sustainable Housing Development in Nigeria: A Critical Challenge to Governance, *International Journal of Humanities and Social Science*, 1(9), 121-127.
- Keffa, S. (2014). Integrated Housing Development Program (IHDP) As Instrument to Alleviate Urban Poverty The case of Addis Ababa Engaging the Challenges - Enhancing the Relevance Kuala Lumpur, Malaysia.
- Kenny, G. (1999). Modelling the Demand and Supply Side of the Housing Market: Evidence from Ireland, *Economic Modelling*, 16, 389-409
- Kusuma, T. H. (2018). Analysis of Factors Affecting House Ownership in Indonesia, *American Research Journal of Business and Management*. 4(1), 1-12.
- Lauridsen, J., & Skak, M. (2007). Determinants of home ownership in Denmark, Discussion Papers on Business and Economics No. 2/2007 ISBN 978-87-91657-12-2
- Lim, G.C., Follain J., & Renaud B. (1980). Determinants of Home-ownership in a Developing Economy: the Case of Korea Urban Studies 17, 13-23.
- MoUDHC-Ministry of Urban Development, Housing and Construction. (2014). National Report on Housing & Sustainable Urban Development.
- Odongo, J. (1979). "Housing deficit in cities of the Third World: factor fiction"? *In housing in third world countries: Perspectives on policy and practice* edited by H.S Murism and J.P Lea. Macmillan International College Edition.
- Okeyinka, Y. R. (2014). Housing in the Third World Cities and Sustainable Urban Developments. *Developing Country Studies*. ISSN 2224-607X (Paper) ISSN 2225-0565 (Online) 4(8), 2014.
- Ozo, A. O. (1990). Low Cost Urban Housing Strategies in Nigeria. *Habitat international*, 14(1), 41-54.
- Painter, G., & Redfearn, C. L. (2002). "The Role of Interest Rate in Influencing Long-run home ownership Rates", *Journal of Real Estate Finance and Economics*, 25(2/3), 243-67.

- Paradza, G. G. (2007). Losers, Weepers An analysis of the low – income widows experience in inheriting Immovable urban property in Zimbabwe. *Urban research symposium*.
- Rohe, W. M., Van Zandt, S., & McCarthy, G. (2002). Social Benefits and Costs of home ownership, in Retsinas, Belsky, E. S. (Ed.), *Low Income home ownership*, 381-406.
- Tan, T. H. (2008). *Determinants of home ownership in Malaysia*, Published in Habitat International. 32/3, 318-335
- Watcher, S., Hoek-S., & Hwan, K. (2018). *Penn-Current Research on Sustainable Urban Development | Housing Challenges and the New Urban Agenda*. Housing Challenges and the New Urban Agenda.