IMPACT OF POOR ROAD INFRASTRUCTURE ON HOUSING INVESTMENT IN OWERRI URBAN, IMO STATE, NIGERIA

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Abstract

PURPOSE: The study investigated the impact of road infrastructure on housing investment in Imo State, Nigeria. **DESIGN:** A questionnaire survey was used to garner information from the respondents. A total of 104 respondents that comprised three different disciplines in the property market, vis-a-vis estate surveyors and valuers, and housing developers and investors were used for this purpose. Data collected were presented using descriptive statistics tools such as tables and percentages. **FINDINGS:** The study indicates that poor road infrastructure has continued to be a setback to housing development and investment in Imo State, Nigeria. **PRACTICAL IMPLICATIONS:** The finding has implications on the property market as it provides evidence that suggests a deficit in their quest for enhancing housing delivery and competitiveness of the industry at large. **ORIGINALITY/VALUE:** The paper provides empirical evidence that poor road infrastructure is a major inhibitor towards housing investment and authorities concern should address this shortcoming. As this would cause dearth in the quest for improved housing delivery, investment and real estate market at large, in Imo state Nigeria.

Keywords: Housing, Infrastructure, Investment, Nigeria, Road.

INTRODUCTION

The condition of the infrastructure is the primary criterion for assessing any urban centre. A nation's infrastructure closely influences its economic prosperity. Infrastructure refers to the buildings, facilities, and procedures necessary for a nation's operations, including roads, bridges, airways, airports, electricity sources, and water and sanitation supplies.

The underdevelopment of these economic indicators hinders progress, resulting in an economic deficit and a diminished standard of living (Adetola and Goulding, 2016). Some nations, such as the United States and the United Kingdom, regard housing as infrastructure, considering it a fundamental human right for which the government bears responsibility.

Despite the Nigerian government's prior provision of housing assistance programs to support its inhabitants, these measures have not demonstrated success (Ogunshakin and Olayiwola, 1992; Mukhtar, Amirudin, and Mohamad, 2016). Erkul, Yitmen, and Çelik (2016) assert that adequate infrastructure and services must be proportionately given for successful human activity in urban environments. This indicates that the supply and upkeep of infrastructure is critically important (Siyan, Eremionkhale, and Mbakwe, 2015).

In the urban centre, transportation infrastructure underpins all economic activity. Ensuring adequate housing for countries in the Global South is a primary objective of sustainable development policies, although it remains inadequately addressed (Queiroz and Gautam, 1992; Siyan, Eremionkhale, and Mbakwe, 2015).

Private entities or individuals predominantly supply housing in numerous nations in the Global South, including Nigeria. Consequently, there are impediments to delivering suitable housing for the majority of these nations.

Nigeria faces numerous challenges, including the urgent requirement for sustainable development, high unemployment rates, widespread poverty, and insufficient infrastructure. Robust infrastructure, particularly in road systems, is essential for ensuring economic advancement. Any society's economic and social growth is significantly dependent on its transportation infrastructure.

Numerous scholars, including Siyan, Eremionkhale, and Mbakwe (2015); Dickey (1995); and Balchin, Kieve, and Bull (1991), assert that an urban road transportation system is a fundamental component for the sustenance of any economy. Scholars assert that road infrastructure facilitates urban development. Consequently, the construction and upkeep of road infrastructure is essential to the residential investment process.

Evidence from Okusipe (2019) and Oduwaye (2014) indicates that access to standard facilities, electricity, drainage, and well-maintained roads enhances property value. A well-maintained road network will consequently result in an increase in housing investments in any country. Housing is an essential human requirement.

It profoundly impacts human well-being and health. Therefore, the delivery must be impeccable. Nigeria, with a population over 200 million, faces a housing deficit (Alagbe and Opoko, 2013). This indicates that the nation's housing sector needs urgent attention to address the populace's housing needs.

This study aims to examine the correlation between road infrastructure and housing investment in Imo State, Nigeria, where private persons predominantly supply homes. The findings will provide stakeholders with reliable information as they pursue performance improvement within the industry.

LITERATURE REVIEW

A proficient land and property market are crucial for addressing Africa's seemingly enduring challenges in real estate development (Queiroz and Gautam, 1992; Ebohon, Field, and Mbuga, 2002). While similar challenges exist in other developing countries, Sub-Saharan Africa faces more acute difficulties, which are likely to worsen with accelerating population growth without the implementation of appropriate remedial measures (Ebohon et al., 2002; Doan and Oduro, 2012). Both the government and a significant portion of the populace have expressed concern about providing excellent housing.

Realizing these problems, public and private developers need to work together on a variety of projects to balance the supply and demand of housing. However, housing availability is still affected by things like high costs for building materials, strict mortgage lending requirements, and government rules (Ademiluyi and Raji, 2008). Humanity's social, political, and economic progress has a fundamental connection to the history of housing (Brussel, Zuidgeest, Pfeffer &

Maarseveen, 2019). Both governments and individuals have always been preoccupied with the challenge of ensuring adequate housing. The housing dilemma in most urban centre pertains not just to quantity but also to substandard quality.

Recent World Bank research (Mukhtar, Amirudin, and Mohamad, 2016; Udechukwu, 2008) identifies two critical urban development difficulties in Nigeria: financing urban infrastructure and establishing an effective institutional framework for housing delivery in urban regions. Urban dwellers, particularly in Owerri, Imo State, face a significant challenge in housing.

This problem is exemplified by the existence of slums and squatter settlements in urban areas. The government is primarily responsible for overseeing the provision of essential utilities and services, particularly housing; however, recent challenges such as diminishing financial resources and volatile political conditions have impeded its efforts. The document (Mukhtar, Amirudin, and Mohamad, 2016; Udechukwu, 2008) outlines these challenges.

The failure of federal, state, and municipal governments to supply housing for their population has led to a surge in demand for housing in urban centre (Ademiluyi and Raji, 2008; Udechukwu, 2008). Private developers frequently constitute a significant portion of Nigeria's overall housing inventory. The role of private developers in housing provision in urban centres, especially in Imo State, is significant.

Despite their efforts to assist government initiatives for housing provision, numerous challenges, such as insufficient building materials, conflicts with indigenous landowners, funding shortages, and inadequate road infrastructure, result in prohibitively high prices for these homes, rendering them unaffordable for the urban poor. This study investigates the impact of deficient road infrastructure on the delivery of sustainable housing in Nigeria's urban centres, specifically Imo State.

RESEARCH METHODOLOGY

This study used a quantitative methodology, distributing a questionnaire survey to a selected cohort of participants. Creswell (2013) and Gray (2014) assert that a questionnaire survey effectively gathers the perspectives of diverse project participants within a brief timeframe. A questionnaire is a structured set of inquiries designed to collect information from participants (Creswell, 2013; Gray, 2014). The objective of this study's questionnaire is to convert the researcher's informational needs into a set of precise questions that respondents can and will answer. The questionnaire facilitates the systematic gathering of quantitative data, yielding internally consistent and coherent data for analysis (Brace, 2013; Malhotra, 2006).

The questionnaire utilized in this study comprised two sections: the first sought to collect personal data from respondents to delineate their profiles, while the second piece concentrated on the study's objective. The study involved three kinds of respondents, as depicted in Table 1 below. The author used purposive sampling and assessed the respondents' opinions using a Likert scale.

Table 1: Study respondents

Profession	Functions
Estate Surveyors and Valuers	☐ Experts in the acquisition of land for the construction, development, and disposal of housing investment.
	☐ Carry out the valuation, consultancy services, corporate management, and maintenance of housing investments.
	☐ Carry out feasibility and viability studies of the proposed housing investment project.
	☐ Render professional services in leasing and out-right sale of housing investments to derive optimum returns on investment.
Housing Developers	☐ Bridge the gap between the housing construction and housing investors' needs in housing investment.
	☐ Meet the needs of housing development and infrastructure in emerging housing areas.
	☐ Obtain the necessary permits for housing development.
	☐ Strive to be up to date and trendy to deliver quality and trendy housing to housing investors.
	☐ Strive to adhere to the master plan while developing housing to avoid demolition and loss of investment to the housing investors.
Housing Investors	☐ Invest mainly in residential accommodations, they could be private or public property companies involved in housing investment.
	☐ Make capital and credit facilities available for housing developers with the aim of making profit.
	☐ Get involved in investing in undeveloped land in anticipation of developing housing for the purpose of making future returns.
	☐ Invest in housing for personal use, as owners and/or occupiers.

Source: Author: 2023

The total number of questionnaires distributed was one hundred and twenty-six (126), of which one hundred and four (104) were found worthy of inclusion in this exercise. The data was analysed with descriptive statistics, namely the mean percentage and mean item score (MIS).

DATA PRESENTATION & ANALYSIS

Participants Response Rate

Table 2 below outlines the number of questionnaires distributed and collected from the three respondent groups that provided the data for this study. The distributed one hundred twenty-six (126) copies of the questionnaire to three distinct groups of respondents. The author supplied twenty-six (26) copies of the questionnaire to thirteen (13) estate surveyors and valuation firms in the study area, ensuring each firm received two copies. All twenty-six issued questionnaires were collected. The researcher's methodology enabled the collection of all twenty-six distributed questionnaires. The researcher was required to personally give and collect the questionnaire. This group is of a manageable size and is well-acquainted with exercises pertinent to the research focus; thus, they provided optimal cooperation for the comprehensive collection of the disseminated study questionnaire. The estate surveyors and valuers achieved a complete retrieval of the study questionnaire, as illustrated in Table 2 below.

Table 2: Participant response rate

Respondents	Questionnaire Distributed	Questionnaire Retrieved	Percentage Retrieved (%)
Estate Surveyors and Valuers	26	26	100
Housing Developers	45	33	73
Housing Investors	55	45	82
Total	**126**	**104**	**83**

Source: Author: 2023

Out of the forty-five (45) questionnaires submitted to home developers, forty (40) were returned; however, only thirty-three (33) (73%) were properly completed, deemed legitimate, and utilized for this study. Of the fifty-five (55) copies disseminated to housing investors, the author collected and utilized forty-five (45) copies (82%) for this study. The study recorded a total of 104 (83%) questionnaire responses from the participants, which it considers adequate for this type of research.

This is a notably high ratio in questionnaire retrieval, attainable due to the methodology employed in presenting the questionnaire, the timing of the study, and the clarity of the questions included in the questionnaire. Consequently, the findings of this study were derived from the 104 (83%) completed questionnaires obtained. Table 2 indicates that a higher quantity of questionnaires was disseminated to home investors and developers in comparison to estate surveyors and valuation firms, presumably owing to their bigger demographic size. The majority of housing investors and developers are actively and regularly engaged in housing investment within the research area. Consequently, a more substantial response from these two responder groups is anticipated to corroborate the research findings.

Demographic Profile of Respondents

The research, comprising three separate groups of respondents, aimed to identify the numerous variables utilized to assess the characteristics of the study participants. The selected factors pertaining to the demographic profile of the study's respondents encompass gender, age, educational attainment, years of experience, and marital status. The author deemed these variables sufficient because they could influence the respondents' evaluations of their responses to the questionnaire's questions. In the study area, it is evident that real estate investment in housing predominantly involves male participants.

The profession of estate surveying and valuation more prominently engages the male gender. Given that not all age groups invest in housing due to a variety of factors, including financial capability and other logistical requirements, the study deemed the respondents' age significant. Consequently, the study considered the respondents' age range appropriate for this type of research. In order to ensure that the data came from individuals with sufficient knowledge of the subject, the study also sought to determine the educational background of the selected respondents.

The duration of engagement in a specific course of activity frequently influences the outcome or conclusion. Consequently, this study considered it essential to ascertain the duration of the

respondents' involvement in housing investment within the study area to validate their responses. Finally, the study deemed it essential to ascertain the marital status of the respondents, as housing issues predominantly concern individuals who are married and/or have children. Therefore, the study deemed it suitable to scrutinize the profiles of the respondents, as presented in Table 3 below.

Table 3: Demographic profiles of the three groups of respondents

Profile of Respondents	Estate Surveyors and Valuers	Percentage (%)	Housing Developers	Percentage (%)	Housing Investors	Percentage (%)
Gender:						
☐ Male	22	85	25	76	33	73
☐ Female	4	15	8	24	12	27
Age:						
☐ 35-45yrs	2	8	12	36	2	5
☐ 46-55yrs	11	42	15	45	28	62
☐ 56-65yrs	13	50	6	19	15	33
Education:						
☐ HND	8	31	15	45	15	33
☐ B.Sc.	12	46	15	45	21	47
☐ M.Sc.	6	23	3	10	9	20
Years of Experience:						
☐ 3-5yrs						
☐ 6-10yrs	2	8	5	15	8	18
☐ 11-15yrs	8	31	15	46	22	49
☐ 16yrs-above	12	46	11	33	15	33
	4	15	2	6	-	
Marital Status:						
☐ Married	19	73	28	85	43	96
☐ Single	7	27	5	15	2	4

Source: Author: 2023

Table 3 above indicates differences in the gender, age, level of education, years of experience and marital statuses of the three groups of respondents. The three groups of respondents all had larger numbers of males who participated in the study. The reason for this is not far-fetched as traditionally in the study area, more males than females are involved in matters pertaining to land and building. Hence it is expected that more males will be involved in housing investment matters which is peculiar to this very study.

Though the different groups under study do not have an equal number of respondents, it is observable that the Estate Surveyors and Valuers, who had the least number of respondents being 26 out of 104, also had the least number of female participants in the study, being only four (4). The age of the twenty-six (26) Estate Surveyors and Valuers was over 45 years, with 24 (92%) being 46 years and above.

From the table, it is observable that out of the 33 Housing Developers that participated in this study, 27 (82%) fell within the age range of 35 to 55 years. While the Housing Investors who participated in this study have its majority in terms of age similar to the majority of the Estate Surveyors and Valuers, with most, 43 (96%) out of 45, being 46 years and above. The higher age range of the Housing Investors, unlike the Housing Developers, is not surprising because Housing Investors are the financiers of housing investment either through equity contribution or through leverages from financial institutions and having the capacity to obtain such leverages for housing investment require such issues as meeting the lending requirements. Hence age, status and experience come into play to meet the lending requirements stipulated by the financing institutions. It is also observable that most of the Housing Investors, 28 (62%) out of 45, fall within the middle age of 46 to 55 years. This is also expected as this age group is more active in housing investment and development in general, particularly in the study area. Due to the nature of this study, the educational qualifications of the study participants were considered very important to establish that the study participants were knowledgeable and capable to participate in a study of this nature. Hence all the study participants possessed higher degrees. Most of the Estate Surveyors and Valuers sampled had B.Sc., being 12 (46%), while 8 (30%) had HND, and 6 (23%) M.Sc. For the Housing Developers 15 (45%) of the Housing Developers had B.Sc., while 15 (45%) had HND, and 3 (10%) M.Sc. Finally, of the 45 Housing Investors, 21 (47%) had B.Sc., while 15 (33%) had HND, and 9 (20%) M.Sc.

Experience is very important in almost every task, hence the number of years the study participants had been involved in housing investment was deemed fit, to ascertain that their judgement on the impact of poor road infrastructure on housing investment stemmed from what they had witnessed in time passed, so that conclusions could be drawn based on their responses which had been adequately influenced by their field of experience. Most of the Estate Surveyors and Valuers had 11 to 15 years' experience, while most Housing Developers and Investors had 5-10 years' experience. It is also observable that 4 respondents from the Estate Surveyors and Valuers, and 2 respondents from the Housing Developers had over 16 years' experience, while none of the Housing Investors had more than 16 years of experience. Inferentially, housing investors move from the housing investment market quicker than the other groups and are replaced by upcoming and new housing investors.

Housing investment, of course, requires large capital outlay, hence the players in the housing investment are financially oriented stakeholders who put activities in the housing market into action through their finance. It appears that finance keeps changing hands, hence housing investors do not stay too long in the market due to shifts in finance. 46% of Estate Surveyors and Valuers (25% of 104 respondents) had over 11 years of experience, while thirteen 33% Housing Developers (32% of 104 respondents) had over 11 years of experience, and Housing Investors, though not having respondents with over 16 years' experience, had 33% respondents (43% out of 104) with experience between 11 and 15 years in housing investment. The marital status reveals that majority of the respondents are married, as 90 (87%) of the respondents were married, while only 14 (13%) were single. The marital status of the respondents makes them very suitable for the study on housing as housing investment are often family-oriented in nature.

The Impact of Poor Road Infrastructure on Housing Investment in Owerri Urban, Imo state, Nigeria

This section presents the consequential effect poor road infrastructure has on housing investments within the study area as reported by the three groups of respondents. Table 4 shows the descriptive statistics of the respondents.

Table 4: Descriptive statistics showing the Mean, Standard Deviation, and the Variance of the responses of the Estate Surveyors and Valuers on the impact of poor road infrastructure on housing investment in Owerri Urban, Imo State, Nigeria

Variables	N	Mean	Standard deviation	Variance
Reduces opportunity for housing investment	26	1.19	0.402	0.162
High cost of transportation to offices	26	1.15	0.368	0.135
Reduces access to credit for housing development	26	1.35	0.485	0.235
High cost of transportation of building materials	26	1.12	0.326	0.106
Limits housing production	26	1.77	0.765	0.585
Decline in housing delivery	26	1.42	0.504	0.254
Reduces earning capacity of housing investment	26	1	0	0
Reduces land value for housing development	26	1	0	0
Discourages new housing investment	26	1.19	0.402	0.162
Reduces housing prices	26	1	0	0
Curtails societal development	26	1	0	0
Curtails mobility within locations.	26	1	0	0
Low profitability in housing investment.	26	1	0	0
Longer travel time in building material movement.	26	1	0	0
Reduces returns from housing investments.	26	1	0	0
Valid N (listwise)	26	1	0	0

Source: Author: 2023

Table 4 above presents the mean, standard deviation, and variance in the responses of the Estate Surveyors and Valuers, regarding the impact of poor road infrastructure on housing investment in the study area. It clearly shows variables where the 26 respondents had unanimous responses and where the respondents varied a little in their responses regarding the impact of poor road infrastructure on housing investment.

The standard deviation varied with the mean to different degrees where there were no unanimous responses to the variables by the respondents. The variable with the highest deviation from the mean was "Limits housing production" with a mean of 1.77 and standard deviation of 0.765. This was followed by "Decline in housing delivery" with a mean of 1.42 and standard deviation of 0.504, and thirdly, by "Reduces access to credit for housing development" with a mean of 1.35 and standard deviation of 0.485.

The variance simply refers to the spread of data, having a variance of zero shows identical responses. Variances show the square of the standard deviation as measured and shown on the table.

Table 5: Descriptive statistics showing the Mean, Standard Deviation, and the Variance of the responses of the Housing Developers on the impact of poor road infrastructure on housing investment in Owerri Urban, Imo State, Nigeria

Variables	N	Mean	Standard deviation	Variance
Reduces opportunity for housing investment	33	1.15	0.364	0.133
High cost of transportation to offices	33	1.12	0.331	0.11
Reduces access to credit for housing development	33	1.33	0.479	0.229
High cost of transportation of building materials	33	1	0	0
Limits housing production	33	1.24	0.435	0.189
Decline in housing delivery	33	1.39	0.496	0.246
Reduces earning capacity of housing investment	33	1	0	0
Reduces land value for housing development	33	1	0	0
Discourages new housing investment	33	1.21	0.415	0.172
Reduces housing prices	33	1	0	0
Curtails societal development	33	1	0	0
Curtails mobility within locations.	33	1	0	0
Low profitability in housing investment.	33	1	0	0
Longer travel time in building material movement.	33	1	0	0
Reduces returns from housing investments.	33	1	0	0
Valid N (listwise)	33	1	0	0

Source: Author: 2023

Table 5 above presents the mean, standard deviation, and variance in responses of the Housing Developers regarding the impact of poor road infrastructure on housing investment in the study area. It shows clear variables where the 33 respondents had unanimous responses and where the respondents varied in their responses. The standard deviation varied with the mean to different degrees where there were no unanimous responses to the variables by the respondents. The variable with the highest deviation from the mean according to the Housing Developers was "Decline in housing delivery" with a mean of 1.39 and standard deviation of 0.496. This was followed by "Reduces access to credit for housing development" with a mean of 1.33 and standard deviation of 0.479, and thirdly, by "Limits housing production" with a mean of 1.24 and standard deviation of 0.435. The variance shows the spread of data and the square of the measured standard deviation. Zero variance shows that the responses are identical.

Table 6: Descriptive statistics showing the Mean, Standard Deviation, and the Variance of the responses of the Housing Investors on the impact of poor road infrastructure on housing investment in Owerri Urban, Imo State, Nigeria

Variables	N	Mean	Standard deviation
Reduces opportunity for housing investment	45	1	0
High cost of transportation to offices	45	1	0
Reduces access to credit for housing development	45	1	0
High cost of transportation of building materials	45	1	0
Limits housing production	45	1	0
Decline in housing delivery	45	1	0
Reduces earning capacity of housing investment	45	1	0
Reduces land value for housing development	45	1	0

Discourages new housing investment	45	1	0
Reduces housing prices	45	1	0
Curtails societal development	45	1	0
Curtails mobility within locations.	45	1	0
Low profitability in housing investment.	45	1	0
Longer travel time in building material movement.	45	1	0
Reduces returns from housing investments.	45	1	0
Valid N (listwise)	45	1	0

Source: Author: 2023

Table 6 above presents the Mean, and Standard Deviation of the responses of the Housing Investors regarding the impact of poor road infrastructure on housing investment in the study area. It clearly shows that all variables had unanimous responses from the 45 respondents. This resulted in no deviations from the mean score of this group of respondents. Therefore, the data set for this group of respondents is identical.

Table 7: Shows how poor road infrastructure has affected Housing Investors in the study area.

Variable	Responses	Percentage (%)
Discouraged them a great deal	38	84
Encouraged them a great deal	-	-
Indifferent on the matter	7	16
Total	45	100

Source: Author: 2023

Table 7 above reveals the responses of the Housing Investors on the impact of poor road infrastructure on their housing investment decisions in the study area. Three (3) variables were selected and used to understand the perception of this group of respondents which are: "Discouraged them a great deal", "Encouraged them a great deal" and "Indifferent on the matter". These respondents are the financiers of housing investment and expect returns on their housing investment. 38 (84%) out of the 45 housing investors sampled agree that poor road infrastructure has "Discouraged them a great deal" in the study area. This is in tandem with the findings of (Osuji, and Onyenechere, 2013). The author opined that where urban infrastructure is adequately provided and efficiently managed, productive and profitable land users are usually attracted towards such areas.

The author went further by stating that the competition for locations with good urban infrastructure usually results in an increase in land and housing values, either for rentals or sales. This is further buttressed by Ebohon, et al.(2002), the authors opined that access to good roads drainage, electricity and availability of standard facilities, and amenities have a positive impact on property value.

Hence good road networks will invariably result in an increase in housing investment in any area where the provision is adequate. 7 (16%) out of 45 respondents opined that they are "Indifferent on the matter". On further inquiry, it was gathered that some housing investors go on with their housing investment irrespective of the poor or bad status of the road infrastructure

within the housing locations with the anticipation that positive changes will come up in the near future. It was also gathered that some do not mind investing in poor road infrastructure conditions to reduce the cost of the land, which they would gain when eventually the road infrastructure has been improved upon. Inferentially a smaller percentage of the Housing Investors are willing to take the risk of investing in locations with poor road infrastructure, while a larger percentage is not willing to take the same risk. This could be attributed to the fact that most housing investors want quick returns on investment considering the large capital outlay involved in housing investment as well as the need to service the sources of finance for their housing investments.

DISCUSSION OF FINDINGS

The analysis shows the Mean, Standard Deviation, and Variance in the responses of the Estate Surveyors and Valuers regarding the impact of poor road infrastructure on housing investment in the study area. It clearly shows variables where the twenty-six (26) respondents had unanimous responses and where the respondents varied a little in their responses regarding the impact of poor road infrastructure on housing investment.

The standard deviation varied with the mean to different degrees where there were no unanimous responses to the variables by the respondents. The variable with the highest deviation from the mean was "Limits housing production" with a mean of 1.77 and standard deviation of 0.765. This was followed by "Decline in housing delivery" with a mean of 1.42 and standard deviation of 0.504, and thirdly, by "Reduces access to credit for housing development" with a mean of 1.35 and standard deviation of 0.485.

The variance simply refers to the spread of data, having a variance of zero shows identical responses. Variances show the square of the standard deviation as measured and shown in Table 4.

For the Housing Developers, the following variables had unanimous responses by all 33 (100%) respondents:

- "Reduces earning capacity of housing investments."

- "Reduces land value for housing investment."

- "Reduces housing prices."

- "Curtails societal development."

- "Curtails mobility within locations."

- "Low profitability in housing investment"

- "Longer travel time in building material movement."

- "High cost of transportation of building materials."

- "Reduces returns from housing investments."

Twenty-two (22) (66%) out of thirty-three (33) respondents believed, to a large extent, that poor road infrastructure in the study area reduced access to credit facility for housing investment, while eleven (11) (34%) believed the same to a moderate extent. Further, twenty-eight (28) (84%) respondents believed that poor road infrastructure in the study area reduced opportunities for housing investment, to a large extent, while five (5) (16%) believed the same to a moderate extent. Additionally, twenty-nine (29) (87%) respondents believed that poor road infrastructure led to high cost of transportation to offices, to a large extent, while four (4) (13%) believed the same to a moderate extent.

Moreover, twenty-five (25) (76%) respondents believed that poor road infrastructure limited housing production, to a large extent, while eight (8) (24%) believed the same to a moderate extent. Twenty (20) (61%) respondents believed that poor road infrastructure led to a decline in housing delivery, to a large extent while, thirteen (13) (39%) believed the same to a moderate extent. Lastly, twenty-six (26) (79%) respondents believed that poor road infrastructure discouraged new housing investment, to a large extent, while seven (7) (21%) believed the same to a moderate extent.

In the analysis, the Mean, Standard Deviation, and Variance in the responses of the Housing Developers regarding the impact of poor road infrastructure on housing investment in the study area clearly showed variables where the thirty-three (33) respondents had unanimous responses and where the respondents varied a little in their responses. The Standard Deviation varied with the Mean to different degrees where there were no unanimous responses to the variables by the respondents. The variable with the highest deviation from the Mean was "Limits housing production" with a Mean of 1.77 and Standard Deviation of 0.765. This was followed by "Decline in housing delivery" with a Mean of 1.42 and Standard Deviation of 0.504, and thirdly, by "Reduces access to credit for housing development" with a Mean of 1.35 and Standard Deviation of 0.485.

The variance simply refers to the spread of data, having a variance of zero shows identical responses. The variance showed the spread of data and the square of the measured Standard Deviation. Zero variance shows that the responses are identical. The Housing Investors' responses on the impact of poor road infrastructure on housing investment shows that the forty-five (45) respondents agree to all the selected negative variables that poor road infrastructure has on housing investment in the study area.

There was 100% agreement for all the selected variables under study by the Housing Investors concerning the impact of poor road infrastructure on housing investment in the study area. This response is expected as this group of respondents are the financiers of housing investment and have felt the greatest impact of any negative influence on their finances that has the capacity to reduce their return on investment.

It is also important to note here that optimum return on investment is often the target of the real property investor, particularly the housing investor. Hence any issue that reduces the return of the investor takes a great toll on the decisions and finances of the investor.

In the analysis, the Mean and Standard Deviation of the responses of the Housing Investors regarding the impact of poor road infrastructure on housing investment in the study area clearly shows that all variables had unanimous responses from the 45 respondents. This resulted in no deviations from the mean score of this group of respondents. Therefore, the data set for this group of respondents is identical. Poor road infrastructure has negatively affected accessibility and services rendered to housing units by Estate Surveyors and Valuers in the study area. By the assessment of the Estate Surveyors and Valuers sampled all 26 (100%) agree, to a large extent.

This means that poor road infrastructure has inhibited accessibility to the housing units managed by the firms to a "large extent". Poor road infrastructure has also inhibited the services rendered to the housing units by the Estate firms to a "large extent". This agrees with Mannering, Walter and Scott (2004) that stated "road networks are observed in terms of its component of accessibility, connectivity and traffic density, level of service, compactness and density of particular roads".

This means that this high response rate could discourage the firms from accepting briefs of the housing units so badly affected by poor road infrastructure. On the other hand, it could result to higher professional charges on property owners by the Estate firms who manage them, this will in turn take a toll on the property investors as their returns on investment will be reduced by higher charges from the Estate firms.

In addition, all Housing Developers opined that poor road infrastructure has reasonably slowed down housing investments in the study area. They unanimously agreed that poor road infrastructure in the study area has posed friction in housing investment by slowing down the rate of housing investment in the study area. Housing Investors agree that poor road infrastructure has discouraged them a great deal on their housing investment decisions in the study area as thirty-eight (38) (84%) out of the forty-five (45) Housing Investors affirm to this, while seven (7) (16%) respondents opined that they were "Indifferent on the matter".

This is further buttressed by (Alagbe and Opoko, 2013; Cobbinah, et. al 2015), the authors accentuate that access to good roads drainage, electricity and availability of standard facilities, and amenities have a positive impact on property value. Hence good road networks will invariably result in an increase in housing investment in any area where the provision is adequate (Brussel, et.al, 2019).

CONCLUSIONS

The findings of this study imply that housing investment is not at maximum output in the study area with poor road infrastructure being a major inhibitor. This suggests that housing investment in the study area will suffer from a shortfall arising from poor road infrastructure. Roads play a vital role in contributing to economic development of any nation. More importantly, it has various social benefits that help contribute and improve the quality of life for citizens. The evidence from the study indicates a lack and deficit for such benefits within the study area.

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