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Factor Influencing The Neighborhood Accessibility Of Private Rental Apartments For Public Officials: A PLS-SEM Approach

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Abstract

This article examines the accessibility of private rental housing in Addis Ababa for government personnel. The primary focus of this study is to examine the extent to which public sector employees can obtain a private rental apartment and the factors affecting accessibility. The study used a cross-sectional survey methodology and a cross-sectional triangulation research strategy to reach this conclusion. We collected quantitative data from 422 respondents using a questionnaire. Quantitative data were coded and analyzed using factor analysis in the PLS-SEM model. We analyze the constructs that affect the accessibility of private rental housing in Addis Ababa for public sector personnel. We divided the accessibility data into LSNA (Neighborhood Accessibility of the Housing Unit) and LSSE (Safety and Social Environment). All independent variable constructs were significantly related to accessibility as determined by factor analysis. This study's finding contributes to a broader society, as our research shows that renting offers more flexibility for those with uncertain future housing needs.

Keywords: Private Rental Housing, Accessibility, Public Sector Employees, Neighborhood Accessibility of the Housing Unit, Safety and Social Environment

Introduction

A house serves as a basic need and a fundamental human right since it provides shelter and a dynamic and private environment for many social activities and relationships (Sani, 2013). Several human rights treaties and instruments codify the right to adequate housing and apply to all people worldwide (Almaden, 2014). Following the "Universal Declaration of Human Rights (UDHR)", everyone should have access to a home, regardless of economic status (Almaden, 2014; Sani, 2013). Ethiopia's constitution guarantees the right to a decent level of living. Pursuant to Article 55 of the Constitution of Ethiopia, Urban Land Rent Proclamation No. 272/2003 provides free land for affordable housing and affordable houses. This decree encourages citizens to purchase apartments and understand their right to adequate housing. However, progress has yet to be made so far.

A rental apartment is a viable option for individuals who cannot afford to purchase their own homes. It is also a better alternative for those who lack the funds for home repairs, has a low credit rating, or are at increased risk of income disruption (Belsky & Drew, 2008). People with low incomes have traditionally acquired low-cost apartments from the private rental sector, which is an essential part of urban housing supply (Kemp, 2011). Furthermore, renting an apartment can play an essential role in creating a stable living environment since it can adapt more quickly to the changing needs of the housing market than an owner-occupied apartment (Vobeck et al., 2014).

Reports indicate that housing is a significant determinant of employee satisfaction in public administration. Housing, life and work happiness are significantly correlated. That is why, according to research, delight in living relates directly to job satisfaction. Reasonably priced private rental apartments can promote national economies, speed up construction and raise the standard of living (Belsky & Drew, 2008). Political will, however, is the most critical factor. The role of African countries must go beyond serving as catalysts (Kamete, 2001). This study is motivated by the rental housing crisis in urban Ethiopia. 26% of the city's urban population lives in Addis Ababa. More than 100,000 new residents arrive in the city each year. Continuous flooding of migrants has exacerbated the rental housing crisis, as evidenced by the high number of houses in poor condition (UN-Habitat, 2011).

To address the rental housing problem, the Ethiopian government has requested that private individuals, members of housing cooperatives, investors, and the "Integrated Housing Development Program (IHDP)" provide housing (Alebel et al., 2016; Tegegne, 2002). Ethiopia, especially Addis Ababa, struggles to provide private rental homes. One million urban dwellings are needed, most of them in Addis Ababa (Alebel et al., 2016). In Addis Ababa, there is a need for more private rental housing. Many city dwellers need access to essential city services and live in substandard housing. According to Abraham (2007) and Alebel et al. (2016), Addis Ababa's housing demand and supply differ significantly. Due to the long-standing demand for large residential land and the availability of government rental housing, public sector workers need help finding private rental housing.. Apartment accessibility affects not only the overall housing market but also household formation, apartment relocation, and social-regional differences (Vobeck et al., 2014). Therefore, the accessibility of rental apartments significantly impacts the well-being of households. Rental housing is a significant barrier to economic development in many countries (Martin et al., 2017). The issue affects individual households, the broader economy, and the environment, including employment, health, and sustainability. The supply of rental housing must consider a more comprehensive range of factors, including the economy, social sustainability, and location (Mulliner & Maliene, 2011).

Many nations worldwide face persistent problems related to rental housing, such as widespread accessibility issues, neighbourhood deterioration, spatial concentrations of poor renters, and exposure to home health hazards (Belsky & Drew, 2008). Despite the range and scope of government initiatives, workers need more government support for private rental housing. As an employee benefit, the business sector (including the personnel industry) has not considered offering personal housing support. The availability of private rental apartments is becoming more and more difficult for public authorities to reach, especially in the housing market of the capital region. According to Gurran et al., 2022, if current trends continue, these workers cannot afford to own their own homes.

Ethiopia, as a developing country, has experienced a similar problem. Like most cities in the developing world, the Capital of Addis Ababa suffers various challenges. More than 60% of the residents of Addis Ababa live in rented apartments. 58.8% of Addis Ababa's accommodation is rented, according to the 2007 census. This includes 37% from business enterprises and the rest, mainly kebele housing, from the government sector (Yehanew, 2016; CSA, 2007). We assume that the significant challenge for residents of Addis Ababa is accessible rental housing and that large shares of public service employees live in private rental houses. However, the studies still need to adequately address this issue in Addis Ababa city (Getahun etal., 2022; Mekonen, E. K. (2022); Fikire, 2021; Berhanu et al., 2022). To fill this research gap, it is essential to find out to what extent the family of public sector employees have access to private rental housing. To this end, the study attempts to come up with an exhaustive account of private rental housing accessibility for public service employees. Therefore, the objectives of this study based on examining the existing housing problems are "to examine the relationship between the neighbourhood accessibility of the housing unit and the accessibility of private rental housing" and "to examine the relationship between the safety and social environment and the accessibility of private rental housing."

Literature Review

Housing is a significant indicator of job satisfaction. Civil servants who live in rented apartments report lower job satisfaction than those who own their own homes. Despite the wide range and scope of initiatives, government support for private rental housing remains unusual for workers. Business (including the personnel industry) has not considered the granting of housing allowance to be an employment benefit. Public officials need help accessing private rental apartments, especially in metropolitan areas. These vital workers may need

help to afford to house if current trends continue (Gurran et al., 2022). The rental market can be a temporary residence for some individuals, while it can be a permanent one for others. The tenants need money for a down payment to own an apartment. However, they are not employed in a position that would entitle them to a mortgage (Hulchanski, 2002).

Rents have risen dramatically in the new housing market, federal subsidies have declined, and many low-income workers' income is going toward housing costs. Losing a home significantly increases the likelihood of losing a job, and housing insecurity is a significant source of employment instability for low-income individuals. The insecurity of housing has grown simultaneously with the insecurity of employment. Since most low-income families live in private rental housing, affordable housing has become an important issue. Many low-income workers are at risk due to increasing unemployment and housing insecurity. Low-income people who lose their house accidentally are more likely to be fired from their jobs. It contributes to neglected efforts to understand the effects of evictions and other forced displacements, which disproportionately affect low-income households. Due to rising housing costs for low-income households, migration would undoubtedly increase. (Desmond & Gershenson, 2016).

The government's policy and plans affect the accessibility of private rental apartments.. According to Satterthwaite (2009), the struggle for housing often links to land disputes. Government infrastructure and service investments affect the land market and housing land availability; official laws and regulations, including building permits and land use standards, affect land pricing and availability. Regarding housing satisfaction, housing characteristics are more important than demographic factors, including building characteristics, location, size, number of beds, rooms and kitchen size (Mohit et al., 2010).

The formation of residential communities influences community culture, geographical location, community service and community development. In informal settings, community culture refers to a way of life those changes between neighbours or individuals. Most renters prefer to live close to their friends, family and social circles, so they consider the community's location very important. To some extent, the city's location has affected the means of transport residents use to get to their workplaces. In theory, people who do not own a vehicle would like to live in an area with good public transport connections. Individuals or organizations perform community service to benefit the municipality's residents or the general public. Most services, such as property maintenance, corridor cleaning and security insurance, are available. Government, court, and hospital are institutions that can compel service providers to comply. Community service has become its ability to guide residents towards morality and good values, and it has become a sense of duty and responsibility. In addition, it encourages a sense of civic engagement by helping individuals balance the benefits and costs of society (Jiang & Fu, 2011).

In addition to the rise in housing costs, the uncertainty of the ownership relationship and the poor accumulation of wealth, the burden of housing costs, and a bad lease agreement significantly impact housing satisfaction. Improving living and neighbourhood conditions is one of many strategies for increasing residents' satisfaction, especially tenants' housing satisfaction and quality of life. Protecting their rights and controlling illegal intermediary interference is also essential (Cook & Bruin, 1994; Tigist, 2015).

With many government employees living in private rental housing, we argue that the lack of rental housing is one of the biggest obstacles facing Addis Ababa residents. Recent studies on Addis Ababa still need to address this issue adequately. The availability of private rental accommodation for public sector personnel must be determined. In this study, we examine several factors related to the accessibility of private rental housing for government employees.

Research Methodology

Research design

This study used quantitative research methods using a “cross-sectional” survey design and simultaneous triangulation research methodology. In the entire data collection process we ensured that the credibility of research is maintained (Creswell, 2009). The research paradigm used in this study is pragmatism. A pragmatic worldview is based on actions, circumstances and results. According to the pragmatic worldview, research methods should be chosen according to the research challenge to be investigated. These persons are concerned about the investigation's actions, situations and consequences. It concerns research that broadly follows quantitative hypotheses (Creswell, 2009).

A sufficient number of government employees live in privately rented houses in Addis Ababa, so this city has been chosen as the focus city of the study. In this way, the researchers obtained the necessary information to analyze the availability of private rental housing for city employees in the public sector. Based on the distance from the center, three outer cities (Yeka, Akaki-Kaliti and Kolfe-Keranio) and two inner cities (Kirkos and Arada) were selected.

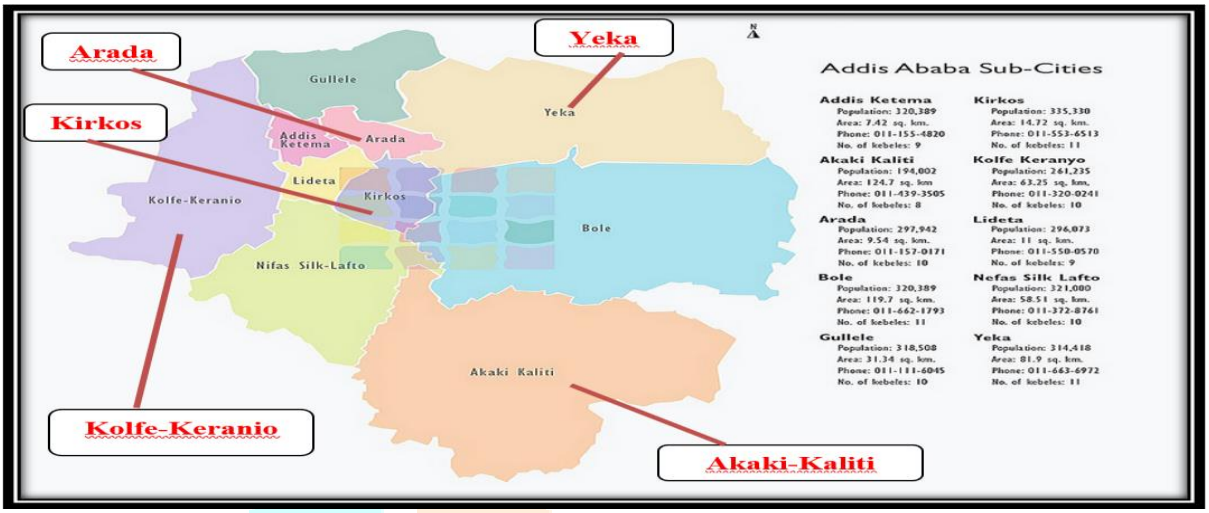

Figure 1: Sub-Cities for the Study
Source: Addis Ababa City Administration GIS Desk, 2022

Type of Data and Data Sources

This study utilized both "primary" and "secondary" data sources. The data was collected through field research, which included a survey questionnaire. The study's participants were civil servants employed by the Addis Ababa city administration. There are 54 public sector offices in Addis Ababa, and the researchers selected a 20 per cent sample, i.e. ten public sector offices. The representative offices were chosen using a simple random selection technique. Ten public sector offices at the city level were chosen as the primary sampling unit. From the selected woreda (administrative unit) officials were elected. The sample size was calculated based on Cochran's (1977) formula for calculating sample size without population data. Numerous researchers have used this method to determine the sample size needed to achieve an appropriate level of precision for a given population. To determine the sample size, Kothari (2004) suggests p = 0.5 where 'n' is the maximum and the sample produces at least the desired precision. We used a significance threshold of 0.05, a significance ratio of 0.95, and a z of 1.96. Therefore, the sample size is:

$$n = \frac{z^2pq}{d^2} = \frac{(1.96^2)\,(0.5)\,(0.5)}{0.05^2} = 384$$

We selected 384 sample respondents from private house renters of public sector employees living in different housing systems in Addis Ababa. A ten per cent increase in the number of public sector employees was added to the survey to compensate for non-response (Israel, 2006). Consequently, 422 public sector employees who live in privately rented houses were selected as respondents. Samples were randomly selected using a lottery mechanism. The sample respondents were selected proportionally and methodically from each assigned unit. Proportional sampling was followed by systematic random sampling for the selection of households based on a list of civil servants living in private rented accommodations.

Table 1: Number of Public Servants in the Selected Offices and Size of Sample Drawn

Public Sectors	Selected Offices	Total Number of Public Servants	No. of Samples Drawn
Public Relations and Good Governance	Culture and Tourism Bureau	596	100
	Environment Protection	150	25
	Code of Enforcement	62	10
Economic Sectors	Finance and Economy	177	30
	Small and Micro Enterprise	120	20
	Trade Bureau	353	59
Municipal Services	Vital Events	106	18
	Sanitation Administration	104	17
Social Sectors	Labour and Social Affairs	404	68
	Youth and Sport	444	75
Total		2516	422

Source: Developed by the Researchers, 2022

Results and analysis

Factors affecting the accessibility of private rental apartments

The factors affecting the accessibility of private rental apartments have been identified in table 2 below. PLS-SEM is primarily used for factor analysis. PLS-SEM also analyzes the relationships between the latent items and the latent variable. In addition, it can generate parameter estimates for associations between unobserved variables using publicly available data. SEM makes it much simpler to examine multiple interrelated variables at once in a single model, rather than looking at each one individually (Hair et al., 2013). Indicators measuring the accessibility of private rental housing were developed to assess the factors that affect the accessibility of private rental accommodation for public sector employees in Addis Ababa. Accessibility divides into LSNA (accessibility of the neighbourhood of the housing unit) and LSSE (Safety and Social Environment). The criteria listed in Table 2 affect the availability and affordability of private rental apartments.

Table 2: Factors that Affect Private Rental Housing Accessibility

Code	Accessibility Indicators
Neighborhood Proximity Factors (LSNA)	
LSNA1	Distance to city center
LSNA2	Distance to the work place
LSNA3	Distance to school and health center
LSNA4	Distance to market area
LSNA5	Distance to the main street
LSNA6	Overall proximity
Neighborhood Attraction and Safety Factors(LSSE)	
LSSE1	Recreational services
LSSE2	Parking lots
LSSE3	Green space
LSSE4	Playground
LSSE5	Safety and security
LSSE6	Overall neighborhood attraction
Private Rental Housing Accessibility Factors(Access)	

Access1	My work area is accessible to transport services
Access2	There is vehicular access to my residential housing unit
Access3	Homeowners agree with my socioeconomic background
Access4	Homeowners respect my basic rights

Source: Field Survey, 2022

Our model consists of latent constructs which we developed to clarify the relationship between latent variables and their latent counterparts. To classify accessibility into four groups, a model was built using the SEM methodology. Exogenous latent structures refer to four categories. The accessibility of the residential area and the apartment's safety and social environment are components of accessibility.

Four primary factors affect the accessibility of private rental apartments. To analyze the variables, the following hypotheses were drawn up. Each of the four hypotheses was evaluated using inferential statistics. Creswell (2009) states that hypotheses indicate possible outcomes related to the study's research questions. In the analysis of variance, it is essential to distinguish between null and alternative hypotheses to determine whether there is a correlation between the predictor and criterion variables.

Table 3: Research Hypothesis

Hypothesis 1 (H1)	The neighborhood accessibility of the housing unit would significantly influence the accessibility of private rental housing
Hypothesis 2 (H1)	The safety and social environment would significantly influence the accessibility of private rental housing

Source: Developed by the researcher on assumptions

Based on the factor analysis, the researchers grouped the accessibility factors. Factor analysis followed outliers, normality and linearity. The researchers classified the accessibility components using factor analysis. Factor analysis determined deviations, normality and linearity:

Exploratory Factor Analysis (EFA)

We assessed reliability using standardized external loadings of observed variables to compare the variance of an individual variable with unobserved variance. The external loadings of our construct variables are greater than 0.7 (Hair et al., 2013). According to their factor loading evaluation results, the initially standardized factor loadings of the model elements ranged from 0.512 to 0.849. Composite reliability (CR) were used to assess the internal consistency of construct reliability. CR is a better measure of internal consistency than Cronbach's alpha since it preserves variable loadings. In Table 4, Cronbach's alpha (CA) and CR of all constructs are greater than 0.7. CA indicated that all latent construct values reached 0.70 and that the scales were reliable. The Kaiser-Meyer-Olkin (KMO) test produced an acceptable result above 0.70 in the factor analysis. Table 4 shows the investigated factors.

Table 4: Exploratory Factor Analysis

Factors	Indicator	Factor Loadings	Scale Reliability (Cronbach's α)	KMO	Composite Reliability (CR)	Average Variance Extracted (AVE)
LSNA	LSNA1	0.796	0.930	0.926	0.946	0.745
	LSNA2	0.761				
	LSNA3	0.716				
	LSNA4	0.748				
	LSNA5	0.820				
	LSNA6	0.849				
LSSE	LSSE1	0.619	0.827	0.868	0.870	0.533
	LSSE2	0.666				
	LSSE3	0.586				
	LSSE4	0.606				
	LSSE5	0.512				
	LSSE6	0.817				

Source: Field Survey, 2022

Construct Reliability and Validity

Average variance extracted (AVE) was determined for each latent construct to test for convergent validity of the variables. At least 50% of the variation in the observed variable must come from the latent components of the model. Thus, AVE should exceed 0.5 for all constructs. Table 5 reveals that all AVE values exceeded 0.5, which confirms the convergence of this study. This study showed that the measurement model is valid and consistent. Reliability was assessed using AVE, CR and CA. Table 5 shows the accessibility, LSNA and LSSE AVE values of 0.695%, 0.745% and 0.533% (Hair et al. , 2013)

A combined reliability value of 0.901 was obtained for Access, 0.946 for LSNA and 0.870 for LSSE. These values exceeded Bagozzi & Yi (1988) threshold of 0.6 for all constructs. These results exceeded Nunnally and Bernstein's (1994) 0.7 criterion for Afford, LSSS, LSUS. Cronbach's alpha values for Access, LSNA, and LSSE were 0.852,0.931 and, 0.828.

Table 5: Construct Reliability and Validity

Main Constructs	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Access	0.852	0.901	0.695
LSNA	0.931	0.946	0.745
LSSE	0.828	0.870	0.533

Source: Field Survey, 2022

Discriminant Validity

We assessed the discriminant validity of the latent construct. If a latent variable for a given construct has a cross-loading value that is significantly greater than any other cross-loading value in the path model, the latent variable for that construct is considered to be separated from all other constructs in the path model.We used Fornell and Larcker's criterion and cross-loadings to assess the discriminant validity As shown in Table 6, the model was tested using the Fornell and Larcker criterion comparing squared correlations with other latent component correlations. Table 6 shows the discriminant validity, as all correlations are less than the square root of the diagonal mean variance.

Table 6: Fornell-Larcker criterion test for accessibility

	Access	LSNA	LSSE
Access	**0.834**		
LSNA	0.362	**0.863**	
LSSE	0.353	0.257	**0.730**

Source: Field Survey, 2022

Note: SmartPLS results

Table 6 shows the construct-observed variable connections of the model. These findings meet standards for evaluating cross-loading (Table 7)

Table 7: Cross-loadings for Accessibility

	Access	LSNA	LSSE
Access1	0.877	0.352	0.298
Access2	0.735	0.244	0.259
Access3	0.823	0.239	0.286
Access4	0.891	0.352	0.329
LSNA1	0.311	0.865	0.210
LSNA2	0.281	0.841	0.231
LSNA3	0.338	0.844	0.221
LSNA4	0.288	0.823	0.191
LSNA5	0.329	0.892	0.239
LSNA6	0.319	0.910	0.238
LSSE1	0.268	0.157	0.753
LSSE2	0.230	0.220	0.761
LSSE3	0.384	0.250	0.813
LSSE4	0.243	0.204	0.749
LSSE5	0.123	0.105	0.510
LSSE6	0.157	0.126	0.754

Source: Field Survey, 2022

Table 8 shows that the VIF of all indicators which is less than 3.

Table 8: Collinearity Statistics (VIF)

Code	VIF
Access1	2.470
Access2	1.523
Access3	2.006
Access4	2.496
LSNA1	2.953
LSNA2	2.606
LSNA3	2.448
LSNA4	2.412
LSNA5	2.005
LSNA6	2.723
LSSE1	1.705
LSSE2	1.794
LSSE3	1.652
LSSE4	1.682
LSSE5	1.452
LSSE6	2.157

Source: Field Survey, 2022

Measuring the Effect Size (f^2)

Each latent construct affects the endogenous in F2. The coefficient of determination (R2) changes when the independent construct is removed from the path model, indicating whether the latent exogenous construct affects the endogenous construct. Cohen (88) reported f2 values of 0.35 (small effect), 0.15 (medium effect), and 0.02 (large effect). Table 9 shows that LSNA (0.099) and LSSE (0.090) had a smaller effect size.

Table 9: Effect Size of Private Rental Housing Accessibility

Exogenous Variables of Accessibility	Latent	Effect Size f^2	Total Effect
LSNA		0.099	Low
LSSE		0.090	Low

Source: Field Survey, 2022

The Standardized Root Mean Square Residual (SRMR)

The average of the normality of the data between the observed and theorized covariance matrices gives the estimated model fit. The research model fits well when the SRMR is 0.08 or less. Table 10 shows that the SRMR for accessibility were 0.060, respectively, indicating a decent fit; the chi-square for accessibility was 409.501. As shown in Table 10, the SRMR of accessibility is less than 0.08, which suggests that the research model is well-fitted. The NFI (Normed Fit Index or Bentler and Boneett Index) accessibility was 0.884.

Table 10: Model Fit Summary of Accessibility

Model Fit Summary of Accessibility	Estimated Model
SRMR	0.060
d_ULS	0.489
d_G1	0.228
d_G2	0.183
Chi-Square	409.501
NFI	0.884

Source: Field Survey, 2022

Confirmatory Factor Analysis of Accessibility

Confirmatory factor analysis of the accessibility of private rental houses was conducted as follows:

Table 11:Confirmatory Factor Analysis of Accessibility

Factor	Indicator	Estimate	SE	Z	P
LSNA	LSNA1	0.850	0.0437	19.45	< .001
	LSNA2	0.730	0.0387	18.86	< .001
	LSNA3	0.766	0.0421	18.19	< .001
	LSNA4	0.699	0.0404	17.30	< .001
	LSNA5	0.815	0.0370	22.05	< .001
	LSNA6	0.832	0.0359	23.18	< .001
LSSE	LSSE1	0.728	0.0513	14.19	< .001
	LSSE2	0.779	0.0519	15.01	< .001
	LSSE3	0.736	0.0518	14.21	< .001
	LSSE4	0.739	0.0532	13.88	< .001
	LSSE5	0.555	0.0584	9.50	< .001
	LSSE6	0.769	0.0482	15.95	< .001
Access	Access1	0.829	0.0427	19.39	< .001
	Access2	0.647	0.0505	12.81	< .001
	Access3	0.767	0.0461	16.62	< .001
	Access4	0.812	0.0412	19.71	< .001

Source: Field Survey, 2022

Table 12: Factor Estimates of Accessibility Factor Covariances

Factor	Indicator	Estimate	SE	Z	P
LSNA	LSNA	1.000[a]			
	LSSE	0.269	0.0539	4.99	< .001
	Access	0.400	0.0481	8.33	< .001
LSSE	LSSE	1.000[a]			
	Access	0.364	0.0533	6.83	< .001
Access	Access	1.000[a]			

[a] fixed parameter
Source: Field Survey, 2022

Model Fit of Factor Analysis of Accessibility

A chi-square (x2) value of 269 in Table 13 and a P value of less than 0.001 indicate that the accessibility factor analysis is statistically significant. Significant differences exist between the fitted covariance matrix and the sample covariance matrix which we used to evaluate the overall fit.

Table 13: Test for Exact Fit of Accessibility

χ^2	Df	P
269	101	< .001

Source: Field Survey, 2022

Fit Measures of Accessibility

In our model comparative fit index (cfi) and tucker-lewis index (tli) are greater than 0.9, while RMSEA is less than 0.08. When accessibility indicators reinforce each other, comparability improves. Standardized residuals are calculated by comparing the observed and hypothesized covariance matrices, and the standardized root mean square residual (SRMR) is the average of these residuals. The research model fits well when the SRMR is below 0.08 or less. Table 14 shows that the SRMR for this research model was 0.060, indicating a good data fit.

Table 14: Fit Measures of Accessibility

CFI	TLI	SRMR	RMSEA	RMSEA 90% CI	
				Lower	Upper
0.951	0.942	0.060	0.0659	0.0564	0.0755

Source: Field Survey, 2022

SEM Model of Path Coefficients (Accessibility)

Path coefficients of the link between independent and dependent variables were calculated using a structural model, and bootstrapping analysis was used to determine whether the coefficient was statistically significant. A 95% confidence level is applied to the bootstrap coefficients for the paths between the independent and dependent variables in Figure 4.

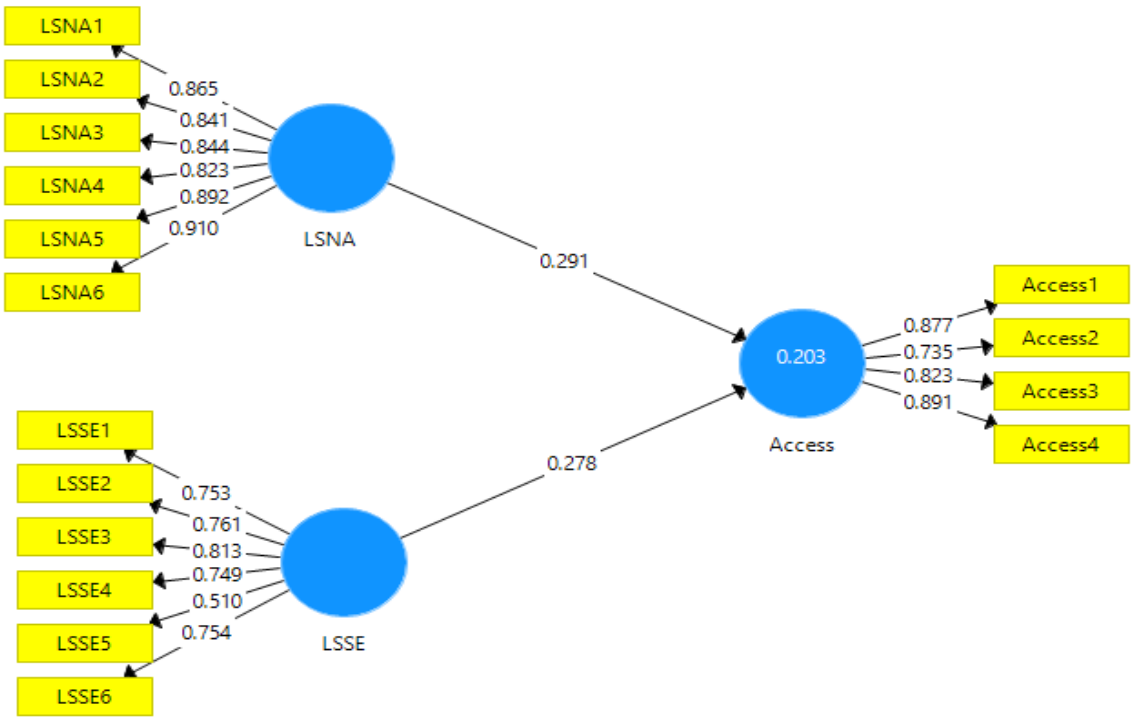

Figure 4: SEM Model of Path Coefficients (Accessibility)

Source: Field Survey, 2022

R2 is used to evaluate the predictive performance of the model based on the relationship between exogenous and endogenous factors. Researchers classify values of 0.67, 0.33 and 0.19 as large, moderate and small (Chin, 1998). Twenty percent of the total variance of the dependent variable accessibility is explained by two independent factors, LSNA and LSSE. In addition, the R2 value of the dependent variable, accessibility of private rental housing, improved by 20% because all twelve independent latent constructs are included.

T-Values of Path Coefficients (Accessibility)

As a result of factor analysis, all two constructs of independent variables are significantly and positively correlated with affordability. LSNA (Neighborhood Accessibility of the Housing Unit) significantly affects accessibility ((β= 0.291, t = 5.477, p 0.01). (ACCESS). LSSE (Safety and Social Environment) directly and significantly affects accessibility (β= 0.28, t = 5.461, p 0.01). T-Statistics values above 1.96 are statistically significant. Therefore, the model's key figures significantly impact the affordability and accessibility of private rental apartments. The statistical distribution of the parameter estimates for the direct effect relationships is described in Figure 5 below.

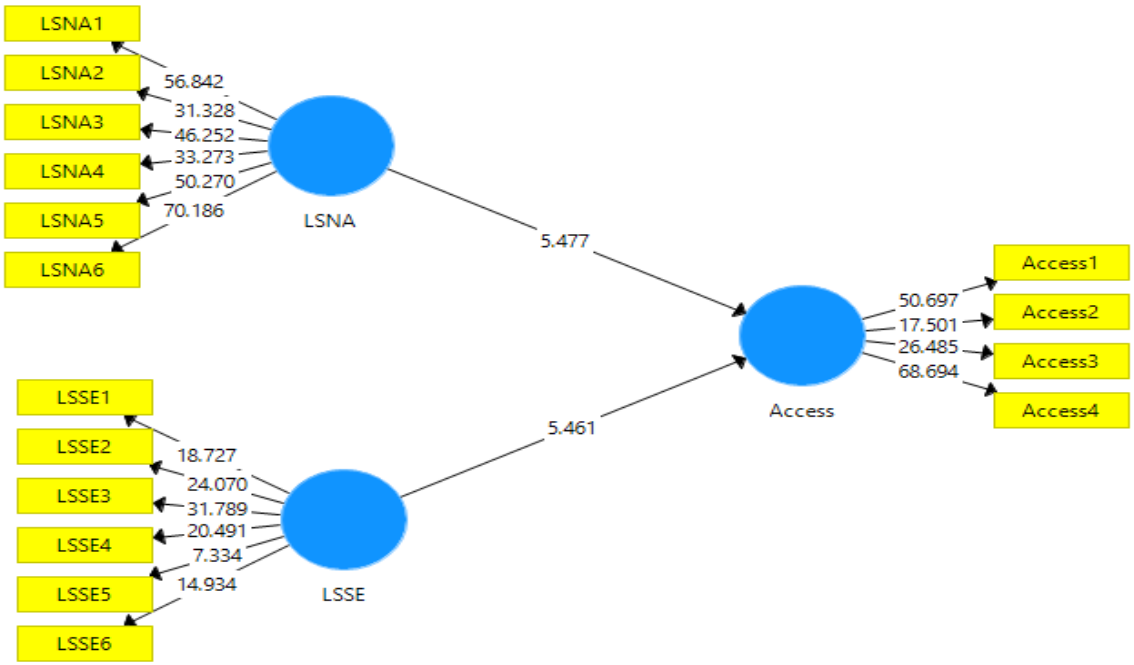

Figure 5: T Values of Path Coefficients (Accessibility)
Source: Field Survey, 2022

Estimation of Path Coefficients and T-statistics

The PLS-SEM factor loadings and the normalized ß coefficients of the regression analysis were comparable. The ß-values evaluate the significance of the hypothesis. A one-unit change in the independent construct predicts ß in the dependent construct (s). The larger the ß value, the larger the significant effect on the endogenous latent components. We performed a t-test to determine the significance of the ß value. All correlations in Table 15 between LSNA and the accessibility construct and LSSE and the accessibility construct are statistically significant (their p-values are lower than the commonly accepted threshold of 0.05). As a result, we can accept H1, H2, H3 and H4. In H3, the researchers assumed that the accessibility of the neighbourhood of the apartment would significantly affect the accessibility of private rental apartments. As supposed, the results in Table 15 showed, as predicted, that the accessibility of neighbourhoods significantly affected the accessibility of private rental housing (ß = 0.291, T =5.477, p =0.001). Thus, H3 was supported. In addition, it is assumed that in H4, safety and social environment would significantly affect the accessibility of private rental apartments. According to Table 15, the accessibility of private rental housing was influenced considerably by safety and social environment (ß = 0.278, T = 5.461, p =0.001), which supported H4.

Table 15: Path Coefficient and T-statistics

Path	Path Coefficients	T Value	P Value	Hypothesis Result
LSNA – Access	0.291	5.477	< .001	Supported
LSSE- Access	0.278	5.461	< .001	Supported

Source: Field Survey, 2022

Discussion

The objectives of this study were to examine the relationship between the neighbourhood accessibility of the housing unit and the accessibility of private rental housing and "to explore the relationship between the safety and social environment and the accessibility of private rental housing. In addition to housing costs and non-housing-related expenses, most of a civil servant's salary goes to housing expenses. According to the findings, we can argue that the apartment rent affects public servants lives negatively, and they live hand to mouth. In addition, we emphasize that their monthly salaries are not equal to their monthly expenses. Due to the apartment rental issue, most tenants have difficulties acquiring basic needs. It could be due to the reason that most respondents do not set aside part of their monthly earnings because their monthly income is hardly enough to survive. Therefore, tenants are required to pay a bigger share of their monthly income. These results are similar to some of the latest studies (Ark et al.,2012; Bell et al., 2018; Pfeiffer, 2018). Our study contributes

a lot to the literature on the accessibility of private rental housing. The accessibility component includes; LSNA (accessibility of housing units in the surrounding environment) and LSSE (safety and social environment). No recent studies in Ethiopia have used LSNA (accessibility of housing units in the surrounding environment) and LSSE (safety and social environment) (Dong & Qin,2017; Swope & Hernández, 2019). Our factor analysis results showed that all structures of independent variables had a positive and significant effect on the accessibility of private rental housing. The results revealed that elected officials were generally dissatisfied with their rental apartments, citing poor housing quality, densely populated areas, small apartments, long commutes, and excessively high rents (DiNatale et al. 2018). Rent depends on apartment quality (Zewdie et al., 2021). The materials used to build different house parts (such as the roof, floor and walls) determine the rental price. In addition, the farm has a significant impact on the rent. If the rent is an apartment, the price is primarily determined by the size and surface area of the apartment. The apartment can have a studio, one bedroom, or two or three bedrooms. Bigger apartments are more expensive. Rental houses located closer to the centre are also more costly, while dwellings situated on the outskirts of the city are cheaper. Private rental apartments are priced according to their quality and size. Rental houses located in the centre are also more expensive in the same way.

Policy Implications

The Addis Ababa city administration can use PPPs to provide private rental homes.. With the market-based housing subsidy system, the federal government should subsidize housing for federal employees (Wubneh, 2018). Due to low monthly incomes, public employees need help to compete and rent a property. That is why the government should support civil servants, relieve them from land leases and provide them with easy access to land to encourage them to organize and build their homes. The government should promote long-term, short-term and medium-term credit schemes without collateral (Gurmessa et al., 2022). This loan mechanism should be made available primarily to government employees as they have no other source of income. It is also possible for the state to participate in the construction of rental apartments in state buildings. There needs to be more information on the number of private rental apartments in Addis Ababa, so the city government should establish administrative organizations with the authority to register privately built rental apartments. The government should develop housing associations with the authority to live in private rental apartments. Most apartment owners do not pay rent tax (Keller et al., 2017). Therefore, the government must intervene and issue appropriate laws and regulations to collect rental taxes for private residences effectively. To balance civil servants' incomes and rents, the government should enact specific rules and regulations. The goal should be to introduce a system that prevents government officials from paying uneven or excessive rent (Baez-Camargo & Ledeneva, 2017).

To stabilize private rental housing, the government should issue declarations and draft legislation for tenants, landlords and brokers. Since not everyone can be a homeowner, it is usually necessary to increase rental housing options. In the next few years, the government should focus on developing rental apartments because this sector needs to be utilized more. As a result, the option to support the creation of rental apartments should be actively considered, as upgrading the apartment could be much more expensive.

Limitations of this Study

This study has some limitations, just like all studies. Public servants' housing related vulnerability as a whole is likely underestimated in this study. However, it is essential to note that the limitations of primary data and the limitations imposed by secondary data limit our approach to survey variables and data collection methods in the same way. In the future, the research can include the accessibility of services in measures suitable for housing and location. Due to the low response rate to inquiries about housing expenses and income, we similarly rely on a subjective assessment of the accessibility of the apartment. We intend to cover only some factors affecting housing accessibility in our statistics. When determining from temporal points aspects, we did not cover how long someone has lived in the same rental apartment or how often they have moved.

Conflict of interest

"All authors declare they have no conflicts of interest."

Ethical approval

"This article does not contain any studies with human participants or animals performed by any of the authors."

Informed consent

"Informed consent was obtained from all individual participants involved in the study."

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Availability of data and material

"All collected raw data and responses cannot be made publicly available to avoid any possible disclosure of sensitive information relating to the study participants. The study participants have been advised that provided responses will remain confidential at any circumstance."

Author's Contribution

"The author confirms sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation."

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