

**Sources and Reliability of Property Market Information for  
Property Valuation Practice in Ghana**

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## List of Figures

Figure 1: Guidelines for Effective Property/Market Data for Valuation Practice

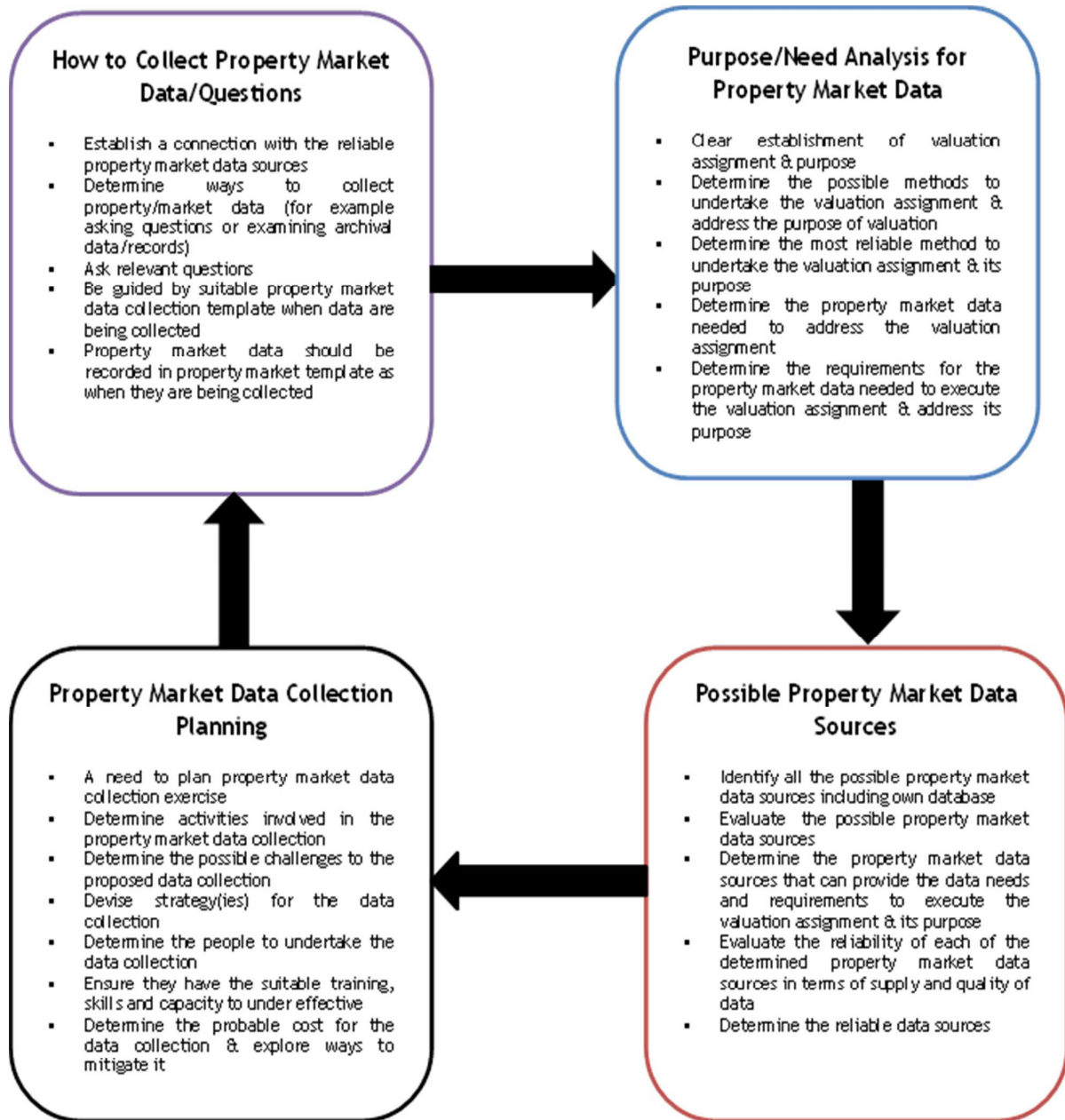


Figure 2

## Property Market Data Collection Template

Property Address	Property/Flat Number/Building Name	Plot Number	Street Name/Land Mark	Location	
				Region	
				District	
				City/Town	
				Neighbourhood	

Transaction	Date [DD/MM/YY]	Nature [Eg Sale/Rental]	Parties		Consideration [Eg Sale price]	Transaction Conditions [Eg Arm's length]
			Eg. Seller/Landlord			
			Eg. Purchaser/Tenant			

Tenure/Title	Type of Tenure [Tick (√)]	Terms of Tenure		Registration Status		Encumbrances
	Allodial		Term		Registration Date	[DD/MM/YY]
	Freehold/Customary Freehold		Commencement date		Registration Number	
	Leasehold		Expiration date			
			Option to renew [For lesser tenures]			
	Sublease		Unexpired term [For lesser tenures]			
	License		Ground rent/contract rent[For lesser tenures]			
Other [Specify]						

Property	Property Type	Description [Eg detached, semi- detached, bungalow - with	Stage of Development	Total Floor Area	Land Size
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			outbuilding]					
	Residential			<b>Main building</b>		<b>Main building</b>		
	Commercial [ eg retail shop/office]			<b>Outbuilding</b>	<b>Outbuilding</b>			
	Mixed land utilisation							
	Industrial							
	Educational							
	Recreation							
	Other [Specify]							

<b>Accommodation</b>	<b>Main building</b>			<b>Outbuilding</b>		
	Number of rooms			Number of rooms		
	<b>Rooms</b>	<b>Description</b>	<b>Size</b>			
	Eg. Bedroom	En-suite	18.6m	<b>Rooms</b>	<b>Description</b>	<b>Size</b>
	Eg. Living room					
	<b>Other Spaces</b>	<b>Description</b>	<b>Size</b>	<b>Other Spaces</b>	<b>Description</b>	<b>Size</b>
	Eg. Porch					
	Eg. Kitchen					
	<b>Orientation of rooms</b>			<b>Orientation of rooms</b>		
<b>External Works</b> Eg. Compound, carport						

<b>Construction Details</b>		<b>Main building</b>	<b>Outbuilding</b>
	<b>Foundation</b>		
	<b>Floors</b>		
	<b>Walls</b>		
	<b>Doors</b>		
	<b>Windows</b>		
	<b>Ceiling</b>		
	<b>Roof</b>		
	<b>Fixtures &amp; Fittings</b>		
	<b>External Works</b>		

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<b>Services &amp; Condition</b>		<b>Main building</b>	<b>Outbuilding</b>	<b>External Works</b>
	<b>Electricity</b>			
	<b>Pipe borne Water/Water</b>			
	<b>Telephone</b>			
	<b>Age</b>			
	<b>General Condition</b>			

<b>Planning, &amp; other Permissions</b>	<b>Approved Planning Scheme</b>	
	<b>Zoning Status</b>	
	<b>Building Permit</b>	
	<b>Fire Safety Clearance</b>	
	<b>EPA Clearance</b>	
	<b>Traffic Impact Assessment Clearance</b>	

<b>Accessibility, Amenities &amp; Neighbourhood</b>	<b>Access to the property</b>	
	<b>Proximity to Social Amenities</b>	
	<b>Neighbourhood Characteristics</b>	

<b>Data Source</b>	<b>Compiled By</b>	<b>Date</b> [DD/MM/YY]

## Sources and Reliability of Property Market Information for Property Valuation Practice in Ghana

**Purpose:** Adequate reliable property market data is critical to the production of professional and ethical valuations as well as better real estate transaction decision-making. However, the availability of reliable property market information represents a major barrier to improving valuation practices in Ghana and it is regarded as a key challenge. This study investigates the sources and reliability of property market information for valuation practice in Ghana. The aim is to provide input into initiatives to address the availability of reliable property market data challenges.

**Design/Methodology/Approach** - A mixed methods research approach is used. The study, thus, relies on a combination of a systematic identification and review of literature, a stakeholder workshop and a questionnaire survey of real estate valuers in Accra, Ghana's capital city to obtain requisite data to address the aim.

**Findings** - The study identifies seven (7) property market data sources used by valuers to obtain market data for valuation practice. These are: valuers own database; public institutions; professional colleagues; property owners; estate developers; estate agents; and the media. However, access to property market information for valuations is a challenge although valuers would like to use reliable market data for their valuations. This is due to incomplete and scattered nature of data often borne out of administrative lapses; non-disclosure of details of property transactions due to confidentiality arrangements and the quest to evade taxes; data integrity concerns; and lack of requisite training and experience especially for estate agents to collect and manage market data. Although professional colleagues is the most used market data source, valuers own databases, was regarded as the most reliable source compared to the media, which was considered as the least reliable source.

**Research Implications** - Findings from the study imply a need for the development of a systematic approach to property market data collection and management. This will require practitioners to demonstrate care,

consciousness and a set of data collection skills suggesting a need for valuers and estate agents to undergo regular relevant training to develop and enhance their knowledge, skills and capabilities. The establishment of a property market databank to help in the provision of reliable market data along with a suitable market data collection template to ensure effective and efficient data collection are considered essential steps.

**Originality** – The study makes a significant contribution to the extant knowledge by providing empirical evidence on the frequency of use and the reliability of the various sources of market data. It also provides useful insights for regulators such as the Ghana Institution of Surveyors (GhIS), the RICS and other stakeholders such as the Commonwealth Association of Surveying and Land Economy (CASLE) and the Government to improve the provision of reliable property market information towards developing valuation practice not only in Ghana, but across the Sub-Saharan Africa Region. Also, based on these findings, the study proposes a new property market data collection template and guidelines towards improving the collection of effective property market data. Upon refinement, these could aid valuation practitioners to collect reliable property market data to improve valuation practice.

**Keywords:** Data, Ghana, property market, sources, valuation

## Introduction

The impact of adequate and reliable property market information on the production of professional and ethical valuation for real estate transaction decision-making is very significant (Dunse et al., 1998; Ge and Harfield, 2006; Mends, 2006). Inadequate and unreliable market data has a high tendency to lead to the production of inaccurate valuations. This situation could affect the property market performance and investor confidence, derail investment and impact greatly on an economy (Ge and Harfield, 2006). However, property market information is often difficult to come by. Consequently countries, in particular, those of the Western developed world over the years continue to develop institutions and create the enabling

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7 environment to improve access to reliable property market information.  
8 Conversely, inadequate access to reliable market information for improved  
9 property valuation practice in developing countries such as Ghana appears to  
10 be worsening. This is compounded by inefficient property market operations  
11 and the ineptitude of market participants as well as public sector lapses and  
12 inertia (Mends, 2006; Mahama and Antwi; PWC, 2012).  
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15 An essential pre-requisite for access to adequate and reliable property  
16 market information to improve valuation practice in Ghana, boost investor  
17 confidence and stimulate investment activities is a need for a conceptual and  
18 practical shift in the way market information is collected, managed, provided  
19 and accessed. However, a suitable and pragmatic prescription will, in part,  
20 require identification and understanding of existing market information  
21 sources and the reliability of the information produced by the sources. This  
22 could provide a background input into proposed prescriptions for a shift in  
23 existing practices. This study, therefore, seeks to investigate property  
24 market information sources for valuation practice in Ghana and analyse the  
25 reliability of the information they provide. The aim is to provide input for  
26 initiatives to address property market information for valuation practice  
27 challenges in the country. The remainder of the study is organised as  
28 follows. The next section discusses property market data sources and  
29 challenges in Ghana to set the context for the study. This is followed by an  
30 account of the approach and methodology employed for the study. Findings  
31 from the study and their discussions are thereafter provided before  
32 conclusions are drawn.  
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### 39 **Property Market Data Sources and Challenges in Ghana**

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41 Professional and ethical property valuations are vital to decision-making,  
42 and are in turn critical to the efficient operation of property markets and  
43 national economies (Aluko, 2004; Babawale and Ajayi, 2011). This decision-  
44 making relates to issues such as: sale, purchase and letting of properties;  
45 real estate investment and management; compulsory purchase of land and  
46 properties; real estate taxation and insurance; real estate inheritance and  
47 settlement; asset sharing, allocation and re-allocation; and government  
48 divestiture and privatisation programmes. Although several factors inform  
49 professional and ethical property valuations, availability of reliable and  
50 quality property market information is perceived as very significant (Peto,  
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7 | 1997; Dunse et al., 1998; [Gilbertson and Preston, 2005](#); Ge and Harfield,  
8 | 2006).Indeed, Brown (1992) notes that valuations are a function of market  
9 | information. Also, Ratcliff (1968) in Brown (1992) acknowledges that  
10 | property valuation is not different from any other economic forecast and  
11 | such a forecast is partly a function of adequacy of property market  
12 | information and partly down to the skill and competence of the analyst.  
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### 21 | Indicators for Reliable and Quality Data,

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23 | The central characteristics of reliability and quality are: dependability,  
24 | stability; consistency; predictability and accuracy (Ge and Harfield, 2006).  
25 | This means that for adequate, reliable and quality property market  
26 | information, there must be a timely collection of property market data, and  
27 | the data should be complete and accurate [\(Gudat, 2010\)](#). Also, the data  
28 | collected should be up-dated at regular intervals. [Ge and Harfield](#) (2006)  
29 | further suggest that data should have some form of historical validity  
30 | meaning that clearly defined explanations of changes in methodologies  
31 | applied and measurement of variables should be available. This is to ensure  
32 | consistency in interpretation of data sets over time. Dwelling on the criteria  
33 | for assessing quality data, [Ge and Harfield](#) (2006) additionally suggest  
34 | property data should satisfy three other requirements. These are: the public  
35 | availability of data; data conformity to internationally accepted standards or  
36 | factors; and the comprehensiveness of data. Public availability of data relates  
37 | to openness of data to the public, which could be accessed freely or at a fee.  
38 | However, conformity to intentionally accepted standards or factors appears  
39 | quite vague as it is unclear whether or not such internationally accepted  
40 | standards have been developed [\(Gudat, 2010\)](#). Nevertheless, for valuation  
41 | practice it is expected that reliable property market data will provide  
42 | information such as: source of the data, the property type and size, the date  
43 | the transaction took place; location of the subject property; interest in the  
44 | property; development status of the property; agreed consideration; and  
45 | history of the transaction [\(Wyatt, 1997; Mends, 2006; Ashaolu and Olaniran,](#)  
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7 2016). This feeds into the comprehensiveness of data, which requires that  
8 all aspects of data are collected, up-dated and managed.  
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### 10 Market Data Sources and Challenges

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12 Property market data for valuation purpose are obtained from several  
13 sources in Ghana. The literature identifies six main sources. These are:  
14 public and quasi-public institutions such as the Lands Commission,  
15 Architectural and Engineering Services Limited (AESL), Tema Development  
16 Corporation (TDC), State Housing Company Limited (SHC) and the  
17 Metropolitan, Municipal and District Assemblies (MMDAs); property owners;  
18 property valuation practitioners, professional property consultancy firms and  
19 lawyers who deal with property transactions (professional colleagues);  
20 practitioners own databases; real estate developers; and informal real estate  
21 agents (Mends, 2006; Mahama and Antwi, 2006). Notwithstanding these  
22 sources, availability of reliable and quality property market data for valuation  
23 practice is regarded as a huge challenge in Ghana (Mahama and Antwi, 2006)  
24 due to the various deficiencies in data obtainable from such sources.  
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30 As can be seen from the preceding discussions, an essential feature of a  
31 reliable and quality data is its completeness or comprehensiveness. However,  
32 market data obtained from public and quasi-public institutions are often  
33 incomplete and not well organised. Data obtained from these institutions  
34 often do not provide information such as agreed considerations and date of  
35 transactions, and they are not regularly updated (Mends, 2006). Apart from  
36 administrative lapses, the problem with market data obtained from public  
37 and quasi-public institutions is attributed to the secrecy usually associated  
38 with property transactions (Gough and Yankson, 2000) and deliberate non-  
39 disclosure of information by parties to transactions for tax evasion purposes.  
40 Due to confidentiality arrangements, property owners and purchasers as well  
41 as real estate developers are often unwilling to disclose details of  
42 transactions. This makes access to market data for valuation purpose from  
43 these sources difficult. Further, Mends (2006) notes that valuation  
44 practitioners, professional property consultancy firms and some lawyers  
45 have built some form of databases, which they usually share with colleagues.  
46 However, the source of the data provided by these databases is often  
47 unknown and the integrity of the data is most of the time questionable. In  
48 fact, anecdotal evidence suggests that there are instances where same data  
49 are acquired from different sources, but with significant variations. These  
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7 constraints, therefore, raise questions about the quality and reliability of  
8 market data supplied by this source.  
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10 Informal real estate agents' constitutes a major source of property market  
11 data for valuation practice in Ghana. However, they often lack the requisite  
12 training and experience to collect and manage quality data for valuation  
13 purpose (Mahama and Antwi, 2006; Obeng-Odoom, 2011). Excepting their  
14 primary interest of earning commissions, they hardly record transaction  
15 details, circumstances, property characteristics and the financial  
16 arrangements for transactions, which are critical to quality and reliable data.  
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19  
20 The literature discussions so far demonstrate that access to reliable property  
21 market information for valuation practice in Ghana could be a challenge. The  
22 question, however, is: to what extent do practitioners experience these  
23 challenges with access and how do they perceive the quality and reliability of  
24 the data they use or choose not to use. These constitute the focus of the  
25 study and to examine them, the methodology for doing so is first outlined in  
26 the next section.  
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## 29 30 Research Methodology

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32 The study initially identified and reviewed the focal literature to gain some  
33 background insights into the relevance of property market data to property  
34 valuation, sources of market data for valuation practice in Ghana and the  
35 challenges. The rationale was to identify the existing knowledge, and provide  
36 the study context. The literature review was followed by a one-day  
37 stakeholder consultation with practitioners - valuation and estate surveyors  
38 in Accra. The workshop was organised with the assistance and support of  
39 the GhIS, RICS and the Commonwealth Association of Surveying and Land  
40 Economy (CASLE). The workshop was organised in three phases. The first  
41 phase was devoted to presentations bordering on the research. The  
42 presentations focused on the research background, findings from the  
43 literature evaluation, and related issues such as market data challenges. The  
44 second phase was a break-out session where the participants were divided  
45 into five groups to discuss pre-formulated questions related to the research.  
46 The discussions were facilitated by a chairperson. Each of the groups also  
47 had a rapporteur who recorded the outcome of the discussions. The third  
48 phase was a plenary session where outcomes from the group discussions  
49 were reported and discussed. The aim was to engage with practitioners, gain  
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7 additional insights and facilitate empirical data collection. Thus, the  
8 workshop helped to confirm the issues identified in the literature and also  
9 identified new issues which were not revealed such as property market data  
10 sources and possible fields of information for a suitable property market  
11 data collection template. It also helped to identify useful informants and  
12 uncover data sources, which were leveraged to obtain data to deliver the  
13 research.  
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16  
17 Subsequently, a questionnaire survey of real estate valuers in Accra was  
18 undertaken. The survey was undertaken between July and September, 2015  
19 with the assistance and support of the GhIS. The survey targeted  
20 professional members of the GhIS. The questionnaire was designed based on  
21 the insights gained from the literature review and the outcome from the  
22 stakeholder consultation workshop. Therefore, apart from background  
23 information of respondents, the questionnaire sought information on the  
24 extent of use of market data sources by practitioners, the reliability of the  
25 property market data sources for valuation practice in Ghana, the relevance  
26 of property market data collection template to effective market data  
27 collection in the country as well as the information (fields) that a suitable  
28 property market data collection template should contain. A Likert scale was  
29 used to assist in eliciting the information that was sought by the  
30 questionnaire. Thus, on a scale of 1–5 (where 1 = do not use at all, 2=  
31 rarely, 3= quite often, 4= often and 5 very often), the respondents were  
32 asked to rate their extent of use of the main market data sources to obtain  
33 information to undertake their valuations. A similar arrangement was used to  
34 obtain the requisite information on the extent of reliability of data from the  
35 sources, the relevance of a proposed data collection template to effective  
36 data collection and the information that a suitable template should contain.  
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43 The questionnaires were self-administered to the respondents. A total of  
44 110 questionnaires were administered. Due to lack of a reliable sample  
45 frame, selection of the respondents was based on purposive and snowball  
46 sampling methods. The GhIS provides annual list of valuers in good standing  
47 in Ghana. However, there is no such list specifically for valuers in Accra.  
48 Further, the lists do not often have the address and location of valuers. This  
49 meant that the approach used was the most practical and suitable way of  
50 obtaining the required data and is similar to studies such as Boamah et al.  
51 (2012) and Baffour Awuah et al. (2013) in the study country. Prior to the  
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7 questionnaire administration, the questionnaire was pre-tested using 4  
8 experienced valuers to evaluate the questionnaire in terms of its coverage of  
9 what it envisaged to address, and the effectiveness of how the research  
10 variables were to be measured.  
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13 The lack of reliable sample frame impeded complete randomisation and to  
14 that extent was considered as a limitation. However, drawing respondents from  
15 different areas of professional practice and varied years of experience ensure that  
16 the results are representative of valuation practitioners in Ghana. Further, results  
17 from the stakeholder workshop and the questionnaire were discussed with  
18 the findings from the literature review. These were established to resonate  
19 with what is generally in the literature.  
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22 Views expressed by stakeholders at the workshop were recorded in a note  
23 book and they were analysed with insights from thematic analysis procedure.  
24 In so doing, the views were re-written in a clearer and more organised  
25 manner. Subsequently, they were read severally to identify significant  
26 viewpoints and common patterns that describe how the stakeholders  
27 described the research issue(s). This was done through the use of words,  
28 which were said often in the recordings as keywords and then noted the  
29 number of times they were used. Similar keywords were thereafter put  
30 together and reviewed to arrive at the outcomes. These were synthesised  
31 with the findings from the literature review. This partly enabled the  
32 identification of the property market data sources and the probable  
33 information that a suitable market data collection template should contain  
34 for the design of the questionnaire instrument.  
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37 The survey data were explored, cleaned, diagnosed and checked for  
38 consistency. Further, the scaled data (the extent of use of the market data  
39 sources by practitioners, the reliability of data from the sources for valuation  
40 practice in Ghana, the relevance of property market data collection template  
41 to the effective market data collection in the country as well as the  
42 information (fields) that a suitable property market data collection template  
43 should contain) were analysed using consensus/agreement around the mean  
44 analytical framework identified by Tastle and Wierman (2007), and  
45 subsequently modified by Tastle et. al (2009). This was to allow for analysing  
46 the consensus around a given target. Details of the formula are given as  
47 follows:  
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~~The target used in this case was 5, the highest score on the likert scale. Details of the formula are given as follows:~~

$$\text{Agr} (X|5) = 1 + \sum_{i=1}^n p_i \log_2 \left( 1 - \frac{|X_i - 5|}{2d_x} \right)$$

Where:

Agr = The level of agreement on evaluation of an attribute;

X = The scores;

5 = The highest score;

$X_i$  = Each score; and

$d_x$  = The range of X ( $d_x = X_{\max} - X_{\min}$ )

Generally, data generated from Likert scales are traditionally analysed using measures such as a weighted mean or weighted standard deviation. However, such approaches have been noted to be fraught with errors and present interpretation challenges particularly because Likert scales are ordinal measures. The consensus measure as given by the above formula is designed to accommodate the ordinal nature of Likert scale scores, and it ranges between 0 and 1. 1 indicates complete agreement on an issue whereas 0 shows a complete lack of agreement. The measure, as applied to this study, captures the extent of the respondents' agreement towards the last option on the Likert scale (5 on a scale of 1 -5). Thus, 5 the highest score on the Likert scale was used as the target score. Therefore, for example, if all the respondents consider the data collection template as most useful by choosing 5, then the consensus measure will result in 1.

Conversely, if all the respondents do not consider the template as useful by choosing 1 on the Likert scale, then the consensus measure will result in 0.

## Research Findings

Findings from the empirical aspect of the study are categorised into two parts. The first part reports the outcome from the stakeholder workshop. This is then followed by the second part, which presents findings from the questionnaire survey.

### Outcome from the Stakeholder Workshop

The stakeholder workshop took place on February 25, 2015. The workshop was attended by over 50 valuation and estate surveyors from both public and private sector institutions. Five past presidents of the GhIS also attended the workshop. The workshop confirmed findings from the literature about the sources of property market data for valuation purpose in Ghana. These are: public and quasi-public institutions; property owners; property valuation practitioners and professional property consultancy firms, lawyers who deal with property transactions (professional colleagues); real estate developers; practitioners own databases; and informal real estate agents. The workshop also noted the media/online real estate transactions as an emerging property market data source in the country. However, participants opined that availability of reliable property market data is a challenge to valuation practice in the country and this has often resulted in the production of questionable valuations. They further expressed that reliability of property market data used for valuations is often dependent on its source. For example, they observed that unlike property market data obtained from state/public institutions, those obtained from real estate developers often appear more current, and that the media/online transactions could be used as a guide not as a real data source.

Participants made a number of suggestions to improve access to reliable property market data. First, it was suggested that a standardised property market data collection template would significantly improve property market data collection practices in Ghana. Participants noted that such a template will be a good reference point to guide property market data collection and assist valuation practitioners to ask suitable questions during data

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7 collection. They also observed that the template could promote  
8 standardisation in data collection and enhance quick and easy access to  
9 information for valuation assignments. It was, however, recognised by  
10 participants that valuation practitioners need to be involved as much as  
11 possible in any effort to develop such a template to promote its use, and  
12 that the GhIS should take the lead in the development of such template. The  
13 participants further recommended the need for such a template to be: user  
14 friendly and adaptable to all property types and land uses; be easy to  
15 understand and use by all practitioners; be easy to access for use; and have  
16 fields to capture relevant information such as property  
17 numbers/identification, nature of transaction, parties to the transaction,  
18 agreed consideration and among other things (the detailed information that  
19 such a template should contain is given by Table 47).

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25 Second, the workshop participants suggested the establishment of property  
26 market databank. It was agreed by the participants that the GhIS should take  
27 the initiative to establish the databank and that its establishment should be  
28 supported by law. However, participants noted the need for the support of  
29 valuation practitioners to make it successful. They, therefore, recommended  
30 the provision of incentives such as discounts on fees to practitioners for  
31 access to data from such a databank to entice them to support it. Also, the  
32 workshop participants suggested that: there should be easy access to  
33 published data at a fee; there is a need for legal requirement to compel all  
34 property related transactions to be published; information sharing among  
35 practitioners should be encouraged; and informal estate agents should be  
36 trained to enable them provide quality data. However, issues of whether or  
37 not the cost of obtaining reliable data should be transferred onto clients and  
38 how such costs should be assessed. This issue could not be resolved and  
39 merits further investigation.

#### 40 41 42 43 44 45 **Findings from the Questionnaire Survey**

46  
47 63.64% (70) of the 110 questionnaires administered were returned. However,  
48 some of the questions for a few of the questionnaires received were not  
49 answered. These were given the due consideration in the data analyses. The  
50 majority of the respondents had less than 15 years of professional  
51 experience. Indeed, 30% of the respondents had less than 5 years of  
52 professional experience compared to 24.29%, 15.71% 18.57% who had  
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7 between 5 and 9, 10 and 14, and above 25 years of professional experience  
8 respectively. Also, 25.71% of the respondents were employed in the  
9 government/public sector as against 28.57% who worked for private  
10 organisations and 45.71% who were private practitioners.  
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### 12 ***Extent of Use and Reliability of Property Market Data Sources***

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14 The seven property market data sources, which were identified from the  
15 literature and the stakeholder consultation workshop namely: public and  
16 quasi-public institutions; property owners; property valuation practitioners  
17 and professional property consultancy firms, lawyers who deal with property  
18 transactions (professional colleagues); real estate developers; practitioners  
19 own databases; informal real estate agents; and the media/on-line  
20 transactions were used in the survey. Analyses of the extent of use of these  
21 data sources and the reliability of the data they provide were undertaken  
22 with the analytical/formula outlined in the research methodology section  
23 after using a 5-point Likert scale to elicit the required responses. Tables 1  
24 and 2 give details for the frequency of use of the data sources and the extent  
25 of reliability of the data produced by the sources respectively for all the  
26 respondents.  
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INSERT TABLES 1 & 2

Table 1 shows that obtaining market data from professional colleagues (AgrI5 = 0.94) was the most used data source compared to media/online real estate transactions, which was the least used (AgrI5 = 0.55) by practitioners. Practitioners own database, public institutions, estate developers, estate agents and property owners were the second, third, fourth, fifth and the sixth most used data sources respectively. A possible reason for the high patronage of professional colleagues may be the ease with which practitioners obtain data from that source as they are colleagues

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7 and they know how to relate to each other to obtain what they want. Besides,  
8 practitioners are often more willing to provide their colleagues with market  
9 data as they may also need data or some form of assistance from them in  
10 the future. Conversely, the findings on the less used sources, in particular,  
11 estate agents and property owners may be due to lack of confidence in the  
12 reliability of the data provided and the usual non-availability of data  
13 respectively.  
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16 Strikingly, apart from the media, whose frequency of use corresponded to  
17 how the respondents rated its data reliability, there were variations in how  
18 the respondents rated the reliability of the data from the other property  
19 market data sources compared with their frequency of use (Table 2).  
20 Although professional colleagues' was the most used property market data  
21 source, its data was not perceived to be as reliable (Agr15 = 0.89) as  
22 practitioners own database (Agr15 = 0.93), which was rated as the most  
23 reliable (Table 2). This may be due to over-confidence of practitioners in the  
24 reliability of their own databases. Professional colleagues' was perceived as  
25 the second most reliable property market data source. A possible reason for  
26 this finding could be the confidence that professionals have in property  
27 market data collection and management capabilities of their colleagues.  
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33 Real estate developers, public institutions, property owners and estate  
34 agents were regarded as the third, fourth, fifth and the sixth most reliable  
35 data sources respectively (Table 2). The finding for real estate developers  
36 may be due to their ability to often provide current property market data as  
37 noted by the participants at the stakeholder workshop. Inadequate records  
38 keeping, and the tendency to provide out of date data and the bureaucratic  
39 process for provision of property market data may account for the finding on  
40 public institutions. Also, the practice of not disclosing details of real estate  
41 transactions by property owners, and the poor data collection and  
42 documentation for real estate transactions by real estate agents could be  
43 possible explanations for the findings on the other two property market data  
44 sources respectively.  
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51 Analysing the results per the nature of practice and years of professional  
52 experience of respondents, it was established that professional colleagues  
53 was the main source of data for the respondents whilst the media was the  
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7 least used data source (Table 3).However, mixed outcomes were noted on  
8 the frequency of use of the other data sources. For example, the findings  
9 show that whilst respondents in private practice and those engaged at public  
10 sector organisations considered public institutions as the second most used  
11 data source, respondents employed at private organisation considered own  
12 database as the second most used data source. With regard to years of  
13 professional experience, respondents with less than 5 years of experience  
14 considered estate developers as the second most used data source.  
15 Conversely, own database was the second most used data source for those  
16 with 5 years or more in experience. This finding is not surprising as  
17 practitioners with fewer years of experience are less likely to have developed  
18 extensive database on their own. Tables 3 and 4 present the frequency of  
19 use of the data sources by nature of practice and years of professional  
20 experience of respondents.

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32 Respondents for all the categories under nature of practice and years of  
33 professional experience also considered own database and professional  
34 colleagues as the most reliable and the second most reliable data sources  
35 respectively. The media was considered as the least reliable data source. The  
36 results on the reliability of the other data sources followed a similar  
37 pattern as those on the frequency of use. Tables 5 and 6 give further details.

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48 ***Relevance/Significance of Property Market Data Collection Template and the***  
49 ***Information (Fields) it should contain***  
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51 Table 73 gives details on the findings from the survey results on the extent of  
52 relevance/significance of a suitable property market data collection template  
53 to effective and efficient market data collection for valuation purpose and  
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7 | ~~the. Table 4 also details the~~ ratings by importance for the information  
8 (fields) that a suitable property market data collection template should  
9 contain.  
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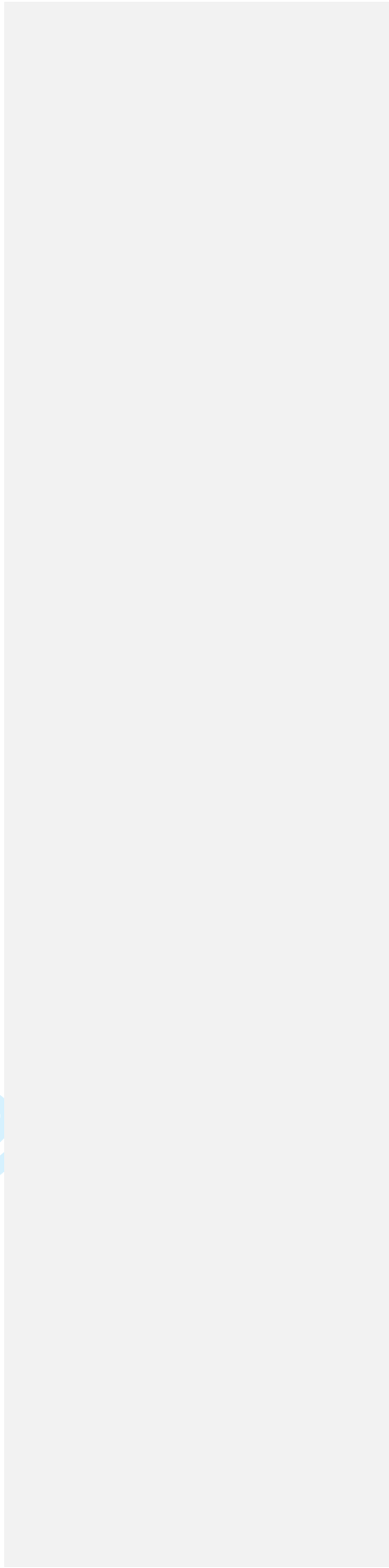
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18 88.57% of the respondents answered the question on the  
19 relevance/significance of a suitable property market data collection template  
20 to effective and efficient market data collection for valuation practice. As can  
21 | be seen from Table ~~73~~, an agreement score of 0.90 was obtained from the  
22 analysis. This signifies a high level of consensus among the respondents  
23 meaning that virtually all the respondents agreed that a suitable property  
24 market data collection template is relevant/significant or very  
25 relevant/significant to effective and efficient market data collection for  
26 valuation practice. This finding gives credence to the finding from the  
27 stakeholder workshop that a suitable property market data collection  
28 template could greatly assist in market data collection for valuation practice  
29 and in turn could help to redress the access to reliable market data problem  
30 in Ghana.  
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35 Analysis of the ratings on the importance/significance of the  
36 information/fields that a property market data collection template should  
37 contain demonstrates, to a large extent, that all the identified information is  
38 | significant/important for inclusion in a property market collection template  
39 (Table ~~74~~). However, *date of transaction* had the highest level of agreement  
40 on its significance ( $AgrI5 = 0.98$ ) compared to *rooms' orientation*, which had  
41 the least agreement ( $AgrI5 = 0.53$ ). Overall, the results show that apart from  
42 *size of property including land* all the first few items (information)  
43 considered most significant are transaction data. The remaining factors  
44 relate to value attributes (property data). This is quite understandable and  
45 significant since it is often useful for appropriate property market data to be  
46 initially assembled subsequent to which the required analyses could be  
47 undertaken to ascertain the effect of value attributes as part of value  
48 determination process.  
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INSERT TABLE 4

Property Management



## Discussion of Findings

Findings from both the literature review and the stakeholder workshop show that there are several sources from which valuers in Ghana obtain property market data to undertake valuations. The survey results established that valuers use all the identified market data sources, but professional colleagues as market data source is the most used compared to the media, which is the least used [source](#). [This](#) further gives credence to the literature and corroborates studies such as Mends (2006). In terms of reliability, valuers considered their own databases as the most reliable but, to some extent, questioned the reliability of data from other sources and the media in particular. This supports Mahama and Antwi (2006), and Obeng-Odoom (2011) about the unreliability of market data often provided by estate agents. Further, the finding on the media confirms what was noted at the stakeholder workshop that data from this source is often used as a guide.

As established from the literature review and the stakeholder [workshop](#), [access](#) to reliable and quality market data is often a challenge although valuers would like to use reliable market data for their valuations ([Mahama and Antwi, 2006](#); [Obeng-Odoom and Ameyaw, 2011](#)). This situation is due to [incomplete](#) and scattered nature of data often resulting from administrative lapses; non-disclosure of details of property transactions due to confidentiality arrangements and the quest to evade taxes; data integrity concerns; and lack of requisite training and experience especially for estate agents to collect and manage market data ([Mends, 2006](#); [Mahama and Antwi, 2006](#)). Nevertheless, the study highlights sources of property market data for valuations, their reliability and associated problems. The study, therefore, provides useful input for any proposed initiatives to address the property market data challenge for valuation practitioners and other real estate sector stakeholders. It is, thus, useful to professional bodies such as the GhIS, RICS and organisation such as CASLE, Ghana's Lands Commission and the MMDAs among others.

Indeed, findings from the study highlight several things, which could help to address the property market data challenge in Ghana. The stakeholder workshop, for example, identified the usefulness of a suitable property market data collection template to effective and efficient market data collection. The workshop together with findings from the literature review

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7 further identified the information (fields) that a suitable property market  
8 data should contain. Establishment of databank was also recommended. The  
9 survey results corroborated the relevance of a data collection template to  
10 effective and efficient market data collection for valuation practice. The  
11 survey also determined the relative importance of the information that a  
12 suitable property market data collection template should contain.  
13 Additionally, the findings emphasise that reliable property market data  
14 should meet certain criteria such as dependability; stability; consistency;  
15 predictability, accuracy and completeness [\(Ge and Harfield, 2006; Gudat,  
16 2010\)](#). This requires conscious and systematic approach to the collection  
17 and management of property market data for valuation practice.  
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21  
22 This study based on the insights from the findings as demonstrated above  
23 developed a suitable template and guidelines (Figure 1) for effective and  
24 efficient market data collection (see appendix for a copy of the template).The  
25 template development follows the principle of consultation with valuers  
26 suggested at the stakeholder [workshop](#). Also, it was developed with the  
27 information identified from the literature review and the stakeholder  
28 workshop, and confirmed by the survey results as information that a suitable  
29 property market data collection template should contain. The GhIS could,  
30 therefore, further refine [the market](#) data collection template to help  
31 standardise and guide meaningful property market data collection for  
32 valuation [purposes](#). The guidelines for effective and efficient market data  
33 collection for valuation purpose emphasise conscious and systematic  
34 approach to collection and management of property market data for  
35 valuation practice. Thus, the development of the guidelines' is rooted in the  
36 qualities of reliable market data, the specific valuation purpose for which  
37 market data is required and the market data requirements to address the  
38 purpose. Figure 1 details the steps prescribed by the guidelines.  
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50 The property market data collection template and guidelines to effective and  
51 efficient data collection could help not only valuation practitioners, but also  
52 professionals and organisations in the built environment to collect and  
53 manage useful data and ultimately build effective and efficient databases for  
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7 better decision-making. Further, they could help in promoting  
8 standardisation in valuation practice, which is essential to reduce errors in  
9 practice.  
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11 As stated in the introduction and the literature discussions, property market  
12 data is vital to the production of professional and ethical valuations  
13 (Gilbertson and Preston, 2005; Irohamet al., 2014; Ashaolu and Olaniran,  
14 2016). Such valuations are also essential to the effective and efficient  
15 operations of the property market, inter-connected financial markets and  
16 national economies (Lorenz and Lützkendorf, 2008) as they are important tools for  
17 good governance, transparent business activities and promotion of investor  
18 confidence (Tretton, 2007). Findings from the research will help to improve access to  
19 market data and the property valuation practice in Ghana. This will also help to  
20 sustain and improve operations of the country's property markets, which are  
21 currently showing signs of growth, enhance investor confidence and activities, and  
22 ultimately lead to economic growth and development to alleviate poverty. Besides,  
23 the improvement in the data situation has the potential to reduce the time and the  
24 transaction cost valuers currently incur to access quality data, which are often non-  
25 existent. The saved time and resources could be re-channelled to other productive  
26 activities to increase productivity.  
27

28 Literature (Babawale and Ajayi, 2011; Otegbulu and Babawale, 2011; PWC, 2012;  
29 Ashaolu and Olaniran, 2016) shows that the property market data challenge  
30 and its adverse implications on property valuation is not peculiar to Ghana,  
31 but across the entire SSA region. For example, Ashaolu and Olaniran (2016)  
32 note that Nigerian financial institutions are becoming weary of mortgage  
33 valuations prepared by Nigerians due to inadequate data and analysis.  
34 Therefore, although this study is not directly applicable to the rest of the SSA  
35 region its findings and outcome of the data collection template could offer  
36 useful lessons to practitioners and their professional bodies in the region to  
37 improve practice and market operations especially at a time when the region  
38 is beginning to attract global investment interest.  
39

## 40 41 42 43 44 45 46 47 48 **Conclusions**

49  
50 Reliable property market information is critical to the production of  
51 professional and ethical valuations. However, access to such information for  
52 valuation practice in Ghana is always a challenge. This may require a shift in  
53 the current practices of how market information is collected, managed,  
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7 provided and accessed. This suggests a need to examine the existing  
8 property market data sources for valuation practice and the reliability of the  
9 data they produce to provide input into any initiative to redress the market  
10 data challenges faced by valuers in the country. This study, therefore,  
11 examined the sources and reliability of property market information for  
12 valuation practice in Ghana. The aim was to provide input into any initiative  
13 to address the difficulties faced by valuers to access property market  
14 information for valuation practice in the country.  
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16

17  
18 The study established 7 sources of property market information for valuation  
19 practice in Ghana. These are: public and quasi-public institutions; property  
20 owners; property valuation practitioners and professional property  
21 consultancy firms, lawyers who deal with property transactions (professional  
22 colleagues); real estate developers; practitioners own databases; informal  
23 real estate agents; and the media/on-line transaction. In terms of reliability  
24 of the market data produced by the sources, valuers own databases was  
25 regarded as the most reliable source followed by the databases of their  
26 professional colleagues, real estate developers, public institutions, property  
27 owners, estate agents and the media in that order. Nevertheless, access to  
28 reliable property market information for valuation practice is always a  
29 challenge although valuers would always want to use reliable data. Further, it  
30 was found that the access to reliable property market information problem is  
31 due to incomplete and scattered nature of market data; non-disclosure of  
32 details of property transactions; data integrity concerns; and lack of requisite  
33 training and experience especially for estate agents to collect and manage  
34 market data.  
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40 Also, it was found that establishment of property market databank and a  
41 suitable property market data collection template are relevant to effective  
42 and efficient market data collection. Information that a suitable property  
43 market data collection template should contain were identified and their  
44 relative importance established. Additionally, the need for a conscious and  
45 systematic approach to market data collection taking into account  
46 requirements of a reliable market and which also suggest a need for  
47 practitioners to undergo continuous training was established. Funding cost  
48 of market data collection is, however, an issue, which requires further  
49 interrogation.  
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7 Using the foregoing insights, the study developed a property market  
8 collection template (see Figure 2 at the appendix) and guidelines for  
9 effective and efficient market data collection for improved valuation practice.  
10 The study, thus, provides useful input for any proposed initiatives to address  
11 the property market data challenge for valuation practitioners and other real  
12 estate sector stakeholders. It is, thus, useful to professional bodies such as  
13 the GhIS, RICS and organisation such as CASLE, Ghana's Lands Commission  
14 and the MMDAs among others. The foregoing has the potential to improve  
15 the access to market data and the property valuation practice in the country  
16 to promote effective and efficient market operations, investor confidence  
17 and activities, and lead to economic growth and development. Access to  
18 property market data improvement could also lead to increase in  
19 productivity through valuers re-channelling saved time and reduction in  
20 transaction costs from their current practice of devoting extensive time and  
21 resources to access quality data, which are often non-existent. Further,  
22 although the research is not directly applicable to the rest of the SSA region,  
23 given the peculiarity of the access to market data challenges and their  
24 adverse implications on valuation practice across the region, the findings  
25 and outcome from this research could offer useful lessons to the other  
26 countries in the region.

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33 Based on the findings of the study and their implications, it is recommended  
34 that:

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37 A property market databank should be created in Ghana. The GhIS with the  
38 support of its members should as a matter of urgency facilitate the creation  
39 of this data bank in collaboration with private sector and other stakeholders  
40 in the property market data industry such as valuation practitioners, public  
41 institutions, financial institutions, estate developers, estate agents and  
42 property owners.

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45 Valuers/valuation surveyors should undergo regular relevant training to  
46 develop and enhance their knowledge, skills and capabilities to collect good  
47 quality property market data and produce high standard valuations. The GhIS  
48 as part of its CPD should organise such education and training programmes  
49 for practitioners. Also, such training programmes should be extended to  
50 local estate agents and other property market data collection and  
51 management institutions in the country.  
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Last, but not the least, further research into funding for the cost of property market data collection in Ghana should be undertaken.

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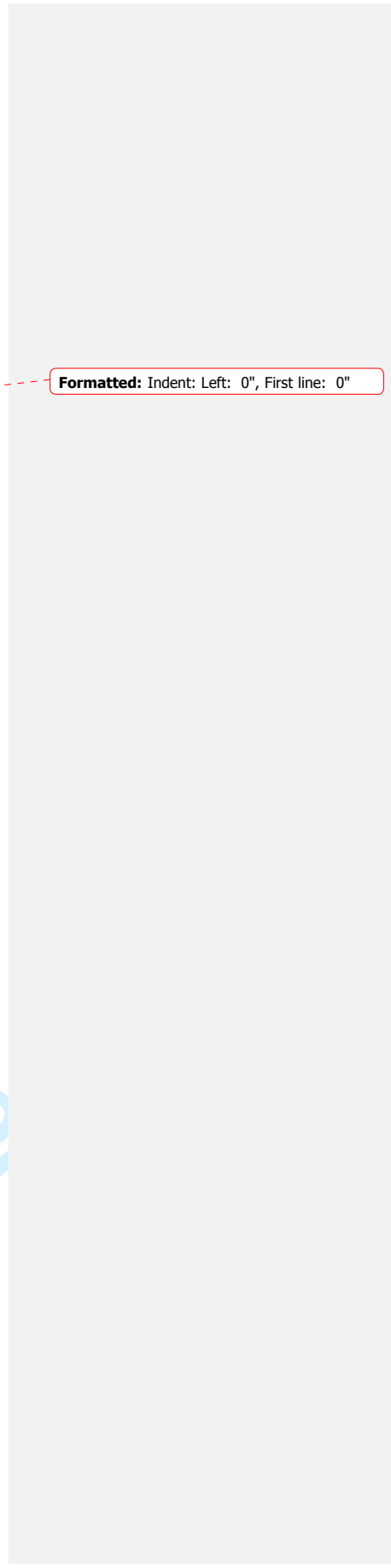
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Appendix

INSERT FIGURE 2

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## List of Tables

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**Table 1: Extent of Use of Property Market Data Sources**

Source	No	Frequencies (%)					Min	Max	Mean	Median	Mode	Agr15
		1	2	3	4	5						
Property Owner	70	2.86	21.43	37.14	18.57	20.00	1	5	3.31	3	3	0.636
Estate Agent	69	1.45	7.25	34.78	39.13	17.39	1	5	3.64	4	4	0.717
Professional Colleagues	69	0.00	0.00	8.70	13.04	78.26	3	5	4.70	5	5	0.939
Public Institutions	70	0.00	10.00	20.00	27.14	42.86	2	5	4.03	4	5	0.797
Estate Developers	69	1.45	10.14	14.49	37.68	36.23	1	5	3.97	4	4	0.784
Media	70	12.86	24.29	25.71	27.14	10.00	1	5	2.97	3	4	0.548
Own Database	66	3.03	6.06	10.61	30.30	50.00	1	5	4.18	4.5	5	0.826

1 = Do not use at all 2 = Rarely 3 = Quite often 4 = Often 5 = Very Often

**Table 2: Reliability of Property Market Data Sources**

Source	No	Frequencies (%)					Min	Max	Mean	Median	Mode	Agr15
		1	2	3	4	5						

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Property Owner Estate Agent	70	2.86	10.00	42.86	28.57	15.71	1	5	3.44	3	3	0.671
Professional Colleagues Public Institutions	70	0.00	0.00	7.14	42.86	50.00	3	5	4.43	4.5	5	0.888
Estate Developers	70	0.00	5.71	25.71	31.43	37.14	2	5	4.00	4	5	0.794
Media	68	1.47	4.41	19.12	38.24	36.76	1	5	4.04	4	4	0.802
Own Database	67	7.46	22.39	50.75	17.91	1.49	1	5	2.84	3	3	0.528
	65	0.00	0.00	3.08	32.31	64.62	3	5	4.62	5	5	0.925

1 = Very unreliable 2= Unreliable 3= Quite reliable 4= Reliable 5= Very reliable

Table 3: Significance of Property/Market Data Collection Template

	N	Frequencies (%)					Min	Max	Mean	Median	Mode	Agri5
		1	2	3	4	5						
Usefulness + Relevance	62	0.00	0.00	6.45	33.87	59.68	3	5	5	5	5	0.908

1 = Very insignificant 2= Insignificant 3= Quite significant 4= Significant 5 Very significant



**Table 4: Relative Importance of Information/Fields that a Property Market Data Collection Template Should Contain**

Field	N	Frequencies (%)					Min	Max	Mean	Median	Mode	Agri5
		1	2	3	4	5						
Date of transaction	70	0.00	0.00	0.00	11.43	88.57	4	5	4.89	5	5	0.978
Sale/purchase price/rent	68	0.00	0.00	1.47	10.29	88.24	3	5	4.87	5	5	0.974
Size of property including land	70	0.00	0.00	2.86	18.57	78.57	3	5	4.76	5	5	0.952
Property address/location	70	0.00	0.00	2.86	25.71	71.43	3	5	4.69	5	5	0.939
Title	70	0.00	0.00	4.29	25.71	70.00	3	5	4.66	5	5	0.933
Neighbourhood	69	0.00	0.00	5.80	24.64	69.57	3	5	4.64	5	5	0.928
Condition of property	67	0.00	0.00	1.49	34.33	64.18	3	5	4.63	5	5	0.928
Term of interest	70	0.00	2.86	7.14	22.86	67.14	2	5	4.61	5	5	0.922
Nature of transaction	70	0.00	0.00	5.71	40.00	54.29	2	5	4.54	5	5	0.907
Accessibility	70	0.00	0.00	11.59	30.43	57.97	3	5	4.49	5	5	0.899
Floor finish	69	0.00	0.00	15.71	35.71	48.57	3	5	4.46	5	5	0.893
Walls	70	0.00	0.00	15.71	35.71	48.57	3	5	4.33	4	5	0.866
Ceiling	70	0.00	0.00	17.14	32.86	50.00	3	5	4.33	4	5	0.866
Roof	70	0.00	0.00	17.14	34.29	48.57	3	5	4.33	4.5	5	0.866
Windows	70	0.00	0.00	18.57	31.43	50.00	3	5	4.31	4	5	0.863
Doors	70	2.94	0.00	11.76	38.24	47.06	3	5	4.31	4.5	5	0.862
Encumbrances	34	0.00	0.00	20.29	39.13	40.58	1	5	4.26	4	5	0.848
External works	69	0.00	0.00	18.57	42.86	38.57	3	5	4.20	4	5	0.840
Electricity	70	0.00	1.43	21.43	35.71	41.43	3	5	4.20	4	4	0.840
Fixtures and fittings	70	0.00	2.86	18.57	45.71	32.86	2	5	4.17	4	5	0.833
Pipe-borne water	70	0.00	1.43	25.71	37.14	35.71	2	5	4.09	4	4	0.815
Age of property	70	0.00	2.86	34.29	27.14	35.71	2	5	4.07	4	4	0.812
Registration status	70	1.43	4.29	22.86	42.86	28.57	2	5	3.96	4	5	0.786
Number of rooms	70	0.00	7.25	27.54	39.13	26.09	1	5	3.93	4	4	0.779
Planning scheme	69	0.00	5.80	33.33	31.88	28.99	2	5	3.84	4	4	0.761
Building permit status	69	1.45	4.35	31.88	39.13	23.19	2	5	3.84	4	3	0.761
Proximity to other social amenities	69	2.90	11.59	20.29	34.78	30.43	1	5	3.78	4	4	0.748
Rent passing	69	1.45	7.25	34.78	33.33	23.19	1	5	3.78	4	4	0.741
Parties to transaction	69	8.57	7.14	40.00	25.71	18.57	1	5	3.70	4	3	0.728
Telephone	70	12.86	18.57	40.00	24.29	4.29	1	5	3.39	3	3	0.650
Rooms' orientation	70	0.00	2.86	7.14	22.86	67.14	1	5	2.89	3	3	0.533

1= Very insignificant 2= Insignificant 3= Quite significant 4= Significant 5= Very significant











**Table 7: Usefulness of Data Template and Relative Importance of Information/Fields that a Property Market Data Collection Template Should Contain**

Field	N	Frequencies (%)					Min	Max	Mean	Median	Mode	Agr15
		1	2	3	4	5						
<b>Panel A: Usefulness of Data Collection Template</b>												
Usefulness/Relevance	62	0.00	0.00	6.45	33.87	59.68	3	5	5	5	5	0.908
<b>Panel B: Relative Importance of Information/Field in a Property Market Data Collection Template</b>												
Date of transaction	70	0.00	0.00	0.00	11.43	88.57	4	5	4.89	5	5	0.978
Sale/purchase price/rent	68	0.00	0.00	1.47	10.29	88.24	3	5	4.87	5	5	0.974
Size of property including land	70	0.00	0.00	2.86	18.57	78.57	3	5	4.76	5	5	0.952
Property address/location	70	0.00	0.00	2.86	25.71	71.43	3	5	4.69	5	5	0.939
Title	70	0.00	0.00	4.29	25.71	70.00	3	5	4.66	5	5	0.933
Neighbourhood	69	0.00	0.00	5.80	24.64	69.57	3	5	4.64	5	5	0.928
Condition of property	67	0.00	0.00	1.49	34.33	64.18	3	5	4.63	5	5	0.928
Term of interest	70	0.00	2.86	7.14	22.86	67.14	2	5	4.61	5	5	0.922
Nature of transaction	70	0.00	0.00	5.71	40.00	54.29	2	5	4.54	5	5	0.907
Accessibility	70	0.00	0.00	11.59	30.43	57.97	3	5	4.49	5	5	0.899
Floor finish	69	0.00	0.00	15.71	35.71	48.57	3	5	4.46	5	5	0.893
Walls	70	0.00	0.00	15.71	35.71	48.57	3	5	4.33	4	5	0.866
Ceiling	70	0.00	0.00	17.14	32.86	50.00	3	5	4.33	4	5	0.866
Roof	70	0.00	0.00	17.14	34.29	48.57	3	5	4.33	4.5	5	0.866
Windows	70	0.00	0.00	18.57	31.43	50.00	3	5	4.31	4	5	0.863
Doors	70	2.94	0.00	11.76	38.24	47.06	3	5	4.31	4.5	5	0.862
Encumbrances	34	0.00	0.00	20.29	39.13	40.58	1	5	4.26	4	5	0.848
External works	69	0.00	0.00	18.57	42.86	38.57	3	5	4.20	4	5	0.840
Electricity	70	0.00	1.43	21.43	35.71	41.43	3	5	4.20	4	4	0.840
Fixtures and fittings	70	0.00	2.86	18.57	45.71	32.86	2	5	4.17	4	5	0.833
Pipe borne water	70	0.00	1.43	25.71	37.14	35.71	2	5	4.09	4	4	0.815
Age of property	70	0.00	2.86	34.29	27.14	35.71	2	5	4.07	4	4	0.812
Registration status	70	1.43	4.29	22.86	42.86	28.57	2	5	3.96	4	5	0.786
Number of rooms	70	0.00	7.25	27.54	39.13	26.09	1	5	3.93	4	4	0.779
Planning scheme	69	0.00	5.80	33.33	31.88	28.99	2	5	3.84	4	4	0.761
Building permit status	69	1.45	4.35	31.88	39.13	23.19	2	5	3.84	4	3	0.761

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<u>Proximity to other social amenities</u>	<u>69</u>	<u>2.90</u>	<u>11.59</u>	<u>20.29</u>	<u>34.78</u>	<u>30.43</u>	<u>1</u>	<u>5</u>	<u>3.78</u>	<u>4</u>	<u>4</u>	<u>0.748</u>
<u>Rent passing</u>	<u>69</u>	<u>1.45</u>	<u>7.25</u>	<u>34.78</u>	<u>33.33</u>	<u>23.19</u>	<u>1</u>	<u>5</u>	<u>3.78</u>	<u>4</u>	<u>4</u>	<u>0.741</u>
<u>Parties to transaction</u>	<u>69</u>	<u>8.57</u>	<u>7.14</u>	<u>40.00</u>	<u>25.71</u>	<u>18.57</u>	<u>1</u>	<u>5</u>	<u>3.70</u>	<u>4</u>	<u>3</u>	<u>0.728</u>
<u>Telephone</u>	<u>70</u>	<u>12.86</u>	<u>18.57</u>	<u>40.00</u>	<u>24.29</u>	<u>4.29</u>	<u>1</u>	<u>5</u>	<u>3.39</u>	<u>3</u>	<u>3</u>	<u>0.650</u>
<u>Rooms' orientation</u>	<u>70</u>	<u>0.00</u>	<u>2.86</u>	<u>7.14</u>	<u>22.86</u>	<u>67.14</u>	<u>1</u>	<u>5</u>	<u>2.89</u>	<u>3</u>	<u>3</u>	<u>0.533</u>

1 = Very insignificant 2= Insignificant 3= Quite significant 4= Significant 5 Very significant

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## Response to Reviewers' Comments

Observations	Response
<b>Reviewer 1</b>	
<p>3. The research method can be enhanced. At page 14, the author stated the formula which calculated the target score. It would be better if there is more discussion on the relevance of this formula to the study. Also, it would be important to discuss how the questionnaire data and the workshop data were analysed. It is also essential to add the discussion on reliability, validity and generalisability as well as limitation of this research.</p>	<p>This has been fully addressed at the research methodology section of the paper.</p>
<p>4. The research findings can be more thorough. For example, it would good there is more discussion on the findings from respondents of different professional and demographic background. The discussion of research findings can be further enhanced by academic literature. At the moment, it is supported by 2 literatures only</p>	<p>This has been fully addressed. The results have been expanded based on the nature of practice and years of professional experience of the respondents [refer to the section on research findings for details]</p> <p>Also the discussion section has been expand and with support from academic literature.</p>
<p>5. The discussion on the implications of this research is quite limited. Further discussion can be beneficial</p>	<p>This has been addressed. Refer to the section discussion of findings and conclusions.</p>
<p>6. Quality of communication is mostly good. The paper is well-written. The presentation of table can be improved. For example, it may not be necessary to put Table 3 as a separate table.</p>	<p>The presentation has been improved. Tables 3 and 4 have been merged. It is now Table 7.</p>
<b>Reviewer 2</b>	
<p>2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the relevant literature in the field and cite an appropriate range of literature sources? Is any significant work</p>	<p>Additional studies have been cited [Refer section on Property Market Data Sources and Challenges in Ghana]</p>

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<p>ignored?: <u>Reasonable section – rather a heavy reliance on ge and Harwood though.</u></p>	
<p>b&gt;3.Methodology: &lt;/b&gt;Is the paper's argument built on an appropriate base of theory, concepts, or other ideas? Has the research or equivalent intellectual work on which the paper is based been well designed? Are the methods employed appropriate?: <u>There is no conceptualisation.</u></p> <p>▲-----  <u>There needs to be some clarification as to why workshop held, how it was run and the purpose. This becomes clearer as results unfold, but it is not articulated in methods section. Given that the workshop was for 50 people it is not clear why a questionnaire was also done – this does not really seem to add much especially as only 70 were received.</u></p>	<p>The relevant literature was examined and based on that the indicators for the ideal or quality property market data were established to help drive the subsequent stages of the research. The literature review section (Property Market Data Sources and Challenges in Ghana).</p> <p>-----                  The reasons why the stakeholder workshop was run have been made clearer at the methodology section. This makes clearer as why both the workshop and the questionnaire survey were undertaken. To reiterate, the workshop among others was to complement the literature review to collect qualitative such as data sources, possible information fields for property market data collection template whilst the questionnaire survey was used to collect information to measure the extent of usage, relevance etc.</p>
<p>&lt; b&gt;4. Results: &lt;/b&gt;Are results presented clearly and analysed appropriately? Do the conclusions adequately tie together the other elements of the paper?: <u>The results are rather vague. There are many references to findings of a 'lack of reliable property market data'. Much more detail is needed on the issues and perceived problems.</u></p> <p>▲-----  <u>Idea of standard template and a databank are, I would suggest, fairly obvious. Contents of template suggested– where did they come from? If that was part of the discussion should be said so – can't believe that this amount of detail came from it. It does seem to assume that everyone would fill these in, honestly and completely – surely one of the issues around transaction information is unwillingness to reveal details? Who would run the databank?</u></p>	<p>The point of “lack of reliable market data” has been adequately explained. The literature discussions outlined what reliable/quality property market data is or should be. Based on that the situation in Ghana is examined. Issues such as incompleteness of data, data sources and integrity were highlighted in both the literature discussions and the discussion of findings sections. Besides, the study did not focus on determining whether there was a lack of reliable market data. Rather, given the fact that the lack of a reliable data has been established in the literature, the study was designed to find out the views of professional valuers on the sources of data they use and the extent of reliability of these sources. .</p> <p>Also, the reviewer’s suggestion that the idea</p>

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	<p>of standard template and a databank is obvious is well noted. However, what the study sought to find out was the perception of practitioners on the usefulness of such a template and its content.</p> <p>The contents of the template were obtained from the literature and the discussions at the stakeholder workshop. This has been made clear in (the section on Indicators for Reliable and Quality Data; the first paragraph of the section on Research Methodology and the last but paragraph on the section on Outcome from the Stakeholder Workshop)</p> <p>The participants at the stakeholder workshop suggested that the GhIS should take the initiative to build and run the databank and this was reported as one of the findings from the workshop.</p>
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