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Relationship between Challenges Militating against Mortgage Finance and Benefits of Mortgage Acquisition in Ghana: Case of SSNIT

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Abstract

Past studies on the mortgage market of Ghana evidenced that absence of long-term sources of housing funds, low-income levels, macroeconomic instability, inability to assess the creditworthiness of prospective mortgagors among others plague the development of Ghana's mortgage market. Therefore, this study was conducted to evaluate the relationship between challenges militating against mortgage finance and benefits of mortgage acquisition in Ghana. Questionnaires were used to elicit responses from respondents. Convenience sampling technique was used to select one hundred (100) respondents comprising staff at SSNIT Head Office in Accra, SSNIT contributors, beneficiaries of SSNIT funds, mortgage applicants, owners and occupants of SSNIT flats. Mean score ranking, Cronbach's Alpha coefficient, one sample t-test and Partial Least Square Structural Equation Modeling (PLS-SEM) were the analytical tools adopted. Dollarization of mortgage markets, access to funding for the scheme, macroeconomic instability and inability to assess creditworthiness of mortgage applicant were the most significant challenges. The most significant benefits were: (1) increase in the rate of house construction; (2) ability to provide a relatively low-interest credit; (3) capacity to mitigate housing deficits; and (4) capability to provide a relatively long-term credit for housing. Structural Equation Model was developed to evaluate the relationship between the challenges and benefits. The study is beneficial to stakeholders such as policymakers, financial institutions, Ghana Real Estate Developers Association (GREDA) and SSNIT contributors. This work is a pioneering study in Ghana on the relationship between challenges SSNIT encounters in mortgage financing and benefits of acquiring mortgage facilities with the assistance of SSNIT.

Keywords: SSNIT, mortgage, financing, challenges, Ghana

1.0 INTRODUCTION

Housing, according to Maslow's theory of needs, forms part of the physiological needs of humans and is thus considered essential for survival (Owusu-Manu et al., 2021). Being a vital component for survival, housing is ranked second to the provision of food as one of the fundamental necessities of humans (Aalbers, 2016; Deci & Ryan, 2000).

As at 2017, the Ghana Statistical Service estimated that the country has a housing deficit of 1.7 million (Clark & Dieleman, 2012). This staggering statistics explain why the Government of Ghana and several financial institutions, principally the Social Security and National Insurance Trust (SSNIT), Home Finance Company (HFC), State Insurance Corporation (SIC), First Ghana Savings and Loans, Ghana Home Loans (GHL) and Société Générale - Social Security Bank (SG-SSB) have occupied the niche of providing financial assistance to citizens in the form of mortgages to help them purchase, construct or improve their houses to augment the efforts made by the government in mitigating accommodation stress and housing deficit.

Although mortgage financing has evolved since its inception in the, Ghana's mortgage market is still underdeveloped, inefficient and inadequately financed (Kukah et al., 2021; Owusu-Manu et al., 2016). A retrospective and pre-emptive research on the mortgage market of Ghana by Boamah (2010b) evidenced that absence of long-term sources of housing funds, ineffective foreclosure legislation, low-income levels, macroeconomic instability, inability to assess the creditworthiness of prospective mortgagors among others plague the development of Ghana's mortgage market. These findings are confirmed by the separate works of Mahama (2008) and Arku (2009). New entrants to the mortgage market, such as the bank real estate developers have resorted to giving short-term credit facilities with high-interest rates to mortgagors to assist them in acquiring decent housing (Chiquier et al., 2004). However, this strategy, according to Boamah (2009), virtually precludes the middle and low-income earners from acquiring mortgages due to short repayment time and the high-interest rates.

These challenges have resulted in the overreliance on foreign remittances for housing and the protracted time taken to complete house constructions by individuals. Again, the effort of house financing institutes and real estate developers at providing housing, pale into insignificance because the individuals currently build about 90 % of new homes whilst real estate developers build woeful 3 to 5% (Obeng-Odoom, 2011). The 1.7 million housing deficit estimated in 2017 is projected to reach 1.9 million by 2019 due to rapid population growth and urbanisation (Clark & Dieleman, 2012). Thus, implying the urgent need to provide more housing units and flexible home construction credit facilities in order to make the menace of housing deficit a thing of the past.

As part of the social security offered in terms of pension, SSNIT also plays a pivotal role in providing housing facilities through mortgages to SSNIT contributors (Owusu-Manu et al., 2016). By mobilising contributions from contributors and prudentially investing these funds, SSNIT accrues a significant fund with which it sources it mortgage schemes. Appraising the creditworthiness of prospective mortgagors is relatively easy because the prospective mortgagors are mostly SSNIT contributors. SSNIT has thus contributed immensely to the housing sector of Ghana (Clark & Dieleman, 2012).

A number of studies have been conducted on mortgage financing. For example, Nelson and Asamoah (2014) investigated the participation of real estate developers in mortgage financing while Boabang (2016) looked into residential mortgage finance and Mahama (2008) scrutinised the mortgage market in Ghana. Still, there is currently no study that assesses the relationship between the challenges militating against mortgage finance and the benefits of mortgage acquisition. In fact, there is currently unknown study that has established the conceptual linkage between the two. This is significant since the challenges in the mortgage would have an effect on the benefits of acquiring mortgage through mortgage financing.

This study seeks to fill the gap. The research questions underpinning the study therefore are: (RQ1) What are the challenges militating against the contribution of Social Security and National Insurance Trust (SSNIT) to mortgage financing in Ghana?; (RQ2) What are the benefits of acquiring mortgage facilities with the assistance of SSNIT?; (RQ3) What is the relationship between the challenges militating against mortgage finance and the benefits of mortgage acquisition? This study is very important since it serves as a means of advancing vital insight for both academia and industry practitioners on mortgage financing and acquisition.

2.0 LITERATURE REVIEW

2.1 Concept of Mortgage

Mortgage is a pledge or a legal conveyance in which an individual or an organisation borrows money to buy properties such as a house, car, etc. and pays back the money over a period of years (Friedman et al., 2013). Thus, in mortgage, borrowers use their existing property as collateral for a credit facility while they continue using that property (Chiquier et al., 2004). Mortgage basically comprises two things; a promissory note and a deed. The individual or the organisation that is seeking the credit facility is called the mortgagor, and the one giving or lending the credit facility is called the mortgagee. In mortgage financing, a third party may be involved who plays the role of being an intermediary and is known as the mortgage brokers. The mortgage broker finds a mortgage facility with good conditions for the mortgagor and he or she charges a commission for facilitating the process of acquiring the credit (Stuart, 2003). In Ghana, the mortgage agreement has the backing of the Mortgage Decree, 1972 (NRCD 96), the Home Mortgage Finance Act, 2008 (Act 770) and the law of contract (Boamah, 2011).

2.1.1 The Mortgage Market in General

By and large, the mortgage market focus on providing credit facility by collateralising real estate properties such as houses, land, office complex etc. Basically, the mortgage market is in two categories: the residential mortgage market that funds the construction, improvement or the buying of homes, and the commercial mortgage that funds all other real estate assets for commercial purposes (Geltner & Miller, 2001). Globally, mortgage financing appears to be the principal way of constructing, improving and purchasing a house. However, in Ghana, the contribution of mortgage financing towards constructing, improving and purchasing a house is quite minimal (Obeng-Odoom, 2010). As opined by Ayitey et al. (2010), many institutions in the financial industry are not willing to engage in long-term investment due to liquidity issues. Inversely, most financial institutions find security in short-term investments, which is comparatively risk-free (Levišauskaite, 2010). This accounts for the few mortgage facilities available in the country.

2.1.1 The Mortgage Market Structure

The mortgage market structure is comprised of several institutions. Generally, two institutions make up the structure of a developed mortgage market. These are the depository institutions and the mortgage banks (Iacoviello & Minetti, 2008). The depository institutions are the principal of the two institutions because they are directly involved in mortgage creation and holdings, and they comprise the savings and loans banks, the commercial banks, the building and loans societies among others. The mortgage banks are involved in the secondary mortgage markets where the play the function of creating and selling mortgage products to final investors or clients (Aalbers, 2016).

2.2 Mortgage Financing in Ghana

Mortgage financing in Ghana has a rather ragged and incoherent history with several short-lived approaches of finance. Mortgage institutions, principally the First Ghana Savings and Loans Limited (then First Ghana Building Society), Home Finance Company (HFC) and other financial institutions like the Société Générale Social Ghana (then Social Security Bank) and State Insurance Corporation (SIC) have at one point in time gave mortgage facilities to the employed citizens of Ghana (Aha et al., 2014). However, the provision mortgages by these mortgage institutions were hindered by the high cost of borrowing, ergo their resultant positive impact on house delivery was limited because only people in the high and the middle-income earners were benefiting from these mortgages (Bonner & Wiggin, 2006).

Donkor-Hyiaman (2013) asserted that high cost of borrowing, currency instability and high inflation plague the mortgage market such that the house financing market seems to be skewed in favour of foreigners and non-resident Ghanaians whose incomes are indexed in foreign currencies. The Research Department of the BOG (2007b) pointed out that among other things, low income is one of the factors that affect prospective mortgagors in accessing mortgage facilities in Ghana. Low-income results in high mortgage payment-to-income ratio for many mortgage applicants and thus precluding them from accessing mortgages. In safeguarding their interest against currency depreciation, estate developers price houses in foreign currencies which hamper the demand for a mortgage. Since mortgagors are obliged to repay their credit in Ghana Cedis, the cost of repaying the mortgage is very high (BOG, 2007a).

2.3 Types of Mortgage Credits in Ghana

Although there are several mortgage facilities or products in the Ghanaian mortgage market, they can conveniently be categorised into five main types, namely:

a. Home Purchase Mortgage (HPM)
b. Home Equity Loan (HEL)
c. Home Completion Mortgage (HCM)
d. Home Improvement Mortgage (HIM)
e. Home Construction/Construction Finance

a. Home Purchase Mortgage (HPM)

Home purchase mortgage is intended to enable individuals or organisations in the working class to purchase a home or residential property which they can use themselves, rent it out or lease to a third party. This mortgage product is usually available for both residential or non-residential Ghanaians. The mortgagor is generally asked to make at least 15% to 25% of the total cost of the property while the mortgagee offers a credit facility to cater for the remaining 75% to 85% of the cost. The repayment duration is usually between 15 to 20 years and the mortgage is subjected to either a fixed or variable interest rate (Teye et al., 2015).

b. Home Equity Loan (HEL)

The home equity loan is created to assist home or residential property owners to access credit facility to better their liquidity position by using their property as a collateral. Persons or organisations who have a title to their properties, that is either the properties are being funded or are fully paid for. The credit accessed could be used to expand businesses, pay for fees, improve homes or buy other properties. The credit accessed under this facility is subjected to repayment duration between 15 to 20 years with either fixed or variable interest rate (Donkor-Hyiaman, 2013).

c. Home Completion Mortgage (HCM)

Home completion mortgage is intended to help mortgagors by giving them credit facilities to complete the construction of their residential properties or homes. The aim of this facility is to assist the mortgagor to realise his or her dream of owning a residential property or home by funding the completion of their construction project. The maximum credit-to-value ratio for home completion mortgage is generally 50%. Again, the repayment time for this mortgage facility is between 15 to 20 years and it is subjected to a variable interest rate (Shipton, 2010).

d. Home Improvement Mortgage (HIM)

Home improvement mortgage is created to help individuals or organisations with a credit facility to embark on an extension work or renovation on their residential properties or homes. Residential properties or homes owners and companies who need to renovate or expand their homes are the target group for this mortgage facility. Apart from the fact that the home improvement mortgage is strictly for the purpose of renovating or expanding existing residential properties or homes, the home improvement mortgage is similar to the home equity loan (Teye et al., 2015).

e. Home Construction/Construction Finance

Home construction/construction finance is intended for the construction of residential properties or homes and the mortgage facility is offered in three ways: firstly, construction funding to the mortgagors, secondly, construction funding to real estate developers, and thirdly, construction funding to the customers of real estate developers. It is worth noting that, all these construction projects are insured against fire, flood and other natural disasters through a private mortgage insurance (Donkor-Hyiaman, 2013).

2.4 Nexus between Challenges Militating against Mortgage Financing and Benefits of Mortgage Acquisition through Mortgage Financing

Although the Ghanaian mortgage market is still evolving, the impact of mortgage financing, especially in-house financing is quite significant. Among the benefits of mortgage financing are the ease of constructing, improving or purchasing real estate and other properties, flexibility in repayment of accessed credit, the existence of foreclosure rights, mitigating housing deficit, and an increase in the rate of constructing or improving real estate properties (Benjamin & Sirmans, 1987; Cocco, 2013; Keys et al., 2012). SSNIT contributors also have an added advantage of having SSNIT to serve as guarantor for them during their mortgage application.

Like any other market, the mortgage market is also negatively affected by a demand and supply mismatch for housing delivery and mortgage credit. Warnock and Warnock (2008) opined that the mortgage market can be perceived in terms of demand and supply. Teye et al. (2015) proposed that the mortgage market comprises of two principal subsystems, namely; demand and supply, and these subsystems are also influenced by other components such as the real estate industry, banking industry and the state housing and legal institutions. If the demand for mortgage credit and/or real estate properties are not met with a commensurate supply, the mismatch in the two subsystems would not augur well for the development of the mortgage market (Clark & Dieleman, 2012).

Currently, only five major financial institutions offer mortgage loans. These are Fidelity Bank, Stanbic Bank, CAL Bank, HFC Bank, and Ghana Home Loans. A survey by the Research Department of the Bank of Ghana reveals that less than 3% of the total loans portfolio offered by banks in Ghana are channelled into house financing (BOG, 2011). The challenges that militate against the financial institutions in supplying more mortgage products are interrelated and they include but not limited to the capital inadequacy of the financial institutions, inability to establish the creditworthiness of prospective mortgagors, collateral problems, and macroeconomic instability. Other challenges include low-income levels of citizens and cultural value (most Ghanaians resort to constructing, improving or purchasing their homes with their own savings or remittances from relation abroad).

One of the major constraints to the supply of mortgage is the weak position of many Ghanaian financial institutions. A thorough appraisal of reports from the Bank of Ghana (BOG) reveals that most of the financial institutions in the country are unable to provide mortgage facilities due to their capital inadequacy or small capital size. This accounts for the reason why just 5 banks are into mortgage financing, out of the over 20 banks. Per the regulations of the BOG, the initial capital required of a bank before it operates is GHC 400 million (Spillan & King, 2017). Although some banks have more than the initial capital, they still do not have sufficient capital to venture into providing long-term loans portfolios such as mortgage financing.

Allen and Saunders (2003) and Anderson (2006) affirmed that evaluating the probability that a prospective mortgagor will repay a loan given him or she is very important in mortgage marketing. According to the observation by Freedman (2004), mortgage institutions in the developed world thoroughly check out the salary statement, income tax returns and the detailed credit history, as a way of evaluating the income of prospective mortgagors (Shipton, 2010). This is in part due to the non-existence of credit-checking agencies and the large informal sector in the developing countries. In Ghana, aside from the dearth of credit-checking agencies, there is also no trustable database for important personal information like date of birth, career history, residential address, property documentation and the like. Furthermore, the digital address system that has been adopted by the Ghana Post Services has not been widely accepted. These, therefore, make it difficult to establish the creditworthiness of prospective mortgagors.

Security in the form of collateral is crucial in mortgage financing (Fleisig et al., 2006). In the developed countries, the property for which the mortgage is being accessed is usually used as the collateral (Green & Wachter, 2005). However, in Ghana, this is not always the case. The real estate is now developing and more than 90% of residential and real estate properties are constructed by Ghanaians through hiring the services of artisans (Ahadzie & Amoa-Mensah, 2010). Thus, most prospective mortgagors can only access credit by collateralising another property. The property that the financial institutions can agree to take as collateral must be of a high standard (Aron et al., 2012). Conversely, the work of Teye et al. (2015) asserted that most of the properties that prospective mortgagors want to use as collateral security are not of high quality.

Borrowing and lending undoubtedly are significantly influenced by the macroeconomic environment. Teye et al. (2015) pointed out that the erratic depreciation of the Ghana Cedi and high level of inflation make venturing into long-term credits riskier and unprofitable to financial institutions because the value of the amount credited rapidly decline. Historically, interest rates and inflation have been high in Ghana. Inflation exceeded 100% in the late 1970s, but adoption of structural adjustment programs helped to bring the inflation down in the early 1980s (Teye et al., 2015). Yet, the economy was still unstable as evidenced when inflation again rose from 14% in 1999 to 41% in 2000 (Teye et al., 2015). The local currency is also unstable as it frequently depreciates against major foreign currencies, especially the US dollar. The Cedi, from 1997 to 2000, approximately depreciated by a woeful 360% against the US Dollar. The depreciation of the Ghana Cedi in recent time is also quite significant. The unstable macroeconomic environment in the country has resulted in the dollarization of the Ghanaian mortgage market (Ize, 2013).

2.5 Empirical Review

The Research Department of the BOG (2007b) carried out an investigation on Ghana's housing market. The study's aim was to assess the trends of house pricing and the impact of mortgage in the delivery of housing in the country. The study made use of survey data collected in the Ashanti, Eastern, Western and Greater Accra Region. The main discoveries made by the study were: the prices of houses have been increasing invariably and this is due to ever increasing cost of land and construction materials in the country, and the housing sector is directly influenced by the domestic interest patterns because a greater part of the housing units is partly financed through credits from a financial institution. The study also revealed that 72.7% of the house construction projects that were commenced by real estate developers were self-funded.

"*An Overview of and the Prospects for Ghana's Real Estate Market*", a work by Karley (2009), found that Ghana is among the few countries in the sub-region with an emerging real estate market despite the fact that the real estate market in Ghana has considerably evolved in recent years. Two years later, Owusu's (2011) work titled, "*Urban Growth, Globalization and Access to Housing in Ghana's Largest Metropolitan Area, Accra*" was deliberately focused on probing housing among the poor in Accra in the scope of the economic liberalisation and the aftermath of the economic globalisation in the last three decades. The research concluded that the problem of housing deficit in Accra is probable to aggravate if creative and innovative policies are not implemented, given the global city status accorded Accra. A handful of research contributions by Domeher and Abdulai (2012), Domeher (2013) and Domeher et al. (2014) disclosed that title registration and land rights are among the several factors that become essential in when one decides to acquire funding for property development. Prior to that, a seminal work by Chambers et al. (2008) with a title, "*Mortgage Innovation, Mortgage Choice, and Housing Decisions*" was aimed at examining some of the mortgage products on housing from 1995 to 2005. Their research revealed that the introduction of mortgage products had a positive correlation with home ownership. The study also pointed out as the supply of these mortgage products were discontinued, the rate of home ownership declined.

3.0 METHODOLOGY

Quantitative method was adopted while research design was descriptive. Descriptive research seeks to describe a phenomenon by clarifying and expounding its relationships and properties by answering the questions; who, what and when (Creswell & Creswell, 2018).

The target population for the study were staff at SSNIT Housing Project of the SSNIT Head Office in Accra, SSNIT contributors, beneficiaries of SSNIT funds, mortgage applicants, owners and occupants of SSNIT flats. These people were the target respondents because they are one way or the other impacted by the operations of SSNIT. Convenience sampling and purposive sampling techniques were adopted. Purposive sampling technique was used in selecting staff of SSNIT Head Office Accra. Convenience sampling technique was used to select SSNIT contributors, mortgage applicants, owners and occupants of SSNIT flats. Convenience sampling as pointed out by Etikan et al. (2016), is a non-probability sampling technique that is employed because the respondents are convenient and readily available (Polit & Beck, 2010). It offers a cost-effective method of collecting data to quickly delve into research problems that can be later be explored further (Mack et al., 2005). Purposive technique on the other hand is used for identification and selection of information-rich cases for the most effective use of limited resources. In all, 100 respondents were sampled for the study. These comprised 20 staff of SSNIT through purposive sampling and 80 SSNIT contributors, mortgage applicants, owners and occupants of SSNIT flats through convenience sampling.

The instruments of data collection were two sets of questionnaires. The questionnaires contained closed ended questions that were designed based on the objectives of the study. The first set of questionnaires was administered to the staff of SSNIT Head Office Accra. The second set of questionnaires was administered to SSNIT contributors, beneficiaries of SSNIT funds, mortgage applicants, owners and occupants of SSNIT flats.

Lewis-Beck et al. (2004) argued that validity and reliability are key parameters considered in the acceptance of research findings by the scientific community because these parameters enhance the credibility of the research (Kimberlin & Winterstein, 2008). The validity of the instrument of data collection was checked by conducting a pilot with the questionnaires prior to the data collection. Reliability was tested Cronbach's alpha coefficient analysis.

Data collected from the field were analysed with descriptive statistical tools like frequencies, percentage, means and standard deviations. One sample t-test was used to ascertain the relative significance of the variables. Structural Equation Modeling (SEM) was used to establish the relationship between challenges and benefits. Software for data analysis was done with version 23 of Statistical Package for Social Sciences (SPSS) and Smart PLS.

3.1 Profile of SSNIT

The Social Security and National Insurance Trust (SSNIT) is the biggest non-bank financial institution and the statutory public trust that is mandated with the management of Ghana's National Pension Scheme. For the following information under this sub-section, kindly visit the official website of SNNIT at www.ssnit.org.gh. The Trust was established in 1972 under NRCD 127 and it is primarily charged with the responsibility of replacing part of the lost income due to invalidity, and old age, and it is also responsible for the payment of benefits to the dependents of a deceased contributor. Prior to 1972, the National Pension Scheme was jointly administered by the State Insurance Corporation and the then Department of Pensions. A Provident Fund Scheme was administered by the Trust until 1991 when it was converted into a social insurance pension scheme and subsequently reformed in 2010 by Act of Parliament, Act 766. The Act was however, endorsed in 2008 to substitute the former SSNIT Pension Schemes.

The National Pensions Regulatory Authority (NPRA) was established to supervise the management and administration of registered pension schemes and the trustees of registered schemes. Act 766 makes provision for a 3-Tier Pension Scheme, and SSNIT manages the 1st Tier which is the National Social Security Scheme. The 2nd Tier is an obligatory fully-funded and privately managed occupational scheme. The 3rd Tier is a voluntary fully-funded and also privately managed the provident fund and personal pension plan. The Trust has since 1974 channelled funds into the development of real estates. The aim of this development was to provide the contributing public with residential accommodation. Although the inception of this housing development was low keyed, more funds were committed to the development from 1987 to 1988. The underlying principle for embarking on the housing development was to ensure that contributing workers could afford decent flats to reside in while these workers serve the country. The total housing units that were developed in the whole country was 7,168 and approximately 98% have been sold to salaried workers.

4.0 DATA ANALYSIS AND FINDINGS

4.1 Years of SSNIT Contributions

In the respondents' profile, respondents who affirmed that they contributed to SSNIT funds were asked the number of years they had contributed to the fund. The number of years a respondent has contributed to SSNIT is also an indication of the worth of the mortgage facility that SSNIT can guarantee for a contributor. From Figure 1, 31.0% of the respondents had contributed for 1 to 5 years, 22.0% of the respondents had contributed for 6 to 10 years, 10.9% of the respondents had contributed for 11 to 15 years, 13.0% of the respondents had contributed for 16 to 20 years, 10.0% of the respondents had contributed for 21 to 25 years and remaining 5.0% of respondents had contributed to SSNIT for more than 25 years.

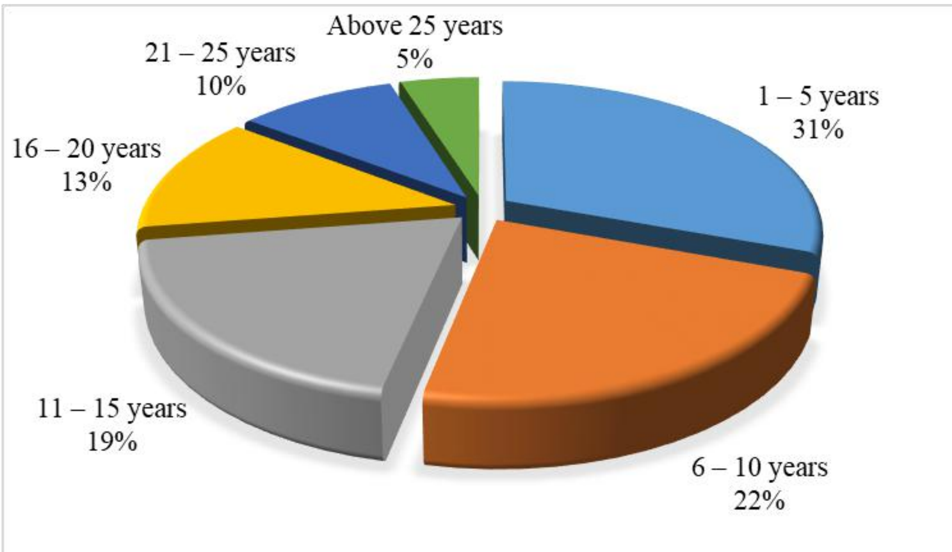

Figure 1 Number of years of contribution to SSNIT

4.2 Reliability Statistics

From Table 1, the internal consistency analysis of the responses received shows Cronbach's alpha coefficient value of 0.912 for the challenges and coefficient value of 0.886 for the benefits. Tavakol and Dennick (2011) postulated that a Cronbach's alpha coefficient value between 0.800 and 0.900 is good for research. This implies that the internal consistency of the responses was valid.

Table 1 Reliability statistics

Cronbach's Alpha for challenges	Number of Items
0.912	9
Cronbach's Alpha for benefits	**Number of Items**
0.886	7

4.3 One Sample T-Test

The one sample t-test was used to establish the relative significance of the variables (benefits and challenges). This is used in ascertaining whether a sample mean is significantly deviant from a hypothesised mean (Ahadzie, 2007). For a single sample test, its hypotheses are:

H_o: $U = U_o$
H_a: $U<, >U_o$

With H_o representing the null hypothesis, H_a representing the alternative hypothesis and U_o representing the hypothesised mean. Ahadzie (2007) records that for a usual one-sample t-test, the mean of the test group, degree of freedom for the test (an approximate of the sample size), the t-value (strength of test) and the p-value (probability of test being significant) are reported usually. A statistical test of the mean was undertaken to decide whether the population considered a variable to be important or not. The mean ranking of each criterion was compiled to articulate the decisions that the respondents expressed. Moreover, the mean for each variable with its corresponding standard deviation and standard error are presented.

In this research, the higher ratings of 4 and 5 were chosen for the rating scale as important and very important respectively. In this study, the hypothesised mean U_o is set at 3.5.

4.3.1 Challenges Militating against SSNIT's Contribution to Mortgage Financing in Ghana

Variables found in literature were presented to the respondents and they were asked to use a five-point Likert scale to rank the challenges. All factors had t-values (strength of test) that were positive indicating that their means were above the hypothesised mean of 3.5. The analysis reveals that *Dollarization of mortgage markets* ranks first with a mean value of 4.556, *Access to funding for the scheme* ranks second with a mean value of 4.250, *Macroeconomic instability* ranks third with a mean value of 4.000, *Inability to assess creditworthiness of mortgage applicant* ranks fourth with a mean value of 3.889, and *Low-income levels of mortgage applicants* ranks fifth with a mean value of 3.833. Other challenges revealed by the study include *Low contributions of mortgage applicant, Collateral problems, Supply and demand constraints,* and *Burden of regulations* which include provision for bad debts, and capital adequacy requirements. Table 2 presents the results accordingly.

Table 2 Challenges militating against mortgage financing by SSNIT

	Mean				
Challenges	**Statistics**	**Std. Error**	**Std. Dev**	**T**	**Sig. (2-tailed)**
Dollarization of mortgage markets	4.556	0.082	0.883	8.615	.000
Access to funding for the scheme	4.250	0.092	0.902	5.421	.000
Macroeconomic instability	4.000	0.047	0.743	10.068	.000
Inability to assess creditworthiness of mortgage applicant	3.889	0.060	0.467	3.129	.000
Low-income levels of mortgage applicants	3.833	0.052	0.688	2.652	.000
Low contributions of mortgage applicant	3.721	0.065	0.900	5.023	.000
Collateral problems	3.638	0.043	1.000	3.611	.000
Supply and demand constraints	3.598	0.44	1.123	2.045	.010
Burden of regulations	3.501	1.001	1.222	1.021	.000

4.3.2 Benefits of Acquiring Mortgage Facilities with Assistance of SSNIT

All the factors had t-values (the strength of the test) that were positive indicating that their means were above the hypothesised mean of 3.5. The findings reveal that *Increase in the rate of house construction* ranks first with a mean value of 4.444 (Std. Dev = 1.000), *Provides a relatively low interest credit* ranks second with a mean value of 4.194 (Std. Dev = 0.154), *Mitigates housing deficits* ranks third with a mean value of 4.038 (Std. Dev = 0.847), *Provides a relatively long-term credit for housing* ranks fourth with a mean value of 3.889 (Std. Dev = 0.154), and *Provides flexible collateralization* ranks fifth with a mean value of 3.763 (Std. Dev = 0.919). Other benefits that the study revealed were *Provides better foreclosure rights* and *Increases affordability of acquiring a decent house.* Table 3 presents the results.

Table 3 Benefits of acquiring mortgage facilities with assistance of SSNIT

	Mean				
Benefits	**Statistics**	**Std. Error**	**Std. Dev**	**T**	**Sig. (2-tailed)**
Increase in the rate of house construction	4.444	0.084	1.000	9.600	.000
Provides a relatively low-interest credit	4.194	0.101	0.154	10.215	.000
Mitigates housing deficits	4.038	0.050	0.847	5.741	.000
Provides a relatively long-term credit for housing	3.889	0.159	0.154	6.120	.000
Provides better foreclosure rights	3.763	0.152	0.919	4.106	.003
Provides flexible collateralization	3.634	0.056	0.134	7.502	.000
Increases affordability of acquiring a decent house	3.536	0.144	0.919	1.173	.000

4.4 Structural Equation Modeling (SEM) Analysis

The dependent variable for the study was benefits while the challenges was independent. Table 4 shows evaluation results of the measurement models in the model depicting the relationships between the challenges of mortgage financing and benefits of acquiring mortgage with SSNIT assistance. This study had reflective measurement items since the constructs cause the items (arrow moves from constructs to measurement items). According to Hair *et al*. (2014), reflective measurement items have high correlation, are interchangeable and some can be omitted without altering the meaning of the constructs.

On validity, the loadings of the retained items were all above 0.60 and positive and so fulfilled the requirement of convergent validity. The computed composite reliability values were all above 0.60 and that of the AVE were also all above 0.50 indicating the meeting of the acceptability level.

Table 4 Reliability and validity of the constructs

Codes	Variables	Factor Loadings	Weighting	t-value
Challenges Militating Against Mortgage Financing (CA: 0.755; CR: 0.807; AVE: 0.506)		-		
CHA1	Dollarization of mortgage markets	0.538	0.085	23.069
CHA2	Access to funding for the scheme	0.674	0.358	18.354
CHA3	Macroeconomic instability	0.703	0.246	13.240
CHA4	Inability to assess creditworthiness of mortgage applicant	0.721	0.354	9.428
CHA5	Low-income levels of mortgage applicants	0.708	0.340	8.541
CHA6	Low contributions of mortgage applicant	0.811	0.256	7.251
CHA7	Collateral problems	0.827	0.245	6.349
CHA8	Supply and demand constraints	0.806	0.361	5.849
CHA9	Burden of regulations	0.753	0.206	3.721
Benefits of Acquiring Mortgage Facilities (CA: 0.846; CR: 0.819; AVE: 0.584)		-		
BEN1	Increase in the rate of house construction	0.802	0.236	21.074
BEN2	Provides a relatively low-interest credit	0.727	0.174	19.730
BEN3	Mitigates housing deficits	0.778	0.168	16.122
BEN4	Provides a relatively long-term credit for housing	0.697	0.167	12.043
BEN5	Provides better foreclosure rights	0.735	0.193	10.908
BEN6	Provides flexible collateralization	0.743	0.264	8.612
BEN7	Increases affordability of acquiring a decent house	0.526	0.141	4.357

CA: Cronbach's Alpha; CR: Composite Reliability; AVE: Average Variance Extracted

It can be observed from the results of Discriminant Validity (Fornell-Larcker Criterion) analysis in Table 5 and cross loadings in Table 6 that, the robust fit indices met the prescribed cut-off criteria and hence the model sufficiently fits the data. From the discriminant validity table, no correlation among any two constructs exceeded the square roots of their AVEs and this is an evident of discriminant validity of the constructs. The cross loadings table provides more evidence of the discriminant validity. From Table 6, there was no cross-loading problem since each measurement item had the highest loading on its corresponding construct.

Table 5 Discriminant validity (Fornell-Larcker criterion)

	Challenges	Benefits
1. Challenges	**0.711**	
2. Benefits	0.426	**0.924**

NB: Bold diagonal values are the square root of average variance extracted of each construct, while the other values are the correlations among the constructs

Table 6 Discriminant validity (cross loadings)

	Challenges	Benefits
CHA1	**0.774**	0.320
CHA2	**0.808**	0.388
CHA3	**0.835**	0.298
CHA4	**0.828**	0.274
CHA 5	**0.798**	0.207
CHA6	**0.765**	0.109
CHA7	**0.815**	0.062
CHA8	**0.725**	0.441
CHA9	**0.802**	0.096
BEN1	0.376	**0.885**

BEN2	0.386	**0.727**
BEN3	0.541	**0.778**
BEN4	0.388	**0.697**
BEN5	0.376	**0.735**
BEN6	0.372	**0.743**
BEN7	0.430	**0.813**

NB: Bold values show that each measurement item had the highest loading on its respective construct

Influence of all the independent variables (constructs) on the dependent variables is depicted in Table 7. Coefficient of determination (R^2) was within acceptable range showing some level of influence. Q^2 also indicates the predictive relevance among the relationship in the model. R^2 and Q^2 were 0.501 and 0.267 respectively. Table 7 shows the bootstrapping results for the model. According to literature, the paths (relationships) that have t-values greater than 1.96 are deemed to be statistically significant at the 0.05 level. From Table VII, the relationship was insignificant. The path coefficients in Table 8 also show the level of influence.

Table 7 Coefficient of determination and predictive accuracy

	R Square	R Square Adjusted	Q^2
Benefits	0.501	0.471	0.267

Table 8 Path coefficient and significance

	Coefficient	Std. Dev.	t-value	p-value	Level
Challenges -> Benefits	0.114	0.121	0.943	0.346	Not Significant

5.0 DISCUSSION

Inferring from literature reviewed, macroeconomic instability as evidenced in the erratic inflation and depreciation of value and the local currency has made several mortgagees resort to dollarizing the mortgage market as a mechanism to protect their revenue. This phenomenon militates against the contributions of SSNIT to mortgage financing as it increases the cost of housing and makes the acquisition of decent accommodation the reserve of non-resident Ghanaians, high-income earners and foreigners. Inability to assess the creditworthiness of potential mortgagors was also revealed as a challenge that affects SSNIT's contributions to mortgage financing. The dearth of proper documentation in Ghana has made it practically impossible to determine the likelihood of a prospective mortgagor to repay his or her credit. In spite of the monthly contributions made by SSNIT contributors to the SSNIT fund, the low-income levels of the contributors result in low contributions and this makes it difficult to collateralise the contributions accrued SSNIT to apply for a mortgage credit.

On the benefits of mortgage acquisition, the results of the analysis support the separate works of Benjamin and Sirmans (1987), Keys et al. (2012), and Boamah (2010b) on mortgages. The supply of mortgage credits increases the speed of building housing. Boamah (2010a) pointed out that averagely it takes the middle-income earner about 9 to 15 years to complete the construction of a residential property by self-funding. However, time is greatly reduced with the acquisition of mortgages (Boamah, 2010a), and this is confirmed by the result of this study. Compared to the conventional short-term credits, mortgages provide a relatively low-interest credit and a relatively long-term credit for housing as observed by Boamah (2010b), and this study confirms that too. The study also revealed that the supply of mortgages mitigates housing deficit. Given the difficulty in allocating portions of the meagre salaries earned by the low and middle-income earners, and the long period of time taken to complete a housing unit by these earners, housing deficit and its attendant effects are greatly felt.

Through the SEM analysis, the relationship between the challenges and benefits was evaluated. According to Teye et al. (2015), supply and demand constraints and mismatch do not augur well for the development of Ghana's mortgage market and this negatively impacts on SSNIT's efforts toward mortgage financing. As discussed earlier, a mismatch in the supply and demand of mortgage and properties often results in high-interest rate and this restricts the contributions of SSNIT. The implication is that even though there may benefits associated with mortgage financing, yet, the challenges associated may serve as a barrier in the mortgage acquisition process.

6.0 CONCLUSION

The most severe challenges militating against mortgage financing in Ghana were ranked to be: Dollarization of mortgage markets; Access to funding for the scheme; Macroeconomic instability; Inability to assess creditworthiness of mortgage applicant; and Low-income levels of mortgage applicants. From the analysis: Increase in the rate of house construction; Provides a relatively low-interest credit; Mitigates housing deficits; Provides a relatively long-term credit for housing; and provides better foreclosure rights were the most significant benefits of acquiring mortgage facilities with SSNIT's assistance. From the structural equation model (SEM) analysis, there was no significant relationship between the challenges militating against mortgage financing and benefits of mortgage acquisition.

Limitation-wise, this study was restricted to stakeholders in Ghana. There is the likelihood of significant variations in the research findings if conducted in other geographical and economic jurisdictions. However, the agreement of the findings with literature goes on to establish credibility and trust in these findings.

Empirically, the robust and rigorous identification of challenges and benefits in the current study have useful theoretical, practical and wider implications. Overall, the study makes a unique contribution to the mortgage and real estate body of knowledge through benchmarking the most severe challenges SSNIT faces in providing mortgage finance in Ghana as well as evaluating the significant benefits of acquiring mortgage through the assistance of SSNIT. The relationship between the challenges and benefits has been conceptually established through the SEM analysis. The study is beneficial to stakeholders such as policymakers, financial institutions, Ghana Real Estate Developers Association (GREDA), SSNIT contributors (current and prospective) and to a large extent, the entire Ghanaian populace. The structural equation model developed can also serve as a decision-making guide when engaging in mortgage financing especially in assessing the balance between the challenges and benefits for mortgage acquisition through mortgage financing. Finally, the findings would augment the growing body of research-based knowledge on mortgage financing in Ghana and be of immense use to professionals of the finance industry, scholars and students as a reference material on mortgage financing. Future studies should adopt interviews and desk reviews to explore mortgage financing by SSNIT in Ghana.

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