Int. j. adv. multidisc. res. stud. 2025; 5(2):1774-1783

Received: 22-02-2025
Accepted: 02-04-2025

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Bank Financing and Real Estate Acquisition by Public Sector Employees in the City of Kisangani, Democratic Republic of Congo

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Abstract
The persistent housing deficit in the city of Kisangani, Democratic Republic of Congo, driven by rapid urbanization and limited access to affordable financing, has left many public sector employees unable to acquire decent homes, despite the sector's role in national development. Against this, the present study investigates the effect of bank financing on real estate acquisition among public sector employees in Kisangani, with a particular focus on both access to housing and the implications of loan repayment on household welfare. Drawing on data from 387 employees across 11 administrative departments and commercial bank records collected between 2020 and 2024, the study employed an Ordinary Least Squares regression model to analyze the relationship. Findings indicate that bank financing significantly enhances the ability of employees to acquire real estate by alleviating upfront capital constraints. However, the burden of repayment was found to negatively affect short-term financial well-being, reducing discretionary spending and household savings. Based on the findings, the study proposes actionable evidence-based policy recommendations to tackle housing access and affordability for public sector employees through inclusive financial products, targeted subsidies, and coordinated institutional support.

Keywords: Bank financing, Real Estate, Public Sector Employees, Kisangani, Democratic Republic of Congo

JEL Classification: G21, H75, O18, O55, R21

1. Introduction

Bank financing has become an essential driver of real estate development in many developing countries, serving as a mechanism through which households, including public sector employees, can access funds to secure housing (Herring & Wachter, 1999; Abuamsha, 2022) [13, 1]. In the Democratic Republic of Congo (DRC), the issue of housing access remains a pressing socio-economic concern, particularly in urban areas such as the city of Kisangani. The increasing demand for decent housing, coupled with insufficient personal savings and limited access to formal credit channels, has led many civil servants to rely heavily on bank loans to finance real estate acquisition. Despite the emergence of financial institutions that offer credit products tailored to housing needs, the extent to which these banking services facilitate real estate acquisition by public sector workers in Kisangani remains underexplored.

In the city of Kisangani, public sector employees represent a significant proportion of the working population, and their ability to acquire real estate is often constrained by inadequate remuneration and unstable employment conditions (Amos *et al*., 2015; Ogbenjuwa *et al*., 2018) [2, 28]. With rising urbanization and the growing need for adequate housing, there has been a steady increase in the demand for mortgage financing and other forms of bank credit (Khan & Gazder, 2024) [16]. However, multiple structural challenges, including high interest rates, stringent collateral requirements, and limited financial literacy, continue to hinder access to bank financing for housing purposes (Kodongo, 2018) [18]. These barriers often compel public servants to turn to informal lending channels, which, while more flexible, are typically associated with higher risk and insecurity in property acquisition.

Furthermore, real estate investment plays a vital role in improving living conditions and fostering urban development, yet the housing sector in Kisangani remains largely underdeveloped. According to the provincial urban planning department, less than

30% of the city's public sector employees own their homes, and the majority either rent or occupy informal settlements. This scenario emphasizes the need to examine the financial mechanisms that can effectively support property acquisition. Theoretically, access to bank financing should enable public sector employees to overcome capital constraints, reduce reliance on informal markets, and transition towards more formal and secure property ownership (Claessens, 2006) [7]. However, empirical data on how effectively this process unfolds in Kisangani is limited, making it difficult for policymakers and financial institutions to tailor appropriate interventions.

Against this backdrop, the present study investigates the effect of bank financing on real estate acquisition by public sector employees in the city of Kisangani. It seeks to answer the central research question: To what extent does bank financing influence real estate acquisition among civil servants in Kisangani? The underlying hypothesis is that improved access to bank credit significantly enhances the ability of public sector employees to acquire residential properties. This hypothesis is grounded in the view that financial inclusion, particularly through access to credit, serves as a catalyst for socio-economic advancement by enabling individuals to invest in long-term assets such as housing.

This study contributes to the existing literature in at least two meaningful ways. First, while most existing studies on bank financing and housing focus on developed economies or broader national-level analyses, this research provides a localized, urban-focused assessment in the context of Kisangani, offering insights into the unique constraints and opportunities that public sector workers face in acquiring real estate in secondary cities in the DRC. Second, by employing a quantitative approach supported by data collected from public sector employees and commercial banks, the study provides empirical evidence on the effectiveness of bank financing as a tool for promoting home ownership among civil servants. These findings are critical for informing housing policies, urban development strategies, and banking practices aimed at enhancing access to affordable and secure housing in Kisangani.

The rest of the paper is structured as follows: Section 2 reviews the relevant literature on bank financing and real estate acquisition. Section 3 presents the methodological approach used in the study. Section 4 reports and discusses the main findings, and Section 5 concludes with policy recommendations and implications.

2. Literature Review

2.1 Theoretical Framework

Theoretically, the relationship between bank financing and real estate acquisition can be examined through the lens of two foundational theories in financial economics: the Credit Rationing Theory and the Life-Cycle Hypothesis. The Credit Rationing Theory, developed by Stiglitz and Weiss (1981) [33], posits that under certain conditions, financial institutions may limit the amount of credit made available to borrowers—not due to interest rate considerations but due to information asymmetries and risk assessments. According to this theory, even creditworthy individuals may be denied loans if lenders cannot perfectly assess their risk, which is particularly relevant in developing economies where credit histories and reliable financial data are often lacking. In the context of Kisangani, this theory helps explain why many public sector employees, despite having stable employment, face difficulties in accessing housing finance. Banks may perceive them as high-risk borrowers due to insufficient collateral, inconsistent salary disbursements, or uncertainties surrounding land tenure and property rights. Consequently, the theory underscores the need for structural reforms in credit allocation mechanisms to ensure that bank financing becomes more inclusive and responsive to the realities of salaried workers in urban settings.

Complementing this is the Life-Cycle Hypothesis (LCH), originally formulated by Modigliani and Brumberg (1954) [23], which suggests that individuals plan their consumption and savings behavior over their lifetime, aiming to smooth consumption by saving during their working years and dissaving during retirement. In the context of housing and real estate acquisition, the LCH implies that individuals seek to acquire long-term assets, such as homes, during their peak earning years as part of a broader strategy to secure financial stability and social mobility. Public sector employees in Kisangani, like in many other regions, view homeownership not only as a form of shelter but also as a long-term investment and a source of future financial security. However, the limited access to bank credit disrupts this financial planning cycle, making it difficult for many to transition from renting or informal housing to formal property ownership. The relevance of the Life-Cycle Hypothesis lies in highlighting how access to credit at critical stages of an individual's financial life can significantly shape their economic well-being and asset accumulation trajectory.

2.2 Empirical Literature

Empirically, numerous studies have explored the dynamics of bank financing and its influence on real estate acquisition across diverse contexts, though specific evidence from cities like Kisangani remains limited. In general, empirical literature supports the notion that access to bank financing plays a pivotal role in enabling homeownership, particularly in developing economies where capital constraints are pronounced. Studies from sub-Saharan Africa and other developing regions reveal that access to formal mortgage credit significantly enhances individuals' ability to acquire residential property, especially for salaried workers who may lack the means to self-finance housing projects (Otiso, 2003) [31]. However, this positive effect is often tempered by structural challenges, including high interest rates, limited loan tenure options, and inflexible repayment terms, which can undermine the benefits of access to credit. For example, Olotuah and Bobadoye (2009) [29] emphasize the importance of affordable credit schemes in Nigeria, pointing out that without supportive financing systems, public housing initiatives often fail to reach their intended beneficiaries.

Other studies underscore the role of institutional barriers, such as unclear property rights, bureaucratic inefficiencies, and weak legal enforcement, which hinder the development of robust housing finance markets (Gulyani & Talukdar, 2008; Mooya & Cloete, 2010) [11, 24]. In the DRC, these challenges are further compounded by the underdevelopment of the financial sector and the lack of targeted credit products for civil servants. Research also suggests that while some public sector employees may obtain housing loans, the repayment burden can negatively affect their overall financial well-being, reducing household consumption, savings, and investment in other essential

areas (Mutero *et al*., 2010; Kihato, 2012) [26, 17]. These findings are consistent with preliminary observations in Kisangani, where public employees often face trade-offs between loan repayment obligations and household welfare.

Despite the existing empirical literature examining the determinants of bank financing and real estate acquisition separately, there remains a significant gap in understanding the direct relationship between bank financing and real estate acquisition, particularly in the context of public sector employees in the Democratic Republic of Congo. Existing studies primarily focus on the role of financial constraints, macroeconomic conditions, and regulatory frameworks in shaping bank credit availability, while research on real estate acquisition highlights the influence of property market dynamics, credit accessibility, and financial regulations. However, these studies largely neglect the specific constraints faced by public sector employees, who often have unique financial characteristics, such as relatively stable but moderate incomes, stringent borrowing conditions, and limited access to alternative financing mechanisms. Furthermore, the literature tends to focus on developed and emerging economies with well-established financial markets, leaving a dearth of empirical evidence on how bank financing interacts with real estate acquisition in underdeveloped financial systems like that of the DRC. This study aims to bridge this gap by empirically investigating the direct link between bank financing and real estate acquisition among public sector employees in the DRC, incorporating unique country-specific factors. As such, this research contributes to the literature by providing novel insights into the challenges and opportunities for improving access to real estate financing in resource-constrained environments, offering policy recommendations to enhance financial inclusion and housing affordability for public sector employees.

3. Methodology

3.1 Data and Source

The study on the effect of bank financing on real estate acquisition by public sector employees in Kisangani, DRC, relies on both primary and secondary data collected from multiple sources to ensure a comprehensive analysis of the relationship between access to bank credit and property ownership. Specifically, all financial data used in the study were obtained from reports of major commercial banks in the locality specifically, the Bank of Africa, Trust Merchant Bank, Rawbank and many others. To complement the data from these bank reports, the study also incorporates data obtained through direct interviews with clients who have engaged in real estate transactions. These interviews serve as a source for determining the actual market value of real estate properties, which may not always be accurately reflected in official banking records. This approach is consistent with prior research that emphasizes the importance of integrating multiple data sources to understand the dynamics of the study (Nguéda & Kelly, 2022; Kelly, 2024; Wassou *et al*., 2024; Kelly & Rutazihana, 2024) [27, 14, 35, 15]. Furthermore, given the limited availability of official real estate market data in the DRC, this strategy helps to bridge existing knowledge gaps and provide more reliable policy recommendations aimed at improving access to housing finance.

The data for this study were collected from a total of 387 individuals through 11 Public Sectors, as detailed in Table 1, over the period from 2020 to 2024. The financial institutions include a mix of mortgage lenders that provide credit facilities for real estate acquisition in Kisangani, DRC. The data capture various aspects of bank financing, including loan amounts, repayment amount, Income revenue, savings, household spending, and Estate value. To ensure consistency and comparability, all monetary values are reported in U.S. Dollars (USD) and presented as a five-year aggregation, reflecting the cumulative trends in real estate financing over the study period.

Table 1: List of Public Sector Services included in the sample

Abbreviation	Full Meaning
CBC	Central Bank of Congo
CEEC	Center for Expertise, Evaluation, and Certification of Precious and Semi-Precious Mineral Substances
GADRA	General Directorate of Administrative and Land Revenue
GDCE	General Directorate of Customs and Excise
GDT	General Directorate of Taxes
MRC	Mining Registry Cadastre
MTLB	Multimodal Transport Logistics Bureau
NIPP	National Institute for Professional Practice
NPEC	National Power and Electricity Corporation
NSSF	National Social Security Fund
WADB	Water Distribution Authority

Source: Author's Construction

Preliminary findings, as depicted in Figures 1 and 2, suggest a positive association between bank financing and real estate acquisition. This relationship is further explored in greater detail in the subsequent sections of the study to assess its robustness and underlying determinants. The descriptive statistics for the dataset utilized in this analysis are presented in Table 2, providing an overview of the key variables. Additionally, Table 3 illustrates the relationships between bank financing, real estate acquisition, and the control variables, offering deeper insights into the dynamics influencing property ownership in Kisangani.

Fig 1 illustrates the average relationship between bank financing and real estate acquisition across the 11 public sectors of activity included in the study. The trend observed suggests a positive association, indicating that financial institutions providing higher levels of credit tend to facilitate greater real estate acquisition. This pattern reinforces the role of bank financing in enhancing property ownership by enabling individuals and businesses to secure the necessary funds for real estate investments. The institutional-level perspective highlights variations in lending capacity and financial support, suggesting that some institutions play a more prominent role in real estate financing than others.



Fig 1: Bank financing Vs Real Estate per Public Sector. Source: Author's Construction

Fig 2 presents the association between bank financing and real estate acquisition at the individual level, capturing data from the 387 respondents in the study sample. The observed trend confirms a positive correlation, where individuals who accessed higher levels of credit were more likely to acquire real estate assets. This micro-level evidence complements the institutional-level findings in Fig 1, further supporting the argument that access to financial resources significantly influences property acquisition. The distribution of data points suggests varying levels of credit utilization among individuals, reflecting differences in borrowing capacity, repayment ability, and real estate investment preferences.

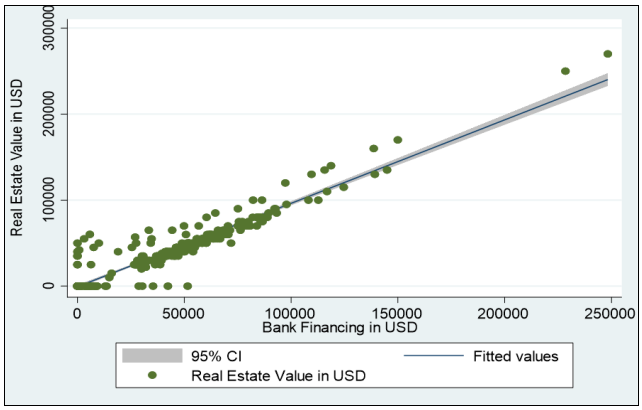


Fig 2: Bank financing Vs Real Estate per Individual. Source: Author's Construction

Before proceeding with the data analysis, a preliminary statistical examination of the study sample is necessary to provide insights into the characteristics of the dataset. Table 2 presents the descriptive statistics for the selected sample, offering a summary of the central tendencies and dispersion measures of the variables under consideration. This prior statistical analysis helps to establish a foundational understanding of the data distribution, ensuring the validity and reliability of subsequent empirical findings.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Bank Finance	387	44577.274	30147.987	0	248250
Real Estate Value	387	42499.225	31177.903	0	270000
Total Revenue	387	75360.62	63720.372	18501.473	597159.01
Repayment	387	74740.729	54636.76	0	518403
Household Spending	387	42449.809	34852.355	10477.9	328447.61
Household Savings	387	1690.673	12652.849	0	240797.24

Source: Author's Construction

Table 2 above presents the descriptive analysis of the variables included in the models. The summary statistics capture data for 387 individuals over the five-year period from 2020 to 2024. The standard deviation values suggest that the variables exhibit sufficient variation, making them suitable for inclusion in the regression models. On average, the mean value of bank financing in the sample is $44,577.27, while the mean real estate value stands at $42,499.23. Additionally, total revenue, repayment, household spending, and household savings have mean values of $75,360.62, $74,740.73, $42,449.81, and $1,690.67, respectively.

Overall, the statistics suggest no extreme outliers, as the means of each variable remain relatively close to their respective medians. The variations in standard deviations reflect differences in financial access and real estate acquisition across individuals. Furthermore, the presence of minimum values at zero for bank financing, real estate value, repayment, and household savings indicates that some individuals in the sample may not have engaged in formal financing or real estate acquisition during the study period. These insights provide a foundation for further empirical analysis to assess the relationship between bank financing and real estate acquisition.

Table 3: Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) Bank Finance	1.000					
(2) Real Estate Value	0.638	1.000				
(3) Total Revenue	0.577	0.670	1.000			
(4) Repayment	-0.704	0.724	-0.514	1.000		
(5) Household Spending	0.578	0.671	0.602	0.515	1.000	
(6) Household Savings	0.086	0.103	0.198	0.077	-0.200	1.000

Source: Author's Construction

Table 3 presents the correlation matrix for the variables in the study. The results indicate a strong positive association between bank financing and real estate value, suggesting that higher access to bank financing is linked to greater real estate acquisition. These correlations provide preliminary insights into the financial behaviors of the sample and will be further examined in the regression analysis.

3.2 Presentation and Definition of Variables

3.2.1 Dependent Variable

In this study, Real Estate Value is employed as the dependent variable, representing the monetary worth of real estate properties acquired by individuals. This variable captures the actual market value of properties based on direct interviews with clients who have engaged in real estate transactions. The use of direct client interviews ensures that the values reported reflect real market conditions rather than estimations or administrative valuations, thus providing a more accurate measure of real estate acquisition. Real estate value is an important indicator of property ownership trends and financial accessibility, making it a measure in assessing the role of bank financing in facilitating real estate investment. The variable is expressed in U.S. dollars to maintain comparability across different transactions and financial assessments.

In our sample, the Real Estate Value ranges from a minimum of $0, indicating individuals who either did not acquire any property within the study period or whose transactions were not completed, to a maximum of $270,000, reflecting high-value real estate acquisitions likely financed through substantial financial resources, including bank credit. The mean value of real estate in the sample stands at $42,499.23, with a standard deviation of $31,177.90, suggesting considerable variation in property values among individuals. This variation highlights the diversity in real estate transactions, from low-cost properties to high-end investments. The inclusion of this variable in the study allows for an in-depth analysis of how bank financing influences real estate acquisition patterns, particularly in a developing urban context such as Kisangani, where financial constraints and access to credit significantly shape property ownership trends.

3.2.2 Independent Variable

Bank Financing (or Credit) serves as the independent variable, representing the amount of financial resources provided by financial institutions for real estate acquisition. This variable is obtained from the reports of major commercial banks operating in Kisangani, specifically Bank of Africa, Trust Merchant Bank, Rawbank and many others. It captures the actual amount of credit extended to individuals for purchasing real estate properties, providing a direct measure of the role of formal financial institutions in facilitating property ownership. Bank financing is a vital determinant of real estate acquisition, as access to credit enables individuals to overcome liquidity constraints and invest in property. The variable is expressed in U.S. dollars, ensuring consistency in financial comparisons across different transactions and borrowers.

In our sample, Bank Financing ranges from a minimum of $0 to a maximum of $248,250. The $0 value represents individuals who either did not secure a bank loan or financed their real estate acquisitions through alternative means such as personal savings, informal borrowing, or family support. The maximum value of $248,250 reflects high loan amounts granted by banks, typically for the purchase of high-value properties or multiple real estate investments. Previous studies have widely used credit volume as a measure of bank financing, linking it to investment in housing, business expansion, and economic growth (e.g., Levine, 2005; Beck *et al*., 2010) [20, 3]. In real estate research, bank financing has been employed as a key determinant of property acquisition, as documented in studies analyzing the relationship between mortgage availability and housing demand (Mian & Sufi, 2011) [22]. By incorporating this variable, the present study seeks to examine how variations in bank financing influence real estate acquisition patterns in Kisangani, shedding light on the accessibility and impact of formal credit in the property market.

Beyond the independent variable, and in line with the determinants of real estate acquisition, the model incorporates control variables. These variables include total revenue (Carrasco-Gallego, 2020) [6], and household savings (Sangori & Aluoch, 2024) [32].

3.3 Model Specification and Estimation Strategy

Drawing from the studies by Mora (2008) [25] and Omollo (2013) [30], the present study adopts a linear empirical approach, leading to the formulation of the following linear empirical models.

$$Real\ Estate_i = \alpha_0 + \alpha_1 Bank\ Credit_i + \mu_i \quad (1)$$

Where $Real\ Estate_i$ is the dependent variable representing the acquisition of real estate by individual i, $Bank\ Credit_i$ represents the amount of money issued by financial institutions to clients and represents the independent variable of the study, α_i are the parameters to be estimated, and μ is the stochastic error term.

Introducing the above-mentioned control variables into Equation (1) refines the model by accounting for additional determinants of real estate acquisition. This inclusion enhances the explanatory power of the analysis, ensuring a more comprehensive assessment of the relationship between bank financing and real estate acquisition. As a result, the modified model is presented in Equation (2).

$$Real\ Estate_i = \alpha_0 + \alpha_1 Bank\ Credit_i + \delta X_i + \mu_i \quad (2)$$

With X being the vector of control variables, and δ the set of parameters associated with the control variables.

Regarding the second specific objective of this study, which has to do with the effect of loan repayment for homeownership on household welfare, Equation (3) is empirically formulated to address this concern as follows:

$$Welfare_i = \alpha_0 + \alpha_1 Repayment_i + \mu_i \quad (3)$$

Where $Welfare_i$ is the vector of welfare variables captured in this study through Total revenue, household spending, and household savings while $Repayment_i$ represent the refunded amount of bank credit.

The present study employs the Ordinary Least Squares (OLS) estimation technique to analyze the effect of bank credit on real estate acquisition in Kisangan. Given that the dataset consists of cross-sectional data on 387 individuals aggregated over a single period (2020-2024), OLS is an appropriate and widely used method for estimating linear relationships between variables. The primary advantage of OLS lies in its ability to provide the Best Linear Unbiased Estimator (BLUE) under the Gauss-Markov assumptions, making it a robust and efficient technique for estimating the parameters of the model (Wooldridge, 2016) [36]. In this study, real estate acquisition is the dependent variable, while bank credit represents the independent variable, alongside additional control variables such as total revenue and household savings. The OLS approach allows us to determine the strength and significance of these relationships, thereby providing valuable insights into the impact of bank financing on real estate investment decisions.

The justification for using OLS in this study is based on several factors. First, OLS is particularly suitable for cross-sectional data analysis, as it efficiently estimates the relationship between explanatory variables and the dependent variable without requiring time-series or panel data structures (Stock & Watson, 2020) [34]. Since the dataset aggregates financial and real estate data over a five-year period but treats it as a single cross-sectional observation, OLS remains a feasible estimation technique. Furthermore, OLS is computationally straightforward and interpretable, making it accessible for both academic and policy-oriented research. The interpretation of OLS regression coefficients is intuitive, allowing policymakers and financial institutions to understand the direct effects of bank financing on real estate acquisition without the complexities introduced by more advanced econometric techniques (Gujarati, 2002) [10].

Another significant advantage of OLS is its ability to handle relatively large cross-sectional datasets effectively. With 387 observations, the study has a sufficiently large sample size to ensure reliable and consistent parameter estimates. According to Greene (2012) [9], as the sample size increases, OLS estimates become more precise, reducing the standard errors of the estimated coefficients. Moreover, OLS does not require sophisticated data structures, such as balanced or unbalanced panels, which would be necessary for panel data models. The cross-sectional nature of the data in this study implies that there are no concerns about serial correlation, a common issue in time-series data that could necessitate more complex estimation techniques. Additionally, given

that the study's focus is on the determinants of real estate acquisition rather than dynamic effects over time, OLS provides an appropriate static analysis of the relationship between bank credit and real estate purchases.

4. Results and Discussion

Regarding the first specific objective with the aim to assess the effect of bank credit on real estate acquisition in Kisangani, the baseline regression results presented in Table 4, obtained when estimating Equation (2), highlight a strong positive association between bank finance and real estate acquisition in Kisangani, DRC. The coefficient for bank finance is 0.855, indicating that, all else being equal, a one-unit increase in bank finance leads to an increase of 0.855 units in real estate value. The result is statistically significant at the 1% level (p-value = 0.000), confirming the robustness of the relationship. This finding aligns with financial development theories (Beck *et al*., 2010) [3] that suggest access to credit enhances investment in capital-intensive assets such as real estate. Moreover, empirical studies such as those by Hancock and Wilcox (1993) [12] and Márquez *et al*. (2014) [21] support this positive effect, showing that financial accessibility directly boosts property acquisition. The high R-squared value (0.905) suggests that bank finance, along with the control variables, explains approximately 90.5% of the variations in real estate value, indicating a well-fitted model. This result emphasizes the vital role of bank financing in driving real estate investments, particularly in developing economies where alternative financing sources are often limited.

Table 4: Effect of Bank Credit on Real Estate (Linear regression)

Real Estate Value	Coef.	St.Err.	t-value	p-value	[95% ConfInterval]		Sig
Bank Finance	0.855	0.02	42.87	0.000	0.816	0.894	***
Household Savings	0.017	0.04	0.44	0.000	0.005	0.061	***
Total Revenue	0.095	0.01	9.93	0.000	0.076	0.114	***
Constant	2750.832	898.426	3.06	0.002	4517.297	984.368	***

Mean dependent var	42499.225	SD dependent var	31177.903
R-squared	0.905	Number of obs	387
F-test	1217.702	Prob > F	0.000
Akaike crit. (AIC)	8202.810	Bayesian crit. (BIC)	8218.643

*** p<.01, ** p<.05, * p<.1

Source: Author's computations

Beyond the independent variable, the estimated coefficients for the control variables—total revenue and household savings—provide further insights into the determinants of real estate acquisition. More specifically, total revenue has a significant positive effect on real estate value (coefficient = 0.095, p-value = 0.000), suggesting that higher household income levels facilitate real estate acquisition. This is consistent with the permanent income hypothesis (Friedman, 1957) [8], which postulates that households allocate income based on long-term financial expectations. Similarly, household savings positively impact real estate value, though with a lower coefficient (0.017) and statistical significance at the 1% level. This result supports the idea that accumulated savings, albeit a minor source of real estate financing compared to bank credit, contribute to property purchases. The positive effect of these control variables indicates that while bank financing remains the most influential factor, household financial stability also plays a role in real estate investments.

The model's validity is further reinforced by diagnostic tests that confirm the appropriateness of the estimation technique and the reliability of the results. The highly significant F-test (p-value = 0.000) indicates that the included variables collectively explain real estate acquisition patterns. Furthermore, the Variance Inflation Factor (VIF) test results, as discussed in the previous section, suggest that multicollinearity is not a concern, ensuring that the estimated coefficients are not distorted by inter-variable correlations. The Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) values confirm that the model specification is efficient and provides an optimal balance between goodness-of-fit and model simplicity. These statistical validity checks affirm that the estimated relationship between bank finance and real estate acquisition is robust and reliable for policy and academic considerations.

Overall, the findings of this study contribute to the growing literature on financial development and real estate markets in developing economies. The positive and significant relationship between bank finance and real estate value emphasizes the importance of a well-functioning banking sector in promoting real estate investments. This aligns with prior studies (Hancock & Wilcox, 1993; Beck *et al*., 2010) [12, 3], which have documented the role of financial institutions in supporting capital formation. From a policy perspective, the results suggest that improving access to credit through banking reforms and financial inclusion strategies could enhance real estate ownership in Kisangani.

4.1 Robustness of the Results

To ensure the robustness of our baseline findings, we conduct additional estimations of Equation (2) by disaggregating the analysis based on the public sector from which employees originate. This sectoral breakdown allows us to examine whether the effect of bank credit on real estate acquisition varies across different professional backgrounds. Out of the 11 public sectors included in the study, we consider only 9 for the robustness check. Employees from the Multimodal Transport Logistics Bureau and the General Directorate of Taxes are excluded from this estimation because more than 75% of them were not involved in bank credit transactions, rendering the data insufficient for meaningful estimation. By focusing on the remaining 9 sectors, we ensure a more reliable assessment of how access to bank financing influences real estate acquisition across different employment categories. The estimation results for the effect of bank credit on real estate acquisition by sector are presented in Table 5, providing further insights into

potential heterogeneities in the relationship between financial access and property investments within Kisangani's public sector workforce. These sector-specific estimations also help validate the overall findings by confirming whether the general trends observed in the baseline results hold across different professional environments, reinforcing the credibility of our conclusions.

Table 5: Effect of Bank credit on Real Estate Acquisition by Public Sector

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Dependent Variable: Real Estate Value								
	CBC	MRC	CEEC	NSSF	GDCE	GADRA	NIPP	WADB	NPEC
Credit	1.016**	1.112***	1.023**	0.149***	0.956***	0.721***	0.594***	0.774***	0.944***
	(0.0555)	(0.0688)	(0.0262)	(0.0215)	(0.0216)	(0.0359)	(0.191)	(0.0790)	(0.0585)
Savings	0.234***	3.136***	0.111*	2.404*	0.200*	0.260**	2.393**	0.180***	1.731**
	(0.0168)	(0.971)	(0.0963)	(1.648)	(0.126)	(0.0838)	(0.518)	(0.0522)	(0.500)
Revenue	0.0993*	0.0670*	0.0262***	0.409*	0.204***	0.164***	1.857***	0.108***	0.137*
	(0.0604)	(0.0417)	(0.00856)	(0.167)	(0.0148)	(0.0541)	(0.059)	(0.0251)	(0.0598)
Constant	9.742***	11.547***	19.748***	9.445***	5.994***	2.691***	11.245**	6.368***	11.316***
	(2.560)	(2.621)	(2.014)	(1.828)	(1.868)	(0.429)	(4.674)	(1.942)	(2.954)
Obs	5	14	5	7	106	182	7	43	12
R-squared	0.898	0.879	0.807	0.779	0.855	0.748	0.756	0.806	0.791

Source: Author's construction**.** Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

The robustness check of our baseline findings, presented in Table 5 reveal varying degrees of magnitude and significance. For instance, the effect is particularly strong and highly significant in the Central Bank of Congo (CBC), the Mining Registry Cadastre (MRC), and the General Directorate of Customs and Excise (GDCE), as evidenced by the coefficients at the 1% level. These findings align with financial accessibility theories that emphasize the role of formal financial institutions in enabling real estate investments (Beck *et al.*, 2010) [3]. The National Social Security Fund (NSSF) and Water Distribution Authority (WADB) also display significant credit coefficients, indicating that employees in these sectors benefit from structured financial support for housing acquisition.

The economic implications of these findings suggest that employees in high-revenue and financially structured public sectors tend to leverage bank credit more effectively for real estate acquisition. Sectors such as CBC, MRC, and GDCE exhibit the strongest credit-real estate value association, suggesting that employees in these entities have better access to mortgage facilities, likely due to stable employment contracts and predictable income streams. In contrast, in sectors such as the National Institute for Professional Practice (NIPP) and General Directorate of Administrative and Land Revenue (GADRA), the coefficients, though significant, are lower in magnitude, implying that credit utilization for real estate purposes may be more constrained.

Regarding the control variables, they continue to exhibit expected signs and significance reinforcing the importance of dual financial mechanisms—formal credit and personal savings—in real estate financing. Overall, the robustness analysis corroborates the baseline findings. The varying sectoral impacts highlight the heterogeneity in credit accessibility and financial stability among public sector employees.

4.2 Does Loan Repayment Matter for Household Welfare?

Regarding the second objective of this study, which aimed to analyze the effect of loan repayment for homeownership on household welfare, we hypothesized that loan repayment for homeownership has a significant positive effect on household welfare. To empirically verify this hypothesis, we estimate Equation (3) as outlined in the methodology section. In this estimation, household welfare is captured through three key indicators: Household Spending, Household Savings, and Total Revenue. These indicators provide a measure of household financial well-being, as they reflect both consumption capacity and financial stability. The loan repayment variable, which represents the amount repaid by households toward their homeownership loans, is obtained from commercial bank reports to ensure accuracy and reliability. The values are reported in U.S. dollars to maintain comparability across different financial institutions and facilitate consistent analysis. The estimation results for this exercise, which assess the effect of loan repayment on household welfare, are presented in Table 6.

Table 6: Effect of Loan repayment on Household Welfare

	(1)	(2)	(3)
Variables	Household_Spending	Household Savings	Total Revenue
Loan Repayment	-0.329***	-0.599***	-0.409***
	(0.0279)	(0.0118)	(0.0510)
Constant	17.885***	3.623**	30.585***
	(2.578)	(1.089)	(4.719)
Observations	387	387	387
R-squared	0.365	0.306	0.364

Source: Author's construction

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

The results presented in Table 6 provide empirical evidence on the effect of loan repayment on household welfare, measured through household spending, household savings, and total revenue. The coefficients for loan repayment in all three models are negative and statistically significant at the 1% level, suggesting that higher loan repayments are associated with a decline in household spending, savings, and total revenue. Specifically, a unit increase in loan repayment leads to a 0.329 unit decrease in household spending, a 0.599 unit decrease in household savings, and a 0.409 unit decline in total revenue. These findings indicate that the financial burden of repaying loans for homeownership significantly constrains household economic resources, reducing their ability to allocate funds for daily consumption, future financial security, and overall income generation. This aligns with theories of credit constraints and liquidity constraints, which argue that high debt obligations can limit household financial flexibility and economic stability (Stiglitz & Weiss, 1981) [33].

From an economic standpoint, the negative impact on household spending implies that loan repayment obligations reduce disposable income, thereby constraining consumption patterns and possibly lowering the overall standard of living. This aligns with life-cycle theories of consumption (Modigliani & Brumberg, 1954) [23], which suggest that individuals adjust their spending based on expected income and liabilities. Given that homeownership is often financed through long-term bank loans, households may experience a prolonged period of financial strain, affecting their ability to maintain consumption levels. Similarly, the negative impact on household savings implies that repayment obligations force households to deplete their savings, reducing their financial resilience and ability to cope with unexpected economic shocks (Friedman, 1957) [8].

Moreover, the significant reduction in total revenue suggests that loan repayments may limit households' capacity to invest in income-generating activities, ultimately reducing overall earnings. This finding is consistent with research on debt overhang, which posits that high levels of debt repayment obligations can deter productive investments and slow down wealth accumulation (Krugman, 1988) [19]. If households must allocate a substantial portion of their income to debt servicing, they may have limited capital to invest in entrepreneurial activities, further constraining economic mobility. This could be particularly concerning in a developing country context like the Democratic Republic of Congo, where alternative sources of finance for small businesses or additional income-generating activities are often scarce.

The findings align with previous studies that have examined the trade-offs between homeownership financing and economic well-being (Campbell & Cocco, 2015) [5]. Given the significant financial constraints imposed by loan repayment, policymakers may need to consider mechanisms such as flexible repayment terms, interest subsidies, or financial literacy programs to mitigate the negative effects on household welfare.

5. Conclusion and Policy Recommendation

The issue of housing remains a critical and pressing challenge given the rapid urbanization and limited access to affordable financing mechanisms which hindered many public sector employees from owning decent homes. Given the central role that housing plays in promoting human dignity, social stability, and economic security, ensuring equitable access to homeownership is not only a national development priority but also aligns with the global commitments under the United Nations Sustainable Development Goal 11, which seeks to make cities inclusive, safe, resilient, and sustainable. In light of these concerns, this study set out to evaluate the effect of bank financing on real estate acquisition by public sector employees in Kisangani. The study took a dual approach: first, to examine the effect of bank loans on employees' capacity to acquire housing, and second, to analyze how the burden of loan repayment influences their household welfare.

Drawing from empirical data collected between 2020 and 2024 from 387 public sector employees across 11 administrative departments, alongside commercial bank reports and client interviews, and employing the OLS linear regression, the analysis revealed key insights. It was found that bank financing plays a significant role in enabling public sector employees to access real estate, thereby acting as a catalyst for increased homeownership in Kisangani. Access to credit facilities allowed many employees to bypass the challenge of upfront capital costs, making housing more attainable. However, while this increased access is a positive development, the study also highlighted a critical trade-off: loan repayment obligations were found to exert considerable pressure on employees' short-term household welfare. This was evident in the reduction of discretionary spending, decreased savings, and constrained overall income, indicating that although bank loans facilitate access to housing, they may temporarily strain the financial stability of borrowers. This duality emphasizes the need for more inclusive and flexible loan products that can support sustainable homeownership without compromising the economic well-being of public sector employees.

Based on the findings, a multifaceted and coordinated policy approach is necessary to enhance housing access for public sector employees in Kisangani while mitigating the financial strain of loan repayments. First, commercial banks and financial institutions should be encouraged, possibly through government-backed incentives or guarantees, to design more inclusive and flexible mortgage products tailored to the income realities of public sector workers. These could include longer repayment periods, lower interest rates, and grace periods that align with employees' financial cycles. Banks should also adopt more comprehensive risk assessment models that consider job security in the public sector as a mitigating factor, thereby improving access to credit without imposing overly burdensome conditions. At the same time, the government, particularly the Ministry of Finance, should establish targeted subsidy programs or interest rate buy-down schemes for first-time public sector homeowners. This would significantly reduce monthly repayment amounts and protect household welfare. Additionally, introducing a public-private partnership housing fund that blends commercial loans with concessional financing could serve as an effective model for long-term affordability and inclusion.

Furthermore, employer institutions within the public sector have a key role to play in supporting the housing aspirations of their employees. This can be done through structured salary-based savings schemes, employer-backed housing cooperatives, or direct payroll deductions that are coordinated with banks to ensure more predictable and lower-risk repayment mechanisms. These efforts should be

complemented by robust financial literacy programs targeting public servants, equipping them with the tools to manage long-term debt effectively without compromising essential household expenditures. On a broader scale, urban planning authorities and local governments must ensure that land access, legal title registration, and housing construction regulations are simplified and affordable, as bureaucratic bottlenecks often deter potential homeowners and inflate overall costs. By aligning the efforts of banks, government bodies, employer institutions, and employees themselves, it is possible to create a housing finance ecosystem that not only facilitates homeownership but also promotes financial resilience and improved well-being among public sector workers in Kisangani.

The main limitation of this study lies in its geographic scope, as it focuses exclusively on public sector employees in the city of Kisangani, which may limit the generalizability of the findings to other regions of the Democratic Republic of Congo with differing economic, institutional, and housing market dynamics. While Kisangani presents a valuable case study due to its urbanization trends and financial infrastructure, the housing challenges and access to bank financing may vary significantly across provinces, particularly between urban and rural areas or among cities with differing levels of public sector presence and financial service penetration. As such, future studies could address this limitation by expanding the scope to include a comparative analysis across multiple cities or regions, thereby capturing a broader spectrum of contextual factors influencing the relationship between bank financing and real estate acquisition. This would not only enhance the robustness and external validity of the findings but also provide more refined policy insights tailored to the specific needs of different localities across the country.

6. References

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