




Variations in rateable values in rating practice in Zambia: the role of mental models in value assessment

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ABSTRACT

Rating valuation is an essential process for local government taxation and revenue generation in Zambia. However, preliminary evidence indicates that the assessment of rateable value is problematic as the same statutory valuation process may lead to different value outcomes. This is especially evident when valuations are undertaken by public valuation surveyors on one side and private valuation surveyors on the other. This has resulted in disagreements in Rating Tribunal hearings at which private valuation surveyors represent the objectors. This paper questions why such differences arise. The paper finds that, besides information factors, a major cause is valuation surveyor-specific factors which, among others, include adoption of different methods and viewpoints. Therefore, the question arises: why do valuation surveyors have different viewpoints or “mental models” if the whole process is specified in the Rating Act of 1997? The study concludes that the Rating Act of 1997 is insufficiently specific concerning the actual calculation of the rateable value, leaving the interpretation of value to individual valuation surveyors. The paper argues that the explanation for differences in values can be found in understanding the “mental models” of valuation surveyors, hence going beyond conventional explanations.

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1. Valuation variances – the setting

As in many other countries, rating valuation is an essential process for local government taxation and revenue generation in Zambia. However, there is increasing evidence that the assessment of rateable value is problematic as the same statutory valuation process leads to different value outcomes, especially when valuations are undertaken by public valuation surveyors on one side and private valuation surveyors on the other. This is evidenced in disagreements in Rating Tribunal hearings at which private valuation surveyors represent the objectors.

The genesis of this problem is the use of the same definition of “market value” similarly defined as “price” in the “open market” (Government of the Republic of Zambia, GRZ, 1997, 1999) both for market valuations and statutory rating valuations. The result is a rather

Table 1. Evidence of valuation variance in rating.

| Cases | Assessed rateable value (K) | Objector's value (K) | Difference (%) |
|------------|-----------------------------|----------------------|----------------|
| Property 1 | 725,600 | 497,800 | 46 |
| Property 2 | 7,778,000 | 5,438,100 | 43 |
| Property 3 | 2,183,100 | 1,979,700 | 10 |
| Property 4 | 3,330,400 | 2,000,000 | 67 |
| Property 5 | 2,366,000 | 1,800,000 | 31 |

Source: Kitwe City Council, 2015–2016 Rating exercise.

confusing scenario. For instance, a property will generally have two “market values” at any point of time: at the lower end is a “market value” referred to as a “rateable value” used for local government tax purposes and at the upper end is another “market value” used for sale purposes.

Preliminary cases examined for this paper showed variances ranging from 10% to 67% between two rateable values, as shown in Table 1. All objections are accompanied by valuation reports from private valuation surveyors, therefore the objector's values shown in Table 1 are not arbitrary. Thus, the puzzle arises as to why there should be these wide differences when the basis and process of valuation is specified in the Rating Act No 12 of 1997 (Principal Act) and the Rating (Amendment) Act No 9 of 1999 (also incorporated in the Rating Act of 1997).

This paper examines three interrelated questions. Firstly, what is the perception amongst practicing valuation surveyors of the existence of this valuation variance? Secondly, what are the major causes of this valuation variance? Finally, how can this valuation variance be narrowed in future rating valuation exercises? This paper hypothesises that if differences in rateable values between the two groups of professionals are consistent over time, there could be different interpretations of the same law. Effectively, there may be a disconnect between “mental models” used in the execution of valuation assignments and formal rules and regulations stipulated in the Rating Act.

Incorrect assessment of value causes a number of problems for the valuation profession (see studies such as Hager & Lord, 1985; Whipple, 1995), including: (i) accusations of incompetence amongst practitioners; (ii) quarrels amongst valuation professionals; (iii) loss of credibility of the profession as clients wonder why two competent professional valuation surveyors should have such huge differences, especially during rating tribunal hearings; (iv) potential litigation in courts of law for negligence; and (v) loss of revenue in rates on the part of local authorities when properties have been undervalued.

The remainder of this paper is arranged as follows: section two reviews the literature on variance in property valuation practice generally while section three discusses the theoretical framework and methodological issues. Section four discusses the results and extends the discussion to alternative theoretical explanations of the causes of valuation variance in rating valuation practice in Zambia, with section five comprising the conclusion.

2. Valuation variance in valuation practice – a literature review

The valuation profession around the world has often struggled to justify its value outcomes when challenged. The defence has usually been that valuation is an art, hence the assertion that the assessed value is simply an opinion of the individual valuation surveyor. At other

times, the profession has had to re-define or re-classify its terms such as from “open market value” to “market value” to try and clarify the valuation outcome (Royal Institute of Chartered Surveyors [RICS], 1992). Comparative studies between “market prices” and “market values” have also been conducted to assess “valuation accuracy”, “valuation variance” or “margin of error” (Crosby, Lavers, & Murdoch, 1998). Previous studies, such as Addae-Dapaah (2001), Adebayo and Osmond (2010), Ayedun, Oloyede and Durodola (2012), Boyd and Irons (2002), Bretten and Wyatt (2001), Harvard (1996), Ogunba (1997) and others have generally concluded that valuation inaccuracy and valuation variance are a function of the uncertainty inherent in the valuation process. The debate over whether valuation is a science or art has extended to examining comparable evidence adjustment techniques, from intuition to more quantitative techniques (Baum & Crosby, 1995; Whipple, 1995).

The review of valuation literature shows that a number of concepts may be interchangeable in studies on “valuation accuracy” and “valuation variance”. In this paper, *valuation accuracy* is defined to be a measure of difference between assessed values and achieved market sales prices while *valuation variance* is defined as a measure of difference in value between two different valuation surveyors for the same property and at the same time. *Valuation error* or *margin of error* is a legally determined range by courts of law and used by courts as a test of negligence in valuations. *Valuation uncertainty* is the inability to determine a single correct value due to processes, assumptions, inferences and opinions inherent in the valuation process while *value range* is the difference between assessed value and the “correct” value as provided by expert valuation surveyors (Beale & Company, 2010; Boyd & Irons, 2002; Bretten & Wyatt, 2001; Crosby et al., 1998; French & Gabrielli, 2004; Harvard, 1996; Hordijk, 2005).

In most developed markets, such as the United Kingdom (UK) and Australia, valuation practice has generally evolved to an acceptable value gap of between 5 and 15% (Baum & Crosby, 1995; Bretten & Wyatt, 2001; Brown, 1991; Hager & Lord, 1985; Kummerow, 2003; Parker, 1998). For instance, in the UK, a number of studies have investigated the question of valuation variance and accuracy. Hager and Lord (1985) examined a case of 2 properties and 10 valuation surveyors who were asked to provide value estimates for use in the Investment Property Databank (IPD) index for property performance. The result was a difference in values ranging from 5% to 10% of a control value provided by an expert valuation surveyor. Crosby et al. (1998), however, contend that despite the 1985 findings by Hager and Lord, not much work was then undertaken in this area except for two studies by Brown (1985) and Hutchison, McGregor, Nanthakumaran, Adair, and McGreal (1996).

Brown’s (1985) investigation did not specifically examine valuation variance, but whether valuations could be used in place of transaction prices. Data were collected from 29 properties and, using regression analysis, Brown (1985) concluded that valuations were good proxies for transaction prices. Hutchison et al. (1996), unlike Brown (1985), examined issues of valuation variance using national and local valuation surveyors in the UK. Hutchison et al. (1996) found 80% of valuations fell around a mean of 20% valuation variance. Notably, even before these two studies, Baum and Crosby (1995) had cited “margins of error” between ± 5 and 15% as being acceptable.

Bretten and Wyatt (2001) also conducted a study in the UK amongst valuation stakeholders concerning the acceptable margin of error for mortgage loan security. Results showed that 36% of the respondents considered a $\pm 5\%$ margin of error as permissible, 40% favoured a $\pm 10\%$ variance while 24% of valuation surveyors considered a $\pm 15\%$ variance as

an acceptable margin of error. Skitmore, Irons and Armitage (2007) then sought to confirm whether the valuation accuracy threshold proposed by Brown, Matysiak and Shepherd (Brown, Matysiak, & Shepherd, 1998) of $\pm 5\text{--}10\%$ held, applying “meta analysis”, which is explained as “the analysis of data from a number of independent studies of the same subject (published or unpublished), especially in order to determine overall trends and significance ...”. Using a rigorous statistical approach on the IPD Database, Skitmore et al. (2007) found that a $\pm 5\text{--}30\%$ was a more realistic range than the $\pm 5\text{--}10\%$ reported in other studies.

In Nigeria, Ayedun, Oloyede and Durodola (2012) examined causes of valuation variance and valuation inaccuracy. Their study asserted that earlier studies in Nigeria had confirmed the existence of valuation inconsistencies and inaccuracies, such that the aim of their research was simply to examine the causes. The research approach was to administer questionnaires to 120 registered estate and valuation surveyors in Lagos State with 82 responses. Data were then analysed using simple statistical techniques. Their findings revealed “divergent causes of valuation inaccuracy and variance ranging from dearth of market data to lack of adequate training and experience on the part of the valuation surveyors” (Ayedun et al., 2012).

In an earlier study, Ogunba (1997) also examined the same question of valuation accuracy and valuation variance in Nigeria although this study was specific to investment valuations. In the absence of a database on property valuations and sales, this research used 30 valuation surveyors based in Lagos to value 2 residential properties using the investment method of valuation. Applying statistical tests, including regression and correlation analysis, the results showed a gap in excess of 5% between valuations and prices, with Ogunba (1997) concluding that valuations were not a good proxy for market prices.

Adebayo and Osmond (2010) examined the question of the “margin of error” in Nigeria from the perspective of both the valuation surveyors and client. Using 195 questionnaires for valuation surveyors in Lagos, the study found a valuation variance of 11.1% amongst valuations and 13.16% amongst mortgage valuation clients. Since the study concerned the “margin of error” as determined in court cases, Adebayo and Osmond’s (2010) final recommendation was that “courts and regulatory institutions might consider adopting and enforcing the lower of the valuation surveyor/client maximum margins of valuation error for commercial and residential valuations”.

Also in Nigeria, Ajibola (2010) focused on examining the causes of valuation inaccuracy in Lagos metropolis. Using a survey approach through the administration of 150 questionnaires to selected estate surveyors and valuers, the study concluded that valuation inaccuracy “result from dearth of market evidence (data), use of outdated valuation approach and clients influence” (*sic*) (Ajibola, 2010).

Addae-Dapaah (2001) similarly examined the question of valuation accuracy using data in Singapore. This study argued that the “criteria for determining ‘accuracy’ is highly a questionable consequent on which the valuation error, bias, etc. conclusion could be seriously flawed” (*sic*) (Addae-Dapaah, 2001). This study was based on 2441 valuations selected using stratified and random sampling, with regression analysis then applied to analyse the data. Addae-Dapaah (2001) concluded that, since the valuation exercise is laden with uncertainty, it would be more rewarding to concentrate on ways and means of reducing these valuation variations.

Valuation literature shows similar studies in other countries. For instance, Parker (1998) carried out a study on valuation accuracy in Australia where 5–10% margin of error, a mode

of $\pm 5\%$ and arithmetic mean $\pm 6.04\%$ were found. Hordijk (2005) also examined valuation accuracy in real estate indices in Netherlands while Harvard (1996) investigated the causes of valuation variance with particular interest in the impact of personality type on valuation surveyor behaviour. Harvard (1996) found that, amongst his respondents, 58% thought that 5–10% was an appropriate range for a typical, relatively simple standing investment property valuation.

That literature reviewed so far shows that the majority of valuation surveyors, whether in the UK, Australia, Netherlands or Nigeria, consider a 5–10% difference in assessed values as being reasonable. These studies show that valuation variance is endemic in the valuation process and needs to be carefully examined in specific environments. Except for Nigeria, most of the studies are in developed markets, being mainly based on a questionnaire and regression analysis methodology.

This study notes that the conventional method of questionnaire administration coupled with quantitative regression methods used in the examination of valuation variances to date, while helpful in isolating key causes of valuation variances, is unable to examine the underlying issues of interpretation of rules and regulations by individual valuation surveyors in the execution of their duties.

For instance, the Rating Act of 1997 in Zambia provides for the establishment of the Rating Tribunal, declaration of rateable areas and determination and levying of ordinary or special rates. However, the Act is silent on how the actual rateable value should be calculated, other than the provision that it should be a “price” of that property. Furthermore, the Act does not stipulate the processes, procedures or methods to be adopted for calculating this value for different types of properties. The fact that rateable values are assessed means that “price” has been interpreted within the understanding of the valuation profession, individual valuation surveyors’ perspectives and valuation firms/organisations practice.

This supports the assertion that where formal institutions (rules and regulations) are incomplete, informal institutions fill-in to achieve an outcome (North, 1990), whether that outcome is the intended one or not. Understanding such a filling-in mental process by valuation surveyors, while important to explaining these variances, is not easily captured in the questionnaire/regression analysis methodology. This study contends that such a mental process of filling-in is the key to explaining valuation variance in rating valuation practice in Zambia.

3. Theoretical framework and methodological issues

The concept of “mental models” is now commonly found in sociology, cognitive science and economics, particularly in heterodox economics (Denzau & North, 1994; Johnson-Laird, 2001; Richards, 2001; Thagard, 2010; Wrenn, 2006). Mental models are mental representations or frames through which humans perceive or interpret the world around them (Denzau & North, 1994; World Bank, 2015). They include “categories, concepts, identities, prototypes, stereotypes, causal narratives, and worldviews” (World Bank, 2015). Denzau and North (1994) show that mental models are used to “explain and interpret the environment” while Johnson-Laird (2001) adds that they are used for deductive reasoning and inference. From a cognitive science perspective, Thagard (2010) describes mental models as “psychological representations that have the same relational structure as what they represent”. Humans create these models over time through learning, observation and experience and in turn

use them to interpret their environment in solving problems. In less complex situations, institutions (rules) are sufficient to help reduce the complexity of the mental models that may be created (Denzau & North, 1994).

Hence the interpretation of rules and regulations, as institutions, is closely linked with mental models held by individuals. However, the outcome of this interpretation is also dependent on the quality and amount of information available. Wrenn (2006) further points out that the building blocks of individuals' mental models are instincts, habits and patterns of behaviour.

The theory surrounding mental models then asserts that, in order to achieve common outcomes, a community should possess "shared mental models" or alternatively "shared understanding" (World Bank, 2015) This paper uses this concept of shared mental models to extend the explanation of causes of valuation variance in rating valuation in Zambia.

The primary means of data collection was through questionnaire administration and in-depth interviews. The first step involved the identification of all registered and practicing valuation surveyors who are qualified and licensed to undertake valuations in Zambia. These data were obtained from the Valuation Surveyors Registration Board (VSRB), a statutory body established under the Valuation Surveyors Act, Cap 207 of the Laws of Zambia, which showed that 61 valuation surveyors were registered and practicing by the end of September 2015. These were distributed in 39 organisations, which are contended to form natural "clusters" within which sampling for data collection could be done. To overcome the shortcomings of questionnaire data, in-depth interviews were also conducted with senior valuation surveyors at the Government Valuation Department (GVD) and private firms. This study used various sources of data including (but not restricted to) desktop research, literature review, survey/questionnaire administration, in-depth interviews and various reports (Rating Tribunal reports and valuation reports).

In order to empirically test if there were differences in the mental models of valuation surveyors which could give rise to the variances observed, a two-tailed Fisher's Exact Test was used. Two hypotheses were formulated for this purpose:

- (a) Null Hypothesis (H_0): There are no statistically significant differences in mental models amongst valuation surveyors with respect to rating practice in Zambia
- (b) Alternate Hypothesis (H_1): There are statistically significant differences in mental models amongst valuation surveyors with respect to rating practice in Zambia

Methodologically, the study considered five parameters (rating valuation method; the rating basis; acceptable variance; principal causes of variance; and the dispute resolution approach) which were then analysed under three classes of strata – the valuation surveyor type (public or private valuation surveyors, with public being represented by government and local authority valuation surveyors), the education of valuation surveyors (Diploma/Bachelor's Degree holders or Master's Degree holders) and the valuation surveyor's experience (1–10 years or 11 years and above) in order to test the null hypothesis.

In-depth semi-structured personal interviews were also conducted with three (3) senior valuation surveyors, comprising one public and two private valuation surveyors. These interviewees are senior both within their organisations and within the valuation profession. In-depth interviews are a primary source of information that provide an opportunity to step into the minds of respondents (Mosimane, 2013), enabling respondents to reveal their thoughts and insights from their own perspective (Chitakunye, 2009).

A brief historical review of rating in Zambia revealed that, although it has its roots in English law, this tax was first introduced in the 1920s with the enactment of the Municipal Corporation Ordinance in 1927 and the Townships Ordinance in 1929 (Jumba, 2005). Both Ordinances allowed councils to levy a rate based on the “annual value” of the property. These laws were adequately discrete about the basis and timing of valuation. In later years, particularly after independence, the Municipal Corporation Act No 34 of 1965, the Townships Act No 35 of 1965 and then the Rating Act No. 33 of 1976 of the Laws of Zambia came into existence. (It should be noted that both the Municipal Corporation and Township Acts were repealed by the Local Administration Act No 15 of 1980 which was later replaced by the current Local Government Act No 22 of 1991) Many of the provisions in the Rating Acts of 1976 and 1997 were similar with regard to the frequency of revaluation and the defined basis of valuation, with the 1999 Rating Act being simply an amendment and incorporating in the Rating Act of 1997.

The rating exercise is currently regulated by the Rating Act No. 12 of 1997 (often called the “Principal” Act) and the Rating (Amendment) Act No. 9 of 1999 of the Laws of Zambia. A number of statutory instruments have been passed since then to exempt religious bodies, particularly churches, in the country as provided for in Section 6 of the Rating Act of 1997, e.g.: the Rating (Exemptions) Regulations of 2005, 2006 and 2009. These legislative instruments collectively provide the legal basis for the rating of all non-exempt properties in Zambia.

Since property rates have become the principal source of revenue generation for local authorities, all authorities strive to keep up with the legal requirement of updating their valuation rolls quinquennially (with interim supplementary rolls) (Chota, 2014). The Government Valuation Department (GVD) is legally empowered to undertake these rating exercises upon the request of a local authority (GRZ, 1999; Kabisa, 1994; Kabuka, 2008).

4. Results and discussion

For the purpose of triangulation of results, quantitative and qualitative data are presented and analysed separately with Section 4.1 focusing on the analysis of questionnaire data, Section 4.2 focusing on in-depth interviews and a discussion of both in Section 4.3.

4.1. Analysis of survey data

In order to test the null hypotheses, the analysis of questionnaire data was stratified into three classes – valuation surveyor type (public or private valuation surveyors), education of valuation surveyors (Diploma/Bachelor’s Degree holders or Master’s Degree holders) and the valuation surveyor’s experience (1–10 years or 11 years and above). Tables 3–5 show the descriptive details of this stratification.

The analysis showed that 6% of the respondents were from the local authorities and 22% from government (collectively referred to as public valuation surveyors) and 72% were from the private sector. In terms of education, 5% of the respondents held diplomas, 67% bachelor’s and 28% master’s degrees. For experience, the study found that almost 90% have a minimum of five years experience in general valuation practice. However, in terms of experience in rating valuation, public valuation surveyors seem to have been involved

in more rating exercises than private valuation surveyors who reported an average of five rating exercises.

As an entry point to the analysis, the study sought to confirm whether registered valuation surveyors do indeed equate “rateable value” to “market value”, as stipulated in the Rating Act of 1997. The survey found that the terms “market value” and “rateable value” are used interchangeably in practice amongst valuation surveyors. For instance, 44% referred to it as a market value while 56% as the rateable value and both are defined in relation to market price (Table 6). Therefore, the question still remained, why does the same basis result in different value outcomes? These results were interrogated further in the Fisher’s Exact Test.

On the acceptable difference in assessed values between two independent valuation surveyors, results showed that 56% of respondents regarded a 10% difference in rateable values as acceptable, 17% favoured a 15% difference and another 17% thought a 20% difference was acceptable. The remaining 6% opted for 25% and above (Table 7). Despite the difference in the level of favoured margins, there seemed to be consensus amongst valuation surveyors that there are differences in assessed rateable values amongst valuation surveyors in rating practice in Zambia. However, as shown earlier by data from the ongoing rating exercise by the Kitwe City Council, these differences can at times be much wider, hence the interrogation of these results through the Fisher’s Exact Test to explain this difference between perception and reality using the concept of shared mental models.

The study then sought to understand the main causes of these variances from the valuation surveyors’ perspective. The results in Table 2 show that the major causes cited were informational factors and valuation surveyor-specific factors, represented by 44% for each category. Others are market/general economic factors (8%) and legal factors (4%). These are further categorised into specific factors such as incorrect application of the law, lack of market transparency, lack of market data, incorrect measurements, etc.

At this point, it may be observed that valuation variance is a result of numerous factors. However, one cause hidden within the valuation surveyor-specific factors is the valuation surveyor’s interpretation of rating rules and regulations. For instance, while the organisational procedures for rating are very elaborate in the Rating Act of 1997, the calculation of the rateable value itself is left mainly to the interpretation of individual valuation surveyors. The Rating Act of 1997 in Section 7(1) simply defines value as “price” but does not necessarily provide the procedures to arrive at that “price”. This leaves the assessment of rateable value the same as that of sales purposes and subject to the interpretation of individual valuation surveyors, placing the valuation surveyor-specific factors as one of the main causes of valuation variance.

These findings indicate two interrelated issues which have the potential to explain the difference in rateable values, being the interpretation of valuation rules and regulations within the Rating Act of 1997 in respect of availability and processing of market information by individual valuation surveyors. In other words, individual valuation surveyors develop “mental models” or “dispositions” from the interpretation of rules and regulations and available data. Denzau and North (1994) link mental models to the human learning process.

As shown in Tables 8–10, on all accounts (except one) the analyses fail to reject the null hypothesis thereby suggesting that valuation surveyors in Zambia have the same understanding in relation to a number of technical issues. Effectively, they have shared mental models concerning rating valuation practice. Hence there is congruence on their responses to the questionnaire.

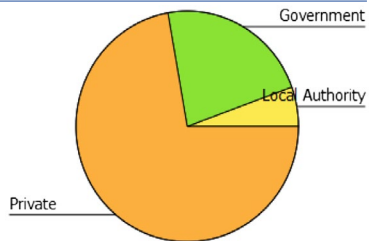
Table 2. Categorized causes of rating valuation variance.

| Class | Specific | No | % |
|-------------------------------------|----------------------------------------------------------|----|------|
| Informational factors | | 26 | 44 |
| | Differences in comparables | 7 | 12 |
| | Absence of a centralised market/Database | 9 | 15 |
| | Lack of market transparency | 1 | 2 |
| Valuation surveyor specific factors | Lack (insufficient) of comparable information/data | 9 | 15 |
| | | 26 | 44 |
| | Calculation/Measurement errors | 5 | 8 |
| | Lack of consultations amongst valuation surveyors | 1 | 2 |
| | Negligence | 3 | 5 |
| | Lack of experience | 3 | 5 |
| | Misapplication of the provisions of the Laws | 2 | 3 |
| | Lack of/Inadequate market research | 2 | 3 |
| | Too many assumptions | 3 | 5 |
| | Differences in valuation methodology | 3 | 5 |
| | Compromised/Corrupted valuation surveyors | 3 | 5 |
| Market and general economic factors | Lack of data sharing culture amongst valuation surveyors | 1 | 2 |
| | | 5 | 8 |
| | Unstable market conditions | 3 | 5 |
| Legal factors | Overwhelming workload | 2 | 3 |
| | | 2 | 4 |
| Legal factors | Time lags between valuation dates | 1 | 2 |
| | Vagueness in valuation instructions | 1 | 2 |
| Total | | 59 | 100% |

Source: Author's Field Survey 2015.

Table 3. Stratification of respondents by valuation surveyor type.

| Value Label | Value | Freq | Percent | Cum Percent |
|------------------------------------|-------|------|---------|-------------|
| Local authority valuation surveyor | 1 | 1 | 5.56 | 5.56 |
| Government valuation surveyor | 2 | 4 | 22.22 | 27.78 |
| Private valuation surveyor | 3 | 13 | 72.22 | 100.00 |
| Total | | 18 | 100.0 | |



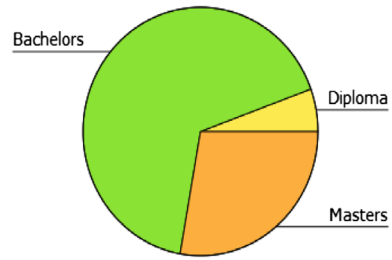
Source: Authors' field survey 2015.

Prima facie, the rating valuation method choices, the acceptable variance margins, the principal causes of valuation variances and valuation variance dispute resolution approaches are indifferent amongst valuation surveyors in Zambia. It is however observed that valuation surveyors with greater experience (11 years and above) have a clearer understanding of the rating basis as being market value (Table 10).

These results also point to another important aspect of this discussion. Where training and formal rules are clear, valuation surveyors will exhibit shared mental models or a common understanding of what should be done. However, this does not explain the remaining situations which require the interpretation of individual valuation surveyors, such as in the

Table 4. Stratification of sample respondents by highest qualification.

| Value Label | Value | Freq | Percent | Cum Percent |
|-------------|-------|------|---------|-------------|
| Diploma | 3 | 1 | 5.56 | 5.56 |
| Bachelors | 4 | 12 | 66.67 | 72.22 |
| Masters | 5 | 5 | 27.78 | 100.00 |
| Total | | 18 | 100.0 | |



Source: Authors' field survey 2015.

Table 5. Stratification of respondents by valuation experience.

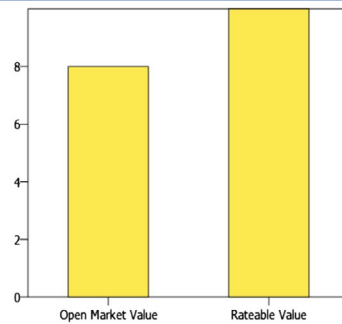
| Value Label | Value | Freq | Per cent | Cum Per cent |
|--------------------|-------|------|----------|--------------|
| 0 to 5 years | 1 | 2 | 11.11 | 11.11 |
| 5 to 9 years | 2 | 6 | 33.33 | 44.44 |
| 10 to 14 years | 3 | 3 | 16.67 | 61.11 |
| 15 to 19 years | 4 | 2 | 11.11 | 72.22 |
| 20 years and above | 5 | 5 | 27.78 | 100.00 |
| Total | | 18 | 100.0 | |



Source: Authors' field survey 2015.

Table 6. The definition/basis of rateable values.

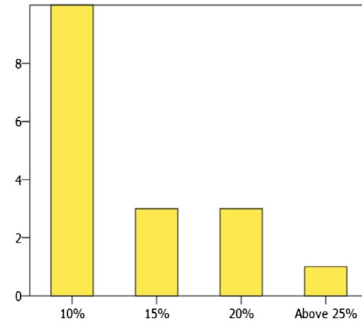
| Value Label | Value | Freq | Per cent | Cum Per cent |
|-------------------|-------|------|----------|--------------|
| Open Market Value | 1 | 8 | 44.44 | 44.44 |
| Rateable Value | 5 | 10 | 55.56 | 100.00 |
| Total | | 18 | 100.0 | |



Source: Authors' field survey 2015.

Table 7. Acceptable variance in the valuations.

| Value Label | Value | Freq | Per cent | Valid per cent | Cum per cent |
|-------------|-------|------|----------|----------------|--------------|
| 10% | 2 | 10 | 55.56 | 58.82 | 58.82 |
| 15% | 3 | 3 | 16.67 | 17.65 | 76.47 |
| 20% | 4 | 3 | 16.67 | 17.65 | 94.12 |
| 25% & above | 6 | 1 | 5.56 | 5.88 | 100.00 |
| | | 1 | 5.56 | Missing | |
| Total | | 18 | 100.0 | 100.0 | |



Source: Authors' field survey 2015.

calculation of the actual value. In others words, what are the informal interpretations which valuation surveyors use to fill-in where legislation is not explicit?

4.2. Analysis of in-depth interview data

As stated above, personal interviews aimed at eliciting the meaning that valuation surveyors attach to valuation variance and how this influences their understanding of valuation rules and regulations were also conducted. Narrative data were viewed as discourse and meanings that emerge as themes relevant to the research topic and provide the basis of interpretation (Chang & Horrocks, 2008). Interviews were conducted around six themes, being rating valuation methods, common understanding of the term “rateable value”, acceptable valuation variance, principle causes of valuation variance and ways of minimising valuation variance. To avoid repetition of findings from questionnaire data, summarised information from the in-depth interviews is included in Table 11.

In-depth interview results revealed a shared understanding on a number of major issues. For instance, on the determinants of the method(s) used for rating valuation purposes, I1 (GVD) asserted that “availability of information on value forming characteristics and comparables” was a key factor in the choice of valuation method. I2 (private valuation surveyor) further pointed out that “the direct comparison method is the generally accepted method to use in mass valuation exercises [since] it gives a fair reflection of values on a mass scale valuation like rating”. I3 (also a private valuation surveyor) concurred and mentioned that “depreciated replacement cost was used where comparables were not adequate to arrive at a meaningful valuation” using the direct comparison.

Legal factors were also highlighted as influencing selection of valuation methods. For instance I1 argued that



Table 8. Statistical significance of valuation variances between public valuation surveyors and private valuation surveyors.

| Ref | Factor(s) | Categories/Outcomes | | Public valuation surveyors | | Private valuation surveyors | | Fisher's Exact P Value | Decision (If P Value < 0.05, Reject H_0) |
|-----|---------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------|----------------------------|-------------------|-----------------------------|-------------------|------------------------|---------------------------------------------|
| | | First | Second | First (No and %) | Second (No and %) | First (No and %) | Second (No and %) | | |
| 1 | Rating valuation method(s) for residential use | Only Comparative Approach | Other methods too (including traditional and contemporary ones) | 5 100 | 0 0 | 9 69 | 4 31 | 0.2778 | Accept H_0 |
| 2 | Common understanding/Basis of the term "Rateable value" | Market value | Others bases or just "rateable value itself" | 3 60 | 2 40 | 5 38 | 8 62 | 0.6078 | Accept H_0 |
| 3 | Acceptable valuation variance | 5% to 15% | 16% to 25% | 3 60 | 2 40 | 10 77 | 3 23 | 0.5827 | Accept H_0 |
| 4 | Principal causes of valuation variance | Informational and valuation surveyor-specific factors | Market/General economic and legal factors | 2 40 | 3 60 | 11 85 | 2 15 | 0.0987 | Accept H_0 |
| 5 | Valuation variance dispute resolution approach | Only Rating Tribunal | Others methods of dispute resolution too | 1 20 | 4 80 | 6 46 | 7 54 | 0.5956 | Accept H_0 |

Source: Authors' field survey 2015.

Table 9. Statistical significance of valuation variances between valuation surveyors with Diploma/Bachelor's Degree and Master's Degree.

| Ref | Factor(s) | Categories/ Outcomes | | | | | | Fisher's Exact P Value | Decision (If P Value<0.05, Reject H ₀) | | | | |
|-----|----------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------|-------------------------|-------------------|-------------------|-------------------|------------------------|----------------------------------------------------|---|-----|--------|-----------------------|
| | | Diploma/ Bachelors' Degree Holders | | Masters' Degree Holders | | Second (No and %) | | | | | | | |
| | | First | Second | First (No and %) | Second (No and %) | First (No and %) | Second (No and %) | | | | | | |
| 1 | Rating valuation method(s) for residential use | Only Comparative Approach | Other methods too (including traditional and contemporary ones) | 11 | 85 | 2 | 15 | 3 | 60 | 2 | 40 | 0.5327 | Accept H ₀ |
| 2 | Common understanding/ Basis of the term "Rateable value" | Market value | Others bases or just "rateable value itself" | 4 | 31 | 9 | 69 | 4 | 80 | 1 | 20 | 0.1176 | Accept H ₀ |
| 3 | Acceptable valuation variance | 5% to 15% | 16% to 25% | 9 | 69 | 4 | 31 | 4 | 80 | 1 | 20 | 1.0000 | Accept H ₀ |
| 4 | Principal causes of valuation variance | Informational and valuation surveyor-specific factors | Market/ General economic and legal factors | 11 | 85 | 2 | 15 | 2 | 40 | 3 | 60 | 0.0987 | Accept H ₀ |
| 5 | Valuation variance dispute resolution approach | Only Rating Tribunal | Others methods of dispute resolution too | 6 | 46 | 7 | 54 | 0 | 0 | 5 | 100 | 0.1141 | Accept H ₀ |

Source: Authors' field survey 2015.



Table 10. Statistical significance of valuation variances between valuation surveyors with greater experience (11 years and above) and lesser experience (1–10 years).

| Ref | Factor(s) | Categories/Outcomes | | Rating valuation experience (1 to 10 years) | | | | Rating valuation experience (11 and above) | | | | Fisher's Exact P Value | Decision (If P Value < 0.05, Reject H ₀) |
|-----|---------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------|-------------------|------------------|-------------------|--------------------------------------------|-------------------|----|--------|------------------------|------------------------------------------------------|
| | | First | Second | First (No and %) | Second (No and %) | First (No and %) | Second (No and %) | First (No and %) | Second (No and %) | | | | |
| 1 | Rating valuation method(s) for residential use | Only Comparative Approach | Other methods too (including traditional and contemporary ones) | 7 | 88 | 7 | 13 | 70 | 3 | 30 | 0.5882 | Accept H ₀ | |
| 2 | Common understanding/Basis of the term "Rateable value" | Market value | Others bases or just "rateable value itself" | 1 | 13 | 7 | 88 | 70 | 3 | 30 | 0.0248 | Reject H ₀ | |
| 3 | Acceptable valuation variance | 5% to 15% | 16% to 25% | 5 | 63 | 3 | 38 | 80 | 2 | 20 | 0.6078 | Accept H ₀ | |
| 4 | Principal causes of valuation variance | Informational and valuation survey-specific factors | Market/General economic and legal factors | 7 | 88 | 1 | 13 | 60 | 4 | 40 | 0.3137 | Accept H ₀ | |
| 5 | Valuation variance dispute resolution approach | Only Rating Tribunal | Others methods of dispute resolution too | 3 | 38 | 5 | 63 | 40 | 6 | 60 | 1.0000 | Accept H ₀ | |

Source: Authors' field survey 2015.

Table 11. Summary of responses from in-depth interviews.

| Theme | 11, GVD | 12, Private valuation surveyor | 13, Private valuation surveyor |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Selection of valuation method(s) | Direct comparison method as main method availability of information on value forming characteristics and comparables | Direct comparison method is the generally accepted method to use in mass valuation exercises [since] it gives a fair reflection of values on a mass scale valuation like rating | Direct comparison method depreciated replacement cost is used where comparables are not adequate to arrive at a meaningful valuation |
| Principle causes of valuation variances | Unreliability of comparable data used market players do not share information time lag between the date of valuation and the date of compilation of the Valuation Roll | Unreliability of comparable data used market players do not share information conservative rates are used in rating valuations to avoid litigations. rating valuation is mass valuation so less attention is paid to details in the field unlike open market valuations which are individualised. | Unreliability of comparable data used market players did not share information conservative rates are used in rating valuations to avoid litigations rating valuation is mass valuation so less attention is paid to details in the field unlike open market valuations which are individualised |
| Market/general economic and legal factors | The property market in Zambia is not open there are no legal statutes to compel players in the market to be transparent in their dealings in the market | The property market in Zambia was/is not open fees chargeable play a role in the variance gap. Rating valuation fees are so low and not commensurate to detailed valuation attention. | The property market in Zambia was/is not open |
| How to minimise valuation variances | Increase the proficiency of players in the property market to enhance uniformity and similar reasoning in assessing values, Valuation Rolls should be prepared as at the date of value compilations, Increase the levels and knowledge in practical valuations by having continuous professional development. | Use staff who are conversant with rating valuation processes, all valuation surveyors should take it upon themselves to abide by professional ethics in executing their work, whether it is rating valuation or market valuations. Valuation surveyors should always apply themselves to upgrading their valuation skills in line with the conditions obtaining in the market. | All valuation surveyors should take it upon themselves to abide by professional ethics in executing their work, whether it is rating valuation or market valuations. Valuation surveyors should always apply themselves to upgrading their valuation skills in line with the conditions obtaining in the market. CPD is therefore very important. |

Source: Authors' field survey 2015.

as much as the statute does not dictate the method of valuation to be used, it however stipulates that values should be open market values and thus directly having an effect on the method to be adopted in assessing the values

with I2 and I3 concurring.

A common understanding of the term “rateable value” was also reflected by interviewees. Their general perception was that there is “no difference between rateable and open market values because rateable values, according to the Rating Act, are open market values” (I1, GVD). Equally I2 and I3 asserted that “rateable values according to the Rating Act are open market values”.

Interviewees further emphasised that “major valuation errors cannot arise out of the method of calculations used, unless in circumstances where wrong data is fed into the computer due mainly to human error” (I1, GVD). I2 also emphasised that the “most important thing to have is accurate data. Garbage in, garbage out”. Interviewees highlighted the fact that valuation variance can be attributed to field information and all value forming characteristics collected by field assistants (I1, GVD; I2, private valuation surveyor; I3, private valuation surveyor).

In addition to the human error factors, interviewees also expressed their professional views regarding the inability to overcome valuation variance, claiming “no two values on the same property from two valuation surveyors will be the same” (I1, GVD; I2, private valuation surveyor) with the basis for this understanding being that “valuation is an art that is subjective” (I1, GVD; I2, private valuation surveyor). In accordance with this interpretation, the acceptable valuation variance was regarded as being 10–15% (I1, GVD), 15–20% (I2, private valuation surveyor) and “less than 5%” (I3, private valuation surveyor).

4.3. Discussion

The data analysis undertaken points further attention to the basis of value as a source of valuation variance, particularly at the time the actual calculation of rateable value is undertaken. As noted above, property rates are based on the market value of land and improvements subject to a number of assumptions as stipulated in Section 7 of the Rating Act of 1997. Many of these assumptions do not directly appear as *prima facie* bottlenecks. However, a critical assessment identifies two fundamental issues that can potentially contribute to valuation variance. Firstly, these assumptions require value judgments by valuation inspectors on site, some of whom might be inexperienced valuation assistants or may not possess the necessary vocational skills.

Consider, for example, the assumption on repair and maintenance. Section 7 (1d) of the Rating Act of 1997 provides that “all repair and maintenance which would be carried out by a prudent vendor prior to the sale have in fact been carried out” (GRZ, 1997). Such an assumption leads to a number of questions including: which repairs and maintenance are expected to be carried out by a prudent vendor?; is merchandising maintenance also inherently assumed?; if so, to what extent?; and do the valuation inspectors have the requisite skills to make these adjustments?

Secondly, the rating exercise involves a number of stages including (but not restricted to) inspections with the actual valuation calculations at a later stage (Kabuka, 2008). In certain instances, inspections and valuations are carried out by different individuals or after such a long period of time that the opinion held during the inspection may not be adequately

captured in the final valuation. Evidently, the legislation displays several shortcomings which require filling-in during the valuation process, having far-reaching implications on value outcomes.

Further, this paper finds that the conventional method of questionnaires and quantitative regression methods used in studies of valuation variance are unable to adequately probe the issue of interpretation by valuation surveyors of regulatory issues (rules, regulations and guidelines) and organisational structure. In trying to explain the causes of valuation variance in Zambian practice, this paper concludes by offering a theoretical viewpoint positing that, in order to understand these causes, there is also a need to explain the shared mental models of valuation surveyors as they carry out the actual assessments.

Three strands of reasoning within valuation literature support the assertion that it is unreasonable for the legislature to assume that, because the Rating Act of 1997 equates “rateable value” to “market price”, it has provided sufficient guidelines on the assessment of that value. The first strand focuses on the valuation surveyor’s influence on market price (see Diaz & Wolverton, 1998; Schuck & Levy, 1999). The common adage is that valuation surveyors “read” prices from the market and hence do not “create” value. Therefore, in the use of market values as proxies for market prices, valuation surveyors are presumed to be independent of the value creating process, but a number of studies show that valuation surveyors and estate agents do influence market prices (see for instance Evans, 1995; Jud & Frew, 1986; Mooya, 2009).

The second strand focuses on the fact that uncertainty is endemic in the property valuation process. For instance, Kummerow (2003) asserts that “valuation is a prediction of human behaviour under uncertainty”, following other scholars such as Ratcliff (1972) and Squirell (1985). Denzau and North (1994) also argue that “under conditions of uncertainty, individuals’ interpretation of their environment will reflect their learning”. Within mainstream economic analysis, prices which valuation surveyors mimic are understood as an outcome of an interaction of buyers and sellers who are self-determined, autonomous, utility-maximising and rational (Wrenn, 2006).

However, studies show that individuals who participate in the market where “price” is generated are not always “rational”, as they rely in many cases on “myths, dogmas, ideologies and ‘half-baked’ theories” (Denzau & North, 1994) to make these choices. It is partly from this reasoning that professional valuation surveyors are often called in to advise on values on the presumption that they will provide an opinion of value which is beyond subjectivity. However, valuation surveyors, being human, are not always objective, given the uncertainty inherent in the environment and their mental disposition at the time of carrying out these valuations.

The third strand contends that even the concept of “market value” is arguable amongst valuation surveyors. For instance, Mooya (2009) argues that market value, “as a knowable, determinate and autonomous figure, does not exist because market conditions necessary for its emergence are not found in reality”. What is, therefore, achievable in reality are often prices which are outcomes of subjective bids within an imperfect environment.

From these three strands of reasoning, it can be concluded that “market value” is not a “knowable, determinate” outcome of the valuation process, but rather an outcome from a subjective process validated by shared mental models of practicing valuation surveyors, hence the argument that “market value” is an opinion of the valuation surveyor. Being an opinion, the implication is that the subjective values assessed by each valuation surveyor

will be heavily dependent on the learning process of that valuation surveyor and the mental representations formulated from that process.

In relation to property valuation, information factors, as identified in Table 2 above, will have a bearing on the development or modification of these mental models. This means an inadequate supply of quality information may result in valuation outcomes which may be suboptimal. Similarly, a lack of congruence on the source of this information may mean disparate mental models amongst the valuation fraternity resulting in greater valuation variance. Hence, the key to reducing valuation variance is to have “shared mental models” within the valuation profession.

Furthermore, individual valuation surveyors, as actors/agents in the valuation process, are constrained or enabled to act in particular ways both by their mental constructs or representation and also by the formal rules and regulations. In other words, their actions are structured both by the formal structure of and by their understanding (belief) of those rules and regulations. In a process of “interactive agency” (Wrenn, 2006), individual actions are constrained by the structure of rules and regulations while they, in turn, effect changes, albeit informally, on the structure. Therefore, while both the individual and the structure are independent, they are at the same time interdependent in some “symbiotic” pattern. The individual’s perception of rules, based on the person’s mental constructs, will have an effect on behaviour and outcomes (North, 1990).

These mental constructs therefore constitute the valuation surveyor’s interpretation of the provisions of the Rating Act, specifically in relation to the basis of valuation but also on how they have been “cultured” through Continuous Professional Development (CPD) and “peer-influence” to view and undertake the whole valuation exercise. They are further expected to follow the formal valuation rules stipulated in the Rating Act and the associated regulations and mechanisms within their organisations on how this should actually be done.

From the foregoing, it can be concluded that where formal rules and regulations are incomplete, as is the case with the Rating Act for the calculation of rateable values, valuation surveyors will rely on other sources for guidance or fill-up with informal rules and regulations. This then contributes to wider differences in assessed values.

Because rating valuation is a statutory process, there is a need to develop detailed guidelines in terms of rules, procedures and regulations for the calculation of the rateable value to minimise the influence of individual interpretations on the assessment of rateable value. An observation arising from valuation literature is that “value” can be qualified in specific contexts (Whipple, 1995), thus rateable value does not need to be equated to “price” in the market.

5. Conclusion and recommendations

It may be concluded that, in view of the differences in rateable value assessments amongst valuation surveyors, there may be a need to have specific guidelines on how statutory values should be calculated. Ambiguity in the basis of valuation will continue to be a contentious issue under the current legislation. A market value basis without clear statutory guidance gives rise to varied values (Ayedun et al., 2012).

This study also finds that the demand for data by other valuation methods makes their application difficult, thus valuation surveyors opt for the simplest valuation method to compensate for such inadequacy in data. However, it does appear that clients of valuation

services are sufficiently sophisticated to demand that Zambian valuation surveyors start looking for more advanced solutions to information problems in order to enable valuation surveyors to apply more advanced valuation techniques.

That literature reviewed also showed that individuals build mental models which they use to interpret and explain their environment. Equally, valuation surveyors build mental models from their schooling process and from the information available which affect valuation outcomes. Therefore, the more diverse the models, the higher the disparity in assessed values. The rating valuation policy solution is therefore to develop a policy framework and a basis of valuation (and method) for rating purposes which is different from the current “market price” basis as used for market transactions.

This study contends that the problem of valuation variance is not specific to Zambia, hence these findings should prompt other countries to review causes of variance from different perspectives as identified in this paper. As noted earlier, many studies of valuation variance do not go beyond the descriptive analysis of questionnaire data. This study extends the analysis to individual valuation surveyor’s interpretation of both the formal and informal rules within the concept of “shared mental models”, making the study novel in that sense.

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