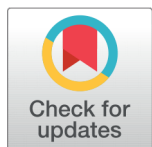


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Public Perceptions and Socioeconomic Impacts of Restricted Land Lease Policies in Addis Ababa, Ethiopia: A Structural Equation Modeling Approach

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Abstract

Background: Inappropriate land policies remain a major constraint on economic and social development in many developing countries. **Objectives:** This study examines public perceptions and the collateral impacts of Restricted Land Lease Policies (RLLP) on land possession (LPOS), housing affordability (HAF), and socioeconomic status (SEST) in Addis Ababa, Ethiopia. **Methods:** A cross-sectional research design was employed, involving 384 respondents selected through a multistage sampling technique. Structural Equation Modeling (SEM) was used to analyze the relationships among variables. **Findings:** Results reveal that RLLP significantly enhances perceptions of land possession ($\beta = 0.311$, $p < 0.001$) but has a negative effect on housing affordability ($\beta = -0.142$, $p = 0.003$). Housing affordability emerged as the strongest direct predictor of socioeconomic status ($\beta = 0.45$, $p < 0.001$), with institutional support (IST) exerting a significant moderating effect. Interestingly, institutional support itself negatively influences socioeconomic status ($\beta = -0.49$, $p < 0.001$). Moreover, the interaction terms HAF $\times$ IST and LPOS $\times$ IST show significant negative moderation effects on SEST ($\beta = -0.276$ and $\beta = -0.165$, respectively). The model explains 44.7% of the variance in socioeconomic status, indicating strong predictive power, and 29.5% of the variance in estate satisfaction, suggesting a moderately good model fit. Discriminant validity was confirmed using the Fornell-Larcker criterion and cross-loadings, supporting the distinctiveness of all latent constructs. Measurement indicators such as RLLP6 ($\lambda = 0.981$) and RLLP5 ($\lambda = 0.962$) demonstrate strong factor loadings. The relatively high mean score for RLLP ($M = 4.90$) reflects general public approval of the policy framework despite its drawbacks. **Novelty:** This is the first study in Ethiopia to employ SEM to assess the impacts of Restricted Land Lease Policies, highlighting the critical need for integrative and transparent land policy reforms that promote equitable enforcement, enhance housing affordability, and strengthen the role of institutions in improving urban satisfaction.

Keywords: Addis Ababa; Ethiopia; Public perception; Land Lease Policies; Land possession

1 Introduction

Land is a multifaceted resource central to economic, social, political, and cultural activities underpinning housing, infrastructure, and agriculture. Recognized as one of the four fundamental factors of production alongside labor, capital, and organization land is indispensable, as no productive or non-productive activity can occur without it. Access to land is critical for human survival, providing shelter and livelihoods, with emphasizing its role in human existence and the importance of its distribution and use⁽¹⁾. The contribution of land for economic development is substantial, mainly in developing countries⁽²⁾. It is also demanded as a financial asset since it is often a good hedge against inflation, especially in countries where financial markets are not well developed. Land is a heterogeneous good whose market prices usually reflect not only its value but also location and attached investment⁽³⁾.

The effective management of urban land plays a pivotal role in facilitating sustainable urban development, promoting efficient land utilization, and addressing the various challenges posed by the rapid pace of urbanization. Urban land management in developing countries, however, is fraught with numerous challenges that hinder sustainable development and equitable resource allocation. Rapid urbanization often outpaces the capabilities of local governance structures, leading to the spontaneous emergence of informal settlements characterized by substandard living conditions and inadequate infrastructure⁽⁴⁾.

Ethiopia is one of the largest countries in Africa (1.106 million km²). But it is difficult to make authoritative statements with regard to its resource base in the absence of a comprehensive and adequate survey of its natural resources⁽⁵⁾. The country is one of the least urbanized and fast urbanizing countries in East Africa. The rapid urban growth of Ethiopia is characterized by poor planning and land-use, inadequate infrastructure, and chronic housing shortage. Addis Ababa, the commercial and political center, is the exemplary of this rapid urban and metropolitan growth. It is one of the few African countries that have implemented a revolutionary land reform program that still retains the relics of the socialist ideology, specifically, the state ownership of land. In the last four decades, the country has undergone a major transformation in implementing land reform policies and other major economic programs⁽⁶⁾.

The lack of clear land ownership rights breeds uncertainty and fosters a sense of insecurity among the population. This uncertainty can fuel tensions and conflicts within communities, particularly in regions where land is a primary source of livelihood and identity. Disputes over land rights have historically been a catalyst for inter-ethnic violence and displacement, exacerbating existing social divisions and hindering efforts towards national unity⁽⁷⁾. This shows that there is a gap between demand and supply of land⁽⁸⁾.

Despite being one of the fastest growing countries, housing remains a major problem in Ethiopia. In recent years, private investors have significantly ramped up development, particularly in the more developed cities like Addis Ababa. The majority of the developers who had received plots failed to deliver timely as they had agreed with their clients. So, considering this sector has played a paramount role in the country economic growth and face challenges to meet the stated objective this study focused identifying current practice and challenges of private residential real estate development of Addis Ababa and recommend possible solutions⁽⁹⁾.

The challenges in the practical implementation of the policy, evaluate the benefit of the people and local government from the urban land lease policy, evaluate the lease policy in line with its effect on financial contribution for infrastructure development of none serviced land and to identify problems that expands the gap between supply and demand of land in Addis Ababa⁽¹⁰⁾. In many areas, especially within the capital city, Addis Ababa, prices doubled and even tripled in a span of a few years⁽¹¹⁾. The city's increasing urbanization, industrialization and population growth pose significant challenges to sustainable development, making it an ideal case study for assessing the impacts of mixed land-use planning⁽¹²⁾. The rapid urban and metropolitan growth in Addis Ababa is exacerbated by poor planning and land-use, inadequate infrastructure, and chronic housing⁽¹³⁾.

So, the land lease policies play a critical role in shaping urban development, land management, and public access to housing and investment opportunities in rapidly growing cities like Addis Ababa. In Ethiopia, the land lease system has been the dominant mechanism for allocating urban land, aimed at promoting efficient land use and generating public revenue. However, despite its policy intentions, the land lease system has generated widespread public concern regarding transparency, fairness, affordability, and long-term socio-economic impacts. Recent developments in Addis Ababa suggest that the public perceives the land lease policy as overly complex, inequitable, and often disconnected from their lived realities. These led to growing dissatisfaction and mistrust in government land administration. Moreover, there are significant collateral impacts both intended and unintended arising from the implementation of the policy, including increased land prices, displacement, speculative behavior, and challenges in urban planning. Despite these concerns, there is limited empirical research that systematically captures and analyzes public perceptions of the land lease system and quantifies its broader socio-economic impacts. Furthermore, existing studies often lack rigorous methodological approaches that can uncover complex relationships between public attitudes, policy design, and socio-economic outcomes. This study seeks to fill this gap by applying Structural Equation Modeling (SEM) to analyze the interconnected factors influencing public perceptions and the collateral effects of land

lease policies in Addis Ababa. The objective the study was to examine the public perceptions and collateral impacts of land lease policies in Addis Ababa, Ethiopia, by employing Structural Equation Modeling (SEM) to identify and quantify the relationships between policy components, public attitudes, and socio-economic outcomes.

2 Conceptual Framework of the Study

H1: Restricted Land Lease Policy (RLLP) favors the Land Possession (LPOS) to the rich.

H2: Restricted Land Lease Policy (RLLP) has a positive effect on Housing Affordability (HAF)

H3: Restricted Land Lease Policy (RLLP) has a negative effect on Socioeconomic Status (SEST)

H4: Land Possession(LPOS) has a negative effect on the Socioeconomic Status of the people (SEST)

H5: Housing Affordability (HAF) has a positive effect on Socioeconomic Status (SEST) of the people.

H6: Land Possession(LPOS) has a negative effect on the Housing Affordability (HAF)

LPOS and HAF serve as mediators between RLLP and SEST.

H7: RLLP has an effect on the SEST through the LPOS

H7: RLLP has an effect on the SEST through the HAF

H9: RLLP has an effect on the SEST through the LPOS and HAF

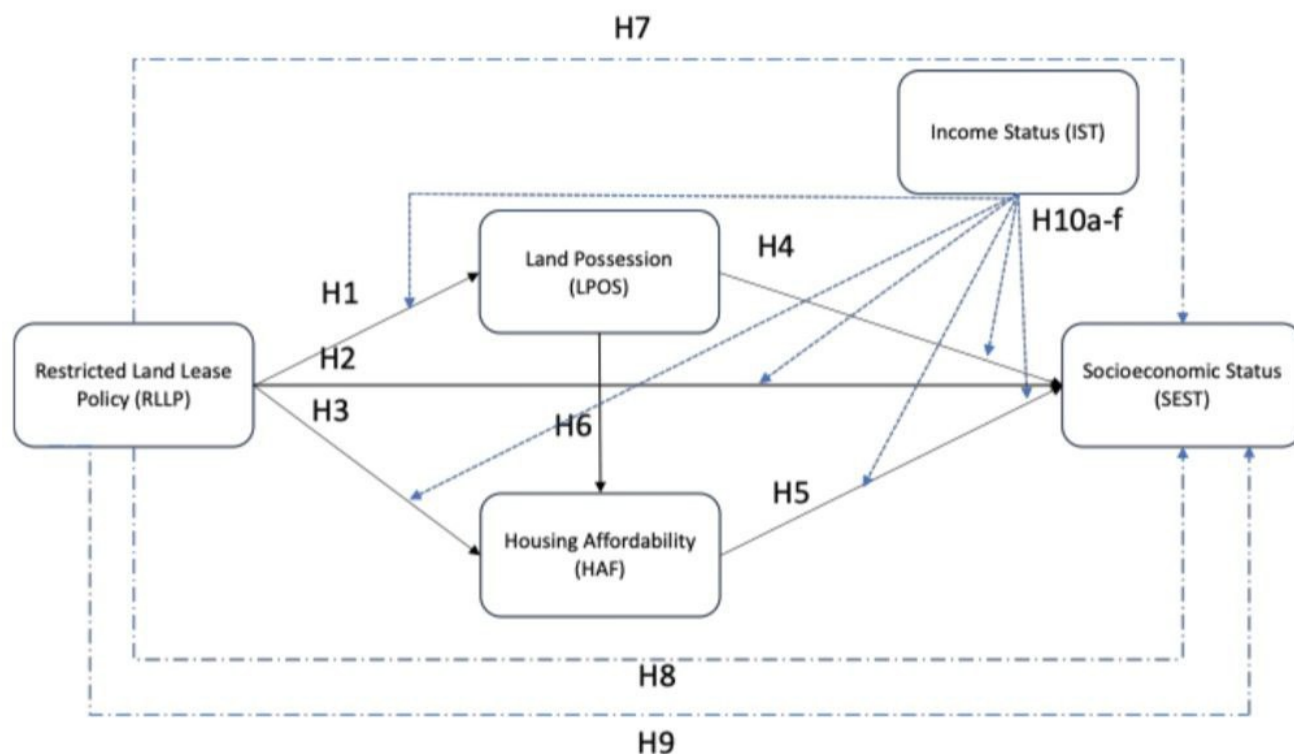


Fig 1. Conceptual Framework of the Study

Income Status (IST) emerges as a moderating variable, influencing the relationship between LPOS, HAF, and SEST.

H10a-f: The moderation effect of IST on all the relationship of RLLP and LPOS; RLLP and HAF, LPOS and HAF, LPOS and SET and HAF and SEST from top to bottom on Figure 1.

3 Methodology

3.1 Study Area

Addis Ababa, the political capital of Ethiopia and an important commercial and cultural center, is located geographically in the heart of the country, at 9°2' north latitude and 38°45' east longitude. Its average elevation above sea level is 2,400 meters, with Mount Entoto in the north being the highest at 3,200 meters. This makes Addis Ababa one of the highest capital cities in the world. Addis Ababa has a total area of 540 square kilometers, surrounded by mountainous terrain⁽¹⁴⁾.

The population of the city is nearly 5 million. However, the growth is accompanied with several constraints as it has not been provided with an equal growth in urban transport provisions and is lagging behind the existing demand. Moreover, the sector is expressed by many traffic problems⁽¹⁵⁾. The total land area of Addis Ababa City Administration is approximately 527 square kilometers (or about 203 square miles)⁽¹⁶⁾.

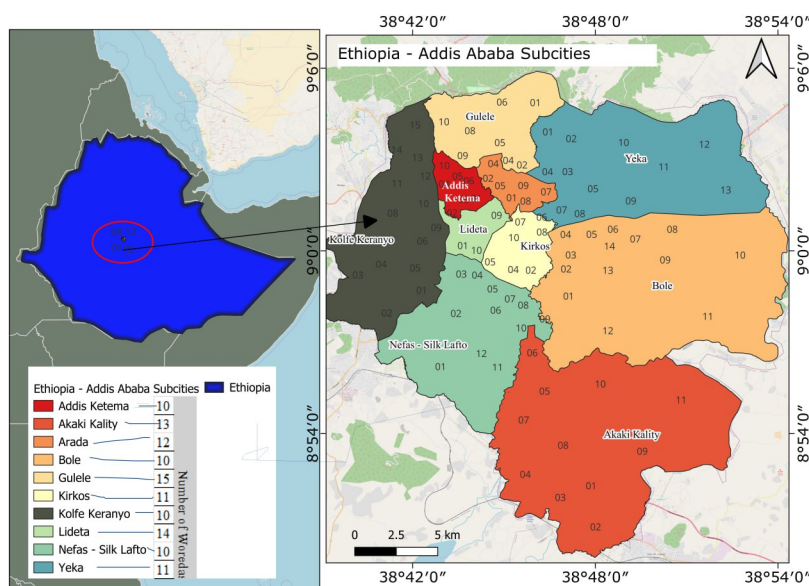


Fig 2. Map of Addis Ababa City Administration

3.2 Study Design

A community-based cross-sectional study design was employed. A quantitative approach was utilized to facilitate the application of Structural Equation Modeling (SEM).

3.3 Study Population

The study targeted all residents of Addis Ababa aged 18 and above who were directly or indirectly impacted land lease policies.

3.4 Sampling Frame

The sampling frame was composed of household registration lists that were obtained from woreda administrative offices, leaseholder and land developer records that were sourced from the Addis Ababa Land Development and Management Bureau, and community directories that were provided by real estate professionals and housing cooperatives.

3.5 Sample Size Determination

The sample size was calculated using the single population proportion formula⁽¹⁷⁾ with:

$$n = \frac{Z^2 \cdot p(1-p)}{d^2} = \frac{(1.96)^2 \cdot 0.5(1-0.5)}{(0.05)^2} = 384$$

Where;

- Confidence level (Z) = 95% → Z = 1.96
- Margin of error (d) = 5% → 0.05
- Assumed proportion (p) = 0.5 (maximum variability, no prior data)

3.6 Sampling Technique

A multistage sampling technique was employed to ensure representativeness. In the first stage, five sub-cities: Bole, Yeka, Kolfe Keranio, Arada, and Akaki Kality were randomly selected from the ten sub-cities in Addis Ababa, based on their geographical diversity and involvement in land lease activities. In the second stage, two woredas from each selected sub-city were chosen using simple random sampling. In the third stage, household lists were obtained from each woreda, and systematic random sampling was used to select households, with intervals determined by dividing the total number of households by the required sample for each woreda. Finally, in households with more than one eligible respondent, one individual was randomly chosen using the lottery method.

3.7 Data Sources and Collection Methods

Data were collected through face-to-face interviews using a structured questionnaire. The primary data sources were the sampled residents of Addis Ababa who met the inclusion criteria. Enumerators trained in data collection and research ethics conducted interviews in respondents' homes.

3.8 Instrument Development

The data collection instrument was a structured questionnaire developed based on existing literature, policy documents, and similar studies related to land lease and urban governance. Based on the feedback, necessary modifications were made before full deployment⁽¹⁸⁾.

3.9 Data Analysis

Descriptive statistics were used to summarize demographic characteristics and perception variables using SPSS and the quantitative approach, coupled with Structural Equation Modeling, using SMART-PLS Software ver.3.2.9, was utilized to test the model, hypotheses and calculate factors loadings and path coefficients⁽¹⁹⁾.

4 Results and Discussion

4.1 Descriptive Analysis

The descriptive statistics provided in **Table1**, further provides insight into participant responses. The higher mean score for RLLP was relatively high ($\mu = 4.90$ and $\text{Std}=1.08$), suggesting a generally favorable approach for respondents of the land lease policy but the higher std. indicated there existed higher variability among respondents. In contrast, the mean scores for LPOS, Housing Affordability (HAF) and Socioeconomic Status (SEST) were much lower ($\mu = 2.83$ and $\text{Std.}=1.570$, $\mu =1.61$ and $\text{Std.}=0.458$, and $\mu =1.89$ and $\text{Std.} 0.509$) respectively. These findings indicate that respondents were largely dissatisfied with LPOS, HAF, and their current SEST standing.

4.2 Reliability and Validity

The internal consistency was confirmed with Cronbach's Alpha (α) values exceeding the acceptable threshold of 0.70. All the variables in Table 1, ranging from 0.845 for Restricted Land Lease Policy (RLLP) and 0.960 the Land Possession (LPOS). The

values were also consistently higher than 0.8 and above, which shows a strong reliability of the model. All the Alpha values and CRs were higher than the recommended value of 0.70 and 0.50, which verifies convergent validity.

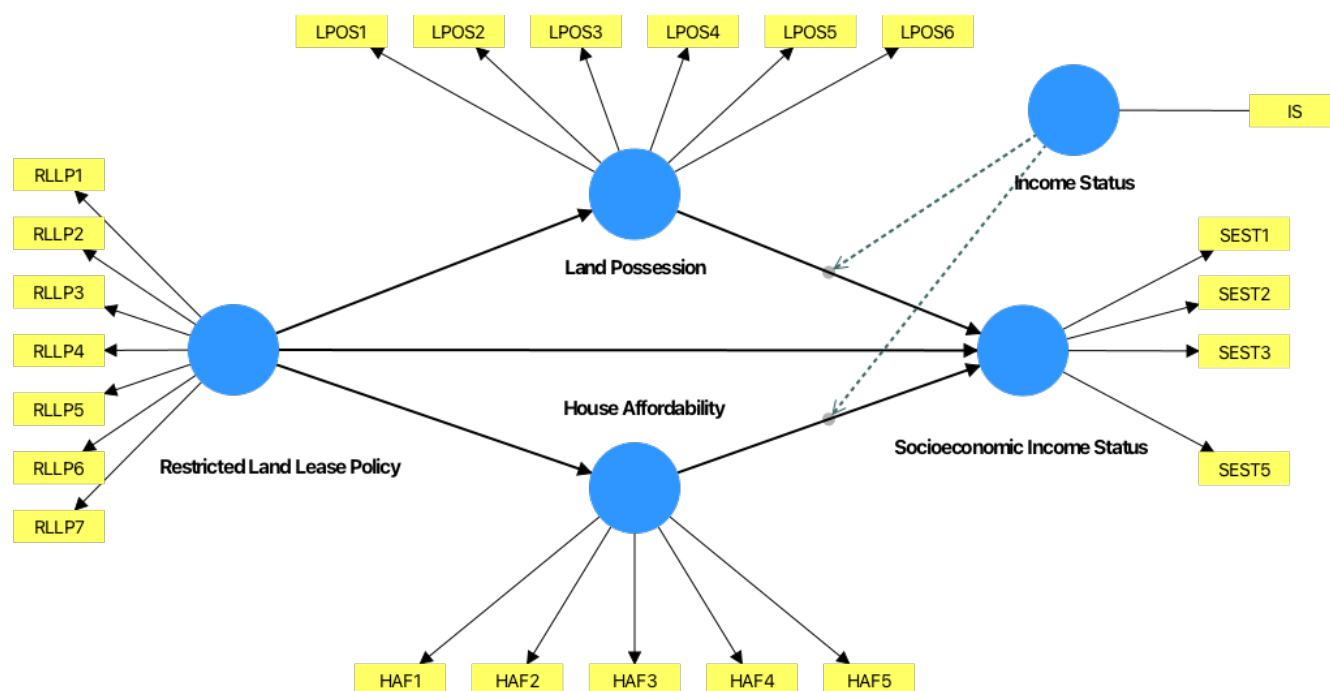


Fig 3. The Initial Path Analysis Model of Public Perceptions and Collateral Impacts of Land Lease Policies in Addis Ababa, Ethiopia.

The strongest direct effect on SEST comes from housing affordability, with a standardized coefficient of 12.055, indicating that affordability is the key driver of overall satisfaction. The model explains 29.5% of the variance in estate satisfaction, suggesting a moderately strong model fit (Fig 3).

The internal consistency of the constructs (Table 1) was confirmed using Cronbach's Alpha (α), with all values exceeding the acceptable threshold of 0.70. The coefficients ranged from 0.845 for Restricted Land Lease Policy (RLLP) to 0.960 for Land Possession (LPOS), indicating excellent reliability across the scales. The Average Variance Extracted (AVE) values were above the recommended minimum of 0.50, confirming convergent validity. LPOS demonstrated the highest AVE (0.827), further supporting construct validity. Most measurement items exhibited strong standardized factor loadings ($\lambda \geq 0.70$), such as RLLP5 ($\lambda = 0.963$) and LPOS1 ($\lambda = 0.957$), reflecting high indicator reliability. However, a few items RLLP7 ($\lambda = 0.535$) and HAF3 ($\lambda = 0.631$) showed slightly lower loadings, though still within acceptable limits. The mean score for RLLP was relatively high ($M = 4.90$), suggesting a generally favorable public perception of the land lease policy. In contrast, the mean scores for Housing Affordability (HAF) and Socioeconomic Status (SEST) were much lower, at 1.61 and 1.89 respectively, indicating concerns about affordability and living standards among respondents.

The square root of AVE for Housing Affordability (HAF) is 0.788. It is greater than its correlations with LPOS (-0.237), RLLP (-0.202), and SEST (0.534). Similarly, LPOS shows a strong AVE square root of 0.909. It is higher than its correlations with RLLP (0.311), HAF (-0.237), and SEST (-0.224). The RLLP and SEST also satisfy the criterion (0.887) and (0.843) respectively.

According to discriminant validity criteria, an item should load more strongly on its associated construct than on any other construct in the model⁽²⁰⁾. As shown in Table 3, all indicators meet this requirement. For example, item HAF1 loads highly on Housing Affordability (HAF) at 0.886, which is considerably greater than its cross-loadings on LPOS (-0.203), RLLP (-0.137), and SEST (0.502). Similarly, LPOS1 has a very high loading on Land Possession (LPOS) at 0.957.

The RLLP significantly affects all three downstream variables, negatively influencing HAF ($\beta = -0.142$, $p = 0.004$), positively influencing LPOS ($\beta = 0.311$, $p < 0.001$), and negatively influencing SEST ($\beta = -0.171$, $p < 0.001$). The indirect effect of RLLP on HAF through LPOS is significant ($\beta = -0.06$, $p < 0.001$). It is the effect of LPOS on SEST through HAF ($\beta = -0.094$, $p < 0.001$). It indicates a serial mediation path where RLLP influences LPOS, which in turn affects HAF, and ultimately SEST. The full mediated path from RLLP $\rightarrow$ LPOS $\rightarrow$ HAF $\rightarrow$ SEST is also significant ($\beta = -0.029$, $p = 0.001$). Additionally, RLLP indirectly influences SEST via HAF alone ($\beta = -0.069$, $p = 0.006$).

Table 1. The measurement table item Loading Reliability, Validity and Descriptive Analysis used within (SEM) framework

Items	FL(λ)	Mean(μ)	Std.	VIF
RLLP Restricted Land Lease Policy (RLLP) $\alpha=0.845$, CR=0.890, AVE=0.62		4.897	1.076	
RLLP1 The current Restricted Land Lease Policy is effective in promoting fair land use.	0.794	4.730	1.199	1.340
RLLP2 The terms of the Restricted Land Lease Policy are clearly communicated.	0.957	4.910	1.259	2.527
RLLP3 The policy helps protect the rights of land lessees.	0.941	4.920	1.249	2.157
RLLP4 I am satisfied with the enforcement of the Restricted Land Lease Policy in my area.	0.947	4.790	1.229	2.862
RLLP5 The lease duration provided under the policy is adequate.	0.963	4.910	1.254	2.424
RLLP6 The process for renewing leases under this policy is straightforward.	0.981	4.880	1.275	2.167
RLLP7 The policy encourages sustainable land management practices.	0.535	5.140	1.075	1.980
LPOS Land Possession (LPOS) $\alpha=0.960$, CR=0.966, AVE=0.827		2.834	1.571	
LPOS1 I feel secure in my current land possession status.	0.957	2.890	2.242	1.980
LPOS2 I have experienced disputes regarding land possession.	0.939	2.670	1.441	2.167
LPOS3 The process for acquiring land possession is clear and fair.	0.899	2.700	1.720	1.660
LPOS4 Land possession laws are adequately enforced in my community.	0.927	3.000	2.048	1.768
LPOS5 I am aware of my rights regarding land possession.	0.895	2.820	1.308	2.728
LPOS6 Land possession positively impacts my overall quality of life.	0.833	2.930	1.539	1.450
HAF House Affordability (HAF) $\alpha=0.949$, CR=0.962, AVE=0.786		1.610	0.458	
HAF1 Housing prices in my area are affordable.	0.886	1.270	0.520	1.340
HAF2 I find it easy to secure financing for my home.	0.723	1.540	0.641	2.110
HAF3 My current housing situation meets my financial capabilities.	0.631	1.520	0.573	2.167
HAF4 I am satisfied with the housing options available within my budget.	0.783	1.580	0.707	2.167
HAF5 Housing assistance programs are effective in my community.	0.885	2.140	0.486	1.264
SEST* Socioeconomic Status (SEST) $\alpha=0.858$, CR=0.906, AVE=0.711		1.815	0.509	
SEST1 My current socioeconomic status is stable.	0.883	1.960	0.703	2.796
SEST2 I am satisfied with my current level of income.	0.608	1.740	0.729	1.379
SEST3 My education level positively impacts my socioeconomic status.	0.912	1.960	0.744	2.110
SEST5 My socioeconomic status allows me to participate fully in my community.	0.928	1.510	0.604	1.320

*(The 4th item is deleted due to low factor loading) *FL=Factor Loading, CA= Cronbach alpha CR= Composite Reliability, AVE=Average Variance Extracted. *VIF=Variance Inflation Factor. *Variance Inflation Factor (less than 5 is good and accepted *($\alpha>0.6$, CR>0.8, AVE>0.5) are generally accepted; $\alpha >0.7$ and above.

Table 2. Discriminant Validity Assessment Using Fornell-Larcker Criterion

	HAF	LPOS	RLLP	SEST
HAF	0.788*			
LPOS	-0.237	0.909*		
RLLP	-0.202	0.311	0.887*	
SEST	0.534	-0.224	-0.286	0.843*

*Above the diagonal HTMT values, the diagonal and below it highlighted gray, the values are Fornell-Larcker Criterion

The total effects indicate the cumulative influence of each variable, accounting for both direct and indirect paths. Generally, RLLP has a strong negative total effect on SEST ($\beta = -0.286$, $p < 0.001$). Underscoring its overarching impact on public satisfaction and socioeconomic conditions. The LPOS also has a significant total negative effect on SEST ($\beta = -0.149$, $p = 0.001$).

The Restricted Land Lease Policy (RLLP), Land Possession (LPOS), Housing Affordability (HAF), Institutional Support (IST), and Socioeconomic Status (SEST). The RLLP positively influences LPOS ($\beta = 0.311$). It is suggesting that the land lease policy enhances individuals' perceptions of land security. However, RLLP negatively influences HAF ($\beta = -0.142$) and SEST ($\beta = -0.171$).

The direct effect of Housing Affordability (HAF) on Socioeconomic Status (SEST) is strongly positive and statistically significant ($\beta = 0.45$, $p < 0.001$). The Institutional Support (IST) was indicated by the significant negative interaction effect

Table 3. The Cross-Loadings Matrix, which is used to assess discriminant validity in Partial Least Squares Structural Equation Modeling (PLS-SEM)

	HAF	LPOS	RLLP	SEST
HAF1	0.886	-0.203	-0.137	0.502
HAF2	0.723	-0.098	-0.137	0.305
HAF3	0.632	-0.021	-0.101	0.233
HAF4	0.783	-0.128	-0.152	0.369
HAF5	0.885	-0.336	-0.232	0.556
LPOS1	-0.216	0.957	0.300	-0.214
LPOS2	-0.265	0.939	0.266	-0.242
LPOS3	-0.215	0.899	0.364	-0.175
LPOS4	-0.240	0.927	0.286	-0.303
LPOS5	-0.185	0.895	0.224	-0.116
LPOS6	-0.026	0.833	0.151	0.060
RLLP1	-0.180	0.185	0.794	-0.194
RLLP2	-0.208	0.315	0.956	-0.278
RLLP3	-0.178	0.302	0.940	-0.272
RLLP4	-0.147	0.229	0.947	-0.217
RLLP5	-0.200	0.317	0.962	-0.289
RLLP6	-0.195	0.325	0.981	-0.290
RLLP7	-0.132	0.205	0.538	-0.204
SEST1	0.461	-0.264	-0.241	0.881
SEST2	0.305	0.063	-0.123	0.612
SEST3	0.504	-0.167	-0.226	0.911
SEST5	0.498	-0.288	-0.337	0.930

Table 4. Mediation Path Analysis

	Variables	Standardized Beta Coefficient (β)	T-Statistics	P-Values
Direct Effect	HAF -> SEST	0.486	11.019	0.000
	LPOS -> HAF	-0.193	4.27	0.000
	LPOS -> SEST	-0.055	1.305	0.192
	RLLP -> HAF	-0.142	2.933	0.004
	RLLP -> LPOS	0.311	7.534	0.000
	RLLP -> SEST	-0.171	3.661	0.000
Indirect Effect	RLLP -> LPOS -> HAF	-0.06	3.778	0.000
	LPOS -> HAF -> SEST	-0.094	3.586	0.000
	RLLP -> LPOS -> HAF -> SEST	-0.029	3.236	0.001
	RLLP -> HAF -> SEST	-0.069	2.747	0.006
	RLLP -> LPOS -> SEST	-0.017	1.301	0.194
Total Effect	HAF -> SEST	0.486	11.019	0.000
	LPOS -> HAF	-0.193	4.27	0.000
	LPOS -> SEST	-0.149	3.214	0.001
	RLLP -> HAF	-0.202	4.316	0.000
	RLLP -> LPOS	0.311	7.534	0.000
	RLLP -> SEST	-0.286	6.48	0.000

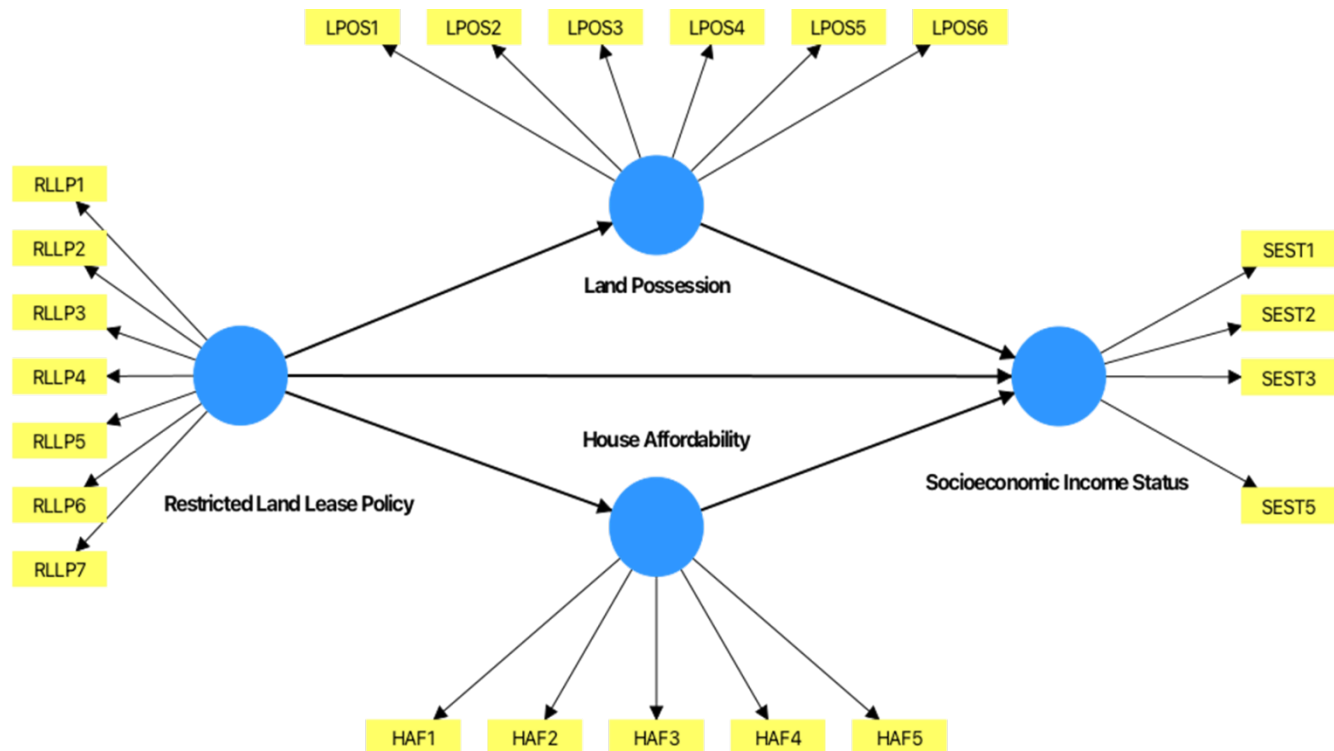


Fig 4. The moderation analysis using PLS-SEM

Table 5. Standardized beta coefficients (β), t-statistics, and p-values for the direct, indirect, and total effects among variables in the structural equation model

	Variables	Standardized Beta Coefficient (β)	T- Statistics	P-Values
Direct Effect	HAF -> SEST	0.45	10.358	0.000
	HAF*IST -> SEST	-0.276	7.971	0.000
	IST -> SEST	-0.49	7.036	0.000
	LPOS -> HAF	-0.192	4.347	0.000
	LPOS -> SEST	0.298	6.324	0.000
	LPOS*IST -> SEST	-0.165	2.909	0.004
	RLLP -> HAF	-0.142	2.936	0.003
	RLLP -> LPOS	0.311	7.528	0.000
	RLLP -> LPOS -> HAF	-0.06	3.858	0.000
Indirect Effect	LPOS -> HAF -> SEST	-0.086	3.9	0.000
	RLLP -> LPOS -> HAF -> SEST	-0.027	3.444	0.001
	RLLP -> HAF -> SEST	-0.064	2.722	0.007
	RLLP -> LPOS -> SEST	0.093	4.949	0.000
Total Effect	HAF -> SEST	0.45	10.358	0.000
	HAF*IST -> SEST	-0.276	7.971	0.000
	IST -> SEST	-0.49	7.036	0.000
	LPOS -> HAF	-0.192	4.347	0.000
	LPOS -> SEST	0.212	3.84	0.000
	LPOS*IST -> SEST	-0.165	2.909	0.004
	RLLP -> HAF	-0.202	4.311	0.000
	RLLP -> LPOS	0.311	7.528	0.000
	RLLP -> SEST	0.002	0.056	0.956

(HAF*IST $\rightarrow$ SEST, $\beta = -0.276$, $p < 0.001$). Likewise, Land Possession (LPOS) positively influences SEST directly ($\beta = 0.298$). But, again this relationship is negatively moderated by IST (LPOS*IST $\rightarrow$ SEST, $\beta = -0.165$). The IST itself shows a strong negative direct effect on SEST ($\beta = -0.49$).

4.3 Discussion

In Ethiopia, political history and land related policies are characterized by the fact that during the last 50 years three distinct political systems governed the country. Each of these political regimes is different in that they were driven by different ideologies: 'feudalism', 'socialism' and 'market oriented' respectively⁽²¹⁾. These shifts have influenced not only how land is administered, but also who has access to it. In recent decades, land acquisition for large-scale commercial farming has often involved privatization or long-term leasing, processes that frequently lead to the displacement of local populations⁽²²⁾. Across many countries, including Ethiopia, property rights and the role of land markets in redistributing land have remained contentious and politically sensitive issues⁽²³⁾.

The results of the current study on discriminant validity assessment in Housing Affordability (HAF) have a square root of AVE of 0.788, which is higher than its correlations with LPOS (-0.237), RLLP (-0.202), and SEST (0.534). Similarly, LPOS (0.909), RLLP (0.887), and SEST (0.843) also exceed their respective inter-construct correlations. The direct effect on SEST comes from housing affordability, with a standardized coefficient of 12.055. These indicate that affordability is the key driver of overall no satisfaction. The model explains 29.5% of the variance in estate satisfaction, suggesting a moderately strong model fit for the study⁽²⁴⁾. The internal consistency of the study was confirmed with Cronbach's Alpha (α) values exceeding the acceptable threshold of 0.70. All the variables in Table 1, ranging from 0.845 for Restricted Land Lease Policy (RLLP) and 0.960 the Land Possession (LPOS). These were good to excellent reliability. According to⁽²⁵⁾. Composite Reliability (CR) values were also strong for all constructs, According to⁽²⁶⁾. The Average Variance Extracted (AVE) was showed 0.50. The LPOS achieving the highest AVE at 0.827 was established the Convergent validity.

The study findings align with prior research highlighting the challenges of housing affordability in Addis Ababa. Larsen et al., (2019) observed that despite efforts to increase owner-occupied housing, many new units are located on the city's periphery, exacerbating transportation issues and limiting access to amenities. This spatial mismatch contributes to dissatisfaction among residents, mirroring the low mean ratings for HAF and SEST in the current study⁽²⁷⁾. Despite the lack of affordability public and private housing development, there continues to be a massive shortage of housing in Addis Ababa. Housing construction and property management are currently seen as the safest and most reliable businesses in the city⁽²⁸⁾.

Respondents expressed a highly favorable view of the Restricted Land Lease Policy (RLLP), with a mean score of 4.90, indicating strong approval. However, perceptions of housing affordability (HAF) and socioeconomic status (SEST) were notably low, with mean scores of 1.61 and 1.89, respectively, reflecting widespread dissatisfaction in these areas. The relatively low standard deviations for HAF (0.46) and SEST (0.61) suggest a consistent negative perception across the sample. In contrast, land possession (LPOS) received a moderate mean score of 2.83, but with a high standard deviation of 1.57, indicating diverse experiences and inequalities in land access. The positive effects are better achieved when combined with other interventions, such as good local market links, agricultural support services that work for family farmers, and improvements in health and education services⁽²⁹⁾. One reason for the shortage of affordable housing in the region is the lack of investment in the construction of low-cost housing units⁽³⁰⁾.

The total effect of HAF on SEST remains the strongest and most significant ($\beta = 0.486$, $p < 0.001$). The RLLP's total effect on SEST is significantly negative ($\beta = -0.286$, $p < 0.001$), largely due to its indirect pathways through HAF. The other results show the LPOS has a weak total negative effect on SEST ($\beta = -0.149$, $p = 0.001$). The question of land tenure has been a pivotal and sensitive political issue in contemporary history of Ethiopia⁽³¹⁾.

The research findings, the direct effect of HAF on SEST is strong and statistically significant ($\beta = 0.45$, $p < 0.001$), reinforcing the central role of housing affordability in influencing socioeconomic satisfaction among urban residents. This is further supported by the significant indirect path (LPOS $\rightarrow$ HAF $\rightarrow$ SEST: $\beta = -0.086$), highlighting that affordability mediates other structural conditions. Although residential satisfaction is vital among low-income residents, most studies on affordable housing have been conducted in the area of planning to increase affordable housing supply and less to evaluate the results of planning policies on residential satisfaction. Assessment of residential satisfaction helps housing planners to make successful housing policies by identifying the factors that determine satisfaction⁽³²⁾. Both IST ($\beta = -0.49$) and its interaction with HAF (HAF*IST $\rightarrow$ SEST: $\beta = -0.276$) show negative and significant direct effects on SEST. This indicates that low institutional trust can diminish the positive effects of housing affordability, likely due to perceptions of unfair implementation or policy ineffectiveness. Similarly, the negative interaction between LPOS and IST (LPOS*IST $\rightarrow$ SEST: $\beta = -0.165$) implies that institutional trust also moderates the influence of land possession on satisfaction⁽³³⁾.

RLLP affects SEST indirectly, with no significant direct effect ($\beta = 0.002$, $p = 0.956$), but influences SEST via LPOS and HAF. It significantly predicts LPOS ($\beta = 0.311$) and negatively impacts HAF ($\beta = -0.142$). The multi-step indirect paths (e.g., RLLP $\rightarrow$ LPOS $\rightarrow$ HAF $\rightarrow$ SEST, $\beta = -0.027$) confirm that the policy's implications are complex and largely mediated through how it shapes land tenure and affordability. Land is a fundamental asset for social, political and economic sustainability, which provides ecosystem services, generate livelihood and accumulate wealth for the rural communities in developing countries⁽³⁴⁾. Finally, the contribution of public perceptions and socioeconomic on the restricted land lease Policies in Addis Ababa, Ethiopia in land availability affects not only the size but also type of land that may be used for housing purposes⁽³⁵⁾.

5 Conclusion

The current research on land lease gave special attention to its effects on changes in land use, and the relationships among land possession, housing affordability, and socioeconomic status in Addis Ababa, Ethiopia. The contribution of the research on restricted land lease policy has not converted into tangible improvements in housing affordability on socioeconomic satisfaction of the people. In the findings, housing affordability developed as the most significant determinant of socioeconomic well-being. Furthermore, land related institutional trust was identified for public satisfaction and for the community participations, it is one of the parameters of fairness, transparency, and efficiency in policy execution.

6 Ethics Statement

Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

7 Author Contributions

LJ and AZB: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, writing original draft, Writing review & editing. **AZB & LJ:** Data curation, Investigation, Methodology, Supervision, Validation, Writing review & editing. **AZB & LJ:** Data curation, Investigation, Methodology, Supervision, Validation, Writing review & editing.

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9 Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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