

Effects of Behavioural Uncertainties In Property Valuation

Hishamuddin Mohd Ali

Faculty of Built Environment and Surveying, Universiti Teknologi Malaysia, 81310, UTM Johor Bahru, Johor, Malaysia

Gabriel Hoh Teck Ling, Ibrahim Sipan, Mustafa Omar, Kamalahasan Achu

Faculty of Built Environment and Surveying, Universiti Teknologi Malaysia, 81310, UTM Johor Bahru, Johor, Malaysia

ABSTRACT

Psychological and behavioural dimensions play a vital role in influencing Valuers' valuation judgements, thus affecting the validity, accuracy and discrepancy (reliability) of property values. However, behavioural uncertainty research, specifically within the discipline of property valuation among property Valuers, is still limited, particularly in developing countries with their unique property valuation systems, and has been so far conducted in an independent, separate manner, which looks into the behavioural uncertainties non-connectedly. Therefore, this study aims to examine the behavioural uncertainties of local Valuers in property valuation, vitally addressing the questions of behaviours involved and how a behavioural uncertainty is associated with other behavioural issues. This study adopted a phenomenological design, where a session of focus group discussions with 10 public-private Valuers from Johor Bahru, Malaysia was conducted. Results show that local Valuers were subject to various, simultaneous interwoven behavioural uncertainties, which ultimately form a behavioural framework of associations, including biases, client influences, heuristics, professional ethics, and opportunistic behaviours in making their valuation judgement. Biases (subjective preference) and professional ethics (negligence and carelessness) are the two most dominant behaviours involved in local property valuation. These findings provide policy insights to both public and private Valuers, academicians, and the market about the importance of understanding behavioural property economics, that crucially enables them to collectively create a sustainable property valuation environment.

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Corresponding Author Contact:

gabriel.ling@utm.my

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1. Introduction

Traditionally, property disciplines are inescapable from applying the rationalist approach and the expected utility theory, where both repose on three fundamental assumptions (Mullainathan and Thaler, 2000). People are assumed to act independently based on full and relevant information, have rational and correct preferences among outcomes that can be identified and associated with a value, and firms are assumed to optimise decisions by profit maximising, while individuals seek to maximise their utility. However, particularly in property valuation and investment, it

appears to negate these assumptions; studies demonstrate that judgements can be sub-optimal and is involving an irrational behaviour (MacCowan and Orr, 2008; Kucharska-Stasiak, 2013; Warren-Myers, 2015). Hard information, especially in fluctuating, illiquid markets of developing countries like Johor Bahru, Malaysia where property data/information transparency and sharing, is still an issue, and on a property's heterogeneous legal and physical characteristics are imperfect, asymmetric, not up-to-date, inaccurate, unreliable, inadequate and unavailable; thus, high transaction costs on searching information have resulted. There is evidence suggesting that property Valuers are

exposed to various assumptions/speculation, emotional uncertainty, bounded/non rationality, heuristics and cognitive biases and errors, negligence (misconduct), client's influence and other behavioural issues, in making valuation decision (Irohah et al., 2014). Thus, research into such problems of behavioural uncertainty and subjectivity, signifying symptoms of errors is indicative of the emergence of new trends in property valuation.

Such compounded behavioural uncertainties (biases) problems that lead to systematic errors are imperative to be tackled as they result in loss of investment and confidence of clients (Ayuthaya and Fredric, 2014; Baffour Awuah et al., 2017). The posed inaccuracy, unconvincing, and discrepancy issues of property valuation due to some of the above behavioural subjectivities and uncertainties are not foreign to Malaysia (Achu, 2013; Nasir, 2006), therefore leading to strong criticism that national valuation is claimed to be of poor quality and illogical (Ismail and Buyong 1998). Kucharska-Stasiak (2013) asserted that behavioural valuation issues are inevitable because mathematical calculation will eventually rely on subjective interpretations and other behavioural uncertainties of Valuers, making appropriate adjustments and assumptions in the valuation models (Crosby, 2000). Thus, one must accept that valuation (estimation) is not pure science; the value is predominately derived from the art aspect (Warren-Myers, 2015), which has a potential for variation, and biases.

While there is substantial and growing research on the 'science' aspect of the methodological model, covering the systematic selection and mathematical analysis of comparables and parameters in ensuring property valuation validity, the descriptive 'art' behavioural property valuation uncertainty is often neglected, particularly on how property Valuers' subjective decision-making process contributes to the inaccuracy and uncertainty of valuation. Studies by Klamer et al., (2017), Kucharska-Stasiak (2013), Lowies et al., (2013), Whittle et al., (2014), Irohah et al., (2014) and Warren-Myers (2015) acknowledge this gap, and they recommend further research into the need of behavioural uncertainties of Valuers in property valuation.

Such knowledge lacuna is particularly true and relevant for the local property context (i.e., the city of Johor Bahru, Malaysia) because by far there is no single empirical behavioural valuation research undertaken. Thus, learning that conventional normative valuation alone will never suffice for the local valuation status quo, this exploratory-descriptive paper aims to revise the notions embedded in the neo-classical theory as well as to transcend the "science" aspects of valuation. The study introduces a more comprehensive set of behavioural economics and psychological dimensions to the local property valuation decision-making processes, after considering the fact that only a few, limited types of cognitive biases anchoring, and adjustment heuristics have been studied in earlier research (see Gallimore, 2004; Gallimore et al., 2000; Gallimore and Gray, 2002; Diaz, 1997; Diaz et al., 2002, 2007; Irohah et al., 2014).

By delving into the area of behavioural valuation of property, this qualitative study formulates a behavioural model by investigating

the local Valuers' behavioural uncertainties and their influences on property valuation. More specifically, the study seeks to answer the following questions:

- (i) What are the behavioural uncertainties influencing the Valuers' property valuation decision-making? and
- (ii) How uncertainties (behavioural components) influence the Valuers' decision-making in property valuation? or under what circumstances/conditions that the Valuers are to be subject to behavioural uncertainties?

The paper is structured as follows. Section 2 begins with a literature review, where it analyses behavioural economics theories and psychological literature, serving as a theoretical underpinning. This covers various types of behavioural uncertainties and their application to property valuation process and final figure decision. Next, in Section 3, it continues with a full description of the qualitative research methodology used to gather and analyse the sampled respondents' data on their perceptions, experiences and facts for the posed research questions. While a detailed set of results and findings are presented in Section 4, discussions of the results are shown in Section 5. Finally, section 6 presents the conclusions, implications and recommendations of the research.

2. Behavioural Uncertainties In Property Valuation

This paper conceptualises psychology and behavioural economics in a property valuation discipline, where its literature mainly adopted from behavioural finance and investment of property and stock markets as well as little from property valuation (see Whittle et al., 2014). The literature also spans the recent short review by Mohammad et al., (2018) on six main behavioural factors influencing Valuers' judgement in property valuation, an empirical case study of property valuation variance in Nigeria by Atilola et al., (2019), MacCowan and Orr's (2008) fund management and property disposal and other types of property transactions instances associated with behavioural disciplines, Gallimore's et al., (2000) small company's property investment, Salzman and Zwinkels' (2013) corporate and household housing investment and valuation, Ayuthaya and Fredric's (2014) property valuation and investment confidence, and Baum's et al., (2000) valuation bias and client influences on commercial property. Succinctly, despite the various scopes of properties, the main behavioural uncertainties discovered confirm Diaz and Hanz's (2007) four lines of inquiry in behavioural valuation, which emphasise (i) departures from normative models, (ii) comparable sales selection, (iii) valuation biases (Sherin, 2002), and (iv) agency-related impacts or feedback.

2.1 Biases and Heuristics

The issue of a Valuer's misjudgement has often been attributed to the adoption of a cognitive heuristics habit (Diaz, 1997; Gallimore, 1996). A heuristic is the use of simplifying cognitive shortcuts in solving complex problems or making a decision (Simon 1978). As the complexity and detailed information increase, people prefer to use a heuristic to eliminate alternatives, often with just a limited amount of information search and

evaluation (Gallimore et al., 2000). This heuristic rule can ease Valuers' time and effort, i.e., less transaction cost of searching and information needed in making a valuation decision. There are various types of heuristics or biases, namely representative heuristic, availability heuristic, anchoring and adjustment heuristic (Tversky and Kahnemann, 1974), and positivity/confirmation heuristic (Evans, 1989).

For example, Tversky and Kahneman (1973) indicate that a person evaluates the frequency or probability of events by availability. Quan and Quigley (1991) show that Valuers make use of their memory, past successful and unsuccessful experience, lesson, belief/philosophy, principles, preferences, perception, intuition, sentiments, interpretation, and human capital (prior knowledge/expertise), when valuing a property. Information via metacognition is more readily and easily available and retrieved compared with macroeconomic, market and property specific data. Valuers will prefer and choose the most recent information or the information that is most vividly recalled and easily obtained (Baum et al., 2000; Diaz et al., 2002). This recency bias/anchoring is based on 1 or 2 examples, rather than by how frequently the event has occurred. The availability heuristic is closely related to confirmation/positivity bias and anchoring, and other types of behavioural biases as presented in the following sections.

The representative heuristic is similar to stereotyping. A Valuer classifies an event with others of a type that they are familiar with. As contented by McCowan and Orr (2008), it is suggested that valuation decisions are biased towards the markets that the Valuers are more familiar with and hold good-quality data. Stereotyping also applies to the herding behaviour or cascade effect. It induces one Valuer to follow the herd (majority of Valuers) by relying on their valuation information, rather than on rigorous independent analysis and private information. Such behaviour occurs because Valuers are concerned with what others think of their valuation decisions; imitating other Valuers' decision makes them felt that their valuation is more validly acceptable and correct. This tendency is accentuated in the case of decisions, involving high uncertainty, regarding pricing of heterogeneous assets in land and commercial/industrial assets or technical knowledge in the valuation process.

The third heuristic involves an anchoring and adjustment bias. Valuers tend to solve problems by forming a-priori value estimates as a reference to what the answer/standard might be (Iroham et al., 2014). Aside from a Valuer's knowledge and experiences (see the availability bias), this anchoring/benchmarking process can be performed through a personal contact of experts' opinions (e.g., based on other Valuers (colleagues)/property agents, negotiators as informers) (Yiu et al., 2006), via a price asking technique (see Diaz et al. 1999). Also, relying on the uncompleted contract price of a comparable property, sensationalist news media or advertisement, which are deemed as 'noise trading' (see Shiller, 2002; Salzman and Zwinkels, 2013), as well as anchored onto their previously appraised values/transacted price for a similar property (Clayton et al., 2001) are considered as part of the anchoring bias. For instance, a semi-rational model shows that property Valuers are

often over-confident by overreacting when the informer's private information is confirmed (Salzman and Zwinkels, 2013). This ease of recall also adds a false impression of the importance or frequency for that information, giving an erroneous interpretation of the market (Gallimore et al., 2000). Another instance is that at times, media or public's urges may exaggeratedly intensify the recent property price hikes or market boom, which consequently induces irrational decision of some Valuers to overreact by following the current, trendy property price increase.

The fourth heuristic, the positivity/confirmation bias, was identified when Evans (1989) noted that humans have a fundamental tendency to seek information that is consistent with their current presupposition, beliefs, principles or philosophy, and avoid the collection of potentially falsifying evidence, although the latter is valid. In this regard, it is suggested that Valuers look for ways of confirming their perceptions of valuation. In general, people tend not to adjust their expectations easily because they look around for a logic which explains and reinforces their beliefs. Gallimore (1994) and Baum et al., (2000) argue that Valuers tend to eliminate or underreact to contrary evidence than to evidence that supports their existing views. This bias may also lead Valuers to manipulation and adjustment of existing information just to fit in and confirm their ways (Harvard, 2000) (see the opportunism concept of Williamson, 1975). Besides, Valuers are also subject to the satisficing effect. It is a process by which a Valuer in selecting a course of action takes the first opportunity, that meets the minimum criteria. The search for alternatives then ceases, even though there is no time pressure or strict deadline imposed by a client (Gallimore et al., 2000). Such behaviour can be associated with the conservatism bias, where conservative Valuers are found to be unwilling to change their valuation opinion and decisions. This bias can also be applied to senior Valuers who may be unwilling to incorporate new information which is relevant to the current market. Most of them view that the decisions made in the past (experience) were the major, sufficient basis of the decision-making process by the senior Valuers.

Next, over-confidence is, likened to over-optimism, a bias that originates from a mental illusion of control and knowledge, and possibly from other forms of above biases (herding bias, and personal internal anchoring). Over-confidence includes the hindsight bias, which is considered as part of the availability bias. That is, Valuers may think they knew specific events (property prices) in advance. Such oversimplifying behaviour refers to an underestimation of risks. Due to an arbitrary reference point obtained from the speculative perceptions and vast experience (past decisions) and reputational establishment, sophisticated and experienced Valuers are likely to be overconfident and believe in their own ability to judge asset values by ignoring current information in their analysis (Salzman and Zwinkels, 2013).

As emphasised, the selection of data from the same database source for valuation is not a mathematical exercise, but a heuristic process of Valuers' subjective preference or professional intuition and gut feeling (Klein and Kahneman, 2009). The subjective selection of market and comparables input is inevitably associated with the above biases (systematic errors, e.g., herding, anchoring

and availability), random deviations and/or client's influences (Mallinson and French, 2000; French and Gabrielli, 2003). For example, a significant discrepancy or variation of valuation may result not only from the choices of different markets and comparables (property) input data (e.g., its location), but also from different valuation principles/assumptions and methodological analysis and calculation techniques used (Havard, 2000).

2.2 *Negligence, Professionalism, and Misalignment of Interest*

The above heuristics and biases could also ensue in negligence. At times, a Valuer, in arriving at his valuation, may have miscalculated and wrongly reported the area/size of the property or failed to make a thorough site/property inspection, therefore overlooking essential comparables features and market data to be included in the valuation report. Such negligent behaviour of Valuers will eventually result in an over or under valuation of a property (see Mallinson and French, 2000; Crosby, 2000 on the case laws of valuation negligence). Such carelessness or negligence, especially the mala fide one, is deemed as unethical or unprofessional behaviour of a Valuer (Levy and Schuck, 1999). Atilola's et al., (2019) descriptive statistical findings asserted that negligence and unprofessionalism of a Valuer are among the significant factors causing distortion to the property values. Unethical/unprofessional valuation is also related to the issue of the misalignment of interest (perverse incentives) that causes moral hazard (Cho and Megbolugbe, 1996). Also, as Levitt and Dubner (2005) explain the roots of misalignment, it could be partly due to information asymmetry.

Oftentimes, Valuers, considered as experts, are better informed and more knowledgeable than their clients who are laypersons; thus, the former tend to opportunistically overstate the value of a property because of their incentive to set the appraised value to be equal to or greater than the transaction price, which that increases their revenues. Moral hazard could be resulted due to undue institutional and political intervention (regulatory requirements) surrounding the property appraisals, which imposes a heavy burden of proof for low appraised values on public Valuers (Baum et al., 2000). Such political information, which favours the government and public Valuers, for low values (or undervaluation) is unfair to their clients who are not aware of the internal political decision (see the issue of information asymmetry). For opportunistic (unprofessional) public Valuers have no position to reject their top management's decision of the government, while they wish to safeguard their valuation job, albeit ethically it could be right to do so if the call for undervaluation is mala fide, this phenomenon is considered a conflict of interest (see social dilemma). Besides, unethical conduct and moral hazard in valuation also involve the Valuers in accommodating the requirements of a specific client, instead of being an impartial, objective and independent Valuer (Amidu and Aluko, 2007).

2.3 *Client Influences*

Client influence or pressure is another behavioural uncertainty, concerning whether a Valuer subjects himself to principal-agent moral hazard. The following is a summary of client influence characteristics and circumstances affecting the valuation outcome, which include: (i) client types- sophisticated, individual/institution client; (ii) procedural (methodological) influence; (iii) integrity of Valuers; (iv) age and experience of Valuers; (v) size of valuation firm; (vi) client size (firm and income generation) and their relationship with Valuers (see Levy and Schuck, 1998, 2005; Achu, 2013). The above agency issue arises because it provides the 'mutuality of interests' in terms of economic dependence and/or the provision of non-auditing services by the valuation firm (a win-win situation) between a Valuer and a client (Baum et al., 2000). Generally, various clients (developer, bankers, and chargor) pressure Valuers by requesting or forcing them to alter the value estimates in order to meet the clients' expectation (Kinnard et al. 1997; Wolverton and Gallimore, 1999), even without supporting documentation.

As Gallimore and Wolverton (1997) asserted, rather than independently assessing the property value, Valuers are merely to validate the pending price provided by their clients. Levy and Schuck (1999) found that both sophisticated pressure, involving the use of property and market knowledge and information, the process of valuation including changing the valuation purpose, addition and omission of input parameters or comparables and other transaction data and unsophisticated pressure, using the threat of withholding and delaying fee payments or future assignments, are faced by Valuers. Typically, a client's size matters; the bigger the client in terms of the firm and amount of fees given, the more likely are Valuers to revise their initial value to fit their client's demand. Valuers may think it is an acceptable practice and is rational to safeguard business relationship and for future instructions. However, there are instances where neither the client size nor the level of value adjustment influences Valuers' decisions. Such resistance of influence is not impossible and is lesser, if below conditions, namely (i) firm integrity and high professionalism of Valuers, and (ii) large-size and multi-service valuation firms with less economic dependence on clients, are observed (Achu, 2013).

Moreover, it is also illustrated that the client's influence, ethical issues, heuristics, and negligence are linked to biases, due to their adverse selections made. All these biases/moral hazards can ultimately be associated with the self-interest or opportunism concept (Williamson, 1975; see also Ling et al., 2019). By virtue of the personal interest, incurring less transaction cost in terms of time and effort required, Valuers may rather be subject to unprofessionalism by choosing to dwell in their conveniently quick subjective experiential and opinionated assumptions, or even by succumbing to a client's undue influence, instead of seeking for mathematical evidence in justifying the property's value.

3. Methodology

The primary research strategy adopted by this qualitative research was phenomenological, and the data collection method used was a one-day focus group discussion. While such research strategy was suitable, especially to study in depth the experiences, perceptions or opinions of experts as well as facts pertaining to the above research questions, the discussion technique used is to understand the meanings and interpretations of the group people towards specific issues from their perspectives. This discussion is likened to group interviews, in which it involved both registered and non-registered ten (10) Valuers who are considered as experts from the Johor Bahru district, Malaysia. Those expert Valuers were identified from The Board of Valuers, Appraisers, Estate Agents and Property Managers Malaysia and the Malaysian Institute of Professional Property Managers. Prior to data collection, the respondents were contacted via invitational emails and phone calls to enquire their willingness to undertake in the discussion.

The Johor Bahru city of Malaysia, within the active, fast-paced economic region of Iskandar Malaysia, was selected as the study area. Aside from the local property valuation issues highlighted above, another key reason is that the emerging and fast-growing city has major and active/diverse property valuation operations, resulted from rapid property development and transactions, and significant local and international investments. The sampled Valuers were comprised of both government (public) and private sectors. They have involved in various property valuation activities for heterogeneous properties, encompassing various uses of commercial, residential, industrial, agricultural and vacant land, and the scopes of valuation work, be it corporate or individual valuation, covering loan, sales, rental, mortgages/charges, investment, acquisition, which ultimately can be categorised into two types of valuation in Malaysia: statutory valuation (e.g., stamp duty, property gain tax, compensation, land and rating tax) and non-statutory valuation (e.g., sale and purchase of a property) (see Suriatini and Buyong 1998). In addition, all the sampled respondents are considered as highly experienced, qualified expert Valuers due to their educational background, professional affiliations, and positions held in their organisations, namely senior managers, and branch managers or directors. The qualifications of Valuers above were strictly observed, ensuring that they are indeed the experts in local property valuation, because dealing with the topic of behavioural uncertainties involving multi-stakeholders, it is complicated.

As for the instrument of research, altogether six main questions posed were in a semi-structured form. A review of the literature identified the topic areas to be probed and the questions to be asked during the discussion (see content validity). Also, face validity (validated by peers) on the interview questions was carried out. The discussion was chaired and facilitated by the two authors (as moderators), in which the discussion was voice recorded and field noted for the transcribing purpose. Although there is no rule of thumb (magic number) for qualitative non-probabilistic sampling, the optimum size for a focus group is six to eight participants (excluding moderators). This number is consistent with Bryman's (2008) and Guest's et al., (2006) argument that ten experts are considered acceptable, since themes

concerning common views and experiences were garnered among relatively homogeneous individuals (in this case, all were Valuers). The respondents (Valuers) were sampled via purposive expert samplings, i.e., after a few experts' agreed to take part in the discussion, they were then asked to recommend other relevant respondents (colleagues).

All in all, based on the content coding analysis, using the total 15 themes/codes related to the above literature and four categories (namely biases, heuristics, ethics/professionalism, and client influence) derived abductively (see Figure 1 below), the following section selectively reports the main results and interpretations (findings). Along with the respective findings, two types of results presentations, namely textual and diagrammatic mind-mapping forms of the codes and categories, are illustrated accordingly. To ensure the study's credibility, especially in dealing with the large and complex dataset, the Atlas.Ti software has been used during the processes of transcribing, coding and results generation.

4. Results and Findings

There are various uncertainties of Valuers' psychological and behavioural biases and heuristics involved in property valuation. Also, Valuers' decision may likely be subject to various institutional and political settings (government intervention) that bring about the issue of conflict of interest against the clients. Carelessness/ negligence, as well as biases regarding personal selection, are the two most adopted behaviours mentioned by local Valuers during the discussion.

Respondent 4 responded:

"Valuers are subject to various subjectivity, bias, client influence, negligence, and other various behavioural issues that may lead to inaccurate and imprecise valuation."

This is also agreed by **Respondent 2** who frivolously responded as follows who believes that ultimately it boils down to a Valuer's decision/discretion who is governed by subjectivity:

"...quoting a professor from one institution that valuers themselves are the "culpriet" who may render the inaccurate market value of a property..."

Local Valuers tend to ask around to obtain the current market values of a property predominately from public Valuers (as a significant market regulator) and some their colleagues (private Valuers, bankers, and real-estate agents), to use them as references and benchmarks. Based on the retrieved values, some subjective adjustments are performed. Such anchoring or following-other-Valuers behaviour (herding issue) makes some private Valuers feel more confident about their assumption in their valuation, since most of the Valuers arrive at similar values.

Respondent 5 responded:

"Based on the income method, make some adjustment...overly dependent on the information by the broker or real-estate agents who can know much information on a property value, instead of doing their own independent market search and value on the property...Those agents are very close to

the bankers (for the loan purpose). They can influence the valuers.”

Respondent 3 affirmed:

“...the client may offer some values as references to the valuers by simply quoting a value...private valuers may always anchor or seek the advice from the public valuer (local government) on what is the current value of the property. Use or follow it as a reference/benchmark and make some adjustments. For instance, how much did the government value the property?”

Also, although it is not rampant, the issue of the recency bias occurred, whereby local Valuers are biased to follow the current unique market trend, stimulated by foreign investment, instead of anchoring onto the overall and historical market of the property. Some Valuers are overly engrossed in the recent, specialised market that suddenly booms and have based on it to justify the nearby local residential valuation. Apparently, such a biased estimation may not truly reflect the local property market value.

Respondent 10 attested to:

“...the market value for the property is around RM200,000 but it has recently been raised to RM400,000 (the market has been pushed)...”

Respondent 8 further confirmed and questioned on this recency effect in valuation:

“...some special conditions for big developers with the recent high or overvalued property, how exactly the valuer go about it (how to value the property which is just next door to those overvalued properties)?”

Most of the local property valuations involve one conventional technique, i.e., a typical comparison method. Due to the little application of other techniques on specific properties (vacant land) such as an investment or discounted cash flow method, most of the Valuers subjectively choose this (comparison) method, which is less complicated and is more convenient to be employed on residential properties. Property valuation based on the standard comparables (parameters inputs) and procedures/practice is considered sufficient or ‘good enough’, so long as the value estimate is justifiable and logical. For that reason, the satisfied Valuers may not attempt to search other relevant, unique data or comparables for the similar property valuation. In addition to the subjective selection and preference issue, Valuers’ choices on methodology and inclusion of parameters (comparables) are highly biased. Despite the national governing bodies (see the Royal Institution of Surveyor Malaysia, the National Institute of Valuation and the Department of Property Valuation and Services, Malaysia, JPPH), the national valuation Act, common practices and some general standards guidelines (see the Capital Markets and Services Act 2007) on valuation (see also the Board of Valuers, Estate Agents and Appraisals through the Valuers, Appraisers and Estate Agents Act 1981), since valuation ultimately requires the discretion and judgement of a Valuer, subjectiveness is unavoidable; thus, the selection and inclusion of data and methodology can be rather widespread among Valuers. Such subjectiveness is permissible as long as it does not go against the norm or practice of valuation; so far, no specific guidelines or

laws and policies are enforced to address the issue. For instance, with a similar methodology using a comparison method, two different Valuers still included quite a different types and number of parameters (comparables) for the property value estimation, in which both can justify their selection. Thus, such uncertainty (subjectiveness) also leads to inconsistency and discrepancy of valuation.

Respondent 5 verified:

“For instance, one property uses a comparison method, while the other similar property used an investment method, why? Both the principles of existing use and the highest and best use are valid... There is no law to dictate which principle to be used for the valuation.”

It is also found that Valuers (both public and private) inevitably establish their valuation judgement based on the following behavioural uncertainties: various and diverse opinions, memory, understanding (knowledge), perception, experience (successful and unsuccessful) and feeling about the property valuation. The value of the similar property will be valued differently, especially when it comes to the different understanding and inputs of the legal planning and land requirements (tenure system, planning guidelines) and the market’s opinion and views. Thus, questions on which Valuer’s valuation is correct and which one is wrong are never being straightforward. However, the inconsistency of value arises when a Valuer is overly dependent on adopting the behaviours above. The biased and heuristic behaviour exposes them to the issues of inaccuracy and credibility of valuation, since ultimately, in the eye of the court, proper and hard evidence as testaments are still necessarily prioritised.

Respondent 5 succinctly responded:

“Most of the valuers use their own perception...it is powerful...These diverse conditions introduce their subjectivity and choices, understanding, preference, bias in it...if the next door sells this much of value, then the similar properties around it should have the similar value (stereotyping issue).”

Another behavioural uncertainty is human errors. Due to certain reasons, Valuers are unavoidably subject to carelessness or negligence (not being cautious) in their property valuation decision. The carelessness/negligence issues include typographical errors, miscalculation of area or value of a property, wrong insertion/assignment or omission of a number, overlooking some comparables/parameters input during the search/ inspection, and inappropriate methodology selection.

Respondents 5 confirmed:

“...sometimes unintentional carelessness is committed by a valuer, e.g., assigning wrong figure/number of the area of a property, probably due to typographical error...”

It is also discovered that the local Valuers are highly vulnerable to client influence. The influence or pressure by clients (buyers or sellers of property, bankers and developers) can come in various forms, mostly influencing the final valuation figure and methodology selection on the valuation. Interestingly, there are

two types of client's influence found, namely the unsophisticated and sophisticated clients. The former is more frequently encountered by the local Valuer. The question on whether or not the Valuers are influenced by clients is not fully disclosed; however, some Valuers are found to be resistant to the client's unethical request by declining the offer of their clients. For instance, an unsophisticated client typically attempts to influence a Valuer by giving high fees and more businesses in order to change the final value of a property. Also they (clients) may quote/offer their desired property value to the Valuers for confirmation or validation, rather than evaluation; if the Valuers decline their requests then they may suffer the loss of business and delay of payment. While, as for the sophisticated clients, their influence is indirect, which their ultimate intention is to alter the final figure. The client may not fully reveal necessary information or supply misinformation that distorts/lowers the property value. Also, some of them may intervene by urging their Valuers to change the techniques or principles in arriving at the final valuation figure.

Respondent 5 affirmed:

"There are many cases, e.g., the client has fixed the value of the property and coerce the Valuer to follow their intention, i.e., by forcing the valuer to maintain the value which was sort of undervalued..."

Respondent 3 responded:

"Client influence is still unavoidable on the property value, e.g., the client may offer a figure as a reference to the valuers. Have a conflict of interest with the client to overvalue or undervalue..."

Respondent 2 further supported:

"... some clients try to persuade the valuer to use the highest and best use principle which creates a court case..."

It is also found that property valuation is subject to political (governmental) intervention. Although this is not rampant, it is rather influential and critical. Public Valuers particularly, due to the uncertain (dynamic) condition of the local political setting, they are compelled to follow the instruction and discretion imposed by the top management (governments). This has suggested that the conflict of interest/moral hazard occurs as the Valuers' professional position and the decision can no longer stand impartially. For instance, due to the government's authority, Valuers must apply certain imposed valuation method and principle (i.e., adoption of existing land use assumption) on a certain property (vacant land and low-cost housing) that may eventually disbenefit or compromise the interest of sellers, as it produces much lower value compared to the market value.

Respondent 4 attested:

"...one seller was forced to sell at a lower price compared to the market value due to the government/institutional setting. The value must follow the existing use: low-cost housing instructed by the government, although the general and highest and best use of the land can be residential or building..."

Furthermore, the results do not only suggest that Valuers are subject to the above behavioural uncertainties individually and independently but rather, all the above behavioural issues are interconnected with each other. This study shows that many heuristics (e.g., memory and experience) and biased behaviours (e.g., herding, anchoring and adjusting, and gut feeling) and subjective selection of Valuers' are associated with (lead to) the carelessness and negligence (overlooking) issue. Valuers may not realise that when they heavily relied on their personal preference, assumption, memory, gut feeling, and 'so-called' vast experience frequently, leading them to commit stereotyping and satisficing issues, establish evidence and comparables from the inaccurate, misleading information of clients and a recent (specialised) market without doing independent and exhaustive search/and analysis, they have in fact been directly and indirectly subject to carelessness or negligence. Valuers may overlook some relevant, updated comparables, either by omitting or without including them in the calculation. This situation is particularly true, when dealing with legal, planning, and land matters of properties in terms of the exact location, area, status and category of land use, which are often uncertain due to the high cost of information searching.

It is also suggested that the above subjective preferences and the selection of comparables and methodology in valuation are associated with those biased and heuristic behaviours described above. For instance, based on the past experiences, which have made some Valuers subject to stereotyping (generalising) and the satisficing issue, they have shaped the Valuers to be predisposed to a particular set of methodology and input parameters selection. Aside from suggesting that biases are the most rampant, common behaviour presented by local Valuers in property valuation, more intriguingly, biases are also the most relatable element with other behaviours (client influence, heuristics and ethics). All of the above textual findings and results can succinctly be illustrated in the graphical result below (Figure 1). The 15 coloured boxes are indicated as codes, while the four white boxes are the categories/families of the respective codes which are linked with the red-dotted lines.

to revise the final figure of value or offer their desired property value to the Valuers for confirmation or validation, rather than proper evaluation. Coercion in terms of losing future business and late/no payment is also resulted in the local condition due to incompliance with clients' needs (see Levy and Schuck, 1999). Also, the rarely sophisticated clients with valuation knowledge are encountered as well that they may attempt to withhold negative information and emphasise positive attributes (see information asymmetry) via some advertisement of media. They force their Valuers to change the principles or techniques of valuation, i.e., from the assumption of an existing use to the highest and best use of property which the latter can give a higher value.

All the above-mentioned biases, heuristics, negligence and client influence have signified that the professionalism and integrity of local property Valuers are questionable and have been compromised. Moreover, the ethics of valuation extends to the undue political influence, subject to moral hazard (conflict of interest) (Cho and Megbolugbe, 1996). Due to information asymmetry, public Valuers particularly, who are more informed with government's decision compared to layman clients, the former are compelled to follow the instruction and discretion imposed by the top management (governments) to apply certain, imposed valuation methods and principles (i.e., based on existing land use), which this may disbenefit the interest of sellers as it creates much lower value compared to market value (Baum et al., 2000). Imposing such undue obligation on local Valuers has subjected themselves to a dilemma between their prospective job and client interest/valuation accuracy. Evidently, local Valuers rather choose the former over the latter. As Williamson (1975) asserted, most of the behavioural uncertainties, if not all, in local property valuation are inherently associated with opportunistic behaviour of a Valuer (see Ling et al., 2019). For their own sake (in terms of gaining more and faster profit and fees), convenience, less macroeconomic information searching costs, Valuers may rather disregard their clients' interest and valuation accuracy.

6. Conclusion and Recommendations

The study applies the theory of behavioural economics and psychology insights in property valuation. In sum, these are the main theoretical findings: behavioural uncertainties of local valuation embrace the following interrelated biases and heuristics (e.g., availability, stereotyping/representative, herding, anchoring and adjusting, confirmation, overconfidence, subjective choice, satisficing and recency effect), negligence, moral hazard, opportunism, and client (both sophisticated and unsophisticated) influences. Thus, the above-mentioned empirical discoveries have achieved our set objectives. However, a methodological limitation is posed. This paper's findings may preclude us to draw a conclusive and representative causal-effect inference, especially with one focus group discussion session with only a group of Valuer experts. A longitudinal behavioural study via a more rigorous methodology (e.g., explanatory mixed method research with a combination of in-depth personal interviews and questionnaires surveys with quantitative structural modelling) is necessary, especially involving other stakeholders (developers, bankers, estate agents and buyers and sellers) for validation and evaluation. Due to data and time unavailability, although the

sample of respondents was homogenised (at least all of them are experienced, highly qualified and knowledgeable and from property valuation and management background), we did not manage to ensure well-rounded distribution of the number of private and public Valuers as for the current study, the number of the latter prevails. Such different sectors with wide-ranging, generic scopes, experience/exposure and knowledge have contributed to broad and diverse yet rather superficial results on certain, specific instances. Therefore, more systematic results which are executable via the categorisation of the background, specific sectors and scopes of Valuers are suggested because they could be influential in behavioural valuation where different responses may be observed.

Despite the limitations, this study addresses the literature lacuna on behavioural uncertainties in property valuation, particularly describing extensive behavioural economics components in a real-estate discipline. At least three contributions are achieved by this study. First, this study provides evidence that behavioural uncertainties (e.g., heuristics and biases) and their effects on local property valuation are also occurring in Malaysia. Second, among the behavioural uncertainties, this paper has identified the most widespread and influential behavioural uncertainties (i.e., biases and professional ethics), which local Valuers are subject to. And lastly, this paper showcases and contributes an interrelationship framework of the behavioural uncertainties, i.e., how one behavioural uncertainty (e.g., a satisficing effect under the bias category) is associated with another (e.g., stereotyping effect under the heuristic category). This study has indeed proven Warren-Myers' (2015) commentary on the significance and needs for such study on the behavioural uncertainties in property valuation because human-property interconnection is always varying in different contexts and circumstances.

Lastly, the findings with practical implications offer in-depth, fundamental understanding to local policy-makers, that the often-neglected behavioural study is a sine qua non in determining the property valuation outcome. This paper discovers rationales behind the complex ways of how Valuers make their decision and hence suggests that the current local property valuation system appears adversarial. Therefore, more comprehensive behavioural valuation research, including the identification and formulation of potential countermeasures to curb psychological and behavioural uncertainties in property valuation, should be carried out to produce a sustainable property valuation environment. This is of particular significance in emerging markets of developing countries, where objectivisation, via information availability and comparison methods, seems to be more difficult.

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