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Determining House Prices in Data-Poor Countries: Evidence from Ghana

Kingsley Tetteh Baako

RMIT University, Melbourne, Australia. Email: kingsley.baako@rmit.edu.au

In many developing countries, house price index construction is sparse, leaving decisions which hinge on housing performance data with little corroboratory evidence. Thus, the purpose of this research is to ascertain the micro-level determinants of house prices in Ghana. Using a qualitative approach, data are collected through semi-structured interviews with twenty expert property practitioners including valuers, academics, property developers, mortgage providers and housing agents.

This research uncovers interesting findings including the relevance of unexpired lease terms, and the impacts of market dynamics such as the physical heterogeneity of properties and hearsay. The study also reveals that an index needs to be created and managed through a collaborative effort between the government and industry to ensure wide acceptability. This study lends guidance to housing policy decisions at the local and national levels, and provides a much-needed source of data for further academic inquiry into the housing dynamics in Ghana.

Keywords

House Price Determinants, Ghana, Residential Valuation, Automated Valuation, House Price Modelling

1. Introduction

Housing is one of the most important sub-sectors of real estate. It has long been perceived as a basic necessity as it meets a primary human physical need, and access to housing is considered a fundamental human right. It acts as shelter for households and provides the space needed for daily human activities. Additionally, owning a house provides a sense of prestige, security and achievement. For individuals and families, housing is a crucial investment asset, often representing the single largest investment in their personal investment portfolio (Hwa and Keng, 2004). Additionally, studies such as Lee (2008) highlight the diversification benefits of including even housing stock in institutional investment portfolios.

As a result, the importance of housing performance indicators cannot be over-emphasised and thus many enquiries have been carried out which have led to a large volume of house price indices in various markets. There is significant level of research done globally (including in Africa) on housing markets with the use of house price indices. However, research on index construction is limited in Ghana. Previous studies on the housing market in Ghana (Awuah *et al.*, 2016; Owusu-Ansah, 2012b, 2013; Owusu-Ansah and Talinbe Abdulai, 2014, Owusu-Ansah *et al.*, 2017) acknowledge that establishing a house price index is a crucial prerequisite to better understanding the Ghanaian housing market in order to make meaningful interpretations of trends, robust predictions of future behaviour, as well as prudent policy interventions to further strengthen the housing market.

To accrue these benefits however, there needs to be a large enough pool of credible data to be modelled. Ghana, like other developing countries, is limited by a paucity of data. The transactional databases needed to facilitate this house price modelling process are sparse. The only source of transactional data of appropriate geographical coverage and size can be generated from stamp duty applications filed by prospective owners as part of the transfer or registration process. This data is, however, not credible because owners are likely to reduce the transaction price to lower the stamp duty payable. With no legal requirement for agents to publish transactional evidence, efforts to model house prices remain crippled by inadequate data. Any such effort should thus be preceded by an inquiry to chronicle the relevant factors that should be captured in the subsequent modelling, if the resultant model is to be of relevance.

While there is previous research that covers house price dynamics in Ghana, this is the first that takes the explanatory approach and qualitatively assesses the house price determinants that are derived from analyses grounded on interviewing a broad range of property market stakeholders. As a result, this research enjoys the added advantage of being locally relevant and as context-specific as possible - a departure from the common practice of researching into

new areas, using metrics and factors derived from other areas although they may differ substantially.

2. Literature Review

2.1 Housing Performance and Measurement

Housing is a crucial sub-sector of real estate. As stated earlier, it is regarded as a form of necessity and human right which fulfils basic shelter and convenience needs, provides a sense of achievement and represents economic advantage. It is also regarded by investors as an important asset class, providing diversification and inflation-hedging benefits (Lee, 2008). It is thus crucial to have a clear understanding of the dynamics of housing and its performance over the years, to ensure sustainable investment decisions for both individuals and institutional investors. Research outputs in this vein have been predominantly quantitative in nature, with many econometric approaches proposed to measure house price levels and returns and subsequently create indices. The main methods are discussed briefly below.

Hedonic modelling is often attributed to Lancaster (1966) and Rosen (1974) who, although coming from differing angles, argue with the microeconomic theory that the utility from, and thus market forces for, composite goods (such as a house or car) is derived from the characteristics of the goods and not the goods per se. A homeowner thus demands a house not for the structure per se but access to a comfortable bedroom, protection from external weather vagaries, a functioning bathroom and living space to dwell as a family. Several other works have grounded this theory and highlighted the functional form, econometric principles and definition of the terms, including Court (1939), Fair and Jaffee (1972), Wallace (1926), Witte *et al.* (1979) and Awan and Odling-Smee (1982).

Repeat sales indices are estimated by analysing data where all units have sold at least twice. Such data allow us to annualise the percentage growth in sales prices over time. These are time series indices in their pure form. They do not provide information on the value of the individual house characteristics or price levels. They have the advantage of being based on actual transaction prices, and in principle, allow us to surmount the problem of omitted variable bias.

The oft-cited classic reference on repeat sales is Bailey *et al.* (1963). While there are early applications such as Nourse (1963), they are greatly popularised in several papers by Case and Shiller (1987, 1989). Wang and Zorn (1997) also provide a thorough review of the method.

Hybrid models have been proposed by researchers as an alternative index construction method that combines the hedonic and repeat sales approaches in an attempt to consolidate the advantages and eliminate the shortfalls inherent

in each approach. It was Case and Quigley (1991) who initially propose a hybrid model that applies generalised least squares to jointly estimate the hedonic and repeat sales indices. Other studies that have adopted hybrid models include Quigley (1995), Hill *et al.* (1997), Nagaraja *et al.* (2011) and Jiang *et al.* (2014, 2015).

Various reviews have been carried out that compare these different approaches to property valuation and house price index construction. Mark and Goldberg (1984), Case and Quigley (1991), Crone and Voith (1992), Clapp and Giacotto (1992), Gatzlaff and Ling (1994), and Meese and Wallace (1997) have all compared the various variants of house price indexation models. It can be surmised from these studies that no one approach is generically superior: it ultimately depends on the use/application of the resultant index, type of data available and area under study. As Wang and Zorn (1997) aptly state, much of the literary conundrum regarding the choice of method is really a disagreement over targets or aims that necessitate the construction of the index. The appropriate method to use will, thus, depend on the opinion of the researcher on which method will most efficiently achieve this target and the variations to make to each method that will correct for any statistical and econometric issues that arise from the approach.

2.2 House Price Indices in Developing Markets

A large number of studies have been conducted to investigate the relationship between housing prices (values) and housing characteristics. However, such studies are conducted in different locations and geographical regions and so the impact of housing attributes on the price of the property may vary in different geographical regions (Sirmans *et al.*, 2005). Thus, it is ill-advised to make generalisations about the nature of this relationship without an empirical inquiry in each particular geographical location of interest. In Latin America and Asia, the use of a hedonic price model to examine housing market dynamics has been growing in popularity. Examples include Pasha and Butt (1996) who study Pakistan, Samapatti and Tay (2002) who study Indonesia and Guevara *et al.* (2016) who study Costa Rica. In Africa, the application of the hedonic pricing model is widely documented mainly in Nigeria in West Africa. The pioneering work of Megbolugbe (1986) empirically examines housing trait prices by using a hedonic price function and a Box-Cox functional form. Arimah (1992a) also estimates the demand for a set of housing characteristics with data from Ibadan, Nigeria. Similarly, there are several previous Nigerian studies that use a hedonic pricing model (Adiboye & Chan, 2017a, 2017b; Babawale and Famuyiwa, 2014; Bello and Yacim 2014; Bello and Bello, 2008; Bello, 2011; Arimah, 1992b; Megbolugbe, 1989, 1991). Other African countries in which recent studies have been carried out using hedonic models include Kenya (Michelson and Tully, 2018), Rwanda (Choumert *et al.*, 2016) and South Africa (Preez and Sale, 2014).

2.3 Modelling House Prices in Ghana

Ghana has the 12th largest GDP at purchasing power parity in Africa, with the 2019 IMF estimate hovering at 226.01 billion USD and growing at 5.6% per year (International Monetary Fund, 2019). Ghana was predicted to become the fastest growing economy in the world in 2018 (World Bank 2018, International Monetary Fund 2017, African Development Bank Group 2018). As stated above, there is a significant level of research done globally (including in Africa) on housing markets by using house price indices. However research on index construction is limited in Ghana. Previous studies on the housing market in Ghana (Awuah *et al.*, 2016; Owusu-Ansah, 2011, 2013, Owusu-Ansah *et al.* 2017) acknowledge that establishing a national house price index is a crucial prerequisite to better understanding the Ghanaian housing market in order to make meaningful interpretations of trends, robust predictions of future behaviour, as well as prudent policy interventions to further strengthen the housing market. Recent studies such as Owusu-Ansah & Abdulai (2014) and Reed *et al.* (2010) have attempted to develop indices by using housing data from three cities. The only other studies found on house prices in Ghana are Asabere (1981) and Anim-Odame (2008).

The literature cited above highlights that even though hedonic modelling has been somewhat applied in the Ghanaian property market, research in this area is still under-developed. One thing is strikingly clear: all of the literature cited takes a quantitative approach, both in the developing and developed markets. This leaves a clear gap which this research undertakes to address by examining house price determinants through a qualitative lens. In this paper, it is argued that every market is unique, from the national to the submarket levels, and thus for a housing index to have increased applicability and enjoy widespread acceptance from local practitioners, an in-depth qualitative analysis of the relevant determinants in this specific market is immensely relevant. A qualitative analysis that precedes the construction of a quantitative index therefore has huge benefits.

Thus, this paper is guided by one objective: *to survey stakeholders and present an analysis on key factors that impact the housing prices in Ghana*. The focus is thus to investigate the factors that influence house prices in Ghana through interviews with the appropriate stakeholders. In particular, the study answers the following research question: what are the determinants that influence house prices in Ghana? The work then goes further to investigate who should be mandated to create and manage house price indices.

3. Methodology

This paper ascribes to the constructivist worldview which forms the bedrock of pure qualitative studies. A qualitative study sets out to *describe* a situation, problem, phenomenon or event. Guided by a constructivist paradigm, qualitative researchers believe in the relevance of subjectivity in understanding the phenomenon at hand and thus focus on the “lived experiences” of individuals and groups. The qualitative data gathered, which reflect the experiences and recollections of the respondents, are usually in the form of text which is then analysed to make conclusions about the subject matter. The information gathered is, however, not necessarily exclusively textual, as qualitative research can be conducted through the use of variables measured at a nominal or ordinal scale (Creswell, 2014). This approach is chosen because it is the considered opinion of the researcher that it provides the best chance at fully understanding all the issues relevant to the research objective while maintaining the originality and uniqueness sought.

Primary data are collected through semi-structured interviews with 20 practitioners. The interviewee selection is conducted through purposive sampling. The target interviewees are selected based on their role and expertise which have exposed them to the dynamics of the housing market in Ghana and uniquely positioned them to provide insight into the relevant house price determinants. There are five sub-groups of experts targeted: property valuers, housing researchers/academics, housing agents/brokers, property developers and mortgage lenders. The property valuers are sampled from a list provided on the website of the regulatory body (i.e., the Ghana Institution of Surveyors (GhIS)) and emails sent to their official addresses. The housing researchers are contacted based on their research output available in journal and conference publications accessible online. The property agents, although without any certified regulatory body, are contacted via snowball sampling from agents professionally known to the researcher. The property developers are contacted from the list available on the regulatory body website (i.e., Ghana Real Estate Developers Association). The mortgage lenders are easily contacted because they are the primary mortgage lenders in Ghana. Table 1 details the response rate for the interviews.

As can be seen from Table 1, a list of 25 respondents is gathered initially and they are contacted by email to solicit their interest in participating in the interviews. After one month elapsed during which follow-up calls were made, 22 out of 25 of the interviewees responded. Eventually, 20 respondents agreed to partake in the interviews and availed themselves during the interview period. All of the respondents are the head of their respective department in their firm and very experienced, with the majority having between 11 and 15 years of experience and the most experienced respondent having about 30 years of professional experience.

The next section presents the results and discussion from the interviews. Then the paper closes with a conclusion that draws out the main findings and provides recommendations.

Table 1 Interview Response Rate

Target Group	Willing Participants	Rejections	No Response
Valuers*	11	1	
Academics	2	1	
Agents	3		
Mortgage Lenders	2		
Property Developers**	2		
Total Number of Participants	20	2	3
Proportion of total response	80%	8%	12%

Notes: *Includes state/government valuers (4) as well as private valuers (7).

**Property developers include 1 luxury housing developer and 1 middle class housing developer.

4. Results and Discussion

The main focus of the qualitative study is to ascertain the determinants of house prices in Ghana, from the perspectives of the actual practitioners in the market who play key roles in the housing sector. Then, a discussion is presented on the ideal manager of a house price index in Ghana. The first set of questions basically asks: “what are the factors that determine house prices in Ghana?”. The second set of questions regards who should be managing a house price index in Ghana. From the responses, the study finds that there are a host of factors which can be broadly categorised into four main areas: physical features, locational considerations, neighbourhood factors and other determinants. Figure 1 is a diagrammatic representation of the relationship that is found between these factors and price.

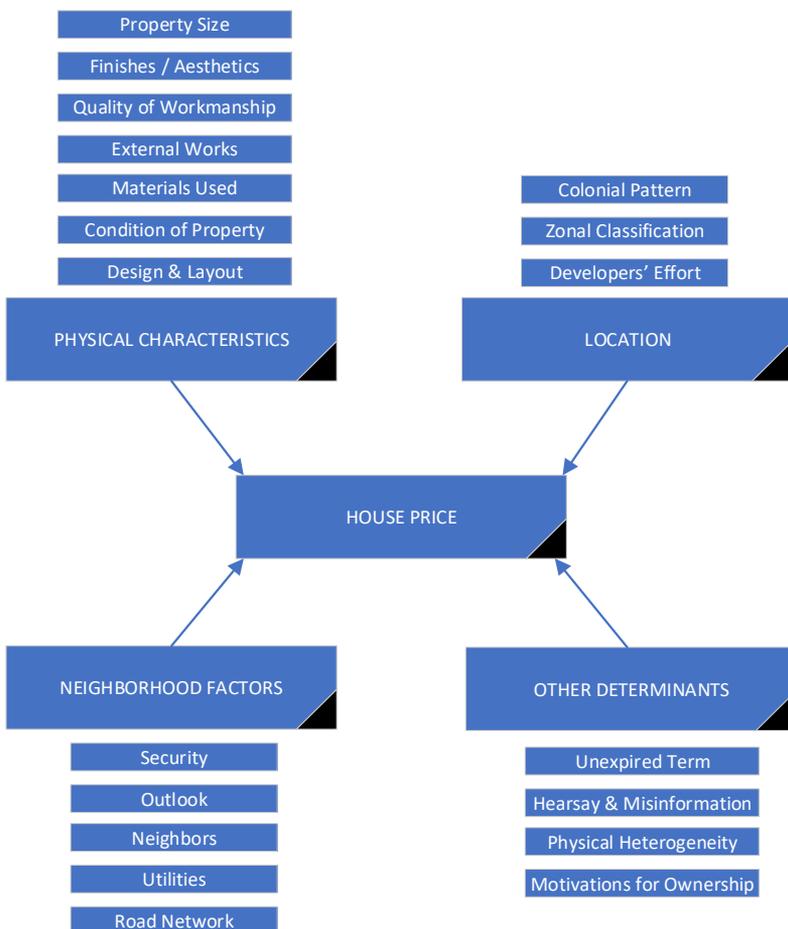
The figure shows the four main sets of determinants that affect price, detailing some of the individual factors under each group. In the following, a detailed analysis of these determinants is provided.

4.1 Physical Features as a Determinant of Price

The first set of factors that impact house prices are the physical features of the property in question. This has been established in the literature, and thus, property physical characteristics often represent a default determinant considered in most house price modelling research. It is of particular interest here to determine exactly how this price-to-physical characteristics relationship

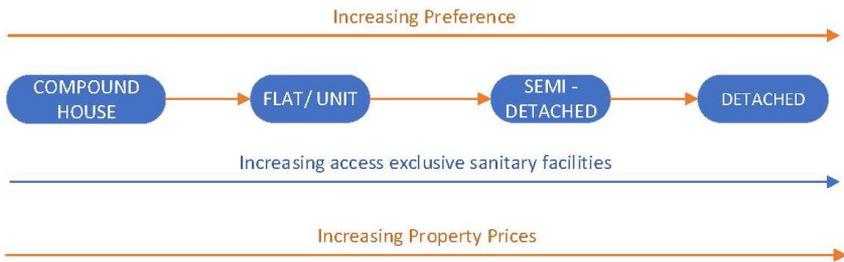
plays out in the housing market in Ghana. Some of the physical features found in the literature as variables for quantitative analyses include the number of bedrooms, number of floors (stories), landscaping and other external works, land (lot) size and quality of the finishes used. From this study, these and other factors are found. In some cases, the relationship attested by the interviewees is in consonance with the findings in the literature. In others, there is a new and interesting relationship between the factors and price. Moreover, there are factors which, we opine, are new to the literature and present an interesting relationship with price. The following paragraphs discuss a physical feature of each property and how it impacts house prices, as is established in the interviews.

Figure 1: Diagrammatic Representation of House Price Determinants



The *size* of a property is found to have an impact on its price, regardless of its use. This is consistent throughout the literature, and Metzner and Kindt (2018), in their literature-based analysis of the parameters of automated valuation models for housing, establish that the dimension (size) of a property is the most common building characteristic found in the literature. Property size, in this context, refers to the gross building area of a residential property and takes into account the number of bedrooms, bathrooms and floors, and other accommodation facilities as well as their size. Another important consideration of property size and facilities is the level of access that property users have to amenities. The level of access to sanitary facilities is often reflective of the housing typology within which a resident lives. Compound houses and make-shift dwellings have less access and exclusivity as regards sanitary and other facilities and thus attract lower prices than separate houses. Figure 2 illustrates that relationship.

Figure 2 Housing Typology and Relationship with Price and Access to Utilities



It is important to note that these components of size are often considered individually as independent variables in statistical modelling, and they are some of the commonest variables found. Owusu-Ansah (2013) defines a number of property size variables including property area and the number of bedrooms, floors, bathrooms and public rooms. *Property size* here is a category that includes the number of bedrooms, bathrooms and other sanitary facilities, public rooms, floors and storage space, to mention a few.

Overall, the most prominent elements of physical size established from the interviews are floor area (14 respondents), house type (15), number of bedrooms (11), number of bathrooms (12), number of stories (11), and access to and exclusive use of sanitary facilities (12). These results are consistent with earlier studies (Metzner and Kindt, 2018; Owusu-Ansah, 2013) which have identified the same physical size elements.

Another key property physical characteristic that is seen to have an impact on house prices is the quality of *finishes* of a property. In fact, some of the interviewees posit that the aesthetics of a house has the largest impact on the

price that can be fetched in a market transaction (sale or rental). By finishes, property practitioners are referring to the outward appearance and the perception of quality that the decoration seeks to denote. Aesthetics cover the materials used, colours, design and overall appeal.

The *quality of the workmanship* of the construction of the house is another major property physical factor that impacts the market price of a residential property in Ghana. The interviewees define quality of workmanship as the level of detail or neatness with which a house is constructed which influences the appeal of the property. One way in which this quality of workmanship is depicted is in the finesse of the masonry, connection of services, final decoration and installation of fittings and fixtures. The interviewees assert that a more refined, “neater” workmanship will attract more demand and thus yield a higher price than one of lower quality. Whether a developer uses an informally trained artisan, or a formally trained architect is evidenced in the quality of the workmanship of the house, and thus has an effect on price.

Beyond its aesthetic pleasantness, high quality workmanship attracts a high price because it is positively correlated with cost. A more skilled, higher quality tradesman will be more expensive to contract, and this increase in cost must be passed onto the buyer in the sale price. The variation in the labour cost between these two different classes of labour is substantial, with formally trained experts commanding in excess of twice the labour costs of their informally trained counterparts.

We have houses that are built by draftsmen. It's a reality in Ghana. If the houses are built by architects, there's a clear difference (Regional Valuer 1).

Additionally, *external works* constitute a determinant of house prices in Ghana. For many houses in Ghana, external works typically include improvements such as fencing, gardening, compound floor finishing, garages, water storage tanks and swimming pools. While these external works and their impact on house prices are not entirely new to the literature, the way in which this impact plays out in the Ghanaian housing space calls for interest and study. Fencing in the Ghanaian context entails the enclosure that is used to delineate the boundaries of the site as well as provide exclusion, security and privacy. Another important component of the enclosure of a building is the presence or absence of a gate – and this is also a key selling point for housing agents. This element is highly coveted and has led to terms such as a gated house, a gated community or a gated estate. Other external works that impact price include the presence or absence of a garage, swimming pool and the finishing of the compound of the property. The garage space can also be converted into storage space or, as is more common in recent times, mom-and-pop stores and other such commercial uses.

In determining the price of a house, a key component that all stakeholders notice are the *materials used* for the house. This factor is considered in terms of level

of quality, country of origin and cost. There are different levels of quality of materials used for the construction of the various fittings and fixtures and general structure of the house, and these different grades have an effect on the price of the property. The major emphasis here, which causes the variation in prices, concerns the building material used to finish the internal surfaces and the fittings and fixtures found in the house.

Consider the finishes. Assuming we have cement-plastered floor, and that of polished ceramic or porcelain tiles, the values wouldn't be the same because the money sank in the two of them are different, and the beauty and attraction differ (Regional Valuer 2).

The interviews reveal that the country of origin of these materials also has an effect on value. A house that is constructed with “foreign, imported” finishing materials increases its value as opposed to the use of local materials, particularly if the country of origin specialises in that product. This impact is felt through the cost of the material itself, importation costs including customs and excise duty, and the foreign exchange losses incurred by purchasing in foreign currency.

Then, the *age and condition* of a property impact its price. All things being equal, the price of a property decreases correspondingly with age. Home purchasers are willing to pay more for a newer property than for an older version of the same property because the utility derived from using a property decreases with time: fixtures and fittings get old and malfunction, the finishes begin to deteriorate and the general aesthetic appeal of the property diminishes. Again, the property may suffer from functional obsolescence as newer and more efficient technologies are used in homes. Due to this physical deterioration and functional obsolescence, homeowners will have to spend more money on maintenance to keep the property useful and comfortable. Purchasers are therefore willing to avoid this cost by paying higher prices for newer housing units.

Finally, the *design and layout* of the various sections of a house also contribute to the price that it will attain on the market. This factor considers the efficiency of the positioning of the different sections of the house, and as the interviews reveal, a house may have superior finishes, accommodation space and may be very new, but if the layout is not appealing and efficient, purchasers are likely to lose interest.

In summary, the key physical characteristics of a house that influence its value are the physical size, aesthetics, external works, quality of workmanship, materials used, land size, age and condition, and design and layout. As Table 2 shows, the most prominent factors are size (number of rooms, bedrooms, sanitary facilities and floors) and aesthetics with 90% and 80% of the experts discussing them respectively.

Table 2 Summary Table of Physical Features that Influence Price

Interviewee	Property Physical Characteristics							
	Property Size	Aesthetics	Quality of Workman-ship	External Works	Materials Used	State of Repair	Land Size	Design and Layout
Property Researcher 1	✓			✓				
Property Researcher 2	✓	✓	✓				✓	✓
Regional Valuer 1	✓		✓			✓		
Regional Valuer 2	✓	✓			✓			
Regional Valuer 3	✓	✓		✓		✓		
Regional Valuer 4		✓	✓	✓	✓	✓		
Private Valuer 1	✓			✓		✓	✓	✓
Private Valuer 2	✓	✓		✓		✓		
Private Valuer 3	✓	✓	✓		✓	✓	✓	
Private Valuer 4	✓	✓	✓	✓	✓	✓	✓	
Private Valuer 5	✓	✓		✓		✓		✓
Private Valuer 6	✓	✓	✓	✓	✓		✓	
Private Valuer 7	✓	✓		✓		✓	✓	
Housing Agent 1	✓	✓		✓	✓	✓	✓	
Housing Agent 2	✓	✓			✓			✓
Housing Agent 3	✓	✓	✓		✓	✓		✓
Mortgage Lender 1			✓	✓	✓	✓	✓	✓
Mortgage Lender 2	✓	✓	✓	✓	✓	✓	✓	
Property Developer 1	✓	✓		✓	✓			✓
Property Developer 2	✓	✓	✓	✓	✓			
Number of Times Discussed	18	16	10	14	12	13	9	7

Each factor has a different relationship with value, and the relationship observed also varies based on the taste and preferences of the individual purchaser.

4.2 The Impact of Location on Price

The crucial importance of location on real estate has been widely documented, particularly in terms of house value. As the adage goes, the three most important factors that influence the price of a property are: (i) location, (ii) location and (iii) location. The centrality of location to the price of a house is tied to its immobility. The interviewees recognise this in the Ghanaian context, and state that the resultant variations can be very significant.

Location... is about 80% of the value of a property (house) (Private Valuer 1).

Location considers the proximity of the residential property to commercial centres (or central business districts (CBDs)), landmark sites, civic and cultural centres, and other important venues. In referencing a location, a premium is often given to the relative advantage of the location; so that for an otherwise similar property, one that is closer to the shopping and recreational centres, and other complementary uses commands a higher price than others that are further away.

The location factor has been captured in house price indices in many ways, primarily through pre-existing geographical classifications. While these classifications exist in the housing market of Ghana, it is interesting to explore what they are and how they are factored into the house price determination process, especially from the perspective of the practitioners within that specific industry. The interviews reveal that the pre-existing classifications, to begin with, are influenced by historical narratives. These classifications of residential areas sprung from the colonial times when the native Ghanaians lived in segregation from the British colonial masters. The latter resided close to the commercial and civic centres where the seat of government was located, and their locations were well-planned and connected to the appropriate services. Areas where the colonialists lived became prime locations, and thus house values rose markedly. After the independence of Ghana, these colonial residences are still located close to commercial centres, headquarters of state organisations, embassies and other important national sites. Additionally, they are characterised by neighbourhood characteristics such as better quality roads and better access to municipal services and utilities. The house prices are therefore much higher than those in other locations. The interviews reveal that following this historical narrative, state-led zonal classifications emerged. This major, oft-cited location classification system in Ghana is the zonal classification of the Town and Country Planning Department which categorises areas into three residential classes: first, second and third classes.

4.3 Impact of Neighbourhood on Price

The neighbourhood character and quality have been repeatedly identified to influence the price of houses. Neighbourhoods are often linked to the location of a property. The interviews reveal that the neighbourhood quality is described based on the following factors: security, general outlook, prestige, access to utilities, road network and calibre of neighbourhoods.

Neighbourhood security, as the interviews show, can be perceived or actual security. The perceived sense of security is tied to the number of security features that a neighbourhood enjoys, for example, the presence of police posts/stations and/or private security agencies within the vicinity, CCTV cameras, artificial night lighting of the neighbourhood and mandatory security checks of all entrants (in gated communities only). The second aspect of neighbourhood security is the actual security level in the face of crime and safety. Prospective buyers take into consideration the prevailing crime rates in the neighbourhood. Most home seekers tend to avoid a neighbourhood that is considered prone to crime which negatively affects house value.

A major factor that homeowners consider when choosing their residential home is the *general outlook of the neighbourhood*, which refers to the nature and quality of the houses within a neighbourhood. Homeowners look favourably upon neighbourhoods with externally neater and better designed homes, which are fitted with gates, well delineated and mapped out. Beyond the aesthetics of the houses, residents consider issues such as the dominant types of houses and the serenity of the neighbourhood. These factors cumulatively define the pleasantness of a neighbourhood, and thus the price that people are willing to pay to live there.

Prospective buyers also consider the *calibre of the residents* in the neighbourhood. An elusive but crucial question is asked about many neighbourhoods in Ghana: "Who lives here?". Neighbourhoods that are designed to attract higher income earners and well-known residents attract higher house prices, primarily because such individuals are expected to be more civil in behaviour and will thus make for more peaceful neighbours. Additionally, many residents would be prepared to pay higher house prices if they find out that they will become neighbours with the rich and respected in society as it will afford them bragging rights. Other neighbourhood factors considered include access to utilities, as well as type and quality of roads in the neighbourhood,

4.4 Other Considerations

Apart from these three main groups of factors that influence price, other noteworthy factors emerged throughout the interviews which also have some significant impact on house prices. They are crucial considerations which are worth mentioning because they make for a more thorough understanding of the dynamics within the housing market. These are the impact of the unexpired lease term of the property, land tenure security, influence of hearsay in worth determination, motivation of ownership and the high physical heterogeneity of properties.

Consistent with the existing literature, the value or price of a property should have an inverse relationship with the term of interest that a party holds in the property. The interviews reveal that practitioners often face a dilemma when it comes to analysing the unexpired term as a value-determining factor. Some practitioners opine that the unexpired lease term is not a crucial determinant of value, and thus proceed to leave it out in their estimations of value. The justification for this line of thought is that homeowners pay little consideration to this factor as they expect leases to be renewed upon expiry with little hesitation as long as consideration is paid. The leases are therefore as good as perpetual interest and thus unexpired terms do not have an important relationship with value. However, there are also practitioners who suggest that the unexpired term has a critical impact on value because a value assessment or determination is essentially linked to the term for which it is to be held and should thus be considered. A good understanding of this dilemma is important in any house price estimation endeavour.

The study also reveals that there is a high occurrence of hearsay which influences the prices of houses. This particularly refers to the (mis)information of homeowners that is informally gathered from their peers or open discourse about the price of similar sold houses. Since there is no index or formal disclosure of property prices, this hearsay information is gleaned on the open market without any recourse to verification or professional scrutiny. The result is that landlords, prospective sellers and the general public display a herd mentality and expect their properties to sell at the same “rumoured” prices or higher. Consequently, property prices continue to increase without any justification, except that such prices are prevalent on the “market”. Eventually, these unverified hearsay prices begin to reflect on and direct the actual prices at which houses are transacted on the market.

Furthermore, a defining characteristic of property in general is the physical heterogeneity of the units, and this differentia is especially more pronounced in housing units in Ghana. The interviews reveal that, unlike in many developed countries, two properties owned by different parties seldom have the same physical appearance. This variation springs from the fact that homeowners often construct their properties without architectural drawings and finance the projects incrementally (and often slowly). As such, designs are modified

subjectively along the process, making it difficult for two owners to have very similar looking properties. Any analysis, particularly that which is quantitative in nature, that has not implemented a substantial codification of all the possible features of each property may have misleading or inconclusive results.

The last consideration which has increased importance within the Ghanaian housing market regards the motivations that underlie home purchases. The interviews show that the three main reasons why people build houses are occupation, investment and prestige. The motive that necessitates a sale will determine how much prospective buyers will be willing to pay for a property. This subjective value of a property to a specific individual, known as worth, may be the reason why a property is sold for an extraordinary amount although it does not constitute market value. Prestige-driven purchasers, for example, tend to place huge worth in properties that they are keen to own. An awareness, therefore, of the motivation for the exchange of a property may explain the value achieved.

In assessing the physical characteristics of a property that influence house values, these issues must be kept in mind as additional variables that may explain outliers, and other unexplained differences.

4.5 Proposed Index Managers

As part of the interviews, the respondents were asked to indicate the ideal managers of the housing index. This inquiry is necessary because the interviewees hinted that the index would have far-reaching benefits for the property market and by extension, the economy as a whole. The open-ended question attracted different answers: state institutions, private sector firms, financial institutions, the Bank of Ghana (BoG), the GhIS and public private partnerships (PPPs).

Some interviewees proposed that the state will be in the best position to create and manage a nationally relevant housing index through its institutions because a housing index sheds light on housing, which is an essential element for national development and welfare. This level of comprehensive data collation requires huge capital expenditure, which many believe the state alone can shoulder. Again, the data collection team needs to cover a wide geographical area, and a decentralised workforce would be ideal. The state institutions thus fit this role perfectly because they are already decentralised into the local areas and have officers who have lived and worked in these areas for a long period of time. The state institutions proposed to champion this agenda include the Lands Commission, specifically the Land Valuation Division (LVD); the Ghana Statistical Service (GSS) and Ministry of Works and Housing (MWH). Some of the respondents propose a special purpose vehicle (SPV)- a specialised unit set up under any of these agencies or ministries or a combination of some sort,

with the sole mandate of gathering data to feed the housing index, and manage the index so created.

Other respondents believe that the creation of the housing index, if it will see timely execution, should be a private sector effort. The interviews hint that successive governments have lacked adequate interest to expedite changes particularly with regards to data collection, and as such, private entities are more likely to succeed with these efforts since they are not burdened by other political considerations and the restrictions of office term. For this same reason, some respondents point out financial institutions as the ideal manager of a housing index for Ghana. They propose that banks, especially those who provide mortgages, are in a unique position to collect and analyse the data. The BoG has also been singled out as being uniquely positioned to gather data on housing to create an index. As the central bank, it is the trusted voice on all financial issues and will be a trusted manager and purveyor of information on housing. Then there are those who opine that this housing market information collection and management should be the sole interest and responsibility of the GhIS. As the sole professional body that licenses valuers, and quantity and land surveyors, the GhIS has the capacity to implement and monitor the collation of housing data, and should be keenly interested in pursuing this sort of database as it has benefits for residential valuation.

The last school of thought on this issue, which represents the majority (60%) of the interviewees, is that the housing index should be a collaborative effort between all stakeholders, spearheaded by the government or GhIS. It could be a PPP, an SPV with members from each interested party, a joint research team monitored by the GhIS and backed by the state, or a collaborative effort of the private sector firms and agencies, and funded or legislatively backed by the government.

The most popular submission for the management of the house price index in Ghana is as a PPP, which would mean a combination of state and private efforts towards a robust index.

Table 3 illustrates the opinions of the experts on the ideal index manager. Regardless of the type of matrix adopted and how the project is financed, the interviews suggest that two items remain essential and over-arching: 1) the data collection and index construction process must remain transparent to engender the key elements of reliability and trust, and 2) there must be periodic updates because the index is only relevant if it is constantly updated to reflect changes in the market and current dynamics.

Table 3 Proposals for an Ideal Housing Index Manager

Interviewee	Institution					
	State Institutions (SPV*)	Private Sector Firms	Financial Institutions	Bank of Ghana (BoG)	Ghana Institution of Surveyors (GhIS)	Public Private Partnership (PPP)
Property Researcher 1				✓		✓
Property Researcher 2	✓			✓		
Regional Valuer 1			✓			
Regional Valuer 2	✓					✓
Regional Valuer 3				✓	✓	
Regional Valuer 4	✓	✓			✓	✓
Private Valuer 1		✓				✓
Private Valuer 2			✓		✓	✓
Private Valuer 3		✓				✓
Private Valuer 4	✓		✓	✓		✓
Private Valuer 5	✓				✓	✓
Private Valuer 6		✓		✓	✓	✓
Private Valuer 7	✓	✓			✓	✓
Housing Agent 1					✓	
Housing Agent 2	✓	✓				
Housing Agent 3						✓
Mortgage Lender 1			✓			
Mortgage Lender 2			✓	✓		
Property Developer 1		✓	✓			✓
Property Developer 2		✓				✓
Number of Times Discussed	7	8	6	6	7	12

Note: *SPV= Special purpose vehicle

5. Conclusion

In recent times, there have been calls for the international standardisation of house price indices (Eurostat and Union européenne, 2011; Owusu-Ansah, 2018) to allow for international comparison and learning. While this research recognises the importance of the standardisation and comparison, the position taken is that an index can only be representative and locally relevant if it considers the unique factors that inform the index, as seen in daily transactions within the study area. As a result, this research work adopts a narrative, qualitative approach that seeks to tease out the factors that influence house prices from the relevant stakeholders, and which ones should be included in a house price index. This paper presents an analysis of this qualitative study and finds that there are host of factors which can be broadly categorised into four main areas: physical, locational, neighbourhood and other factors. These areas and their influence on house prices are fully discussed. The key physical characteristics of a house that influence its value are the physical size, aesthetics, external works, quality of workmanship, materials used, land size, age and condition of property, and design and layout. The most prominent factors are size (number of rooms, bedrooms, sanitary facilities and floors) and aesthetics. Locational influence originates from colonial settlement patterns, statutory zoning and the efforts of developers. Neighbourhood considerations include security, calibre of neighbours, utilities and road networks available. Other noteworthy determinants are unexpired lease term, hearsay, physical heterogeneity and motivations for ownership.

The paper further presents a discussion of the perspectives of the stakeholders on the party that should be ideally mandated to create and manage a house price index for Ghana. It is found that the housing index should be a collaborative effort among all stakeholders, spearheaded by the government or GhIS, while ensuring that these fundamental issues are considered: 1) the data collection and index construction process must remain transparent to engender the key elements of reliability and trust, and 2) there must be periodic updates because the index is only relevant if it is constantly updated to reflect changes in the market and current dynamics.

This paper lists the factors that are relevant in the construction of house price indices in Ghana and sets the tone for further research to model house prices and construct an index. Guided by the findings from this paper, future research can rely on these factors to model the market dynamics in Ghana through quantitative studies and will not be forced to superimpose research from other study areas onto Ghana. Additionally, the interviews present data on the expected influence of the factors on price, and as such, are a reliable interpretation and explanation for the statistical results of modelling from subsequent quantitative analyses. This paper thus serves as a good foundation for a corollary house price modelling inquiry.

The research approach in this study is particularly crucial in countries with sparse data to help them to understand the property market dynamics. In many developing countries, there is very little credible data that can be used to model house prices and thus the benefits of such modelling are crippled by this limitation. In the case of Ghana, for example, there is no credible data source to facilitate this modelling process. The only source of transactional data of appropriate geographical coverage and size, generated from stamp duty applications, is not dependable because owners are likely to reduce the transaction price to lower the stamp duty payable. A query of the nature of this paper serves as the initial step in assessing the relevant factors, which will be used to design data capture tools that will better generate the required data from existing or new sources.

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