

**WHAT DRIVES HOUSEHOLD RESIDENTIAL
PROPERTY INVESTORS? A CROSS-COUNTRY
BEHAVIOURAL ANALYSIS**

TAN CONSILZ

Bachelor of Economics

Master in Applied Statistics

This thesis is presented for the degree of
Doctor of Philosophy of Murdoch University

2014

DECLARATION

I declare that this thesis is my own account of my research and contains as its main content work which has not previously been submitted for a degree at any tertiary education institution.

.....

(TAN CONSILZ)

ABSTRACT

The real estate investment markets of Australia and Malaysia are continuously developing, due to the reputation of real estate as a lower risk investment. Individual investors play an important role in shaping the development of each of these real estate markets. This research aims to explore the behaviour – specifically, bounded rationality – of individual real estate investors, which, so far, has been unexplored. Individual investors are frequently described as rational and as optimising their choices out of self-interest. However, this research hypothesises that boundedly rational behaviour will complicate this theory.

The study employs mixed methods to triangulate information related to the research questions. The first phase of data collection is a Delphi study comprised of two rounds of investigation that seek to obtain opinions from Australian and Malaysian experts. These panellists were selected on the basis of their expertise in real estate, both in academia and industry. The second phase of data collection is a research survey. The research survey collects responses from Malaysian individual real estate investors who have sold at least one of their properties. This particular selection criterion enables the study to explore experience across the entire investment process, from the purchasing of a property to selling.

In both the Delphi study and research survey, Schwartz's ten human values were assessed as guiding principles in real estate investment decision-making. The results from both research phases suggested that achievement, self-direction, and security were the three top-ranked human values that were important in real estate investment decision-making.

This research also suggested six propositions from bounded rational behaviours that were thought to significantly contribute to the real estate investment decision-making process. These bounded rational behaviours were accessibility, the endowment effect and loss aversion, herding, overconfidence, status quo bias, and anchoring. The findings from the research survey revealed that individual investors are likely to be affected by their prior experience when they make an investment decision. They are also likely to have emotional attachment to their property, exhibiting the endowment effect and loss aversion. The data also revealed the existence of herding and status quo bias, representing behaviour that conforms to social trends. Moreover, the data showed that individual investors are overconfident, especially if they achieved success with a past investment. Finally, the individual investors were found to use an anchor price to adjust the value of a property.

The study explores the existence of bounded rational behaviours in individual real estate investors, which, previously, was not well understood. This study also makes a contribution to behavioural economics. Hence, this study provides improved understanding regarding quality decision-making in real estate investment and offers important insight regarding the implications of bounded rational behaviours at the individual and societal level.

TABLE OF CONTENTS

ABSTRACT	iii – iv
LIST OF FIGURES	viii
LIST OF TABLES	ix
ACKNOWLEDGEMENTS	x
CHAPTER 1: INTRODUCTION	1
1.1 Introduction	1 – 5
1.2 Background to the study	5 – 11
1.3 Research focus and purpose of the study	11 – 13
1.4 Significance of the study	14 – 16
1.5 Chapter summary	16 – 18
CHAPTER 2: LITERATURE REVIEW	19
2.1 Introduction	19
2.2 Real estate investment	20 – 23
2.3 Decision-making	24 – 31
2.3.1 The imperfection of Neoclassical economic models	32 – 36
2.3.2 How can behavioural economics and behavioural finance complement neoclassical economic theory?	36 – 42
2.3.2.1 Accessibility	42 – 43
2.3.2.2 Anchoring	43 – 44
2.3.2.3 Endowment effect	44 – 46
2.3.2.4 Herding	47 – 48
2.3.2.5 Loss Aversion	48 – 52
2.3.2.6 Overconfidence	52 – 54
2.3.2.7 Status quo bias	54 – 56
2.4 Culture and the human values	56
2.4.1 Culture and cross-cultural studies	56 – 58
2.4.2 Human values	59 – 67
2.5 Chapter summary	68

CHAPTER 3: METHODOLOGY	69
3.1 Introduction	69 – 70
3.2 Methodology (Phase 1: Delphi study)	70
3.3 Sample population (Phase 1: Delphi study)	71 – 72
3.4 Instrument of the Delphi study	72 – 74
3.5 Data collection and analysis (Phase 1: Delphi study)	75 – 76
3.6 Methodology (Phase 2: research survey)	77
3.7 Sample population (Phase 2: research survey)	78
3.8 Instrument of the research survey	79 – 81
3.9 Data collection and analysis (Phase 2: research survey)	81
3.10 Chapter summary	82 – 83
CHAPTER 4: PHASE 1 – THE DELPHI STUDY	84
4.1 Introduction	84
4.2 Demographic profiles of panellists	85
4.3 The first round of the Delphi study	85 – 93
4.4 The second round of the Delphi study	94 – 103
4.5 Discussion and implications	103 – 107
4.6 Chapter summary	108
CHAPTER 5: PHASE 2 – RESEARCH SURVEY	109
5.1 Introduction	109 – 110
5.2 Demographic profiles and investment background of respondents	110 – 114
5.3 Measures of validity	115
5.4 Structure of the analysis	115 – 116
5.4.1 Investors’ motivation	116 – 119
5.4.2 Investors’ behaviours	119 – 131
5.4.3 Investors’ attitudes	132 – 134
5.4.4 Investors’ human values	135 – 136
5.4.5 Outcomes in real estate investments	136 – 137
5.5 Discussion and implications	138 – 143
5.6 Chapter summary	144

CHAPTER 6: DISCUSSION AND CONCLUSION	145
6.1 Introduction	145
6.2 Review of findings	145
6.2.1 Phase 1 – Delphi study	146 – 148
6.2.2 Phase 2 – research survey	148 – 151
6.2.3 Triangulations of findings from Delphi study and research survey	152 – 156
6.3 The contributions of bounded rational behaviours and the implications of the six propositions in real estate investment	157 – 163
6.4 Limitations	163 – 164
6.5 Future research	165 – 167
6.6 Conclusion	168
APPENDIX 1	169 – 170
APPENDIX 2	171
APPENDIX 3	172 – 174
APPENDIX 4	175 – 182
APPENDIX 5	183 – 195
LIST OF REFERENCES	196 – 218
BIBLIOGRAPHY	219 – 228

LIST OF FIGURES

Figure 1.1: The real estate economy	2
Figure 1.2: Four types of investors focused in this study	13
Figure 1.3: The structure of the thesis	18
Figure 3.1: Research design for the study of investment decisions and behaviours of individual real estate investors	83
Figure 4.1: Four types of investors	90
Figure 5.1: The employment status of respondents	112
Figure 5.2: The length of time in real estate investment	113
Figure 5.3: The ownership of the current real estate investment	113
Figure 5.4: The management of the properties	114
Figure 5.5: Structure of the analysis	116
Figure 5.6: Schwartz's human values as a guiding principle in real estate investment decision-making	136
Figure 6.1: The bounded rational behaviours in real estate investment	163

LIST OF TABLES

Table 3.1: Summary of Delphi study	76
Table 3.2: Development of measure scales	80
Table 4.1: Differences and similarities of elements that involved in property decision-making	86
Table 4.2: Ranking of top five Schwartz's values	98
Table 4.3: Mean ranking and Mann-Whitney <i>U</i> statistics for Schwartz's human values	100
Table 5.1: Demographic data of Malaysian respondents	111
Table 5.2: The independent samples <i>t</i> test on the financial motivators	117
Table 5.3: The importance of the financial and economic motivations to participate in real estate investment	118
Table 5.4(a): The bounded rational behaviour – accessibility (Scenario 1)	121
Table 5.4(b): The bounded rational behaviour – accessibility (Scenario 2)	122
Table 5.5: The bounded rational behaviours – the endowment effect and loss aversion	124
Table 5.6: The bounded rational behaviour – herding	126
Table 5.7: The bounded rational behaviour – status quo bias	128
Table 5.8: The bounded rational behaviour – overconfidence	129
Table 5.9: The bounded rational behaviour – anchoring	131
Table 5.10: Attitudes towards risk	132
Table 5.11: Attitudes towards saving	133
Table 5.12: Attitudes towards retirement	134
Table 5.13: List of the Schwartz's human values, in parentheses are specific value items that represent it	135
Table 5.14: Outcomes in real estate investment	137
Table 6.1: Top five perceived and actual Schwartz's human values ranking	155
Table 6.2: The six propositions in real estate investment	158

ACKNOWLEDGEMENTS

In these few years of carry out the research and complete this thesis, I learn through many things along the journey. Although there are obstacles on the way, I enjoyed overcoming the challenges and have a better understanding on myself. I am grateful at every time to have the opportunity in experiencing the self-actualisation during my course of study. The moment of writing this passage would not have been possible without the guidance and support from many people.

First and foremost, I would like to express my appreciation and thanks to my Principal Supervisor, Professor Leland Entrekin, for his wisdom, trust, and guidance throughout the whole process. I would also like to thank my Co-supervisor, Professor David Butler, who provides comments and guidance so that I can improve the quality of this thesis.

I am thankful to Winthrop Professor Paul Flatau, for his guidance during the early stage of research. I also want to say thanks to Associate Professor Antonia Girardi, Dr. Megan Paull, and other academic staff in the School of Management and Governance. I would like to thank the staffs in Graduate Research, Student Learning Centre, IT Service Desk, and Library, who have helped me when I was writing away from Perth.

To my colleagues in KDU University College and friends, my sincere thanks for your encouragement and support. A special thanks to my parents and my sisters, for their love and support. I would like to express deep appreciation to my husband, Hong Haw, for his endless understanding, love, and spiritual support.

CHAPTER 1

INTRODUCTION

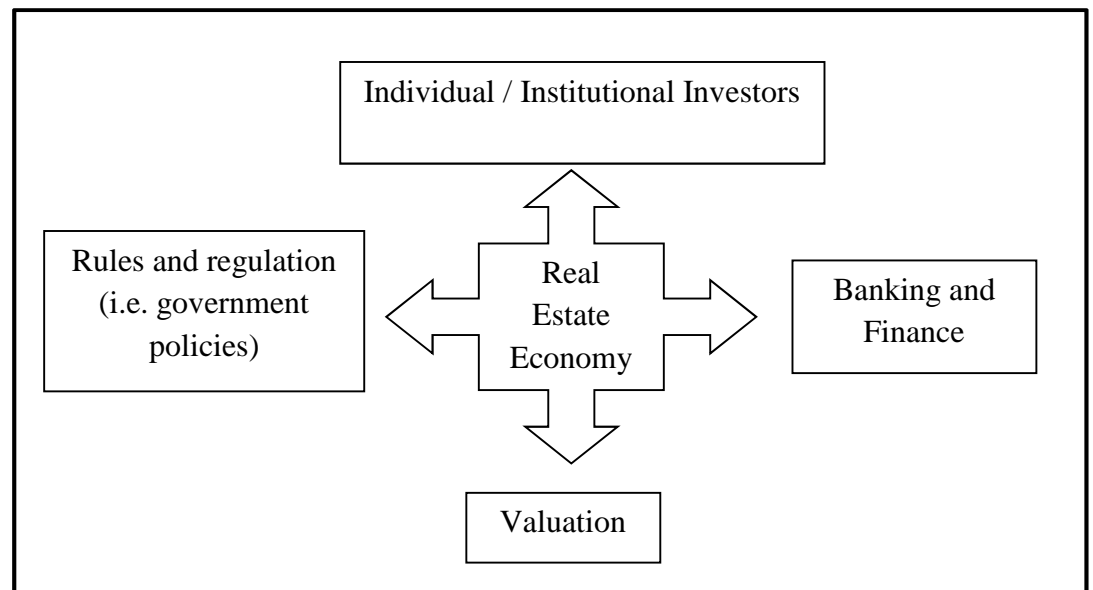
1.1 Introduction

In the Stone Age, our ancestors sheltered in caves that functioned as protection from predators and the elements. However, with the rise of agriculture and settlement, the nomadic lifestyle has to come to an end. It marks the starting of a new page in human history where there is the concept of personal home ownership. In the meantime, it has marked an important transition in housing, namely the creation of the real estate industry. Western society has evolved into the Industrial age and a revolution in the banking system encouraged people to borrow money to purchase their own home. Home ownership, in turn, transformed into evermore challenging investment opportunities. In comparison to other types of investment such as stocks and business investment, housing investment is relatively low risk as long as one can hold the property long enough. Nonetheless, housing investment shows some specificity in wealth accumulation (Arrondel & Lefebvre 2001) and it is becoming increasingly difficult to ignore the development of real estate investment and its contribution to the economy.

When trying to understand real estate economics and human agents, behavioural inquiries and underlying choice selection are not yet fully known. Hence, the current research aims to serve as an intermediary to understanding real estate economics. Additionally, the aim of this research is to discover new insights, especially regarding the choice of a paradigm that is related to human values. It is believed that endogenous motivation is always stronger than exogenous when affecting attitudes and behaviour related to decision-making. Here, in real estate, endogenous variables are labelled as motivations instead of forces. Motives play an important function to realising the

investment goal when guiding an individual to make a decision. Nevertheless, the broad range of study on real estate economics necessitated that more research be carried out. There is a variety of research conducted to enhance or reject behavioural inquiries. In the current study, the following diagram helps to delineate the situation.

Figure 1.1: **The real estate economy**



Source: Developed for this study

Figure 1.1 shows the various dimensions of the real estate economy which involve individual and institutional investors, banking and finance institutions, valuation on properties, and the rules and regulation that govern the economy as a whole. The investment process involves many stages of decision-making. Specifically, the investment process includes the purchase, valuation, search for financial supports, legal advice, sale, and rent or lease of the property. In addition, researchers in real estate need to understand the forces of demand and supply in the property market. Policy makers plan policies in the real estate industries relating to taxation, interest rates and loan programmes. Property management companies and investors, both institutional and individual, are also concerned with the selling and rental price of the market. Bankers and agents are required to arrange necessary paperwork where they are responsible for the transaction of a property. Other policies and schemes (i.e., tax exemption policy and subsidy plans) that might

be applicable will also influence the development of the real estate industry. Finally, the developers and construction related industries are involved as well.

The present study seeks to understand the bounded rational behaviours of individual investors and is an exploratory study that aims to understand the value system and decision-making behaviour in real estate investment. The study aims to explore the bounded rationality of investors and to identify how these behaviours affected investment outcomes. Infrequent choices, such as selecting a house, are particularly susceptible to these influences due to potential ignorance of the market discipline that could lead to the discovery of human values. This research critically examines the existence of bounded rational behaviour in the real estate investment market and serves as a stepping stone to investigate the imperfect characteristics of real estate markets. Individual investors, as a single identity, who play an increasingly important role in property investment decisions, are the main focus of this study. This research emphasises the values possessed by real estate investors, particularly where those values are the guiding principle in the decision-making process.

By looking at the ‘big picture’ of real estate economy, this study focuses on the individual real estate investors who are not attached to any investment institutions. They are the sole decision makers involved in their investment and they are assumed to be rational in neoclassical economics. Nonetheless, the current study is built on the fundamentals of behavioural economics that these individual investors are sometimes bounded in their rational choice. They tend to be affected by heuristic biases in decision-making and thus they are boundedly rational. There are different terms that have been used in past decades to understanding bounded rationality. These terms are such as anomalies (e.g. Camerer et al. 2003 and Kahneman, Knetsch & Thaler 1991) and behavioural phenomena (e.g. Scott & Lizieri 2011). Scholars have used many of these similar terms to describe human behaviour in suboptimal choice situations. There are plenty of scholars who have specialised in the study of behavioural economics such as Amos Tversky, Andrei Sheifer, Colin

Camerer, Daniel Kahneman, George Akerlof, George Loewenstein, Mathew Rabin, Sendhil Mullainathan, Vernon Smith, and others.

Simon (1987) once proposed that decision makers should be viewed as boundedly rational (cited in Kahneman 2003c, p. 1449). They tend to have heuristic biases when making uncertain judgments. Sometimes, things occur randomly and there is no discernible pattern. People believe that they see patterns but, in fact, it is in truth random sequences (Barberis, Shleifer & Vishny 1998). This is where representative bias is in action. Housing markets are driven largely by people who form their expectations based on past price movements and do not depend on the fundamentals of economic motivators (Case & Shiller 1988). In view of this, behavioural theories are important in understanding the behaviour of real estate investors. Some theories suggest that decision-making processes are not fully rational and the processes are subject to heuristics and biases (Gallimore, Hansz & Gray 2000). Camerer and Fehr (2006) proposed that most models in economics consider human agents as rational and self-regarding. They suggested that “economic man” dominates the outcome of social interactions. They also argue that bounded rationality and other-regarding preferences are better than traditional economic theory in predicting actual aggregate behaviour.

Kahneman, Knetsch and Thaler (1986) questioned why it is fair to sell a house or painting at a market-clearing price when this is not the case for an apple, dinner, a football game ticket, or other consumer goods. It is motivating to know that an investment with resale value can serve as a vale ‘store’ that can be sold again in any mechanism where the seller can capture a maximum price. This fact magnifies the reason real estate investment is well accepted in the market and why investors focus on the potential resale value of the property. However, we have little information about bounded rational behaviour in property investment. There are few studies that use the term ‘behavioural’ in studying real estate investment. Furthermore, it is questionable that these studies conducted an in-depth analysis of the behaviour of individual investors. There is a lack of knowledge regarding how individual investors make a decision when considering a real estate

investment and few findings on whether the individual investors are fully rational or bounded rational in certain situations.

1.2 Background to the study

From 1980 to 2014, the median house price in Perth grew from less than \$100,000 to nearly \$545,000 (Real Estate Institute of Western Australia 2014). In the space of ten years, median house rents in Perth rose from around \$200.00 per week in June 2004 to \$470.00 per week in March 2014. Various economic factors influenced this rapid growth in prices and rents including: the introduction of the First Home Owner Scheme (FHOS) in July 2000, the resources boom in 2006, and the global stock market crash in 2007. However, individual investor interest in the Perth residential property market is also thought to have contributed to its growing strength. As in Kuala Lumpur, the house price index rose dramatically by 14.4% (11.9% in real terms) (Global Property Guide 2014) and the real estate market became well established and dynamic as a long term secure investment. The role of individual investors has attracted increasing attention in academic literature as they represent a significant force in the real estate market. The boom in housing prices represents a major redistribution of wealth. Those who own property(s) see their equity increase. On the other hand, those who do not own any are facing higher rents and a reduced probability of owning (Case & Shiller 1988).

The analysis of the private residential property market has been undertaken mainly within a neoclassical framework (see Arrondel & Lefebvre 2001; Brown & Ong 2001; Brown, Schwann & Scott 2006; Friday & Higgins, 2000; Grenadier, 1996; Quan & Quigley 1991; Wood & Ong 2010; and Yinger 1981). For example, Arrondel and Lefebvre (2001) estimated a portfolio choice model and used probit models to produce econometric estimation by taking a two-dimensional view of home ownership (consumption and investment) into account. By using logit regression, Brown, Schwann & Scott (2006) revealed financial and socio-demographic

factors that influenced property investment. Wood & Ong (2010) also used the probit model to predict the likelihood of rental investors when making a choice. The investment process is usually presented using mathematical or econometric methods and prediction is always done by using models with several independent socio-economic variables.

Nonetheless, this is not the process when engaging in social research. A social researcher may want to understand individual human behaviours and attitudes when in a social setting, attempting to answer key questions. These questions might include: what are the standard practices in the decision-making process, especially at the moment of selling and acquiring a property? Are investors making decisions based on their experience? Will they allow themselves to be guided by other's ideas and prevailing opinions? Are their cognitive systems being developed by heuristics or intuition?

As suggested by Einhorn and Hogarth (1981, p. 59-60): 'Paradox: Optimal modes have been suggested to overcome intuitive shortcomings. However, in the final analysis the outputs of optimal models are evaluated by judgment, i.e. do we like the outcomes, do we believe the axioms to be reasonable, and should we be coherent?' There are many different reasons for investors to participate in investment activity. Investors want to maximize their profit and yet they still make decisions based on heuristic judgment and intuitive thoughts. For example, why does an investor like a selected property and location? In addition to capital gains and rental yields, what are the other factors considered in the decision-making process? It is important to consider these questions as these unknown purposes may influence investor viewpoints and values that guide them. Kahneman and Tversky (1984, p. 341) proposed that decision-making is the study of different disciplines, 'from mathematics and statistics, through economics and political science, to sociology and psychology...the study of decision addresses both normative and descriptive questions.' Having said that, the neoclassical framework is based on the postulation of rational profit-maximizing behaviour. The behavioural finance and economics approach does not necessarily deny the

rational profit-maximizing behaviour but seeks to examine whether investment behaviour is driven by such goals.

The significant relationship between economics and psychology should not be neglected when researching the study of decision-making processes of real estate investors. The fundamental ideology of economics forms the skeleton of this research. Nevertheless, investment activity as a human activity in an economic setting is gaining attention from psychologists as well as economists. Why is this an important element of research? Because economists believe that economic agents will withdraw from the market if they do not act rationally (Hogarth & Reder 1987). But, not all agents in real estate markets behave rationally and yet they still succeed in the market. As per Hogarth and Reder (1987), psychological assumptions are required for economists to add credibility to the story. Scholars from these two different disciplines continue to develop their own separate theories regarding these behaviours, but there are no reason to deny the importance of the connection between economics and psychology and, in fact, should be encouraged to work towards cross-disciplinary research. A holistic paradigm of understanding behaviours of investors is needed in order to better understand the modern world. This study aims to at least draw a connection between the boundaries of economics and psychology.

In fact, the idea of cross-disciplinary boundaries is often an illusion, awaiting concrete illumination to bring the two disciplines together. There is an increasing number of research being done at the intersection of psychology and economics, but it is still inadequate. There are still wide areas of economic phenomena that have been overlooked. The complexity of theory regarding economic decision-making requires expansion that can be achieved by using both economics and psychology (Black et al. 2003). This study also considers that decision-making processes should not only rely on mathematical approaches, especially in a social setting. We should stop relying on assumption and prediction of human behaviour (Simon 1987). Instead, we should engage in practical research that seeks a paradigm that works through the lens of neoclassical theory and behavioural economics.

In most cases, researchers have generated mathematical models in order to predict investors' behaviour. But, how can policy makers specifically target real estate investors by using these models without knowing the behaviour of individual investors? Here, there is no reliable predictability unless in a specific social interaction that is situationally based (Vinson, Scott & Lamont 1977). This study attempts to defend the view that psychological and social influences may affect investment decisions in real estate markets. These influences might include: time in the market, socio-economic backgrounds, financial motivations, bounded rational behaviours, and human values that play an important role in investment decision. Already, there are economic concepts that have undergone revolution and further evolved to become more complicated and realistic in the current social setting. This is the reason why we need to improve assumptions made in neoclassical economics. Behavioural economic study does not abandon fundamental neoclassical economics but further enhances and supplements the insights of neoclassical economics (Rabin 2002). Akerlof (cited in Sent 1967) suggested that behavioural economists have succeeded in discovering the 'wild side' of economic behaviour.

Along with the growth of real estate investment markets, there is increasing concern over the roles being performed by individual investors as primary market players. There are two general motives in housing markets; these are consumption and investment (Brueckner 1997). The intertwined motives of housing consumption and investment highlighted the importance of optimal decision-making behaviour of individual investors; either bounded or unbounded rationality. There are many arguments regarding the behaviour of investors when their aim is to accumulate wealth through real estate investment. It is to be believed that individual investors sometimes fall into heuristic biases that, in turn, cause suboptimal investment decisions. Some decisions made are influenced by emotion: the fear of loss, hope for capital gains, enjoyment, regret of making the wrong decision, joy in success of an investment, and other emotions that are related to the judgment in an investment decision. To date, there has been little agreement on how to

access emotive investments and indeed the existence of emotive investments in real estate markets.

After reviewing studies in the fields of behavioural economics and behavioural finance, this study suggests that individual investors are human agents in the economy who are not fully rational. The reason for this is that behavioural factors powerfully influence the subconscious mind. Utilising arguments and findings from both neoclassical economics and behavioural economics, this study provides a framework on bounded rational behaviours that bridges the gap in better understanding individual investors. In this framework, it is explained that individual investors are swayed by seven bounded rational behaviours that include: accessibility, anchoring, the endowment effect, herding, loss aversion, overconfidence, and status quo bias. Accessibility portrays the easiness of an intuitive thought to come into mind (Kahneman 2003c) and is a heuristic bias that recalls information easily (Lizieri 2011). Accessibility is enhanced when the subject has had a similar experience in the past. This study proposed that an individual is likely to be affected by his/her own experience when making an investment decision. On the other hand, Diaz (1998) suggested that property valuers use a reference point as an anchor in the negotiation process. However, the reference point may lead to an incorrect decision if it is an incorrect anchor (Hardin 1999). Similar to real estate investment, this study proposed that the individual investors use an anchor price to adjust the value of a property.

There are numerous studies that conclude that investors are reluctant to acknowledge losses, hold on to losers longer than they should (Parachiv & L'Haridon 2008; Strahilevitz & Loewenstein 1998), and weigh losses higher than gains (Fromlet 2001; Kahneman, Knetsch & Thaler 1991; Kahneman & Tversky 1979; Levy 1992; Loewenstein, John & Volpp 2012; and Strahilevitz & Loewenstein 1998). Such behaviours are attributed to emotional attachment toward the object (Ariely, Huber & Wertenbroch 2005), thus placing higher value on it (Kahneman & Tversky 1984). Here, emotional attachment can be categorised in two ways – as endowment effect and loss aversion. This study examines the presence of endowment effect and loss

aversion in real estate investment. In addition to this, herding behaviour is observed in many investment activities especially in financial markets (Avery & Zemsky 1996). Similarly, in the real estate investment markets, herd behaviour might be possessed by individual investors.

Another bounded rational behaviour is overconfidence. There are overconfident investors who overrate information and the precision of private signals (Daniel, Hirshleifer & Subrahmanyam 1998). Reasonable confidence is helpful in investment, but overconfidence can represent a 'blind spot' that misguided decision-making. Therefore, this study seeks to address the existence of overconfidence in real estate investment markets by using individual investors as the subject of study. Finally, status quo bias may induce individual investors to do nothing or maintain a decision when they face uncertainty. There are studies highlighting that fact that decision makers will stick disproportionately with the status quo alternative when they are indecisive (Camerer 1998; Samuelson & Zeckhauser 1988; and Tetlock 1992). This research will investigate whether individual investors conform to social norms and whether they are reluctant to make changes in an investment decision.

Furthermore, values are used to determine motivation behind the actions taken by individual investors. Values are a set of standards that guide people's judgement and actions (Rokeach 1973). There is much research that has investigated universal values in different countries and cultures (for example Bardi & Schwartz 2003; Rokeach 1973; Schwartz & Bilsky 1987; and Schwartz & Sagiv 1995), including Bardi and Schwartz (2003) who investigated ten motivational values tested across twenty one countries. The ten motivational values are power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. In addition to this, there are international studies that have researched on marketing and management, but not the investment market. Although extensive research has been carried out on values, to the knowledge of this researcher, there is no study that adequately covers the value priorities among real estate investors.

The studies presented thus far have provided evidence that behavioural economics is important in exploring human behaviour and for further understanding the behaviour of individual investors. Collectively, many studies have outlined the critical role of values in guiding the decision-making process. Despite the substantive research, investigation on the bounded rational behaviours of individual real estate investors is absent. By utilising a mixed methods approach, this study aims to provide a more realistic exploration that will be beneficial to the development of knowledge in behavioural economics. Drawing upon the knowledge of behavioural economics, this study seeks to obtain data that will help to address a research gap. This effort is guided by a clear research focus that will be discussed in the following section.

1.3 Research focus and purpose of the study

There are several discrepancies in the real estate management and investment process in Australia and Malaysia. Generally, the property investment process begins when a decision is made to acquire property with the aim of succeeding to secure tenure of the property or to resell the property to other investors. The whole process is comprised of: the viewing stage, negotiation, legal process, finance settlement, and taxation. In property investment, this process is iterative and each step is crucial in determining the next move.

The concern here is how well the investment can be managed if the decision is made solely by individual investors, rather than being managed by professionals. What are the motivations and rationale that trigger an investor to make this choice? How do the judgements and preferences of individual investors function to affect each stage of the process of acquiring and selling property? There have been many queries into this area, yet there is a lack of confirmative answers. Hence, the determinants of investor behaviour and the decision-making framework are essential to success in real estate investment. This study focuses on the task of identifying the existence of bounded

rational behaviour in the real estate investment decision-making process. This research also focuses on the importance of human values that play a guiding role in decision-making. There are three primary questions that guide this research project, as outlined below:

- a) What are the decision-making behaviours of individual investors in the real estate investment process when acquiring/selling property?
- b) Do the decision-making patterns vary among Malaysian and Australian investors? What are the similarities and differences? For example, are there any cultural differences between the groups?
- c) How important are human values when motivating real estate investors?

The aim of the study is to observe human behaviour in real estate investment. Several objectives of the study in relation to the property industry are highlighted below.

- a) Identify the variations in property management between the two countries (Australia and Malaysia)
- b) Investigate decision-making behaviour in the investment process when acquiring and selling a property
- c) Determine the most important human values in decision-making behaviour in property investment

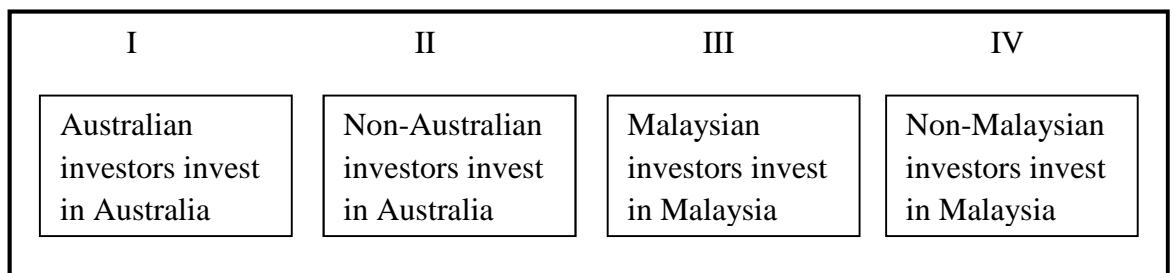
According to the neoclassical economic approach, in the economic arena humans as actors are assumed to be rational and their preferences of choice are bound to optimization. The Expected Utility Theory (Einhorn & Hogarth 1981) explains the details of this rationality. Socio-demographic and economic factors are not influential enough to explain the decision-making process fully. This knowledge gap has drawn attention from numerous psychologists and economists and several studies have been done to further investigate into psychological aspects of human agents (see Arberl, Ben-Shahar & Sulganik 2009; Genesove & Mayer 2001; Kahneman 2003; Kahneman & Tversky 1979; and Mullainathan & Thaler 2000). Theories of behavioural economics and behavioural finance have assisted the researcher

in exploring new areas of knowledge to close the gap between neoclassical economics and the behaviour of investors in the real world. Here, bounded or unbounded rationality can then be understood in the context of human values, cross-cultural differences and cognitive psychology. Cognitive psychology helps to aid understanding of the decision-making process. Camerer et al. (2003) suggested that cognitive psychology is an ideal concept to be employed in establishing new theories of economic choice.

This study focuses on economics as well as behaviours (i.e., psychological construct) primarily because of the modern social setting that requires a holistic paradigm to better explain economic phenomena. Psychology is primarily concerned with human nature and is not solely constrained by mathematical construct and precision (Rabin 2002). The purpose of this study is to explore the interaction of real estate investment strategies and the behaviour of individual investors, particularly the environmental and socioeconomic factors that may have influenced this behaviour. It is also important to understand how important human values are when motivating individuals to become real estate investors.

The first phase of this study focuses on four groups of people (see Figure 1): Australian investors investing in Australia, non-Australian investors investing in Australia, Malaysian investors investing in Malaysia, and non-Malaysian investors investing in Malaysia. The study employs a research survey methodology in the second phase of data collection and focuses on the Malaysian individual investors.

Figure 1.2: **Four types of investors focused in this study**



1.4 Significance of the study

The objective of economic research is to predict economic outcomes and understand market interaction (Malmendier & Tate 2005). However, it is important to enhance predictive power by exploring the existence of behavioural influences that are either bounded or unbounded rationality. This study aims to provide important information that will advance our knowledge of the bounded behaviours of individual real estate investors. The guiding assumption of this study is that people do not act rationally all of the time, that is, they are not always seeking to maximize their utility and profit. Brian Elton and Associates (cited in Seelig, Burke & Morris 2006) stated that rental investors are not economically logical or rational most of the time and that, the real case is that they become landlords only because of some personal situations.

Uniquely, this study focuses on individual investors who have sold at least one property. In the past, there were many studies conducted that emphasized institutional investors and valuers. This study understands that investigation of the behaviour of individual investors is rather more challenging. For instance, the degree of loss aversion of institutional investors is hardly measured because they are acting as intermediaries and will not manifest the affective component of loss aversion (Parachiv & L'Haridon 2008) due to their role as professionals. As individual investors are not 'professional' but have the same objective of earning profits from their investment, it is crucial to discover the existence of bounded rational behaviours as the influence of these behaviours on the outcome of investment is still unknown.

Further, this study takes a tenacious approach by studying two countries, Australia and Malaysia, and employs a Delphi study to gather information from experts in both the real estate industry and academia from both countries, to produce a complete understanding of the field. In addition to this, this study compares and contrasts actual real-life situations from both countries. The policies that govern real estate investment that are implemented in these two countries are different in terms of tax exemption,

payable tax, negative gearing, and current development, as well as what the cause-effect relationship of real estate development is to social economics. This can be explained by the results from the Delphi study. Beyond this, the study also conducted a research survey to investigate the importance of financial motivators in real estate investment. Nonetheless, the primary focus of the survey is to identify the bounded rational behaviours of individual investors. These individual investors are more than qualified to be part of the study as they have experience in the whole investment process, from purchasing of property to the sale of property. The research survey also examined the attitudes of the individual investors towards risks, savings, and retirement.

The use of mathematical logic and equation computation is convenient when making predictions. But, by ignoring the findings and advances of the social sciences, economists can be at a disadvantage when estimating. By observing people's behaviour, we can seek to resolve some of the anomalies in the bounded rational state of human behaviour. Additionally, it is important that we understand the cultural effects that influence decision-making behaviour. To our knowledge, there are currently no other scholars that use human values as guiding principles to measure decision-making behaviour in investment fields, especially real estate investment. Most of the time, human values are embedded in the subconscious mind and it is not yet acknowledged that these values play a key role in affecting decision-making behaviour. The rating of values when guiding decision-making may be varied depending on personal experiences, family background, cultural background, education, learning impact from daily life and other external factors.

Moreover, real estate investment is becoming increasingly internationally oriented (Lim, McGreal & Webb 2006). And, with the closer economic gap between Australia and Malaysia in the Global Competitiveness Report 2013, it is worthy to compare both countries. For example, the report compared drivers of productivity and prosperity in both countries and published that Australia was ranked 20th and Malaysia was ranked 25th for year 2012-13 (World Economic Forum 2013). Most value- attitude- behaviour studies are

conducted only in a single country, not across two or more countries with different cultures. Hence, this study examines the importance of values in the decision-making process and the variation in value priorities among individuals from two different countries.

By reviewing the current literature, the researcher has found that, to date, there has been no investigation of the bounded rational behaviours of individual investors in the real estate market. Therefore, this study makes a contribution to research by attempting to demonstrate the existence of these behaviours. It is the first study to undertake a detailed analysis of bounded rational behaviours by gathering data from experts in the industry, as well as individual real estate investors. The study aims to contribute to the area by providing a better understanding of how to make quality decisions in real estate investment. This research offers an important insight into the implications of bounded rational behaviours, both at the individual level and societal level.

1.5 Chapter summary

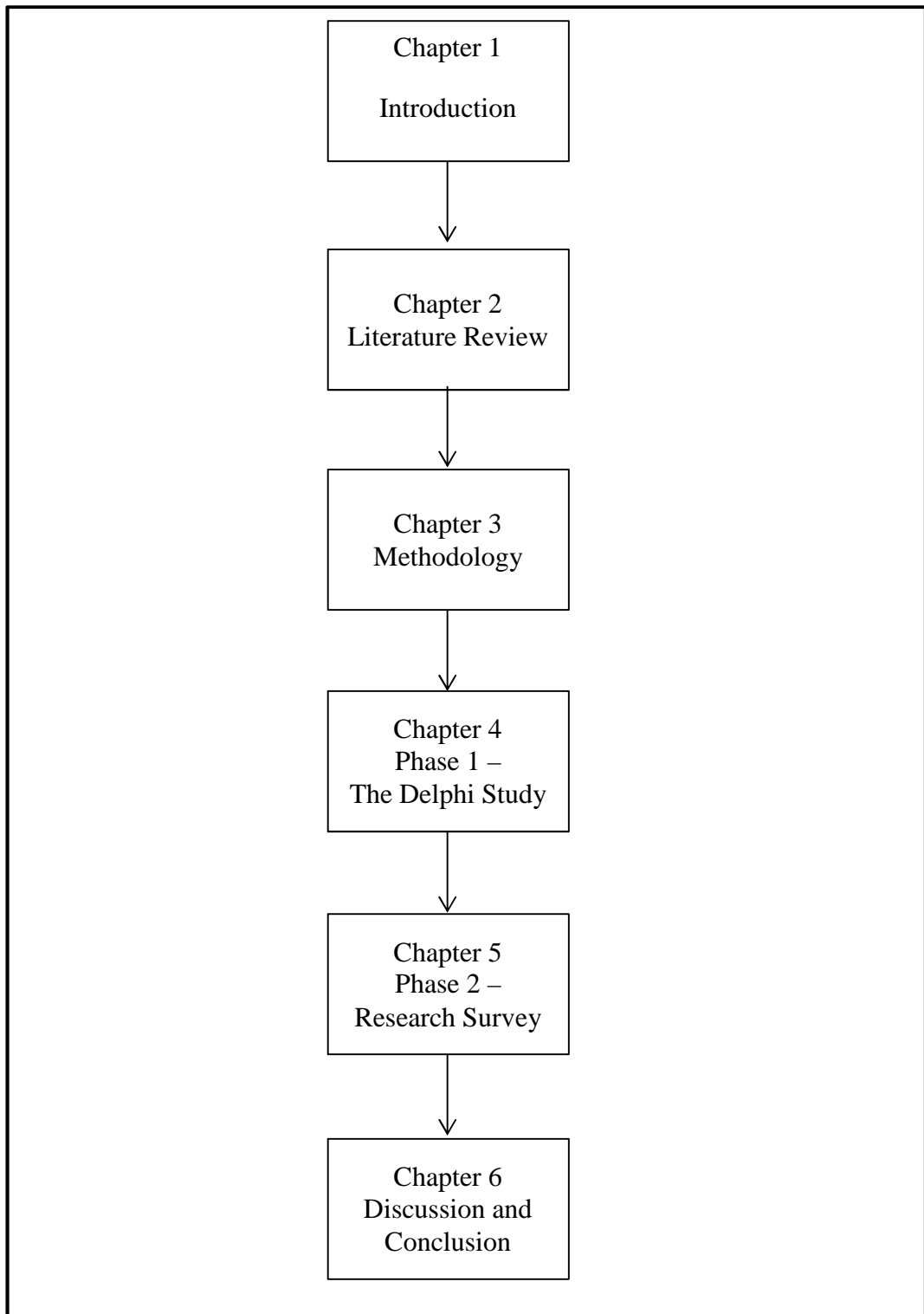
This chapter has served as an introduction to the background and direction of this study, discussing the overall purpose and significance of the research. The focus of the study is important as it drives the direction of inquiry by regularly reviewing the research questions. Overall, this thesis is structured into six chapters.

Figure 1.3 on the following page exhibits the structure of the thesis. Chapter Two is the Literature Review, further broken down into subsections, that provides a substantial discussion and review of real estate investment, decision-making behaviours, and the neoclassical economic model and its imperfections. It provides an extensive review on past literature that helps to establish the purpose of the study rigorously. The chapter illustrates how behavioural economics and behavioural finance complement neoclassical

economic theory and delineates the impact of culture and human values as guiding principles in the decision-making process.

Chapter Three presents the mixed methodology that is employed in the current study. It is comprised of two phases: Phase 1 – The Delphi Study and Phase 2 – Research Survey. Chapter Four reports the qualitative findings of the two iterations of the Delphi study and the implications of the results. Similarly, Chapter Five discusses the quantitative results of research survey and the implications of the bounded rational behaviours in real estate investment with six propositions suggested to investigate the bounded rational behaviours of individual investors. Finally, Chapter Six reviews the outcomes of both phases of the study and presents the significance of the findings. Chapter Six outlines important discussion on the contribution of bounded rational behaviours and the implications of the six propositions in real estate investment. Particularly, Chapter Six draws on the important roles of bounded rational behaviours to improve the quality of decisions at the individual and societal level. The limitations of the study are outlined in the same chapter. Chapter Six completes the study by offering suggestions for future research and delivers the conclusion.

Figure 1.3: **The structure of the thesis**



CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

A review of the current literature reveals that the development of real estate investment knowledge is both strong and emerging. The fundamentals of decision-making research are also robust, yet there is room to explore and improve. Real estate investment involves several decision-making processes that are essential when determining the success of an investment. There are many studies that focus on institutional investors but investigation of the decision-making behaviours of individual investors has not drawn much attention from researchers.

This chapter intends to describe the fundamentals of the neoclassical economic model and how it leads into the development of behavioural economics. It examines the existence of bounded rational behaviours in the real estate investment market and the role that human values play in the decision-making process. The following discussion will blend concepts and ideas from various disciplines such as psychology, economics, finance and marketing. This literature review is segregated into subsections with the aim to provide a greater understanding of the areas of real estate markets, economics, psychology, and human values. Psychological literature is included in the review because the decision-making process is founded on the fundamentals of psychological processes in judgement and choice (Einhorn & Hogarth 1981).

2.2 Real Estate Investment

If we take a closer look at the variety of choices in investment, investing in the real estate market is profitable and has lower risks compared to investing in security markets. Houses are always viewed as a safer investment compared to the other types of investment, as long as the investors hold out long enough (Case & Shiller 1988). When people have higher marginal propensity to consume on housing, they are accumulating wealth through capitalizing housing assets (Benjamin, Chinloy & Jud 2004). This research emphasized that a portfolio with real estate maximizes household's utility and satisfies the consumption capital asset pricing model. However, peripheral knowledge of the real estate market may not be sufficient for individual investors to succeed in real estate investment as one requires a deep understanding of its institutional setting in order to succeed. The institutional environment includes both government policies and the condition of property markets. Individual real estate investors must comprehend housing policies, taxation, property laws, and current economic and financial issues. However, first things first, why is real estate investment the topic of interest?

In real estate investment, there are two general motives: consumption and investment (Brueckner 1997). In addition to this, the behaviour of housing investors is connected to wealth accumulation. This concept was researched by Arrondel and Lefebvre (2001) who projected a portfolio choice model by using probit models. Here, they discovered that investment decision in housing has an effect on wealth accumulation. Furthermore, they suggest that the analysis on investment decision is closely related to housing consumption. An investor should draw a line between their housing consumption and investment as the variation of motives will yield different outcomes. Intertwined motives of both consumption and investment may blur the objectives of buying a property and, subsequently, investors may fall into the housing trap, which occurs when buying power is decreased or limited by the investment portfolio that loaded or distorted the consumption gains. Objectives should be clearly identified, especially when buying power is

limited and the investment portfolio is overloaded. Ioannides & Rosenthal (1994) highlighted the difference between the consumption and investment demand for housing, explaining that consumption demand is less sensitive to wealth and income compared to investment demand.

The life cycle hypothesis addresses individual consumption patterns over the lifetime. Modigliani (1966) explored the life cycle hypothesis where he observed that people make consumption decisions based on available long term resources and the stage of their lifetime. It is inevitable that the younger generation will opt for non-housing consumption due to high entry cost. Housing consumption and investment are two inseparable topics where trade-offs will happen. The housing and non-housing consumption model explains the life cycle pattern of consumption. It is arguable that older cohorts are more likely to become investors than younger cohorts as younger people struggle to gain a house for consumption, rather than investment (Yang 2005). Discussing home ownership, Kupke et al. (2001) explained that, in comparison to older cohorts, younger cohorts take more time to acquire a home. If this is related to earnings and life cycle consumption, it is fair to assume that the population of real estate investors is highly populated by older groups of people. Having said that, there are two types of investors. The first type of investor is one who invests by acquiring rental income. The second type is one who invests by acquiring capital gains by selling the property after some time. It is arguable that both types of investors will behave differently according to their optimum choice and the objectives of investment. Private landlords, who invest in acquiring rental income, do not act rationally or efficiently, as is assumed by the economic model (Andersen 1998). In view of this, are investors who invest to acquire capital gains also acting irrationally and inefficiently? According to Andersen (1998), the motives of private landlords are comprised of long term profit, economic surplus from the property, income from undertaking building work, and keeping the property as a personal possession.

According to the Asia Property Market Sentiment Report 2012, there are 8 factors that contribute to the readiness of a person to purchase a property (The iProperty Group 2012). These factors include political and economic climate, recommendation by friends and family, financing eligibility, developers' track record and reputation, potential capital appreciation, potential rental yield, and price and location (see also de Bruin & Flint-Hartle 2003; The iProperty Group 2013). When considering investment in the property market, expected return on the investment, wealth accumulation through long term gain, and risk attitude are among the motivations to make an investment (de Bruin & Flint-Hartle 2003). Brown, Schwann and Scott (2006) conducted research by developing a logit regression to estimate the chance of a household receiving profit/loss from residential property investment. The aim of their study was to identify the financial and socio-demographic factors that motivate property investment. In addition, they were also concerned with how property investment changes over the property cycle. In their model, life cycle variables such as age, marital status, and the number of children in the household were included. Investors who were married and employed were more ready to invest in property than those who were not. However, full time employment and the presence of children are factors that affect the investor's ability to manage their property and participate in real estate investment.

Recently, Wood and Ong (2010) developed a probit model by using data from the Household Income and Labour Dynamics in Australia (HILDA) survey. Their research objective was to examine factors that shaped a person to become a rental investor (a landlord). This study, suggested that personal characteristics and the attitudes of investors does not affect the investors' decision to initiate a real estate investment. Conversely, a person's after-tax economic costs have utmost significance role when influencing rental investment behaviour. Results presented in Wood and Ong's probit model is opposed to the research by Brown, Schwann and Scott (2006). The probit model showed that the number of children, marital status, and labour market history of an investor were not significant as influencing factors. Motivators prompting rental investment, such as attitudes towards risk and saving

behaviour are also insignificant in the probit model. Beyond the above mentioned socio-demographic factors, educational also plays a part the investment decisions (de Bruin & Flint-Hartle 2003). Having said that, Thaler and Bernatzi (2004) suggested that there are three forms of accumulating retirement wealth, namely social security, pensions, and home equity.

Furthermore, there have been many studies directed into understanding the decision-making process of real estate investors in the context of institutional investment. Individual investors are not acting as professionals; compared to institutional investors, they are not technically aware when making the decision to buy, hold, or sell property. Institutional investors may not manifest the affective component of loss aversion in the situation of selling an object (Paraschiv & L'Haridon 2008). Institutional investors are sophisticated while individual investors, as a group, are un-sophisticated (Grinblatt and Keloharju, cited in MacCowan & Orr 2008). Even if there is insufficient information regarding the property market, there are in-house research teams that help institutional investors to perform forecasting before making a strategic decision. Institutional investors are similar to investment managers and pension fund and REITs managers (Lim, McGreal & Webb 2006). Generally, institutional investors are not emotionally invested in any one property.

MacCowan and Orr (2008) also discussed the disposal decision-making of property fund managers by using an economic approach. Apart from this thesis, there is little research that aims to understand the decision-making process of individual investors as specific individual residential investors. This study aims to explore the decision-making process of the individual investors, asking questions such as: what are the dynamics behind rational decision-making and the values that influence them? According to Lim, McGreal and Webb (2006), there are four factors shaping the decision-making process of institutional investors: political, economic, socio-cultural, and legal circumstances.

2.3 Decision-making

The reality of decision-making is that people often face more than one choice and need to select from different options. To select the correct option, people will weigh the value of the costs and benefits, either in the short or long term. One of the principles of economics is that rational people act according to incentives (Mankiw 2008). Here, the more information available the better, especially in investment decision-making. A study on consumer behaviour may be useful to this research to understand the decision-making process. In other words, investors are involved in buying and selling activities too, the difference being that the product is a property and not typical consumer goods. Gibler and Nelson (2003) suggested that consumer behaviour theories can be applied to real estate education and that this may shed light on understanding the decision-making process in real estate investment. Understanding consumer behaviour will help to uncover the reasons that people have when buying a product and the processes that they are involved in when they make a decision and take action (Black et al. 2003).

It is important to know the variety of attitudes that investors have when choosing a property investment. It is also interesting to examine how they assign value to a property, given the market price alignment with other factors. People value a property based on external and internal real factors and investors consider the general condition of the economy, financial situation, location, transportation, and neighbourhood. Internal factors include things such as size, accommodation, condition, design, layout, age, type, and plot size (Adair, Berry & McGreal 1996). In 1892, there was concern from Keynes regarding human decision-making from logical and psychological theories of stock prices. There is reason to believe that this is happening in the real estate investment as well, although differences will exist between the two, for example, the risk of stock investment is higher than real estate investment. Despite this, the decision-making process will involve the attitudes and behaviours of either individual or institutional investors. Of course, one should take into account that experience can change the attitudes and behaviour of an agent (Black et al. 2003). Black and his colleagues also

highlighted that psychological rationale influences the prices in the financial market.

The two processes of making judgements are: scientific/statistical methods of prediction and intuitive methods of prediction (Slovic 1972). According to Upshaw (1975) there are four phases of decision-making that include,

- Phase 1: Processing information about alternative positions on the issue
- Phase 2: Establishing an attitude and a preference order among alternative positions
- Phase 3: Describing oneself on attitude related variables
- Phase 4: Changing one's position.

Furthermore, it is necessary to understand that decision-making is action-oriented and requires a person to take action in order to satisfy his/her basic needs and wants (Einhorn 1980) as well as to opt into the choice (Carroll 1980). Of course, people will face trade-offs when making decisions (Mankiw 2008) but in the meantime, he/she will try to optimize the option as explicated by Bayes' Theorem (Einhorn 1980). In Bayes' Theorem, a decision is made based on expected utility and draws necessary assumptions from sample data. Behaviour is said to be irrational when there is a violation of expected utility axioms or the updating of the belief probabilities rule, as in Bayes' Theorem (Einhorn & Hogarth, 1981; see also Knez, Smith & Williams 1985). Bayes' rule particularly failed as a descriptive model, due to the evidence that individuals use information inefficiently (Grether 1978). In Rabin (2002, p. 6), assumptions made by economists about human nature are:

People are Bayesian information processors; have well-defined and stable preferences; maximize their expected utility; apply exponential discounting weighting current and future well-being; are self-interested, narrowly defined; have preferences over final outcomes, not changes; have only "instrumental"/functional taste for beliefs and information.

The competency of decision-makers attracted researchers to conduct deeper research into how a competent and incompetent person assesses information before taking action (Camerer & Weber 1992). Loewenstein (2001) found that individuals are different from one another, acting differently across

situations and over time. In other words, even a single individual may act inconsistently in the same situation. This has prompted researchers to reflect on whether how any individual model can be conclusive enough to predict human behaviour. Furthermore, Wilson et al. (cited in Loewenstein 2001) concluded that people may act according to their “gut”, especially in spontaneous decision-making. This again evoked reflection on whether real estate investments involve spontaneous decision-making. Real estate investment may not appear to require impulsive decision-making, but it often does. However, a rational investor should always obtain sufficient information before taking action. Anecdotal evidence suggests that the decision to buy and sell a house is a joint decision, where the individual uses agent knowledge and acquires other relevant information to narrow down choice in terms of price and location.

Availability of information is crucial when people do not wish to experience regret when making a decision. People are likely to avoid responsibility when feeling regret after a bad decision has been made (De Bondt & Thaler 1995). Regret avoidance describes a situation where people avoid decisions as they are reluctant to make the wrong decision (Tetlock 1992; see also Bell 1982; Samuelson & Zeckhauser 1988). Shefrin and Statman (1985) also discussed how aversion to regret contributes to investors’ behaviour when averse to realising losses (see also Case & Shiller 1988). People are averse to making wrong decisions when they are perceived as competent. Some investors prefer to hire an agent to help them make a decision in order to negate stress. Taking this into consideration, only experienced agents are able to make the decision and are responsible for the blame or credit from investors. Contrary to this, if the decision-making is done by the individual investor him/herself, the researcher’s concern is that competency may still exist or has been transformed into other forms.

Case and Shiller (1988) suggested that investors in real estate markets do not have fundamental knowledge and interpret events in the market based on hearsay, clichés, and casual observations. Of course, there are skilled investors who trust their own intuition and often perform better even when

compared to decision-making based on a full set of detailed analysis reports (Klein, cited in Kahneman 2003c, p. 1469; see also Kahneman 2003a). Subsequently, when buying and selling, the judgement and decision-making process may be varied (Barber & Odean 2006). Shiller (2001) provided a different insight into the behaviour of institutional investors and suggested that institutional investors may have the need for justifiable authority to confirm their best judgements, which are often generated intuitively. In this case, there is a contrary notion of regret avoidance and independence. Individual investors have the freedom to make investment decisions without worrying about a need for authority, but they still attempted to avoid the regret sentiment in case the decision did not deliver satisfactory results.

Regret, disappointment, fear, hope, joy, envy, jealousy, interest, and enjoyment are emotive factors that affect activities of investment. These emotions can be generated before, during, and after the investment. Thus, there are interrelated emotions that should be included in the study of decision-making behaviour (e.g. Kogut & Ritov 2005) as it may be that investors become involved in emotion/sentiment easily; in other words, they are easily induced to decision by third parties manipulating the investment environment (Elster 1998). Finucane et al. (2000) also stated that emotional responses toward social groups are one of the essential components of judgement. Simon (cited in Kahneman 2003c, p. 1449) once proposed that decision-makers are boundedly rational (see also Barber and Odean 2006). Hence, Kahneman and Tversky (Kahneman 2003c) extended their research on compound cognitive systems: System 1 and System 2. The cognitive operation of System 1 is fast, effortless, and mostly governed by habit. Here, the term “intuition” abridged these. The cognitive operation in System 2 is relatively slower, effortful, controlled, and relatively flexible. Here, “reasoning” issued to describe this system (see also Kahneman 2003a). Kahneman (2003a) presented the three domains of decision-making which are: heuristics of judgement, risky choice, and framing effects, in order to better understand the thoughts and preferences that come to mind without reflection.

Furthermore, Brian Elton and Associates (cited in Seelig, Burke & Morris 2006) described the investors' actual behaviour as unpredictable because it may change according to institutional circumstances. For example, the decision-making process of individual investors may be affected by the speech and methods that are used by real estate agents and financial officers. Automatic evaluation effect and avoidance reaction describe one's psychological avoidance motive. Participants in Bargh's experiment pushed away all unpleasant words, instead focusing on those that were pleasant (Bargh 1997). Hence, the impact of automatic behaviour and the push-pull reaction seems to be part of the decision-making process. More importantly, the outcomes of a decision should not be overemphasised, instead effort should be spent on evaluating the process of deciding (Einhorn & Hogarth 1981).

To further extend the discussion of the decision-making process, a review by Roberts and Henneberry (2007) suggested that there are ten stages of decision-making in real estate investment:

- a) Setting of initial (property) investment goals and decision criteria
- b) Formulation of a fully defined decision-making strategy (relating to portfolio structure and performance)
- c) Search (for suitable properties)
- d) Information input (including analysis of market conditions)
- e) Prediction of outcomes (return and risk at portfolio and property levels)
- f) Application of decision criteria
- g) Trade-off (between properties)
- h) Project screening (of properties)
- i) Investment selection
- j) Negotiation, deal resolution, and post investment activity

Lewellen, Lease and Schlarbaum (1977) suggested that decision-making starts in a circular loop; from goals, analysis, and choice, to evaluation. This process is repeated again in the next decision-making process. In the same study, several investment behaviours and investment characteristics are examined. For example, when comparing the decision-making process of

males and females, male investors are more likely to conduct their own security analysis; although savvy real estate investors understand that the security analysis is essential when making a decision to invest in a real estate portfolio. Security analysis is particularly important for investors who want to analyse financial statements, price trends, and momentum of securities. Einhorn and Hogarth (1981) have deconstructed the process of decision-making and judgement into smaller components that include: information acquisition, evaluation, action, and feedback or learning. It is understandable that most consumers purchase real estate intermittently, so they are more likely to conduct an information search (Gibler & Nelson 2003). In an analysis conducted by Worzala and Newell (1997), a decision-making framework was used to explore how investment decisions were being made in the respondents' organization. The decision-making framework can be divided into two types: a top-down approach and a bottom-up approach. In both top-down or bottom-up, there is no certainty that it will yield a promising outcome.

Generally, there are two types of decision to be made: solely independent investment decisions and cross checking decisions. Additionally, disposition effect is found to be significantly weaker for professional investors when compared to amateurs. Individual investors are said to present a disposition effect when they sell their winning stocks too early and hold onto their losing stocks too long (Shefrin & Statman 1985). This is because trained and experienced professionals have less judgement bias in the decision-making process (Shapira & Venezia 2000). Nonetheless, in the decision-making process, an individual investor or professional may be affected by bias or preference as it is human nature although the increase of experience earned through the decision-making process will decrease the necessity of conscious attention (Bargh 1997).

Huisman et al. (2004) categorized investment decisions into three characteristics: uncertainty, irreversibility, and choice of timing. Uncertainty will be reduced in the condition of information spill over and pre-emption. Related to this, decision-making can be simply a cognitive or preconscious

automaticity for investors in their decision-making process. Specifically, this is likely to occur when investors have experience in a similar situation and is more likely to happen to experienced investors. Otherwise, decision-making and the judgement are influenced by underlying values and motives that have developed over time (Upshaw 1975).

In fact, the decision-making process is often influenced by the desire to seek approval and respect from others (Tetlock 1992). This can include both symbolic and tangible rewards and punishments. According to the neoclassical economic model, that postulates the general motivation to utilise scarce resources, people must make decisions amid a range of choices. There are three motives highlighted by Tetlock (1992):

- a) the motivation to protect and enhance one's social image or identity
- b) the motivation to protect and enhance one's self-image
- c) the motivation to acquire power and wealth

By examining these three motives, the researcher strongly agrees that real estate investment is influenced by these motives and wishes to demonstrate the importance of exploring real estate investors' behaviour in decision-making.

According to Lewellen, Lease and Schlarbaum (1977), dominant elements such as age, income, and gender are vital to this analysis. Occupation, marital status, family size, and educational background are also important elements that contribute to decision-making patterns. The investment volume tends to increase when the age of the investor rises. Moreover, if the investor is moving toward a retirement period, with higher family income, he/she will often reduce some of the investment portfolio. Nappi-Choulet (2006) concluded that motivation, availability of information, market trends, and capital constraints are the attributes of private sector decision-making in property investment. The standard life cycle model of saving is influenced by both bounded rationality and bounded willpower (Mullainathan & Thaler 2000). The action of saving, especially for retirement, is believed to be one of the major factors when making real estate investment. Mullainathan and Thaler (2000) asserted that bounded rationality reflects the limited cognitive

abilities of human when solving problems. They also defined bounded willpower as a situation where people make choices that do not fulfil long-term interest.

The decision-making process includes a choice model. Here, choice behaviour is a concept in the study of consumer behaviour. However, the economist and psychologist have different opinions on choice behaviour. Economists explain choice behaviour consistently, using the hypothesis of rationality maintenance with an emphasis on outcomes. On the other hand, psychologists emphasise the importance of process and ask why such choices are made (Hogarth & Reder 1987). This demonstrates that economists and psychologists observe choice behaviour from two different perspectives. When meeting with investors, the aim is to understand their decision-making process and the outcome can be unsure during the interview setting. Ebbesen and Konečni (cited in Einhorn & Hogarth 1981, p. 81) concluded that there are weaknesses in the laboratory setting when understanding the decision-making process due to low external validity. However, the elements of an appropriate social setting are still vague. Social psychologists are interested in interpersonal and small-group processes when understanding the process of judgement and choice (Tetlock 1992). The purpose of this research is to explore the fundamental laws of human thought and Tetlock (1992) believed that it is important to understand people in normal social settings.

Inevitably, economics is the fundamental discourse that provides adequate theories to better comprehend the decision-making process. To extend this understanding, neoclassical economic models and the behavioural economics model are reviewed thoroughly. The neoclassical economic models are arguably the cradle of study on how economic agents behave and interact. Nonetheless, as humanity progress throughout time, it is proven that a new understanding of society offers fresh perspective on previously known realities. Behavioural economic models examine human agents by taking cognitive heuristic judgement, emotion, and market inefficiencies into account.

2.3.1 The imperfection of Neoclassical economic models

According to the neoclassical economic approach, humans as actors in the economic arena are assumed to be rational and their preferences of choice are bound to optimization. These economic agents, in the presence of information, are described as completely rational in the decision-making process (Fromlet 2001). The expected utility theory explains the details of this rationality. However, socio-demographic and economic factors are not robust enough to describe the decision-making process fully. As outlined by MacCowan and Orr (2008), there are three basic assumptions of neoclassical economics theory. First, people are assumed to act in accord with the full and relevant information that they have received (see also Mullainathan & Thaler 2000). Second, people have rational preferences among outcomes and associate preferences with a value. Last, firms make decisions based on the goal of maximizing profit. On the other hand, individual decision-makers aim to maximize their utility.

Most of the theories in economic models assume that economic agents are rational in achieving optimization. The decision-makers are said to be rational if, and only if, the behaviour is 'conforming to the rational choice paradigm' (Hogarth & Reder 1987, p. 2). For example, the expected utility model and neoclassical economic model are optimal models with a single goal which is optimization (Einhorn & Hogarth 1981). However, the decision-makers are bounded by the constrained maximization situation. Terms that are usually used in neoclassical economics include: expected utility theory, risk aversion, and the Bayesian formulation. Expected utility theory describes the utilities of outcomes that are weighted by their probabilities (Kahneman & Tversky 1979, p. 263). Under the umbrella of discussion on expected utility theory, people tend to underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty (Kahneman & Tversky 1979, p. 263). Expected utility assumes that the probabilities of outcomes are known. Yet, it is appropriate to question whether this will always occur. Simon (1987) highlighted that the assumptions of expected utility theory include the actors' utilities, beliefs, and expectations. This was mentioned

explicitly by Camerer and Weber (1992) where 'it is hard to think of an important natural decision for which probabilities are objectively known' (p. 325). As probabilities are connected to mathematics, it is important to ask whether mathematical methods are able to detect real preferences in choice. If not, decision-makers will need to understand more about the self in order to make a better decision. Likewise, Sent (1967) was concerned with whether mathematical economic models were able to explain economic phenomena completely. This leaves room for improvement by allowing the development of behavioural economics.

Gilboa and Schmeidler (1995) highlighted that expected utility theory and case-based decision theory complement each other by understanding how people (agents) think and make a decision. Specifically, decision problems under uncertainty are not always easy to deal with given the complexity of the world. They presumed that people will place more weight on decision problems that are 'more similar' to ones they have previously experienced. Expected utility theory is being used to analyse decision-making under risk. However, it is not always the case that predictions are able to be fully matched with observed behaviour (Levy 1992). Portfolio theory has always been used as a model for pricing and allocation of assets. Property, equities, and bonds are among the asset classes that are included in the assets allocation model. Real estate is selected as one of the assets and decision-makers allocate these assets accordingly, subject to their objectives and capital rationing constraint as well as how they perceive risk. Even though the theory is focused on the mathematical model, French (2001) has mentioned that the final decision in assets allocation may be influenced by other variables that are not included in the mathematical model.

Economic theory is the combination of positive and normative (descriptive) theory. Normative theory describes how consumers should choose according to the rational maximizing model, while positive theory describes what consumers actually do. Supposedly, economists should utilise normative and positive theory in order to better understand consumer choices or human behaviour as, in fact, many consumers do not act in accordance with

economic theory. In other words, there is inconsistent consumer behaviour to consider, as described in economic theory. Stanovich and West (1998) highlighted that ‘humans deviate from normative models of decision-making and rational judgement’ (p. 161).

Decision theory is a set of models that discuss judgement in rational choice (French 2001, p. 399). This theory can be used in economic applications and in psychology, mathematics, and statistics. According to French (2001), there are three interrelated decision models that include: descriptive, normative, and prescriptive analysis. Normative models allow us to explore new thoughts or ideas and suggest ‘how a decision should be made’. The descriptive model describes ‘how the decisions are actually made’. Lastly, prescriptive analysis combines the application of normative and descriptive models to lead the decision-maker towards a ‘good’ decision. Prescriptive theories also offer advice to help people to improve their decision-making (Thaler & Benartzi 2004). Although there are three decision models, behavioural researchers are primarily in favour of using normative models to comprehend problems in decision-making (Janis & Mann 1977). They also labelled humans as reluctant decision-makers who do not always behave rationally. Subsequently, in order to avoid the decision-making, the reluctant decision-makers tend to opt for delaying behaviours or, more specifically, procrastination.

The idea of rationality as a decision-making behaviour is further challenged by other well-known social researchers. This body of research aims to bridge the gap between the rational model and socio-demographic and economic factors. This gap has gain attention from numerous psychologists and economists and several studies have been done to further research the psychological aspects of decision-making (see Arbel, Ben-Shahar & Sulganik 2009; Genesove & Mayer 2001; Kahneman 2003c; Kahneman & Tversky 1979; Mullainathan & Thaler 2000; and Thaler 1980). MacCowan and Orr (2008) emphasised that information available in the investment market is not always perfect and also that there is evidence that fund managers exhibit heuristics, biases and tendencies in their investment patterns to follow certain

trends. Having said that, there are arguments amongst financial theorists on behavioural issues. They believe that observable market anomalies arise sporadically due to the misspecified asset models or from poor quality data (MacCowan & Orr 2008).

However, mathematical solutions and econometric models are unable to distinguish the complexity of human behaviour, thus it is impossible to answer most of the questions that arise in real world situations (Simon 1987). Most of the time, decision theorists, economists, and psychologists are at odds when discussing this topic (Camerer & Weber 1992, see also Einhorn & Hogarth 1981). Simon (1987, p. 26) makes the distinction that ‘the rationality of economics is substantive rationality, while the rationality of psychology is procedural rationality’. This researcher has advanced the study of bounded rationality, where there are limitations on human knowledge. Here, economic agents behave in discord with neoclassical theory (Klaes & Sent 2003). There is a heuristic model that describes the actual judgement and choices of decision-makers who are attempting to obtain multiple goals. When the goals conflict with one another, there is no optimal solution. Hence, one’s values will need to be taken into account to reach the final decision. Tversky and Kahneman (1974) disputed the use of statistical principles in everyday decision-making because ‘the relevant instances are not coded appropriately’ (p. 1130). Most individual investors tend to rely on heuristic judgement and use short cuts when making decisions due to incompleteness of information. Consequently, this may result in judgemental bias and produce biased or inefficient outcomes (Roberts & Henneberry 2007). Undeniably, institutional investors can avoid such judgemental bias by relying on their research team to collect data from the market (MacCowan & Orr 2008).

Thus far, this research has presented a substantial literature review on behavioural economics and behavioural finance. In the following section, an overview will be given on how behavioural economics and behavioural finance complements neoclassical economic theory. The following discussion is not intended to criticise the shortfalls of neoclassical economic theory, but rather provide an open discussion on the development and wider

usage of behavioural economics in the decision-making process. Additionally, the review will discuss the implications of bounded rational behaviours in business decision-making.

2.3.2 How can behavioural economics and behavioural finance complement neoclassical economic theory?

There are disagreements on the validity of the expected-utility model and there is a growing number of alternatives to this standard model (Payne, Bettman & Johnson 1992). It has been suggested that behavioural decision research is able to provide ‘a rich interplay between basic and applied disciplines’. By reviewing the available scholarly research, scholars have realised that there is insufficient evidence to support rational decision strategy. Hence, further research is required to evolve this flawed model. In view of this, there have been increasing numbers of well-established models over recent decades that analyse human behaviour in economic and decision-making contexts. These are labelled behavioural economics and behavioural finance. These models take humans agents in the economy as subjects of research and aim to comprehend the decision-making processes of these economic agents. The discussion and arguments in this thesis are primarily framed around behavioural economics, behavioural finance, and the neoclassical economic approach.

Behavioural economics is a discipline that studies human psychology when making an economic decision (Mohamed 2006). Masini and Menichetti (2012) indicated that human agents are not fully rational due to behavioural factors that powerfully affect a decision such as the level of confidence and their prior beliefs. To further emphasise the limitations of neoclassical economic theory, Bell (1982) described anomalous mental shortcuts that are involved in the decision-making process, such as ‘dismissing the difference between 10% and 11% as negligible’ (p.962). This has raised questions about whether expected utility theory is still relevant as a guide to understand human decision-making behaviour. In 2003, Daniel Kahneman expressed his psychological views in the economic context, arguing that economic agents

are rational (Kahneman 2003b) and contributing a large body of psychological work to economics and introduced prospect theory. There are several anomalies in decision-making that are raised by behavioural economists. These anomalies include: endowment effect, loss aversion, and status quo bias. Benartzi and Thaler (2007) deliberated the implication of heuristics and biases in saving and retirement plans when increasing the total saving of employees. Heuristics biases, such as mental accounting and status quo bias, help to explain the decision-making process and provide a solution to improve the quality of the decision (see also Thaler & Benartzi 2004). Thaler and Sunstein (2009) explained how status quo options may improve choice architecture. In their example, employees at the University of Chicago were at an advantage if the option for the amount of annual retirement savings was set to default as 'same as last year' rather than 'back to zero'. This is the inertia effect, where people tend to continue with their current situation.

Behavioural economists explore judgement, well-being, and the behaviour of economic agents to explore how agents act outside of accepted economic theories (Sent 1967). More specifically, behavioural economics is a sub-field of economics that aims to identify the behaviour of economic agents that diverges from standard economic models and how this behaviour affects the economic context (Mullainathan & Thaler 2000). The establishment of behavioural economics is not meant to wholly reject the approach of neoclassical economics in discussions on utility maximization, equilibrium, and efficiency. In fact, bounded rationality was defined as 'intended rational, but only limitedly so' (Simon, cited in de Bruin & Flint-Hartle 2003). Furthermore, it assists in understanding the agents' behaviour when influenced by imperfect knowledge and the use of heuristics judgement. Having said that, the neoclassical approach is a theoretical framework that every single economist can apply to any form of economic behaviour to make a prediction on analysis (Camerer, Lowenstein & Rabin 2004; see also Roberts & Henneberry 2007).

The two schools of economic theory, classical and neoclassical economic theory, assume that human rationality is perfect, whilst behavioural economics considers the reality of human behaviour as observed in economic life (Simon 1992). Neoclassical economic theory assumes competition, information, and rationality are perfect (Camerer et al. 2003). There is evidence from several studies that shows that irrational agents earn higher returns than rational traders (Summers and Waldmann, cited in de Bondt & Thaler 1995). In addition to this, behavioural finance has successfully explained the financial market when compared to neoclassical economic theory (Fromlet 2001). The theories of behavioural economics and behavioural finance have infused quality insights into this research when exploring new areas of knowledge, helping to close the gap between neoclassical economics and the behaviour of real estate investors in the real business world. Either bounded or unbounded rationality can be explored by this research framework that takes human values and cognitive function into account.

Researchers in economics and finance have witnessed a paradigm shift in both disciplines over the past few decades. The adaptive belief systems model was used to emphasise that human agents are boundedly rational and that they have heterogeneous expectations (Brock and Hommes, cited in Hommes & Wagener 2008). In relation to the current study, there is a strong belief that real estate investors are boundedly rational with two distinctive motivations: long term investment returns as wealth accumulation and short term gains. Heterogeneous expectations in investment tends to produce a switch in investment strategies, in order for the investor to survive in the market. Kupke et al. (2001) categorized real estate investors as unintentional and unsophisticated, displaying irrational economic behaviour. In view of this, there is supporting evidence for the proposition that investors are acting bounded rationally.

Findings in behavioural economics are mostly established from evidence generated by experiment or simulation, using methods such as, field data, field experiments, and brain magnetic resonance imaging (MRI) scans to

collect rigorous evidence (Camerer, Lowenstein & Rabin 2004). Mullainathan and Thaler (2000) have highlighted that the success of behavioural finance is due to the following two factors. First, financial economics and the efficient market hypothesis have produced accurate, testable predictions about observable phenomena. Second, there is a wealth of data available to test these predictions. According to Camerer, Lowenstein and Rabin (2004), behavioural decision research can be classified into two groups: judgement and choice. Judgement research highlights the process that people use to estimate probabilities, while choice research deals with the process that people use to select among actions. Overconfidence, framing, loss aversion, and representative heuristics are terms commonly used in the study of behavioural finance. Fashion and fads (De Bondt & Thaler 1995) represent real life situations where people are easily influenced in their decision-making. In the case of real estate investment, the concepts of fashion and fads are applicable. As observed by the researcher, a person is likely to start making real estate investments when the people around him/her are investing. That is, due to peer modelling, a person can be influenced to invest and tends to follow investment trends.

Case and Shiller (1988) proposed that the current market for residential property is very different from what has been discussed in past research. Furthermore, there are limitations in studying real estate markets. One of the limitations is that real estate markets 'do not provide all of the data needed to calculate the value of the option that represents the owner's interest in a home' (Cauley & Pavlov 2002). Perfect market assumptions no longer hold as the information is imperfect and unevenly distributed (Seelig, Burke & Morris 2006). Bounded rationality is the best term to summarise investors' decision-making behaviour where economic assumption does not hold. People will not be able to act rationally due to a lack of relevant information, and will experience uncertainty during the decision-making process (Camerer & Weber 1992). Also, the bounded rationality of human beings partly depends on the ability to process information (Barber & Odean 2006). Roberts and Henneberry (2007) described an imperfect concept in the decision-making process as a situation where there are imperfect players in an

imperfect market using imperfect information. They demonstrated that the property investment market was not working according to normative models, and subsequently, that rational analysis was not the only way to understand how the market works. Their study concluded that ‘investors tend to “collapse down” the decision-making process, taking heuristics or cognitive shortcuts to achieve investment outcomes’ (p. 289).

As delineated by Seelig, Burke and Morris (2006), the objective of decision-making is limited by social norms, lack of information, uncertainty, cognitive abilities, and emotion. Investors may attempt to maximize their utility, profit, and return but are bounded by their own intuitive and cognitive thinking. In the decision-making process, investors are likely to be conditioned with usual societal practices and be affected by the status quo effect. ‘Gut feeling’ could be the term that a real estate investor, who made a profit from their investment, uses to explain their success. In neurobiological studies, the somatic marker hypothesis provides evidence of what is referred to as ‘gut feeling’. According to Damasio (1996), the ‘marker’ signals the body and brain to respond to stimuli, and the evoked emotion may occur overtly (consciously) and covertly (unconsciously) in relation to past outcomes (see also Damasio 1994). Past performance and experience guided individuals in the decision-making process, using cognitive powers of calculation (De Bruin & Flint-Hartle 2003). Einhorn and Hogarth (1981) also argued that the Bayesian Theorem may not be able to characterise the natural environment in the process of decision-making. Additionally, individual decision-makers do not behave ‘in accordance with the axioms of expected utility theory’ (Shefrin & Statman 1985). In an effort to strengthen arguments regarding the weaknesses of the optimal choice models, Kahneman (2003c) also mentioned that rational models are psychologically unrealistic.

The number of studies conducted on real estate investment, based on behavioural theory, is minimal and research on decision-making in the real estate market has largely focused on valuation (Roberts & Henneberry 2007). Hence, most of these studies utilised real estate valuers as the subjects of study (e.g., Northcraft & Neale 1987). Hardin (1999) discussed the heuristics

and bias that happen among valuers when setting a listing price for real estate. He found that valuers do not follow normative models in the valuation process. Instead, the valuers were forced to rely on subjective judgement that was extracted from market experience and knowledge, in the absence of price and other information for the comparison (Adair, Berry & McGreal 1996). So far, there has been a lack of empirical research on the behaviours of real estate investors. Hence, this study aims to improve understanding of bounded rationality amongst individual real estate investors who have imperfect knowledge. Research should continue on how judgements might enhance decisions (Payne, Bettman & Johnson 1992) by providing better information on the key elements of the decision-making process.

In economics, *homo economicus* conceptualises the rational behaviour of a human actor who makes a decision to optimize utility or profit. However, the presence of *homo sociologicus* cannot be neglected, as it is concerned with social norms. Elster (1989) highlighted that social norms are the emotional and behavioural propensities of an individual. Tversky and Kahneman (1974) demonstrated how boundedly rational individuals engaged with heuristics, for example, anchoring, accessibility, representativeness, and availability in judgement. Accordingly, this research aims to explore this interesting subject - social norms which may be playing a significant role in affecting decision-making processes, particularly in real estate investment activities. When the occurrence of bias in real estate investment is serious, it may harm the investment portfolio, in turn affecting the return of the real estate investment. Hence, this study will explore bounded behavioural phenomena that can be implied in the real world setting. Compiled by the researcher, there are seven bounded rational behaviours that are believed to be influencing factors in the decision-making processes of individual property investors. These seven bounded rational behaviours are:

- a) Accessibility
- b) Anchoring
- c) Endowment effect
- d) Herding
- e) Loss aversion

- f) Overconfidence
- g) Status quo bias

2.3.2.1 Accessibility

The example of purchasing flood insurance, given by Simon (1987), demonstrates the accessibility heuristic. In his example, neoclassical theory predicts that owners buy insurance if the expected reimbursement of flood damage is greater than the premium. Despite this fact, data shows that insurance is purchased if the owner has experienced flood damage in the past and that the purchase is entirely independent of cost and benefit (Simon 1987; see also Thaler & Sunstein 2009). Accessibility represents intuitive thought that comes to mind effortlessly and in accord with the spontaneous situation (Kahneman 2003c). Accessibility is a heuristic bias where information can be recalled easily (Scott & Lizieri 2011). An example given by Kahneman (2003c) was the usefulness of billboards as advertising tools, providing information that is accessible to viewers. If the information evokes 'hot' states of emotional and motivational arousal, it will subsequently increase the accessibility of thoughts. Moreover, decisions that are made through emotion, and those that are related to love and affection, are always more accessible. Normally, this does not take place in accordance with normative economic principles. The concept of accessibility can also be related to the laws of association. Kahneman (2003a) argued that accessibility is the ease of effort when recalling information. It involves mechanism that provokes it to happen in the presence of certain stimuli. Additionally, people can develop accessibility by practicing it as a skill. However, accessible information does not guarantee a good decision.

Information that catches the attention of investors is more likely to influence their preferences. Barber and Odean (2006) tested whether the buying behaviour of individual and professional investors is more heavily influenced by attention paid to information or their selling behaviour. They found that institutional investors are the least influenced by attention. In contrast, the

buying behaviour of individual investors is highly influenced by attention to information. Advertising may increase levels of attention (Barber & Odean 2006) and make information more accessible in the decision-making process. In studies conducted with faculty and non-faculty staff at the University of Southern California, Benartzi and Thaler (1999) found that the way in which information is provided to individuals can have a strong influence on their investment choice. This provides insight on the accessibility of information and the process of acquiring information. These participants made a decision based on the information given where consultation with others was not evident, except with family members. The researchers proposed that this outcome was disturbing as 58% of the respondents allocated an hour or less when making the asset allocation decision.

2.3.2.2 Anchoring

In the study of property negotiation, Diaz (1998) suggested that expert valuers assigned inappropriate weight to asking prices, demonstrating the anchoring effect. Here, a reference point is used as an anchor and provides comparable characteristics for the valuers in the negotiation process. This phenomenon has invoked the existence of an anchoring effect in the context of individual property investors and will be explored further in the current study. The anchoring or adjustment heuristic happens when a person adjusts their decision based on an initial point and attempt to get closer to this point. The given response and further information may also be used to adjust the response at a later stage (Payne, Bettman & Johnson 1992). This can become a bias if the original point was an incorrect anchor and, subsequently, can result in an incorrect decision (Hardin 1999). In the case of negotiation, for example, a negotiator tends to frame a decision based on the previous situation in which he/she won the negotiation. In real estate investment, it is strongly believed that an investor attempts to make a decision based on their prior investment portfolio. This could be advantageous if the current investment produces capital gain, but could be a liability if it does not.

People tend to make judgements by employing cognitive shortcuts to simplify their decision-making process (Scott & Lizieri 2011). This phenomenon is called as arbitrary coherence and represents a situation where a decision-maker becomes coherent when arbitrary valuations are formed as a basis for future judgements in their mind. Interestingly, Scott and Lizieri (2011) suggested that valuation judgement on a property is heavily influenced by the most recently-valued property. This is because the previous valuation invokes the anchoring effect for the next property. Northcraft and Neale (1987) conducted a study to investigate anchoring-and-adjustment by utilising students and real estate agents in a real world setting. They concluded that subjective components are included in the appraised value of every piece of property. These subjective components include things such as: size of the residence in square feet of living space, condition of residence, and average price per square foot of living space for comparable neighbourhood properties.

2.3.2.3 Endowment effect

The endowment effect can be useful for predicting an individual's behaviour when possessing an object. Past ownership is an influencing factor in the evaluation of an object. Hence, there is a positive relationship between the endowment effect and duration of ownership. Strahilevitz and Loewenstein (1998) proposed that the more time a subject possesses an object, the more value he or she will place on a similar object within a shorter time of possession (see also Parachiv & L'Haridon 2008). Hence, the study showed that endowment increases the value of an object significantly. Duration of current ownership did significantly increase the value of an object, as well as its perceived attractiveness, to the owner. Therefore, it is crucial to examine the implication of the endowment effect in the real estate market. One may suggest that property (i.e., houses) possesses greater value compared to other consumable goods such as cars, food, and clothes, and that so people will especially value property as its value will appreciate. The duration of house ownership may be prolonged if there are improvements made over time.

However, duration of ownership maybe shorter if the house serves only as an investment.

There is the possibility that the endowment effect is absent in cases where an object was purchased for resale purposes (List 2003). Ariely, Huber and Wertenbroch (2005) discussed emotional attachment and changes in cognitive perspective as two different psychological approaches to the endowment effect. They highlighted that the perceived value and attractiveness of an item increased with the duration of ownership. In the case of investment, investors are unlikely to possess a high degree of emotional attachment to the property as it has been acquired for investment purposes and they allocate the property as a transaction good, rather than a consumption good. Here, however, they might exhibit an overconfidence behaviour. Homeowners, on the other hand, are likely to exhibit the endowment effect when they sell their home. This information creates an interesting focus for the study of real estate investors' behaviour, as well as providing a topic to further discuss in the latter part of this thesis.

To understand the endowment effect, it is important to consider price setting from the seller's and buyer's point of view. Price setting is usually the primary concern of both the seller and buyer during the decision-making process. People are reluctant to let go of an object that, they believe, belongs to their endowment (see also Rabin 2002). When people experience more pain letting go of an object when compared to pleasure obtaining the same object, selling prices will be significantly higher than buying prices (Kahneman & Tversky 1984). This was demonstrated by Kahneman, Knetsch and Thaler, cited in Camerer (1998, p. 6) using a mug experiment to discover whether the participants in the experiment endowed with coffee mugs exhibit a willingness-to-accept and willingness-to-pay disparity (see also Kahneman 2003b; List 2003). They concluded that selling prices were always higher than buying prices (see also Levy 1992). Liberman et al. (1999) clarified that 'once people are endowed with an object, they become reluctant to exchange it even if, before endowment, they might have preferred the alternative object'. The endowment effect can be explained as the value of a good being

higher when a person views it as something that they are giving up; alternatively its value is lower when the person evaluates the same good as a potential gain (Kahneman 2003c). Nonetheless, the endowment effect may need to be distinguished from the enhancement effect through laboratory research (Plott & Zeiler 2011).

Another typical example is the perceptible difference between a cash discount and credit card surcharge. Here, people viewed the cash discount as an opportunity cost and the credit card surcharge as an out-of-pocket expense. According to Thaler (1980), the opportunity cost is considered as forgone gain while out-of-pocket costs are losses; therefore, the latter will be more heavily weighted than the former (see also Kahneman, Knetsch & Thaler 1986). This phenomenon urged businesses to impose the policy of offering customers cash discounts, rather than imposing credit card surcharges (Levy 1992). Thus, by studying this implication in actual markets, it is evident that this could be occurring in the real estate market and may affect the investors' decision-making process. The concern here is the effect of endowment and framing effects.

Lieberman et al. (1999) argued that when people have experienced losses more frequently than gains, they will have a greater tendency to maintain their current possession over new options. They also highlighted the importance of the source of ownership and the performance of the object. A key point to highlight here is that people value an object more when there is the positive event. In other words, if a property that carries a positive experience to an investor, such as good feng shui (particularly in the Asian market) or special design and renovation, that has received positive feedback, or was inherited from someone he/she loved and cared for, the investor tends to overvalue the property, affecting the decision-making process as well as the desired selling/buying price. Essentially, there is a dual association between the endowment effect and loss aversion. Loss aversion will be discussed shortly, in detail, in the latter part of this thesis.

2.3.2.4 Herding

Herding behaviour represent the behaviour of investors when following the movement of the majority in investment activities. In other words, investors will move in the same direction as others. Hirshleifer and Teoh (2001) proposed that all human beings are ‘influenced by others in almost every activity, and this includes investment and financial transactions’ (p. 1). There are some researchers examined the herd behaviour or “trend-chasing” behaviour on real estate investment by taking financial institutions as the subject of study (e.g. Mei & Saunders 1997). In the financial market, an agent may trade against his initial assessment and instead follow a trend or movement reflective of a previous trade (Avery & Zemsky 1996). Herding behaviour can be due to conformity pressure on the willingness of people to secure their status in the group (Shiller 2001). In a simpler example given by Banerjee (1992), people often make choices based on the choices of people before them, such as during a visit to a restaurant. Sometimes, they will even neglect personal knowledge of the subject by acting in accordance to the decisions made by others. Banerjee (1992) conducted an experimental study to test the herd behaviour of decision-makers to discover whether an individual will follow his/her individual signal or his/her predecessors’ signal.

It is crucial to differentiate an information cascade from a herd. An information cascade indicates a herd but a herd may not be the effect of an information cascade (Çelen & Kariv 2004). Nonetheless, herding behaviour can be rational when economic agents make decisions that are strategic complements. There have been several beauty contest experiments conducted to test the theory of Keynesian beauty contests (i.e., Bosch-Domenech et al. 2002; Grosskopf & Nagel 2006). Here, participants were asked simultaneously to choose a number between 0 and 100. The ‘winner’ was the person whose number was closest to a given proportion, multiplied by the average of all submitted numbers. The decisions were strategic complements made in order to win the contest, where participants disregarded their own preferences and made a decision based on the preferences of others.

There are many societal examples of herd behaviour. To name a few: fertility choices, adoption of new technology, ‘hot’ topics for academic researchers to work on, or opinion polls that influence voting results. (Banerjee 1992). Çelen and Kariv (2004) also showed that herding behaviour influenced decision in technology adoption and the asset market. Furthermore, they highlighted that individuals ‘rationally ignore their own information and follow the herd’ (p. 484). Agents are said to conform to herding behaviour when they trade against their initial assessment and instead follows the trend (Avery & Zemsky 1996). Case and Shiller (1988) suggested that when investors do not know the fundamentals of the housing market, they tend to understand the situation in terms of ‘hearsay, clichés, and causal observations’. Hence, this study proposes that an investor learns to invest from their family members or friends and that he or she may invest in a property primarily guided by the influence of friends and family members.

2.3.2.5 Loss aversion

Kahneman and Tversky (1979) have labelled loss aversion as the behaviour of a person when they weigh losses heavier than gains in making decisions (see also Conlisk 1996; Fromlet 2001; Kahneman, Knetsch & Thaler 1991; Levy 1992; Loewenstein, John & Volpp 2012; and Strahilevitz & Loewenstein 1998). In other words, decision-makers are ‘disproportionately averse to losses’ (Camerer et al. 2003, p. 1216). Samuelson and Zeckhauser (1988) also discussed loss aversion in their study of cognitive misperception. Benartzi and Thaler (1995) suggested that investors are more sensitive to losses when compared to gains. Moreover, long term investors tend to assess the value of their portfolios regularly. Hence, they named this combination of behaviour as ‘myopic loss aversion’.

According to Gallimore, Hansz and Gray (2000), investors do not like to realise a financial loss on an investment and thus exhibit loss aversion. An owner occupant of a property will also be more likely to display loss aversion. Genesove and Mayer (2001) concluded that owner occupants set a

higher asking price compared to investors. To extend the discussion of disparity between the selling and buying prices of sellers and buyers, loss aversion implies that there is a gap between the minimal amount of money that people are willing to accept (WTA) to relinquish a good and the maximal amount of money that people are willing to pay (WTP) to acquire a good (Tversky & Kahneman 1991; see also Parachiv & L'Haridon 2008). In the case of bidding, a highest bidder tends to increase his/her bid when challenged by another bidder. He/she is willing to raise the bid higher than the initial WTP due to the 'pseudoendowment effect' (Ariely, Huber & Wertenbroch 2005).

People's willingness-to-pay is smaller than their willingness-to-accept due to loss aversion and the endowment effect. This explains why the selling price is often higher than the buying price. However, Parachiv & L'Haridon (2008) suggested that consumers may reduce their loss aversion by learning from multiple transactions (see also Johnson, Gächter & Herrmann 2006). Hence, the more experience an individual accumulates, the lower their loss aversion and, consequently, the better their investment choice will be. This point is important to consider because, unfortunately, the number of annual transactions made by individual real estate investors is relatively low. Isoni, Loomes and Sugden (2011) suggested that experience reduces investor uncertainty, which flows on to reduce the disparity between WTA and WTP. They also argued that the difference between consumption goods and money will yield different results in uncertainty. For example, the participants in their mug experiment value mug as a consumption good that can be obtained with certainty. In contrast, the participants felt uncertain in the lottery tasks when they value sums of money that to be received. Plott and Zeiler (2011, p. 1017) commented that 'people commonly value losses much more than commensurate gains independent of transactions costs, income effects or wealth constraints.'

Other research shows that people process information differently when they play different roles in the decision-making process. The specific roles of seller and buyer affect their focus on certain aspects of transaction. Paraschiv and L'Haridon (2008) contributed to the study of loss aversion, attempting to discover its marketing implications. They arrived at the conclusion that a loss can yield greater impact on a person's psychological state compared to an equivalent gain. They highlighted that the seller's cognitive focus is on the object he possesses while the buyer's cognitive focus is on the money he stands to lose to possess the object. This difference in cognitive focus induced the seller to set higher selling prices than buying prices.

The disposition effect is another important concept to consider to understand loss aversion. The disposition effect can be explained by prospect theory, first introduced by Kahneman and Tversky (1979). According to prospect theory, investors refer to a reference point when making a decision. There are two features of prospect theory that describe the disposition effect. First, people value their gains and losses in investment by referring to the reference point, for example, the initial purchase price of a share. Second, investors are more likely to avoid risk when they are gaining and to seek risk when they face losses (Weber & Camerer 1998; see also Levy 1992). This research paper also cited Shiller and Case's 1988 study (Weber & Camerer 1998, p. 169) that showed that homeowners are prone to sell their house at a profit, rather than loss. One of the studies that aligns with prospect theory was conducted by Idson, Liberman and Higgins (2000). Idson et al. (2000) proposed that people enjoy the pleasure of gain more than the pleasure of non-loss. Subsequently, they emphasised that the pain of a loss is greater than the pain of a non-gain.

Genesove and Mayer (2001) examined sellers' risk aversion behaviour by using data from the 'downtown' Boston housing markets. The results showed that housing sellers were averse to realising a loss and likely to set higher asking prices. According to these researchers, the real estate market is quite different from the perfect asset markets, where transaction prices are determined by seller characteristics other than the unit attributes. In addition,

sellers are unwilling to accept losses relative to an existing reference price. A decade previous, the same researchers studied a sample of condominiums that were for sale in Boston and found that a unit with a high loan-to-value ratio had a higher reservation price (Genesove & Mayer 1993). In other words, units with low equity take longer to sell and are sold at a higher price.

According to Odean (1998), the value function in prospect theory is comparable to standard utility function, the difference being that value function is defined by gains and losses while standard utility function is defined by levels of wealth. This researcher, in contrast to others, argued that investors are not reluctant to realise losses and that investors consider that 'today's loser' will perform better than 'today's winners'.

The disposition effect may be affecting the decision-making process of investment and help to explain the bounded rational behaviour of investors. The disposition effect is the inclination of investors to sell assets that have gained value and continue to hold assets that have declined value (Weber & Camerer 1998; see also Shefrin & Statman 1985). A number of studies have shown that investors largely tend to sell their winning stocks and hold on to their losing stocks (Barber & Odean 2006; see also Ben-David & Hirshleifer 2012; Genesove & Mayer 2001; Odean 1998; Shapira & Venezia 2000; and Shefrin & Statman 1985).

Grinblatt and Keloharju (2001) used logit regression to distinguish the determinants of investors buying and selling decisions in the Finnish stock market. They found that the disposition effect was evident and that it played a significant role in investor decision-making. In the same year, Engelhardt (2001) proposed two new theories: a housing equity constraint and nominal loss aversion when analysing housing markets. An example in the housing equity constraint is that 'households with school-age children are thought to be less mobile' (p. 18). Nominal loss aversion is referring to the situation of households treat housing gains and losses asymmetrically. These are not easily explained by standard asset-market models. This has steered the

researcher toward the exploration of both loss aversion and the disposition effect in the real estate investment setting.

2.3.2.6 Overconfidence

One of the irrational behaviours of investors is overconfidence. People tend to interpret information differently and make a judgement that is related to personal experience (Gilboa & Schmeidler 1995). When a person has achieved positive returns from previous investments, they tend to be more confident and motivated. Daniel, Hirshleifer and Subrahmanyam (1998) define an overconfident investor as one who overrates the precision of private signals or assessment, regardless of whether he/she is an institutional investor or individual investor. A reasonably high level of confidence is encouraging, especially in the field of investment which deals with uncertainty and risk. However, overconfidence can become a 'blind spot' in the decision-making process. Investors sometimes overestimate the accuracy of their information (Glaser & Weber 2007) and fail to calibrate their decision with their investment portfolio. Malmendier and Tate (2005) investigated the effects of CEO overconfidence in corporate investment and proposed the 'better than average' effect, where an individual is too optimistic about their own future prospects. Here, investment decision-makers overreact to the provided information and demonstrate an extreme optimism (Gallimore, Hansz & Gray 2000).

Overconfidence may induce decision-makers to act insensitively to risk and can lead agents to an even riskier portfolio, as they believe they can beat the odds (Camerer & Lovallo 1999). Overconfidence usually signals the existence of risks (Fromlet 2001) and can represent hindsight bias or the "I knew it all along" phenomenon (Payne, Bettman & Johnson 1992). Glaser and Weber (2007) explained that investors who think that 'they are above average in terms of investment skills and past performances' are likely to trade more compared with other investors. They highlighted that overconfidence is due to miscalibration and, in part, the judgement bias.

Shiller (2001) pointed out that investors are often overconfident about expected future price changes. He provided several examples from his study to support the view that intuitive judgement plays an important role in the investment markets. For instance, Shiller asked his respondents why they believed that a rebound would occur after the stock market crash in 1987. He described the answers he received as 'merely intuitive'.

Most people claim that their abilities are above average and are overconfident. There are psychological studies that support the notion that people are 'unreasonably optimistic about their futures' (Camerer & Lovo 1999). These researchers highlighted the consequences of overconfidence in business entry mistakes, using an experimental setting to test their hypothesis. Here, they examined the effects of overconfidence by comparing economic decision-making and personal confidence. The research succeeded in proving the hypothesis that business failure is the outcome of the business managers being overconfident with their skill. It was also reported that 'overconfidence has a negative impact on trading performance' (Deaves, Lüders & Luo 2009). Fromlet (2001) suggested that control illusion is a type of overconfidence (see also Kahneman 2011) that happens when people believe that they can control a situation when, in fact, they have no influence over the outcome. In addition to this, Dorn and Huberman (2005) suggested that unobserved psychological attributes, such as risk aversion and overconfidence, are the attributes that behaviourists should focus on when analysing the behaviour of investors. Hence, in their study of overconfidence, proxies for overconfidence, such as self-attribution bias and illusion of control, were included in a probit regression.

In research conducted by Barber and Odean (2006), the concept of overconfidence was demonstrated by noting that men trade more than women. This is arguably because males are more overconfident than females (Ben-David & Hirshleifer 2012). In a study conducted by Dittrich, Güth and Maciejovsky (2001), it was shown that participants were overconfident in their investment choices. Twenty out of seventy two of the participants

presented overconfident behaviour, where they ‘consistently over evaluated their own investment decision’ (p. 10). They also demonstrated that overconfidence rises in relation to the complexity of task. In other words, overconfidence is more evident when dealing with more than one asset. Silver (2012) used the results of a Duke University survey of corporate CFOs, who were perceived as sophisticated investors, and suggested that they overestimated their own ability when forecasting the price of the S&P 500. The results of the study showed that even sophisticated investors are overconfident in the decision-making process.

2.3.2.7 Status quo bias

When making a judgement during the decision-making process, people normally exhibit status quo bias. This is where individuals will fail to act or will maintain a current or previous decision. People make decisions according to their experience and tend to follow the status quo. A study conducted by Knetsch and Sinden, cited in Tversky & Kahneman (1991), sought to understand the behaviours of students towards retaining or trading a gift (a decorated mug) that they received during the experiment. The result showed that 90% of participants chose to retain the gift, rather than trade it for a large bar of Swiss chocolate. Samuelson and Zeckhauser (1988) argued that decision-makers will remain disproportionately with the status quo to avoid indecisive situations (see also Tetlock 1992; Camerer 1998). People are required to make a decision when they choose amongst stability and change, where change brings uncertainty (Lieberman et al. 1999). Moreover, people tend to choose the option that is socially acceptable, to avoid “unnecessary” cognitive work. In layman’s terms, to do nothing can be the best strategy under uncertain circumstances which involved new options.

According to Kahneman, Knetsch & Thaler (1991), people prefer a second better choice or an alternative when this option is designated as the status quo. Additionally, Samuelson and Zeckhauser (cited in Tversky & Kahneman 1991) suggested that the status quo effect can be explained through brand

loyalty and pioneer firm advantage. In their discussion on the status quo effect, Madrian and Shea (2001) proposed that the ‘power of suggestion’ is important, particularly when promoting individual saving behaviour. According to this research, individual savings behaviour is not only bound to procrastination, but also ‘anchor[ed] around the default and a bias for the status quo.’ The results of their study showed that the participation rate in their 401(k) plan (equivalent of superannuation in Australia) was significantly higher when the choice to enrol in the plan was set as default.

Despite the fact that switching costs from one plan to another are generally very low, Camerer et al. (2003) found that people tend to stay with their original choice, be that initial policies, consumption patterns, or legislators. Hence, they recommended that paternalistic policies that affect ‘default outcomes’ may help boundedly rational people to make informed decisions that impact less on rational people. Loewenstein, John and Volpp (2012) proposed that the status quo effect represent people’s tendency to take the path of least resistance. In other words, people are likely to continue doing what they have already been doing, rather than change their course of action, even if the alternatives are superior. Hence, they imply that the status quo effect is helpful when promoting saving, if the option of saving is provided automatically.

There are several implications that are proposed by scholars drawing on behavioural economics. For example, Loewenstein, John and Volpp (2012) suggested that people who failed to do exercise is due to the inertia to get to a gym. The same inertia problem occurs in saving. In view of that, by combining a visit to a gym and saving with lottery may help to overcome the inertia to go to gym and to save respectively. They proposed that work-out machines such as treadmills may generate payouts when the user is exercising at the same time the machine “hits the jackpot”. Implications of behavioural economics can be even promoted at the societal level such as addressing the issues of global warming, charitable activities and international disputes (Loewenstein, John & Volpp 2012). Another breakthrough of behavioural economics is that it contributes in designing an effective prescriptive saving

program which Thaler and Benartzi (2004) called Save More Tomorrow™ (SMarT program) (see also Kahneman 2001; Thaler & Sunstein 2009). The SMarT program helps people to commit to their retirement savings by allocating a portion of their salary for the best of tomorrow.

Reviewing neoclassical economic models and behavioural economics reveals a gap between normative models and actual behaviours. This discrepancy can be partially explained by the existence of human values. As such, this study aims to understand the decision-making behaviours of real estate investors in terms of human values. The discussion will begin by reviewing cross-cultural studies and continue by discussing the concept of human values.

2.4 Culture and human values

“Classic economic theory, based as it is on an inadequate theory of human motivation, could be revolutionized by accepting the reality of higher human needs, including the impulse to self-actualization and the love for the highest values” – Abraham Maslow

2.4.1 Culture and cross-cultural studies

There are several different definitions of *culture* provided by anthropologists and cultural psychologists. In general, culture consists of ‘shared elements’ (Shweder and LeVine, cited in Triandis 1996). Berry (cited in Berry & Sam 1997) highlighted that ‘cultures as changing contexts are due to both their own internal dynamics, and due to contacts with other cultures’. Additionally, culture is associated with social structure and the psychological systems of individuals; it is observable through behaviour and attitudes as well as motives and the perception of the real world (Kluckhohn & Strodtbeck 1961). Culture shapes a person, therefore it is necessary to study culture in order to discover its influence on the development of society and economics. As argued by Hofstede and Bond (1984), culture does not only influence a

person psychologically; it affects the 'sociological, political, and economic functioning of social systems'.

A person's behaviour will deviate relative to different socio- cultural settings. As reviewed by Triandis et al. (1988), cultures can be divided into two groups: collectivism and individualism; and these two groups have different characteristics and traits that continue to influence the attitudes and behaviours of individuals. People in individualistic cultures emphasise 'independence, exploration, creativity, and self-reliance', while people in collectivist cultures tend to change themselves rather than their environment. That is, they are flexible. Within each cultural group, people can again be categorised as two different types: allocentric or idiocentric. Allocentrism is a collectivist personality where focus is directed towards other people, rather than the self. In contrast, idiocentrism is an individualistic personality trait where people place higher importance on their own goals rather than others. Triandis recommended four attributes to define individualism and collectivism (Triandis 1996, p. 409):

- i) The meaning of the self
- ii) The structure of goals
- iii) Behaviour as a function of norms and attitudes
- iv) Focus on the needs of the in-group or social exchanges

Furthermore, individualism can be understood as a situation where people focus on taking care of themselves, as well as their immediate family members, only. There is no further action of caring extended to other members of a social circle. In contrast, collectivism is a situation where people look after all members of the in-group (Hofstede & Bond 1984).

In a review of cross-cultural literature, especially focused on consumer behaviour, Lee (2000) tested the consumer purchasing behaviours of cameras in Singapore, Hong Kong, Australia, and United States. Kacen and Lee (2002) investigated impulsive consumer buying behaviour in six locations (Australia, United States, Hawaii, Singapore, Malaysia, and Hong Kong) and grouped them according to a score of idiocentrism and allocentrism. The

results of the later survey suggested that regional level factors (individualism-collectivism) and individual cultural factors (independent-interdependent self-concept) affect impulsive buying behaviour. Kahle's List of Values (LOV) (Soutar, Grainger & Hedges 1999) is used as one of the tools to study the importance of cultural values in Australia and Japan. Kahle's List of Values include: sense of belonging, excitement, warm relationship with others, self-fulfilment, being well respected, fun and enjoyment of life, security, self-respect, and a sense of accomplishment (Soutar, Grainger & Hedges 1999). Kim et al. (2002) utilised LOV to study cross-cultural purchasing behaviour in the clothing retail markets of China and Korea. It was found that the difference in subcultures, and the emphasis on a collectivist or individualist cultural value manipulates an individual's choices in business performance (Lenartowics & Roth 2001).

There are relationships between culture and one's self, either independent or interdependent to cognition, emotion, and motivation. Motivation is rooted in desire and perceived reward and individuals will act either positively or negatively to achieve their personal goals (Simon 1987). Here, it is important to question what the motives of real estate investors are. Are their motives to achieve, to self-actualize, or to enhance their self-esteem? Indeed, there is often more than one motive that drives investors, and these motives are unique. Often, motives form the core of a person's internal self-system (Markus & Kitayama 1991). Gibler and Nelson (2003) suggested that 'a house can be viewed as part of the extended self, an object that helps to form identity and present that identity to the world'. Given the variation of personality traits, the acceptance of culture as a shared system of meaning will be helpful to understand values and identities (McCrae 2000).

2.4.2 Human values

Values can be defined as, ‘desirable goals, varying in importance, that serve as guiding principles in people’s lives’ (Schwartz & Sagiv 1995; Schwartz, cited in Lee, Soutar, Daly & Louviere 2011), and include five distinct features: a) concepts or beliefs, b) desirable end-states or behaviours, c) transcending specific situations, d) guiding selection or evaluation of behaviour and events, and e) ordering by relative importance (Schwartz & Bilsky 1987). Allport (Rokeach 1973, p. 7) stated that ‘a value is a belief upon which a man acts by preference’. Values are often enduring beliefs and consist of changing character (Rokeach 1973). Values are widely discussed in three main areas: anthropology, sociology, and psychology.

Each discipline conceptualises values and their meanings from a different standpoint. More than half a century ago, the importance of values was known among philosophers, but did not gain attention from social researchers, especially regarding their importance in society and social change (Kahle & Kennedy 1989). Fortunately, today, there are many studies being carried out in various fields including organizational behaviour, charity contributions, mass media usage, drug addiction, political inclination, and cross-cultural difference (Kamakura & Mazzon 1991). Unfortunately, none of these specifically target real estate investment. However, all of these studies were conducted by using values and to provide meaningful implications; products can be purposely designed to meet these needs and promotional strategy can be designed based on values held by consumers (Vinson, Scott & Lamont 1977). It has also been suggested that personal values play a role forming a standard for influencing personal choice and evaluations. In addition, knowledge of values benefits marketing managers, especially regarding market segmentation (Kahle & Kennedy 1989). Fritzsche (1995) examined the relationship between personal values and the ethical dimensions of managers in United States. In his study, he successfully showed the significant difference between two groups of managers with different value systems who made decisions to take ethical/unethical acts that paralleled their values.

Rokeach (1973) included 18 terminal values and 18 instrumental values in his value survey. Each value was exhibited on a form, along with a brief definition of the value in parentheses, that asked the respondents to rank the values as guiding principles in their life. Instrumental values are beliefs about desired modes of action whilst terminal values are beliefs about desired end-states of existence (Allen, Ng & Wilson 2002). According to Allen and his colleagues, 'terminal values are more abstract than instrumental values and are more closely tied to the self-concept'. The Rokeach Value Survey became the conceptual framework for Schwartz and Bilsky to segregate Rokeach's marker values into seven motivational domains (Schwartz & Bilsky 1987). They collected samples from Israel and Germany to perform cross-cultural comparisons. In their study, values are discussed and distinguished into 8 motivational domains (Enjoyment, Security, Achievement, Self-direction, Restrictive-conformity, Pro-social, Social power, and Maturity). They suggested that a value system is shaped from individual motivational patterns and societal arrangement.

Furthermore, Lenartowics and Roth (2001) conducted a study based on motivational domains by studying business performance in Brazil. They argued that individuals' values differ across subcultures and consequently affect business performance, either positively or negatively. Subculture is 'a secondary group within a societal group that exhibits a shared pattern in the relative importance placed on the motivational domains' (Lenartowics & Roth 2001). Smith and Schwartz (1997) cited Schwartz and Bilsky's work in 1987, summarising the definition of values and explicating it into five features that have been accepted by other researchers as robust. One of these features is that 'values serve as standards to guide the selection or evaluation of behaviour; people and events' (see also Bardi & Goodwin 2011). The five features support the current study in the idea that individual investors are guided by their value system in the process of pursuing their goals in real estate investment. People make decisions based on their value system, which is a form of hierarchy or priority structure (Williams, cited in Fritzsche 1995), as well as considering their circumstances.

Subsequent to the collaborative work of Schwartz and Bilsky (1987), Schwartz conducted empirical testing in 20 countries to explore the universal characteristics of values in terms of their content and structure (Schwartz 1992). His work aimed to answer the questions: 1) 'how do common experiences people have, due to their shared location in social structure (e.g., education, age, gender, occupation), influence their value priorities, and 2) 'how do the value priorities held by individuals affect their behavioural orientations and choices'. Schwartz extended this cross-cultural project by using 56 values that provided insight by examining the function of values in decision-making, as well as a continuum of motivational goals. The motivational continuum provides facts about and links between the relationships amongst the 56 values and boundaries of the motivational types of values. In an extension to Schwartz's study, Schwartz and Sagiv (1995) utilised more sample sets from 40 countries in order to examine variation on bipolar value dimensions (openness to change versus conservatism and self-transcendence versus self-enhancement). Bardi and Schwartz (2003) were successful in identifying 10 motivationally distinct value types that were used to express value priorities. These include:

- a) Power (social power, authority, wealth)
- b) Achievement (success, capability, ambition, influence)
- c) Hedonism (pleasure, enjoying life)
- d) Stimulation (daring, variety, an exciting life)
- e) Self-direction (creativity, freedom, independence, curiosity, choosing one's own goals)
- f) Universalism (broadminded, wisdom, a world at peace, protecting the environment)
- g) Benevolence (helpful, honest, forgiving, loyal, responsible)
- h) Tradition (humble, accepting, respect for tradition, moderate)
- i) Conformity (polite, obedient, self-disciplined)
- j) Security (family and national security, social order, reciprocal of favours)

Schwartz and Bardi (2001) compared the values of 13 nations and a representative/near representative sample from 54 nations for a pan-cultural analysis where Pearson's correlation was used to compare the mean value ratings between the groups. Subsequently, Bardi and Schwartz (2003) discovered that stimulation and tradition were strongly related to behaviour. Hedonism, power, universalism, and self-direction were moderately related to behaviour. Finally, security, conformity, achievement, and benevolence were only marginally related to behaviours. The researchers argued that people may not consciously think about certain values, even if they are actually acting in accordance with them. However, McClelland (cited in Bardi & Schwartz 2003) found the opposite arguing that 'behaviour stems from conscious decisions'. Of course, normative influence complicates the relationship of values and behaviours.

Danis, Liu and Vacek (2011) examined generational differences in values and behavioural preferences by using Schwartz's values orientation. The generations in Czech Republic were divided into two groups that were pre and post-transition generations. The transition referred to the change from Soviet-style central planning to market-oriented economic systems. They found that generational preferences for certain upward influence strategies are mediated by underlying differences in value orientations. In relation to this, values that underlie choice in business system will shape decision-making behaviour. Becker et al. (2012) also found that the relationship between value (openness) and risk attitudes can be affected by the age.

In order to understand how values function when affecting decision-making, the distinction between individual- and culture-level analyses must be made (Smith & Schwartz 1997). Steenkamp, Hofstede and Wedel (1999) reviewed cross-level interactions between national culture- and individual-level variables in relation to consumer innovativeness. Their study used Hofstede's 4 work values and Schwartz's 10 motivational values types as their theoretical model. In terms culture-level affects, Australia was ranked second in the individualism index while Malaysia was ranked thirty sixth (Hofstede 1991). Hofstede's study therefore provides validity to the current study to

research differences between Australia and Malaysia in real estate investment, as their cultural approaches to values are significantly different. Each person embodies different levels of culture: national, regional, ethnic, religious, linguistic, gender, generational, social class or organizational. Hofstede (1991) conducted a survey regarding the values of people in over 50 countries who worked in local subsidiaries of IBM. He intended to analyse the difference among countries in the following areas:

- a) Power distance – social inequality, including the relationship with authority
- b) Collectivism versus individualism – the relationship between the individual and the group
- c) Femininity versus masculinity – concepts of masculinity and femininity
- d) Uncertainty avoidance – ways of dealing with uncertainty, relating to the control of aggression and the expression of emotions

In his study, Australia and Malaysia returned similar scores on the masculinity/femininity and uncertainty avoidance indexes. However, in the power distance index, Malaysia scored 104 while Australia scored 36. In terms of the individualism, Malaysia scored 26 while Australia scored 90. The difference in these indexes signifies a cultural diversity between countries. From these two indexes, it is clear that there is a cultural gap exists between Australia and Malaysia that the current study seeks to close by investigating the importance of human values in these two countries.

The citizens of a given country may share a common culture, despite being from different groups with different backgrounds (Lenartowics & Roth 2001). Hence, comparison between groups is important and essential to investigate the dominant values of each group in Malaysia and Australia. As such, individual-level analysis will involve background variables such as age, education, income, occupation, and household size that are likely to affect an individual's value system through experience. These background variables can be included as covariates (Steenkamp, Hofstede & Wedel 1999). Values

embedded in older adults are less likely to change compared with young adults (Bardi & Goodwin 2011; Danis, Liu & Vacek 2011).

Due to the Australian migration policy, the population varies in composition of foreign-born and Australia-born people, with colonisation arrivals being originally foreign-born. With the diverse background of cultures, languages, religions, and social backgrounds, discovering how people adapt and change values is crucial to this study. In the adaptation theory, 'values are a type of social cognition that functions to facilitate adaptation to one's environment through continuous assimilation and integration of environmental information (Kahle, cited in Kim et al. 2002, p. 481; see also Berry & Sam 1997; Smith & Schwartz 1997). Malaysia is a country also formed by different ethnic groups. Each ethnic group possesses a unique culture that adds 'colour' to this values study. In both Australia and Malaysia, citizens have differing cultural values and attempt to adapt to new environments and social institutions. This results in value priorities that come about from shared enculturation (Schwartz & Bardi 2001; Smith & Schwartz 1997). A certain level of conflict and compatibility may occur due to the divergence between one's own values systems and national/cultural priorities (Steenkamp, Hofstede & Wedel 1999; Lee et al. 2011). In fact, Fischer, Milfront and Gouveia (2011) proved that 'migration patterns are diluting the effects of social living conditions on value stability'.

Changes in culture may cause individual changes in values. The degree to which will vary depending on individual life experience (Kluckhohn & Strodtbeck 1961; Knafo, Roccas & Sagiv 2011). Kluckhohn (cited in Kluckhohn & Strodtbeck 1961, p. 2) once asserted:

There is a philosophy behind the way of life of each individual and of every relatively homogeneous group at any given point in their histories...the basic outlines of the fundamental values, existential propositions, and basic abstractions have only exceptionally been created out of the stuff of unique biological heredity and peculiar life experience...The specific formulation is ordinarily a cultural product...

Hence, value systems can be changed over time and normally happens during re-examination of the current value (Danis, Liu & Vacek 2011). According to Schwartz (1992), the ten motivational values are able to measure the guiding principles of people's lives and has been tested in over twenty countries. Value priorities will be different at the national, social, and socio-economic level, among others. Kamakura and Mazzon (1991) concluded in their values study that, true values held by a country's subcultures are not easily revealed when measured hierarchically at the aggregate level. Values of western and eastern countries (individualism-collectivism), the migration effect, the adaptation effect, and other unpredictable situations can influence a change in values and priorities. The enduring, yet changing character of human values may influence human behaviour to change over time. These patterns are also influenced by changes in environment, experience, and communication with others, along with the learning process and social situation. When more than one value exists, and there is a need to be select one over another, people will make their choice that ordered by relative importance (Rokeach 1973; see also Bardi & Schwartz 2003). Bardi and Goodwin (2011) suggested five facilitators of value change, including: priming, adaptation, identification, consistency maintenance, and direct persuasion. These researchers outlined two routes of value change: effortful and automatic, and suggested that further longitudinal research is required to better understand value change. Permanent change in values can be caused by the environment (new culture) or a new life situation (such as parenthood). In terms of a new life situation, values can be changed via both automatic and effortful routes (Rohan, cited in Bardi & Goodwin 2011).

Credit is due to Schwartz as his rigorous study on human values has benefited many other scholars in cultural or psychological disciplines. Knafo, Roccas and Sagiv (2011) summarised Schwartz's human value study into two categories: personal values, which differentiate between individuals in the same culture; and cultural values that differentiate between societies, that is to say, there are national-level values and individual-level values. The latest research development into human values takes focus on human values in value structures. Here, values are segregated according to their two

theoretical functions: type of orientation (personal versus social) and type of motivation (materialistic versus humanitarian) (Fischer, Milfront & Gouveia 2011) and within-country variations were found. For instance, the study showed that Brazil is a collectivist country but different Brazilian states reflect different cultural values. The researcher suggested that this could be due to immigration patterns; the north is influenced by African and native Indian cultures while the south by European cultures.

The effect of values on human behaviour is significant, so much so that it is used as an independent variable to predict attitude and behaviour (Rokeach 1973; Schwartz & Bilsky 1997). The nature of attitudinal predictors and behavioural criteria are related closely to people's action (Ajzen & Fishbein 1977). In other words, attitude is an intervening variable in the process of values that influence behaviours (Carmen, cited in Homer & Kahle 1988). Having said that, Grunert and Juhl (1995) once used Schwartz's values to test the attitudes and buying behaviour of consumers of organic foods. The researchers investigated the relevancy of values on environmentally concern and unconcerned consumer behaviour. Tan (2011) also conducted a study on consumers' green buying behaviour by incorporating the value-attitude-behaviour model. He postulated that 'values have no significant direct influence on shopping behaviour and indicated that attitudes play a mediating role between values and behaviour'. In addition, Allen, Ng and Wilson (2002) proposed that human values are different from attitudes. They suggested that attitudes refer to specific mental or physical objects, but that human values do not have an object of reference.

Furthermore, there are differing opinions regarding the relationship between attitude and judgement. Either attitude influences a person's judgement or their judgement influences their attitudes (Upshaw 1975). In contrast, Skinner (cited in Homer & Kahle 1988) did not support the significance of values as a guiding behaviour for attitudes. Skinner argued that behaviour is a function of its consequences. Alternatively, there is a general conformity among more recent researchers that, in fact, values influence behaviour (Fritzsche 1995), and possibly both attitudes and behaviours (Homer & Kahle 1988). There is

the possibility that people vary circumstantially when integrating human values into their self-concept and make behavioural choices accordingly (Allen, Ng & Wilson 2002).

At this point, the impact of attitudes may not be as important as prioritizing and understanding the values of individual investors. In the process of understanding value priorities, it is important to consider time as a factor, if values are to be implanted into behaviour. Changes in values may take place when a person is undergoing a process of adaptation (i.e., effects of immigration), a slow change in social environment, or a tragic incident. There will be other factors that influence changes in values, but they will not occur at a fast or sudden pace. Over time, many people may not even realise that their attitude has changed (Carroll 1980). Values are taken to be the main influence that shapes a person's behaviour, especially over the long term (Rokeach 1973). Hence, this study aims to explore the behaviour of real estate investors, where real estate is a long term investment that requires a high level of patience, time, and experience in order to succeed in the market.

2.5 Chapter summary

The main themes that have been discussed in this chapter include general estate investment, the decision-making process, an exploration of the imperfection of neoclassical economic theory, leading to the discussion of the contribution of behavioural economics in understanding human economic behaviour. One significant point to take away from the conclusion of this chapter is, that behavioural economics complements neoclassical economic theory. Here, this study aims to investigate the bounded rational behaviours of individual investors in decision-making process. The study also included discussion regarding the importance of human values in guiding decision-making. In addition, cross cultural elements were discussed, to assist with the aim of this study to discover cultural differences between Australia and Malaysia in real estate investors.

The following chapter will present the research methods used to collect data. The methodological process is divided into two phases: the Delphi procedures and a research survey.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This thesis aims to achieve the following objectives: exploration, explanation, and description (Marshall & Rossman 1989). In order to achieve these objectives, a detailed research plan was required to investigate the complexity of the decision-making process. A mixed methods approach was used to collect richer and more representative data (Creswell 2009; see also Creswell & Tashakkori 2007). The use of mixed methods in this research has allowed for a deeper understanding of the subject area by bringing together both discrete and abstract concepts. However, multi-strategy research is known to generate unanticipated outcomes due to its complexity (Bryman 2006).

Therefore, triangulation, defined as ‘the combination of methodologies in the study of the same phenomenon’ (Denzin, cited in Johnson, Onwuegbuzie & Turner 2007), will be utilised to define the field of behavioural economics in real estate investment, by using a Delphi study in conjunction with research survey. A Delphi study was conducted to examine the variations in property management between the two countries (Australia and Malaysia). In the meantime, the panellists in the Delphi study helped to provide useful information to investigate decision-making behaviour in the investment process. Subsequently, the research survey aimed to explore the decision-making behaviour of individual investors over several dimensions, including financial motivation, behaviours and attitudes, human values, and investment characteristics.

This chapter describes the methodology and research design that is used to collect data in order to address the research questions. It includes discussion of the sample characteristics, research design, and instruments of both the Delphi study and research survey. It also delineates the process of data collection, as well as data analysis procedures.

3.2 Methodology (Phase 1: Delphi study)

This research aims to investigate real estate economics from both a general and behavioural model approach. Hence, a Delphi study was conducted in the first phase to understand the real estate markets and develop ideas about real estate investments.

The Delphi study was first used by the Research and Development (RAND) Corporation in the 1950s (Dalkey & Helmer 1963, p. 458; see also Rowe & Wright 1999; Schmidt 1997; Van de Ven & Delbecq 1974) and was specifically designed ‘to obtain the most reliable opinion consensus of a group of experts by subjecting them to a series of in depth questionnaires interspersed with controlled opinion feedback’ (Dalkey & Helmer 1963, p. 458). The advantages of using the Delphi procedure include: avoidance of face-to-face confrontation, supply of independent thought, and the gradual formation of useful opinion (Dalkey & Helmer 1963, p. 459). Using a Delphi study in this research will strengthen the outcome of the data collected and assist in better understanding decision-making behaviour, particularly in the investment process.

3.3 Sample population (Phase 1: Delphi study)

As this study is a preliminary investigation of the two chosen real estate markets, it is important to obtain primary opinion and feedback from either market players or experts. As such, panellists were selected on the basis of their expertise in the real estate or property market, both in academia and industry, and included academics, policy makers, property management companies, experienced in-charge persons or agents from professional institutions. These professional institutions include the Real Estate Institute of Western Australia (REIWA), Malaysian Institute of Estate Agents (MIEA), Australian Housing and Urban Research Institute (AHURI), The Board of Valuers, Appraisers and Estate Agents Malaysia, and property developers. A small sample size was deemed to be useful for achieving a meaningful outcome. Dalkey and Helmer (1963) suggested that a small sample size can be used, and the quality of their feedback for each round will be controlled (see also Rowe & Wright 1999). A panel of 10 from each country (Australia and Malaysia) was considered.

The selection criteria for inclusion on each panel considered the potential panellists' knowledge, experience, expertise in the field, and representativeness (Chew 2004; Dalkey & Helmer 1963; Rowe & Wright 1999). To select the panellists, the researcher solicited assistance from her supervisors to finalise the list of potential panellists, based on the aforementioned selection criteria. Collecting comments and feedback from two diverse groups in the real estate industry will assist the researcher to better understand the investors' behaviour.

The expert panellists were asked to express their opinion and share their expertise regarding the current situation in the real estate industry, but were not required to have experience in both the Australian and Malaysian markets. The recruitment process began by sending invitation emails to the potential panellists along with an information letter that explained the project (see Appendix 1) and invited them to participate in two rounds of a 25 minute Delphi study. The panellists were informed that their feedback would be

reported in an aggregated form and an executive summary of the Delphi study would be returned to them after each round. The information letter also explained the procedures and objectives of a Delphi study. Through the information letter, panellists understood that their participation was entirely voluntary and confidential and that they could withdraw at any time without discrimination or prejudice.

For the non-responding panellists, follow-up emails and phone calls were made after two weeks. The panellists who agreed to participate in the Delphi study were required to return a signed consent agreement form (see Appendix 2). After the researcher had received the signed consent agreements, the questionnaire for the first round of the Delphi study was sent electronically to the panellists. The opinions and feedback of the expert panel members were compiled and analysed. Following this, the questionnaire for the second round was sent electronically, together with the executive summary of the first round. Once the second round was concluded, panellists received the executive summary of the second round, again electronically.

3.4 Instrument of the Delphi study

The Delphi study involved two rounds of responses to questionnaires where panellists were required to provide information and reasoning on several features of the real estate investment process, independently based on their expertise and knowledge. The questionnaires included questions regarding cross-cultural context, elements in the investment process, judgement and the response of individual investors, along with the decision-making process and perceived values of Schwartz's ten human values obtained by investors.

The first round questionnaire consisted of two sections (see Appendix 3). Section A began with four investigative questions. These four questions were open-ended and designed to investigate the primary elements and important features of real estate investment decision-making. The Australian panellists were asked to suggest any observed differences between Australian and non-

Australian investors in terms of their decision-making behaviour. In the meantime, Malaysian panellists were asked to suggest any observed differences between Malaysian and non-Malaysian investors. Additionally, panellists were invited to comment on the attributes they thought were the most important for potential investors to participate in property investment. Panellists were also asked to provide their background information in Section B. Background information included the name of their institute, organization or company, years of experience in real estate (academia or industry), current position in the organization, and their highest qualification.

After the feedback was analysed, reported, and returned to the panellists, they continued with the second round questionnaire (see Appendix 4). The executive summary was presented in Section A of the second round questionnaire and, similarly, requested panellists to contribute opinions regarding the four questions printed in Section B, that were all open-ended. The responses from the first round of the study, regarding key differences between the two chosen countries, can be divided into financial and non-financial factors. Additionally, the non-financial factors mentioned by the panellists, such as emotional attachment and bounded rational behaviours, appeared to support the significance of the study. Therefore, the expert panellists were invited to provide their opinion regarding how much emotional factors can affect judgement in property investment. The study also aimed to seek examples of rational and bounded rational behaviours that were observed by the panellists.

The second round questionnaire requested the panellists to rank the top five human values that they thought were important in leading an individual to become a real estate investor and were encouraged to suggest other personal values they thought were needed to become a successful investor. The ability and capability of investors to participate in property investment is named as the inner self of an investor. In order to establish whether the inner self of an investor is the primary motivational element when participating in property investment, the study used Schwartz's values to investigate the role that human values play on the inner self. Finally, the second round of study asked

the panellists to explain the different functions of property management in Australia and Malaysia.

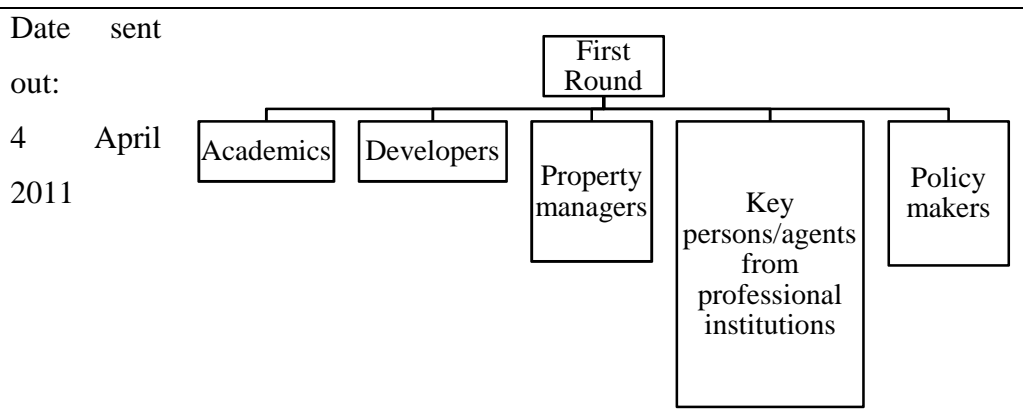
Ethical approval for the Delphi study was sought from the Human Research Ethics Committee at Murdoch University in compliance with the guidelines provided in the National Statement on Ethical Conduct in Human Research. The study was required to respect the participants and to protect their privacy and confidentiality. The data was stored in hard and soft copy and the hard copy data was anonymous, recorded only with code numbers, and was stored in a locked cabinet. The soft copy data was stored on a computer with password protection.

3.5 Data collection and analysis (Phase 1: Delphi study)

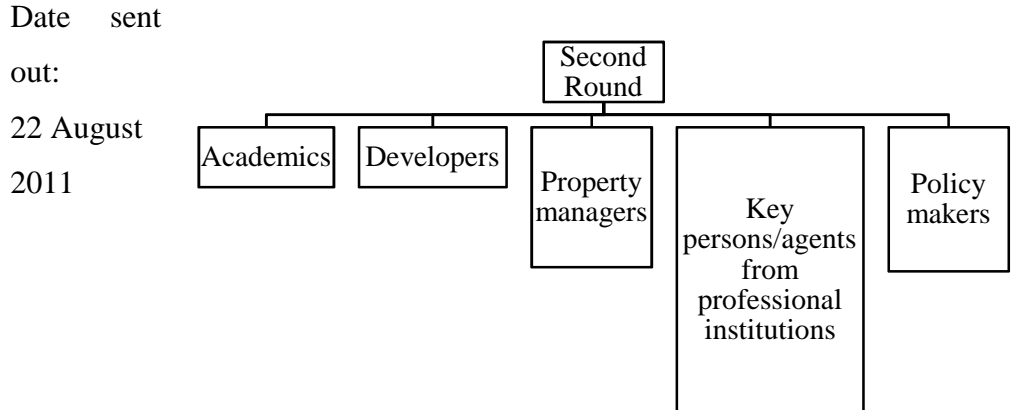
Responses to the first and second round questionnaires were analysed qualitatively, based on response themes provided by the panellists that were grouped according to similarity of ideas. The responses from both Australia and Malaysia were combined, and showed substantial differences of opinion in certain areas. The first round questionnaire served as an introduction to understand the current status and development of property investment markets. Consequently, the questions in the second round questionnaire were developed from the responses received in the first round. These were follow-up questions designed to better understand the decision-making process. Additionally, panellists were asked to rank Schwartz's 10 human values in an order they thought was most important in leading an individual to become a real estate investor. Responses from panellists across the two countries were compared and tested statistically using the Mann-Whitney *U* test. The purpose of conducting the Mann-Whitney *U* test was to compare two independent samples (Australia and Malaysia) of ranked data (Allen & Bennett 2010).

A content analysis (Denzin & Lincoln 2008) was employed to examine the panellists' responses regarding the open-ended questions. The results of the content analysis revealed the perceptions of panellists towards the property investment decision-making process. Additionally, panellists provided responses regarding questions related to the rational and bounded rational behaviours of investors in the property market. Finally, the feedback provided information about the financial and non-financial motivations of real estate investors. Table 3.1 summarises the results of both rounds of the Delphi study.

Table 3.1: **Summary of Delphi study**



Data collected	<ul style="list-style-type: none"> i. Main elements in property investment ii. Important features in real estate investment process iii. Differences between Australian (Malaysian) and non-Australian (non-Malaysian) investors iv. Attributes to become a property investor v. Background information
----------------	--



Data collected	<ul style="list-style-type: none"> i. The effect of emotional attachment in property investment ii. Identification of rational and bounded rational behaviours amongst property investors iii. Ranking the importance of Schwartz's human values iv. Identification of characteristics of property management
----------------	---

3.6 Methodology (Phase 2: research survey)

The purpose of this research was to investigate the rational and bounded rational behaviours of the investment process when acquiring and selling property. Based on the information in the literature review and results obtained from Phase 1: Delphi study, financial factors such as capital gain, rental yield, source of income, and wealth accumulation were identified as factors that motivated rational behaviours. The study aimed to capture the importance of several financial factors when motivating real estate investors to participate in real estate investment.

The research survey was designed to examine the existence of bounded rational behaviours in property investment. As discussed in the literature review, bounded rational behaviours include accessibility, endowment effect, loss aversion, herding, status quo bias, overconfidence, and anchoring. This portion of the study employed quantitative research and statistical analysis and was designed to obtain information regarding the real world situation in property investment. The research survey also investigated investors' attitudes towards risk in real estate investment, saving, and retirement. Schwartz's 10 human values were used to identify the importance of values as a guiding principle in real estate investment.

The research survey used close-ended, self-administered questionnaires. In the final part of the questionnaire, participants were asked to provide their demographic information and investment background. This research survey combined questions with descriptive and explorative characteristics to better understand the decision-making behaviours of real estate investors.

3.7 Sample population (Phase 2: research survey)

The primary purpose of this study was to investigate the existence of bounded rational behaviours in property investment. Hence, the use of convenience sampling is appropriate. The study sought feedback from investors who had experience in real estate investment, particularly from investors who had sold at least one property in their lifetime. The methods of recruitment included email, recruitment through a third party (e.g., via an organization, professional association, or other person), personal contact, telephone, and snowball sampling. Snowball sampling was employed as there was a greater chance to attract potential participants from the recommendation of current participants.

The questionnaire and web based survey link was created using Google Docs. The survey link was then forwarded to potential participants and the consent agreement was embedded into the survey, asking participants to click “agree” before continuing. Hence, the web based survey reduced issues of anonymity and dependency.

3.8 Instrument of the research survey

The self-administered questionnaire consisted of six sections (Appendix 5) and a Likert-scale was used for most of the questionnaire. Section A started with several motivational questions designed to better understand the primary attraction of investors to participate in real estate investment. These motivations are: capital gain, change in stage of family life cycle, long term investment (5-10 years), lower risk compared to stocks, portfolio rebalancing, rental yield, source of income, speculative income (less than 3 years), supplementary income, taxes, and wealth accumulation. Section B included questions that examined investors' personal characteristics and aimed to understand: (1) the effect of accessibility in the decision-making process; (2) the behaviours of investors when they buy/sell their property and invest in a property; and (3) the pricing strategy in real estate investment. There were five questions included in the first portion of this section to study accessibility and a total of 32 questions in the following sections. These questions were designed to explore the possible existence of bounded rational behaviours in real estate investment. Table 3.2 depicts the development of measurement scales for the seven bounded rational behaviours discussed in the literature review.

Section C consisted of questions that assessed investors' attitudes towards risk, saving, and retirement. There were 5 questions for each attitude. The following section, Section D, consisted of Schwartz's 10 human values that were developed by Bardi and Schwartz (2003). Schwartz's values are power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. The respondents were asked to rate the importance of each human value in real estate investment, according to their opinion. Here, a rating procedure was more suitable than a ranking procedure as it allowed for meaningful comparison between two or more studies (Ng 1982). Section E of the questionnaire was designed to understand the outcomes of investors' investments in the real estate market.

Table 3.2: **Development of measure scales**

Bounded rational behaviours	Literatures	Number of items
Accessibility	Kahneman, D. (2003c), Thaler, R.H. and Sunstein, C.R. (2009), Tversky, A. and Kahneman, D. (1987).	5 items
Endowment effect	Carmon, Z. and Ariely, D. (2000), Kahneman, D. (2003c), Kahneman, D. and Tversky, A. (1984), Thaler, R.H. (1980).	5 items
Loss aversion	Carmon, Z. and Ariely, D. (2000), Genesove, D. and Mayer, C. (2001), Kahneman, D. and Tversky, A. (1979), Samuelson, W. and Zeckhauser, R. (1988).	5 items
Herding	Avery, C. and Zemsky, P. (1996), Banerjee, A.V. (1992), De Bondt, W.F.M. and Thaler, R.H. (1995), Thaler, R.H. and Sunstein, C.R. (2009).	6 items
Status quo bias	Camerer, C.F. (1998), Samuelson, W. and Zeckhauser, R. (1988), Tetlock, P.E. (1992), Tversky, A. and Kahneman, D. (1991).	5 items
Overconfidence	Dorn, D. and Huberman, G. (2005), Glaser, M. and Weber, M. (2007), Shiller, R.J. (2001).	7 items
Anchoring	Samuelson, W. and Zeckhauser, R. (1988), Thaler, R.H. and Sunstein, C.R. (2009).	4 items

The final section of the questionnaire consisted of two parts: the investors' profile and their investment background. The investors' profile included basic demographic details such as gender, age, marital status, number of children, employment status, educational level, gross annual household income, country of birth, and parents' country of birth. Subsequently, the investment background included information regarding the length of time investors had participated in real estate investment, ownership arrangements, and property management.

3.9 Data collection and analysis (Phase 2: research survey)

A pilot test was conducted using the first 20 participants of the study. The aim of the pilot study was to evaluate the comprehension of the questionnaire and to ensure that each question was clear and easy to understand.

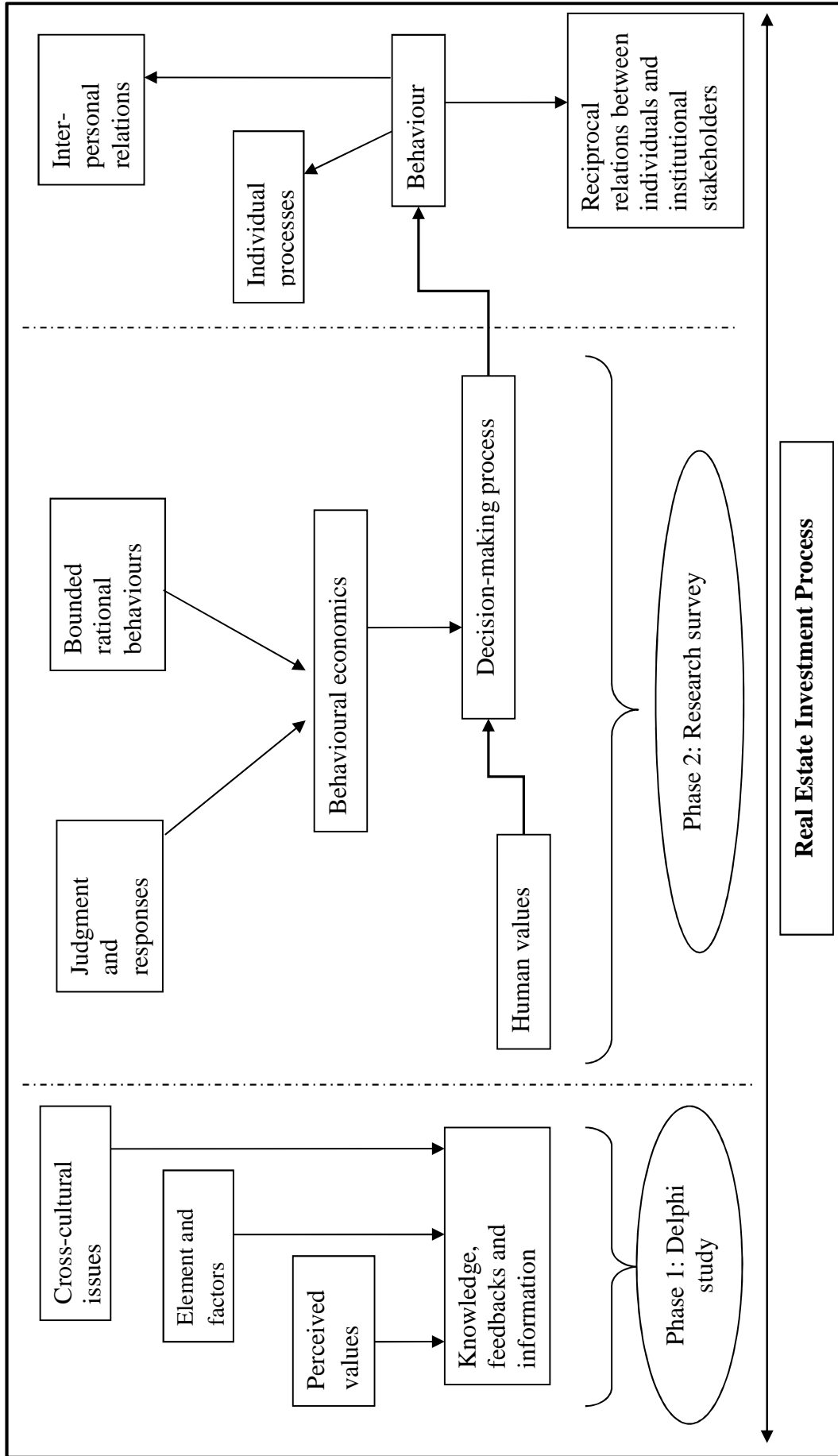
Responses from the research survey provided useful information to study the bounded rational behaviours of real estate investors. These responses were quantitatively analysed using the Statistical Package for Social Sciences (SPSS) version 20.0. Firstly, the data was screened for normality by examining box plots, histograms, normality tests, and kurtosis and skewness values. The data was approximately normally distributed, with no outliers of concern. Individual sample t-tests were conducted to analyse the significance of the data and aimed to test whether the responses were significantly different from 4-point (neither disagree nor agree) on the Likert scale. This study employed a significance level of 0.05. In other words, a *p*-value of less than 0.05 represents findings in the data that are statistically significant.

3.10 Chapter summary

This chapter discussed the design and research methodology that was used to investigate the decision-making process of individual real estate investors. The two phases of data collection included the Delphi study and the research survey. The quantitative and qualitative methods used to analyse the data were presented in Figure 3.1, shown on page 83, that depicted the conceptual framework of this study.

The following chapter will discuss the results and findings of the Delphi study and research survey and the implications of the study will be discussed in the proceeding chapters.

Figure 3.1: Research design for the study of investment decisions and behaviours of individual real estate investors



CHAPTER 4

PHASE 1 - THE DELPHI STUDY

4.1 Introduction

This chapter reports the responses of Phase 1 – Delphi study, which collected data from experts in the real estate market or related industries. The research questions presented in this phase of the data collection investigated important investment features that exist in the real estate markets. The information and reasoning provided by the panel experts were independently based on their expertise, experience, and knowledge. Their responses will subsequently shed light on the study of real estate markets. The data collected helps to examine the variations in property management between the two countries (Australia and Malaysia). The panellists provided useful information to investigate decision-making behaviour in the investment process.

The Delphi study is a consensus building exercise whereby the opinions of expert panel members are shared in two or three rounds until a consensus is reached in regarding the research questions. There is deliberately no face-to-face contact among the experts to eliminate potential biases such as status differences, hidden agendas, and aggressive behaviour. This encourages independent and creative thought from the expert panel. The Delphi technique and its origin with the Rand Corporation (Dalkey & Helmer 1963) are well established in management literature.

Hence, the purpose of this chapter is to discuss the results from the two rounds of the Delphi study and presents the descriptive summaries based on the feedback from panellists. The report includes some of the expert statements, to further aid understanding of the data collected. This chapter consists of several subsections in order to fully discuss the outcomes of the Delphi study.

4.2 Demographic profiles of panellists

A total of 20 experts were invited to participate in the Delphi study. The panellist members consisted of 10 experts from Australia and Malaysia, respectively. There were 6 Australian and 6 Malaysian experts who accepted the invitation. However, there were attrition effects in the second round of the Delphi study, leading to only 4 Australian and 6 Malaysian experts participating in the second round. The panellists were comprised of academics, experienced key persons, and agents from professional institutions (e.g., Real Estate Institute of Western Australia, Australian Housing and Urban Research Institute, Malaysian Institute of Estate Agents, The Board of Valuers, Appraisers, and Estate Agents Malaysia), property management companies, financial institutions, and developers. Each panellist had more than 10 years of experience, either in academia or industry.

4.3 First round of the Delphi study

Delphi Question 1: What are the main elements of property investment decision-making in the real estate industry?

There are some differences and similarities between the Australian and Malaysian real estate markets when concerned with the important elements of the property investment decision-making process. Table 4.1 further illustrates the differences between Australian and Malaysian experts feedback.

Table 4.1: Differences and similarities of elements that involved in property decision-making

	Australian Experts	Malaysian Experts
Differences	Rental income as source of retirement income Negative gearing Diversification of investment portfolios Wealth accumulation Emotive attachment	Government future plan for infrastructures Reputation of developers Past value appreciation of the property
Similarities	Location of the property Capital growth/appreciation Amenities and infrastructures Rental yield	

The elements of property investment decision-making can be split into two categories: financial and non-financial.

Financial Elements

Under the financial grouping, the potential for capital growth (appreciation) is the most important element in both Australia and Malaysia. According to one of the panellists, investors believe that they can obtain capital gains if they retain their investment properties long enough.

Additionally, property investors will consider the return on their investment during the decision-making process. This return can be conceptualised as rental income, either from residential or commercial properties. From the panellists' point of view, a non-owner occupier treats rental yield as both long-term investment and as steady income. Especially in Australia, where rental income is often seen as a preferred source of retirement income as it is received regularly (i.e., weekly or fortnightly). Investors who are risk averse also favour real estate investment over the greater risk of stocks and bonds investment. Moreover, selling a property during retirement will help to fund

daily spending needs. One of the panellists suggested that this is consistent with the life cycle hypothesis. As per the discussion in the literature review, an individual makes consumption decisions based on the long term resources available to them, as well as considering the stage of life they are in (Modigliani 1966). In view of this, older individual tends to gradually let go of their accumulated wealth in order to support daily consumption after they retire. Income security and diversification of an investment portfolio is also highlighted as a profound element of property investment decision-making. In some Australian cases, people make a property investment to utilise the tax shelter benefits. The tax shelter benefits included negative gearing, where the shortfall between rental income and interest costs that incurred in the rental properties are tax-deductible.

Non-financial Elements

Both Australian and Malaysian panellists suggested that location was the primary non-financial element of property investment decision-making. This refers to the closeness of the property to amenities, public transport, and schools. Emotive attachment is also an important element of property investment decision-making. According to one of the panellists, the decision can be complicated by the dual function of the property as an investment and as a family home. Furthermore, the developer's reputation is another important element, where branding and track records are concerned.

Expert comments on the elements of property investment decision-making

One of the respondents highlighted that:

The decision is complicated by the dual function of the family home as both a roof over the head and in most cases the biggest investment in most households' lives. And the emotive attachment to the family home means that decisions to buy and sell are far from purely determined by objective financial considerations. The owner occupier component of the housing market cannot necessarily be analysed in isolation to the non-owner occupier (investment) component, because investors often either purchase from and / or sell to owner occupiers, and therefore by definition are caught up indirectly in the emotional element of housing investment / ownership (Australian panellist 2).

However, the decision-making process can also be influenced by taxation arrangements or wealth accumulation, as stated by Australian panellist 3:

The majority of real estate investors in Australia are landlords. It has been argued that current tax arrangements such as land tax arrangements deter institutional investments on multiple property holdings. Factors shaping individuals' decisions to invest in property can be both financial and non-financial in nature. Some individuals invest in property as part of their plan of accumulating wealth (Australian panellists 3, 4). Others end up owning property due to inheritance (Australian panellist 3).

Additionally, several panellists from Malaysia suggested that:

Location is a big factor. They need to determine which area is a highly sought after area and will most likely experience price increase at a faster rate than most other areas. For rental purposes, areas of high demand include near city centre, train stations, shopping areas, tertiary institutions etc. (Malaysian panellists 3, 4, 5).

Delphi Question 2: What are the most important features of the real estate investment process (i.e., viewing, negotiation, legal, and financial advice)?

Most of the panellists regard viewing of a property as the most important feature of the real estate investment process. One of the reasons for this, is that the investor needs to determine whether the prospective purchase will attract the required rent and favourable capital gain. Hence, investors would want to view the property first to identify whether it is the 'right' property to invest in. As suggested by a Malaysian panellist, no two properties are the same and external factors, such as facing a junction or the presence of a graveyard behind the property, may cause its value to drop.

The second important feature of the real estate investment process was financial advice, where investors seek to ensure that there is available capital and financing. Although, according to an Australian panellist, most owner occupiers would not seek financial advice before purchasing a property. A partial reason for this is that the principal place of residence in Australia is exempt from capital gains tax.

Few panellists elected negotiation as more important as the two features discussed above. However, the process of negotiation (to obtain the best price) could provide an investor with greater flexibility in the future, especially when the investor wants to sell or rent the property. The advantage of obtaining the best buying price (i.e., a lower price) is that it enables the investor to earn higher capital gain when he/she sells the property. Otherwise, the investor may rent the property at a lower rental rate to secure a tenant in a competitive market, as long as rental income covers the loan interest.

One panellist recommended that some legal and financial knowledge is important in the real estate investment process, but that it can be learnt.

Expert comments on the features of the real estate investment process

Australian panellist 2 commented that:

Viewing is the most important of the nominated features, because the investor needs to determine whether the prospective purchase will fetch the required rent and has the potential to maximise capital gain. Most owner occupiers would not seek financial advice before purchasing a dwelling, in part because the principal place of residence is exempt from capital gains tax. Most investors probably would seek financial advice, while negotiation is more relevant to investors than owner occupiers (Australian panellist 2).

And a Malaysian panellist agreed:

Viewing is also important as no two properties are the same. External factors like facing a junction or graveyard behind it may cause its value to drop. Especially important for small time investors who invest on the lower priced properties and those who have a smaller portfolio. Any difference in price due to unexpected reasons may affect their profit in a big way (Malaysian panellist 5).

Delphi Question 3: Are there any observed differences between Australian/Malaysian and non-Australian/non-Malaysian investors in terms of their decision-making behaviour?

This research question aimed to understand the differences in decision-making behaviour of local and non-local investors. It was expected that the decision-making behaviours of Australian investors would be different to those of non-Australian investors. Similarly, it was expected that there would be differences between Malaysian and non-Malaysian investor decision-making behaviour. The following four quadrant box shows the four different investor types in this discussion.

Figure 4.1: **Four types of investors**

Australian investors investing in Australia	Non-Australian investors investing in Australia
Malaysian investors investing in Malaysia	Non-Malaysian investors investing in Malaysia

Feedback from Australian panellists:

Exchange rates will affect non-local investors, including the risk of large movements in exchange rates and the trajectory of absolute and relative prices. Non-Australian investors are thought to be more focussed on rental returns rather than capital gains. They are more likely to make an investment decision based on need and practical usage. On the other hand, Australians, generally, will more likely be driven by status and wealth accumulation.

Feedback from Malaysian panellists:

There are differences, in terms of choice and options, available for local investors compared to non-Malaysian investors. The Malaysian housing authority has stringent restrictions in place for foreign investors, especially concerning land ownership. Panellists suggested that Malaysian investors are more likely to be interested in long term investment, but that non-Malaysian investors tend to be interested in property for personal usage. Regardless, non-Malaysia investors like to invest in property that is built by reputable

developers to provide good after sales service. Local Malaysians, who are owner occupiers, are likely to consider location, amenities, and facilities of the property in their decision-making process.

Some panellists from both countries suggested that, eventually, there will be few major differences between either Australian/non-Australian or Malaysian/non-Malaysian investors, beyond some cultural preferences in certain housing styles or location. One of the Australian panellists also added that, in previous property investment decision modelling, the ethnicity variable was statistically insignificant.

Expert comments on the differences between groups of investors

According to one of the panellists:

Overseas clients are more focused on rental returns rather than capital gains (Australian panellist 6).

Another panellist added that:

Exchange rates, including the risk of large movements in them and the trajectory of absolute and relative (to Australia) prices in the non-resident's home market are both significant factors that are not relevant to domestic investors (Australian panellist 2).

Additionally, one of the Malaysian panellists agreed that there are differences where:

Local investors have more options and choices as to the types and locations of their investment properties as compared to foreign ones. Also, there are certain restrictions placed on foreign investors especially when it comes to land ownerships (Malaysian panellist 2).

Delphi Question 4: What are the attributes that you think are important for potential investors to participate in property investment?

The attributes important for potential property investment, as suggested by panellists, can be organized into two categories: internal and external attributes. Internal attributes are those that can be controlled by investors, whilst external attributes cannot.

The internal attributes can, again, be divided into two groups: the inner self of an investor and outer characteristics of the individual. The inner self of an investor refers to the ability and capability of investors to participate in property investment. An investor needs to be able to identify different types of investment alternatives and the right type of property before stepping into the property investment arena. The investor must show a certain level of capability in gathering and analysing data whilst at the same time, being willing to take a certain amount of investment risk. Having said that, vision and confidence also play a prominent role in creating a successful property investor.

Outer characteristics of an individual investor refer to factors such as sufficient funding and adequate capital to sustain a property investment. Also, potential investors should ensure that they have adequate human capital and financial aids, such as a mortgage loan, to realise their investment plan. Experience, creativity, knowledge of property markets, and investment skill sets and competencies are amongst the attributes required for building strong human capital in real estate investment. These attributes are essential to enhance an investor's holding power. Furthermore, based on the results from earlier research, an Australian panellist revealed that investors who are middle aged (between 30 and 50), possessing relatively high levels of income and educational qualifications, are prone to retain their property investment.

External attributes can also include the prospect of capital growth, rental yield, lowered interest rates, and national stability. Developer reputations that are trustworthy also play a prominent role in encouraging a potential investor to invest. The developer must supply quality finished products, innovative design, and also provide after sales service and prompt defects rectification.

Expert comments on the attributes that are important for real estate investment

From research, one panellist revealed that:

The middle aged investors (mid-30s to mid-50s in age), with relatively high levels of income and educational qualifications, are most likely to be able to retain their property investments over time. This suggests that potential investors who are thinking of participating in property investment should ensure that they have sufficient incomes and human capital to help them sustain these investments, some of which have to be financed via mortgage loans (Australian panellist 4).

Other panellist responses suggested that:

Like in any form of investments, adequate capital and holding power are the two most important basic requirements before one can actually venture into property investment (Australian panellist 5, Malaysian panellists 1, 2, 6). Also, the ability to identify the right type of property to invest in and ability to predict future growth and demand patterns are equally as important (Malaysian panellist 2).

The first round of the Delphi study examined the drivers of household residential real estate market investment. This research sought to understand whether differences existed between the two countries (Australia and Malaysia) in terms of investment behaviours. After gathering feedback from panellists in the first round of the Delphi study, discrepancies between the two countries are evident. The key differences can be categorised as financial and non-financial factors. Importantly, the non-financial/economic drivers (i.e., emotional attachment and rationality) support the hypothesis of this research.

After completion of the first round, the second round of the Delphi study was launched to draw on extensive feedback from the same group of panellist members. As mentioned earlier, during this round, the number of panellist members decreased to 10 members across both panels.

4.4 The second round of the Delphi study

Delphi Question 1: If emotional attachment is one of the elements in property investment decision-making, how much do you think emotional factors affect judgement in property investment? Please provide your comment.

This question elicited agreement and disagreement among panel members, who commented that much depends on who the decision-makers are. If this question was referring to owner occupiers, the consensus was yes, that emotional factors can affect judgement. Future outlook, risk aversion, fear of loss, and experience also play an important role in affecting a current decision. As previously mentioned, experience affirms the choice of investors in decision-making. Final contributing factors include the location and the developer's reputation (i.e., past track record, workmanship, and financial capability on delivering end products).

Additionally, in residential property, the house is also a home. Hence, the residential purchasing process undoubtedly involves emotional factors. According to one of the Australian panellists, there is a high home ownership rate in Australia because most Australians aspire to own a property at some stage in their life. Emotional attachment takes place in the decision-making process where the primary home could be used to fulfil retirement needs, as well as to fund daily consumption. Furthermore, emotional factors in the residential property market may also encourage a person to hold onto a property longer than they should.

Perceived values on several factors also influenced judgement in property investment, such as fulfilling basic needs, a long term secured saving plan, lifestyle living, and safety concerns. According to a Malaysian panellist, the younger generation may neglect to consider the resale value or capital appreciation of the property before purchase. Their concern is whether the location of the property is close to their parents' house and how far it is from home to schools and the workplace.

Nevertheless, there is disagreement regarding how emotional attachment affects property investment. This specifically refers to non-owner occupiers or second property buyers. Investment in a non-primary home will depend on financial viability. In this situation, a detailed calculation and financial plan will be more significant than emotional factors.

Expert comments on the emotional elements of property investment decision-making

As described by an Australian panellist:

Investing in any medium, be it property or other investments, is all about the future outlook. Risk aversion, fear of loss and what has happened in the past however do inevitably form parts of the decision. Hence how people perceive or feel about the future guides the decision. Residential property is people's homes and this has the strongest emotional influence – it always will have (Australian panellist 2).

One of the panellists agreed that:

Emotional factors in the residential market can make a person hold onto a property longer than they should to maximize or capitalize on their investment when market conditions dictate and therefore lose this opportunity (Australian panellist 4).

One of the Malaysian panellists added that:

The purchase process, as far as properties are concerned, is a highly emotional one. It is not every day that one puts his money down for the purchase of a property, unlike daily consumer goods. Most investors have an affinity towards the location of the property they're intending to put their money on, type of property or the developer who's behind the development (Malaysian panellist 1).

Further, some of the Malaysian panellists proposed that:

Emotional factors like sense of basic needs security (to have a dwelling place especially for newly wed or elderly couple), as a secured saving plan (investment for long term capital growth to fund children's education or retirement income), lifestyle living (sense of achievement amongst peers), safety and security (especially for gated and guarded), brand and track record of developers (workmanship and material, finishes quality, timely delivery) and etc. All these have become critical investment criteria for investors. Hence, the perceived value of the above factors will greatly affect the selection of the particular property for investment (Malaysian panellists 3, 4).

However, one of the panellists argued that:

Emotion has not much effect on property investment decisions because people nowadays can calculate their investment potential and they can anticipate the growth of their investment. Hence emotional factors have only a slight effect on property investment (Malaysian panellist 5).

Delphi Question 2: Do you think investors are acting rationally in property investment? Please provide examples of rational and irrational action that you have noticed.

An Australian panellist suggested that the definition of an investor would determine the existence of emotional attachment. In his opinion, when an investor buy a property with the intention to rent (i.e., non-owner occupiers), the direct emotional attachment is not as prominent as compared to the owner occupier. This group of investors purchase property at low yields on the expectation of capital gain and to gain an advantage from negative gearing. As such, non-owner occupiers act rationally in property investment, similar to other types of investment. However, it is important to consider that an Australian investor should think like a home owner for their investment to be successful. This is because home owners are driving 80% of the residential market in Australia.

Moreover, research supports the idea that the economic costs of holding properties critically affect the decision to begin investing in the housing market. Factors shaping investment decisions include financial and market drivers, as well as policies that directly impact the after-tax economic costs of investment.

Two Malaysian panellists supported the idea that a majority of investors are rational in their investments and that they will have dedicated careful thought and evaluation to maximize investment benefits. One of these panellists also noted that he had never, in the past 20 years, encountered any irrational property purchases. According to him, even the amateur will consult their friends and family before making a purchase commitment.

Overconfidence is an element that can direct people move beyond rational behaviour into a bounded rational state of mind. As suggested by one Australian panellist, bounded rational behaviour can be attributed to FIGJAM (F*** I'm Good, Just Ask Me!) syndrome. Indeed, most people assume that their property will be worth more than the market can offer, which is rarely the case.

On the one hand, investors are considered rational in terms of their ability to invest and meet their needs. On the other hand, investors are considered to be acting irrationally when they opt for 'fast lane' investment. Fast lane investment takes place when the investor makes decisions without first examining the situation thoroughly. One of the Malaysian panellists provided an example of fast lane investment. He mentioned an investor who invested in residential units, hoping that the units could be rented out to students of a neighbourhood college still under construction. However, the college was never established and, as a result, the investor's improper planning and irrational behaviour contributed to investment failure.

Expert comments on the elements of property investment decision-making

One of the panellists suggested that:

Most people I know think their houses are always worth more than the market will offer. The FIGJAM syndrome ego based comes again into play. Most people seem to think they are smarter than the next. But in selling, they stress out and hold on and eventually sell at what the market is prepared to offer. Attachment to their style and tastes and the work put into a property seems to reinforce a belief that God is on their side, which of course is not always the case (Australian panellist 4).

Further, one of the Malaysian panellists advised that:

All buying decisions initially are prompted by emotional attachment and connection to the perceived values of their purchases, hence the initial action by the investors are mainly irrational. For example, the investors could very much attracted by the life style concept and well designed and decorated show units without working out their capability to fund the purchase or hoping the rental yield will be able to meet the mortgage repayments (principal and interest). Hence most purchasers are following the herd effect without understanding the market and the sustainability of repayments especially for those who invest for capital and rental yield (Malaysian panellist 3).

Delphi Question 3 (a): Given the following ten (10) Schwartz's values, with specific value items contained in parentheses, please kindly rank the top five (5) human values that you think are important in leading an individual to become a real estate investor.

The top five ranked human values that are important in leading an individual to become a real estate investor are summarised in Table 4.2.

Table 4.2: Ranking of top five Schwartz's values

Schwartz's values	AP1	AP2	AP3	AP4	MP1	MP2	MP3	MP4	MP5	MP6
i) Power (<i>social power, authority, wealth</i>)	3	4	2	1	4	3	1	2	2	1
ii) Achievement (<i>successful, capable, ambitious, influential</i>)	5		1	4	2	2	3	3	5	2
iii) Hedonism (<i>pleasure, enjoying life</i>)	4	1	5	2			5			
iv) Stimulation (<i>daring, a varied life, an exciting life</i>)		5			5				4	
v) Self-direction (<i>creativity, freedom, independent, curious, choosing own goals</i>)	1	2	3	5	3	1	4	4	1	4
vi) Universalism (<i>broadminded, wisdom, a world at peace, protecting the environment</i>)						4		5		
vii) Benevolence (<i>helpful, honest, forgiving, loyal, responsible</i>)										
viii) Tradition (<i>humble, accepting portion in life, respect for tradition, moderate</i>)										5
ix) Conformity (<i>politeness, obedient, self-discipline</i>)										
x) Security (<i>family and national security, social order, reciprocal of favours</i>)	2	3	4	3	1	5	2	1	3	3

* AP1, AP2 ... MP5 and MP6 represent Australian and Malaysian panellists 1, 2 ... and 6 respectively.

It is interesting to note that all 10 panellists chose Power, Self-direction, and Security as top 5 values. 9 panellists chose Achievement as a top 5 value and the ranking for these four values varies from 1 to 5 between panellists. However, we can also see that there are 3 panellists who ranked Self-direction as 1 and Power as 2 while 4 panellists ranked Security at third place. Although there are panellists that chose Stimulation and Universalism, these two values were generally ranked lower (the fourth and fifth place).

In Table 4.2, there are only eight of Schwartz's values ranked in the top five. The eight values are Power, Achievement, Hedonism, Stimulation, Self-direction, Universalism, Tradition, and Security. These eight ranked Schwartz's values were tested using the Mann-Whitney *U* test to determine whether there were any differences between the rankings given by Australian and Malaysian panellists (see Table 4.3). The Mann-Whitney *U* test ($p > 0.05$) indicated that there were no significant differences between the rankings provided by the Australian and Malaysian panellists on all eight of Schwartz's human values. Thus, panellists from both Australia and Malaysia came to the consensus that the same human values, namely Power, Achievement, Hedonism, Stimulation, Self-direction, Universalism, Tradition, and Security are important in leading an individual to become a real estate investor.

Table 4.3: **Mean ranking and Mann-Whitney U statistics for Schwartz's human values**

Schwartz's Human Values	Countries	Mean Rank	Mann-Whitney U
Power (<i>social power, authority, wealth</i>)	Australia	6.00	10.00
	Malaysia	5.17	
Achievement (<i>successful, capable, ambitious, influential</i>)	Australia	5.13	10.50
	Malaysia	5.75	
Hedonism (<i>pleasure, enjoying life</i>)	Australia	7.63	3.50
	Malaysia	4.08	
Stimulation (<i>daring, a varied life, an exciting life</i>)	Australia	5.38	11.50
	Malaysia	5.58	
Self-direction (<i>creativity, freedom, independent, curious, choosing own goals</i>)	Australia	5.38	11.50
	Malaysia	5.58	
Universalism (<i>broadminded, wisdom, a world at peace, protecting the environment</i>)	Australia	4.50	8.00
	Malaysia	6.17	
Tradition (<i>humble, accepting portion in life, respect for tradition, moderate</i>)	Australia	5.00	10.00
	Malaysia	5.83	
Security (<i>family and national security, social order, reciprocal of favours</i>)	Australia	6.38	8.50
	Malaysia	4.92	

Delphi Question 3 (b): Do you perceive any other personal values that are needed in the inner self of an investor to promote a successful investor? Please specify the values and reasons.

Other than the above ten Schwartz's values, panellists suggested that:

1. Patience
2. Confidence (i.e. no FIGJAM syndrome)
3. Charity
4. Knowledge
5. Legacy building for the next generation
6. Self-sustainability
7. Self-discipline and
8. Anticipation

were also important personal values that are needed in order to become a successful investor.

Delphi Question 4: How does property management work in Australia/Malaysia? What are the behavioural patterns of real estate investors in property management?

Feedback from Australian panellists:

In Australia, most real estate investors will outsource property management to a management agent. Here, property management primarily refers to rental collection. There are many rules and regulations involved in property management, so an individual requires a thorough understanding of them to manage a property effectively. Some of the managers will even take responsibility finding ideal tenants and perform inspection works on the property. Hence, the advantage of property management outsourcing is both reducing pressure and saving time. However, there are disadvantages to outsourcing property management services. To start, the quality of service varies, depending on the managers/agents. Second, property managers are often over-loaded with work and some allow their properties to deteriorate through bad or insufficient maintenance. Finally, the engagement of property

management services lowers the return from rent. Thus, one panellist suggested that property managed by the owner him/herself is the best strategy to gain the best returns on investment.

Feedback from Malaysian panellists:

Property management in Malaysia is struggling to gain recognition from real estate investors. Real estate agencies do not offer property management services, perhaps because of both the hassle and lack of opportunity for outstanding revenue. There is also a lack of reputable property managers who have the integrity, experience, and service orientation to manage sale and rental management, as in Australia. Most Malaysian investors are accustomed to managing their own investment properties. They are responsible for collecting rent, maintaining the property in mint condition, paying the city council rates and assessments, and doing repair work.

However, real estate investors of high end properties, or educated investors, do recognize the importance and benefits of property management. By assigning professionals to manage their property, they are able to obtain advice on the latest market developments and liberate their time for other work. Therefore, there are increasing numbers of managing agents in the Malaysian market.

Expert comments on the elements of property investment decision-making

According to Australian panellist 2:

Property management in Australia is really rent collection, and pays no respect to capital growth or total returns. It is essential to use a professional manager to equate a higher return for the investment if self-managed due to the time and pressures involved. There are many rules and laws regarding management that must be known to effectively, correctly and legally manage a property in Australia. Property managers are often over-loaded with work and hence must take the path of least resistance at times to complete a productive days (Australian panellist 2).

Conversely, several Malaysian panellists revealed that:

Most investors are used to managing their investment properties themselves as in rental collections, payment of city council rates & assessments as well as undertake whatever necessary maintenance and repairs of their tenanted properties when required. Majority of the Real Estate Agencies in Malaysia do not offer such services and concentrate only on selling and renting. It may be because of the hassle and low revenue prospect that our Malaysian Property agencies are not keen to promote such service offerings to investors (Malaysian panellists 1, 3, 4).

One of the Malaysian panellists also mentioned that:

Property management is mainly driven by developers and later by management corporations. Real estate investors will appreciate good reputation of developers to kick start with the property management (Malaysian panellist 6).

4.5 Discussion and implications

To discover information that would assist in understanding property investment decision-making, this research aimed to gather real market information from experts in the property market and related industries. The elements involved in property investment decision-making are segregated into two categories: financial and non-financial.

When discussing the financial elements, it was found that investors choose to invest in the real estate market to earn rental yield, look for capital growth, and to obtain capital gains through their real estate investment portfolio. These findings are supported by Benjamin, Chinloy and Jud (2004) who stated that people accumulate wealth through the capitalisation of housing assets (see also de Bruin & Flint-Hartle 2003). As it has been found that these are the primary financial elements when making investments, it is logical to assume that investors will place higher value on properties that carry greater potential for capital gain and rental yield. Having said that, there are also investors who will make a property investment as a retirement plan. Otherwise, people utilise the tax shelter benefits, especially in Australia, by leveraging negative gearing. Note that this tax treatment is only applicable in Australia, New Zealand, and Canada.

Some panellists suggested that the family home has a dual function that may complicate investment decision-making. The family home is a 'roof over the head' and may be one of the biggest investments made by most individuals. As such, emotive attachment to the family home can sometimes be unavoidable.

Additionally, there are non-financial elements that influence the decision-making process. These elements include: location, emotive attachment, and the reputation of developers.

The differences between local and non-local investors exist in the real estate market, in both Australia and Malaysia. For example, exchange rates influence the decision-making process of non-local investors in both countries. Additionally, there are legal restrictions placed on foreign investors in both Malaysia and Australia. Local investors are perceived as being more focused on their needs and practical usage when considering a property. This is reflected in Malaysia, where local investors also place high value on location, amenities, and the facilities of a property during the decision-making process.

Importantly, the Delphi study aimed to investigate attributes that experts considered important for potential investors to participate in real estate investment. Data from the study found that both internal and external attributes are considered important to enable investors to participate, and sustain their participation, in the real estate market.

Internal attributes were elements that could be controlled by investors. Investors should have sufficient capital, holding power, sustainable income, and educational qualifications to enable them to remain in the investment market.

In contrast, external attributes are those that are out of investors' control. These include: the prospect of capital growth, rental yield, interest rates, national stability, and the reputation of developers. Although uncontrollable, these external attributes can be taken into account during the decision-making process. These findings are supported by Adair, Berry and McGreal (1996) who suggested that there are internal and external factors that influence the decision-making process. Internal factors include: size, accommodation, design, and layout; whilst external factors include: economy, financial situation, location, and neighbourhood.

A review of the literature revealed that institutional investors are less affected by emotional attachment and have less bias in their judgement (Kahneman 2003a; Kahneman 2003c; Shapira & Venezia 2000). In the Delphi study, some panellists suggested that emotional attachment will only be evident in the owner occupiers' decision-making process. In other words, the judgement of non-owner occupiers, second property buyers, or institutional investors is not affected by emotional attachment. Risk aversion and fear of loss also play prominent roles in affecting decision-making. Tetlock (1992) defined regret avoidance as a situation where people want to avoid decision and fear feeling regret from a bad decision. Fear of loss behaviour is also the outcome of aversion to regret and a fear of realising losses (Shefrin & Statman 1984). Isoni (2011) also discusses bad deal aversion to describe how the transaction price affects an individual's utility, specifically regarding the willingness-to-accept and willingness-to-pay disparity.

One of the findings of the Delphi study suggested that owner occupiers are influenced by emotional attachment in the decision-making process. In 1990s, other than Luxembourg, Australia was one of the OECD countries with the highest home ownership rate (71.4%) although this rate decreased slightly to 69.5% in 2003 (Andrew & Sánchez 2011). There is a significant difference in the rate of home ownership between Australia and other OECD countries, such as Germany and Switzerland. Hence, Australians mostly conform to a home ownership culture and, thus the majority of Australians aspire to own a

property. In other words, the owner occupiers are more affected by emotive attachment.

When analysing whether investors act rationally in property investment, the answer is yes and no. A direct emotional attachment was not perceived to be noticeable if the investors purchased a property with the clear objective to acquire capital gain or rental yield. These investors were thought to search for complete information before making investment decisions. As such, they were considered to act rationally by considering the positive and negative economic or financial drivers present in the current market. Surprisingly, the younger Malaysian generation were thought to disregard the consideration of resale value or capital appreciation of a property when they acquired the property. This generation were perceived to place more concern on the location of the property, preferring a property that was either close to their parents' home or to school and/or the workplace. This finding, while preliminary, suggests that younger Malaysian investors are boundedly rational when making an investment decision.

Information regarding two important bounded rational behaviours surfaced from the Delphi study, namely overconfidence and following the herd. The FIGJAM (F*** I'm Good, Just Ask Me!) syndrome, suggested by one of the panellists, conform to the concept of overconfidence that was recommended by Kahneman (2013), which he labelled "What You See Is All There Is" (WYSIATI). According to Payne, Bettman and Johnson (1992), overconfidence is a hindsight bias or the "I knew it all along" phenomenon. In addition to this, one of the panellists recommended that follow the herd effects appeared when investors are over attracted by lifestyle concept, design, and decoration. Furthermore, investors that fall prey to follow the herd effect abandon their personal information and instead act in accordance with decisions made by others (Banerjee 1992), overlooking their goals to obtain capital gains and rental yield.

This study aimed to show that human values are important in shaping an individual to become a real estate investor. Here, the Delphi study showed that human values affect the inner self of an investor. Panellists ranked power, achievement, hedonism, self-direction, and security as the top 5 of Schwartz's ten human values that guide an individual to become a real estate investor. This finding reveals that the human values social power and wealth may be primary motivating factors that cause an individual to invest. Also, success in the real estate market may also signify the personal success and ability of the investor. Self-direction represents the investor's priority of gaining freedom, independence, and choosing personal goals. Finally, security is necessary to direct an individual to become a real estate investor.

It was also crucial for the current research to discover the major differences in property management between Australia and Malaysia. Property management refers to the collection of rent and performing inspection and maintenance on a property. In Australia, properties were thought to be commonly managed by management agents. These agents were seen as liable for collecting rent, maintaining the property, and securing ideal tenants. However, this situation was not reflected in Malaysia. Most Malaysian real estate investors manage their properties themselves. Thus, they are responsible for maintaining the condition of their property, collecting rent, paying city council rates and assessments, and other property management responsibilities.

4.6 Chapter summary

In the Delphi study, opinions of an expert panel, regarding real estate investment, were analysed and discussed. Some panellists highlighted the importance of economic and financial drivers that take place in the decision-making process. Furthermore, the study discovered opinion on the internal and external attributes that real estate investors require to take part in the property market. The discussion, by the panellists, of emotional attachment, overconfidence, and follow the herd effects created a need for further inquiry on the bounded rational behaviours of investors. The findings of the Delphi study have assisted in the process of developing a comprehensive instrument for the next phase of the study.

The next phase of study will examine the human values that guide real estate investor's decision-making processes, using the human values ranked by the expert panel. Hence, some of the above findings are subsequently investigated in Phase 2 – Research Survey.

Phase 2 – Research Survey is conducted by providing questionnaires to individual investors who have sold at least one of their properties. The findings and results of the research survey are reported in the following chapter, Phase 2 – Research Survey (Chapter 5).

CHAPTER 5

PHASE 2 - RESEARCH SURVEY

5.1 Introduction

The preceding chapter, Phase 1 – Delphi study, reported the responses of real estate experts from both Australia and Malaysia regarding various facets of real estate investors. This portion of the research, Phase 2 – Research Survey, now seeks to investigate the differences between Australian and Malaysian investors' decision-making behaviours, from the panellists' point of view. Phase 1 feedback provided points of agreement and disagreement from the panellists regarding the involvement of emotional attachment in real estate investment. Importantly, the study discovered that rational and bounded rational behaviours do exist in real estate investment, according to the expert panellists.

The purpose of this chapter is to further explore the decision-making behaviours of individual investors who have sold at least one of their properties and seeks to understand the characteristics of investors when they sell their property. Hence, the research survey investigated how individual investors make their investment decision when they face uncertainties. In addition, the study attempts to illuminate to what extent individual investors rely on their own beliefs and perceptions, gut feeling, emotion, and societal influences and attitudes. The objective of the research survey was to explore the decision-making process of real estate investors over several dimensions, including financial motivation, investment characteristics, investors' behaviours and attitudes of individual investors, human values, and the outcomes of real estate investment.

This chapter is comprised of several subsections in order to fully discuss investment behaviours. The chapter begins with descriptive analyses of the participants' demographic profiles. It then goes on to discuss the validity of the research survey and includes several analyses that examine the research hypothesis. Finally, the chapter will conclude by discussing the implications of the findings in real estate investment.

5.2 Demographic profiles and investment background of respondents

The research survey was attempted in Australia and Malaysia. However, this study did not receive sufficient respondents in Australia to be included in the analysis. As a result, the survey sample included only Malaysian individual investors who had sold at least one of their properties. There were a total of 99 respondents that participated in the research survey. Table 5.1 (below) depicts the composition of respondents in terms of gender, age, marital status, education level, and gross annual household income. Close to three quarters of the respondents identified as male (73.7%) while 26.3% identified as female. 7% of respondents were less than 25 years old while the majority of the participants fell within the age range of 25 to 54 years old (86.9%). Most participants were married (61.6%) and were university graduates, holding a bachelor or postgraduate degree (58.6% and 22.2% respectively). A small number of participants indicated that their education was at the certificate level (8.1%). Gross annual household income for 17 participants was less than RM30, 000 (approximate to AUD10, 400) and more than half of the respondents (60.8%) earned more than RM60, 000 (approximate to AUD20, 800) annually.

Table 5.1: **Demographic data of Malaysian respondents**

	Frequency (n = 99)	Percent (%)
Gender		
Male	73	73.7
Female	26	26.3
Age		
Under 25 years	7	7.0
25 to 34 years	37	37.4
35 to 44 years	29	29.3
45 to 54 years	20	20.2
55 to 64 years	5	5.1
65 years and above	1	1.0
Marital Status*		
Single	36	36.4
Married	61	61.6
Divorced	1	1.0
Widowed	0	0.0
Level of Education*		
Primary school	0	0.0
Secondary school	3	3.0
Certificate level	5	5.1
Advanced diploma	8	8.1
Bachelor degree	58	58.6
Graduate diploma	1	1.0
Postgraduate degree	22	22.2
Gross Annual Household Income*		
Less than RM 30, 000	17	17.5
RM 30, 000 – RM 44, 999	11	11.4
RM 45, 000 – RM 59, 999	10	10.3
RM 60, 000 – RM 79, 999	11	11.3
RM 80, 000 – RM159, 999	26	26.8
RM160, 000 – RM319, 999	16	16.5
RM320, 000 or more	6	6.2

* data contains missing values

The results showed that the majority of respondents were employed full time (63%), while 22% of respondents owned a business or partnership. In addition, it was found that 5% of respondents had retired from work (see Figure 5.1). The survey also included a section designed to investigate the investment background of each individual investor. Here, they were requested to provide information regarding the length of time spent in real estate investment, the ownership arrangement that best described their current real estate investment situation, and also who was responsible for managing their properties. These responses will assist in further understanding further the investment characteristics of the respondents and to identify development of Malaysian property management.

Figure 5.1: **The employment status of respondents**

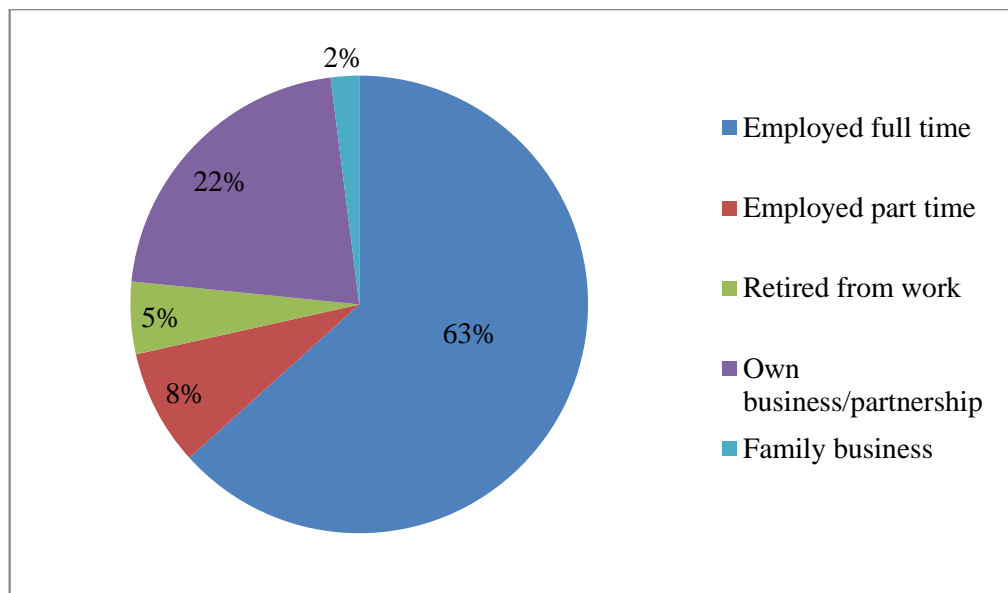
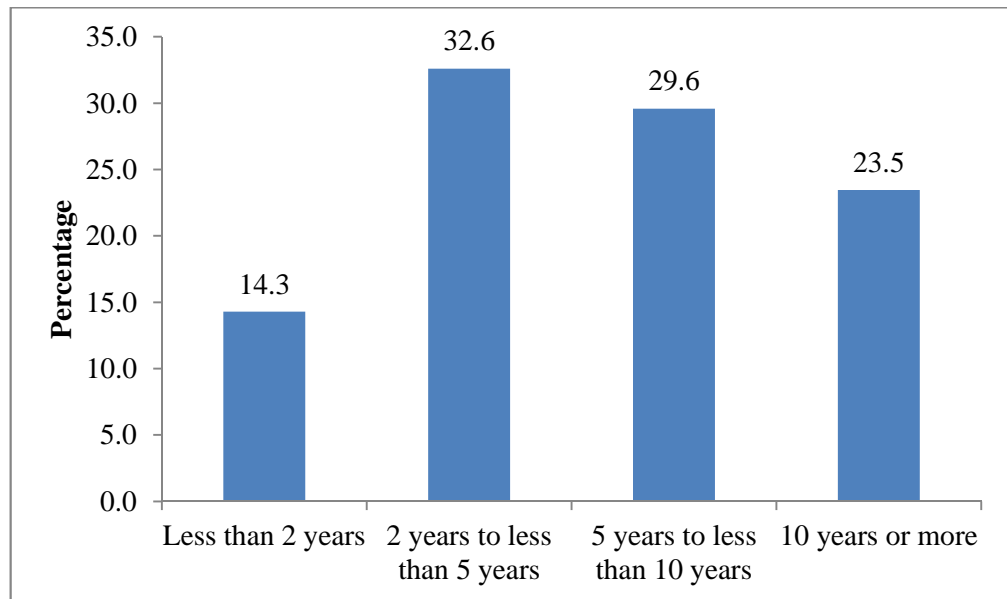


Figure 5.2: **The length of time in real estate investment**



As shown in Figure 5.2, only 14.3% of respondents had less than 2 years' experience in real estate investment. Around 33% of respondents indicated that they had 2-5 years' experience in real estate investment while 23.5% of respondents had participated in real estate investment for 10 years or more.

Figure 5.3: **The ownership of the current real estate investment**

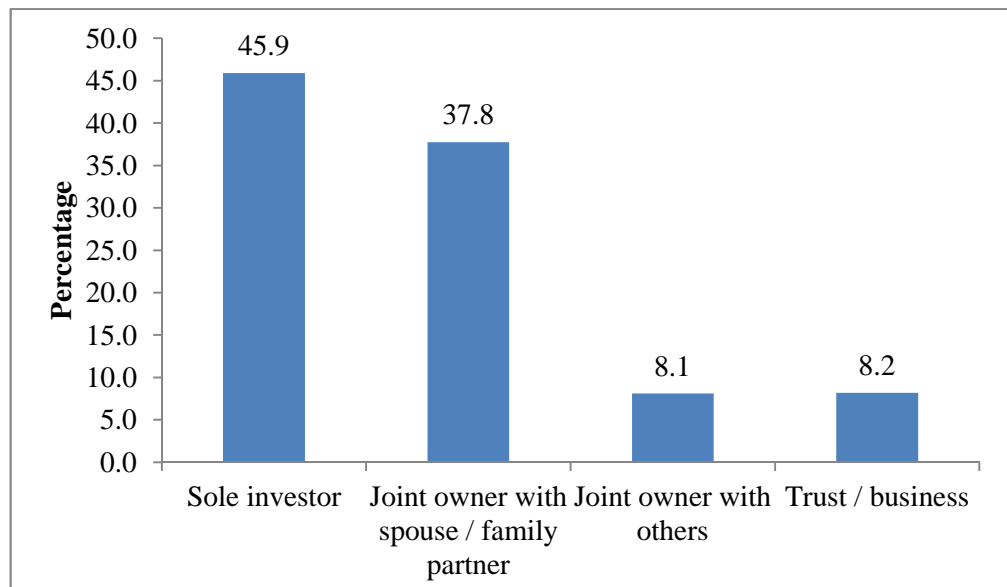
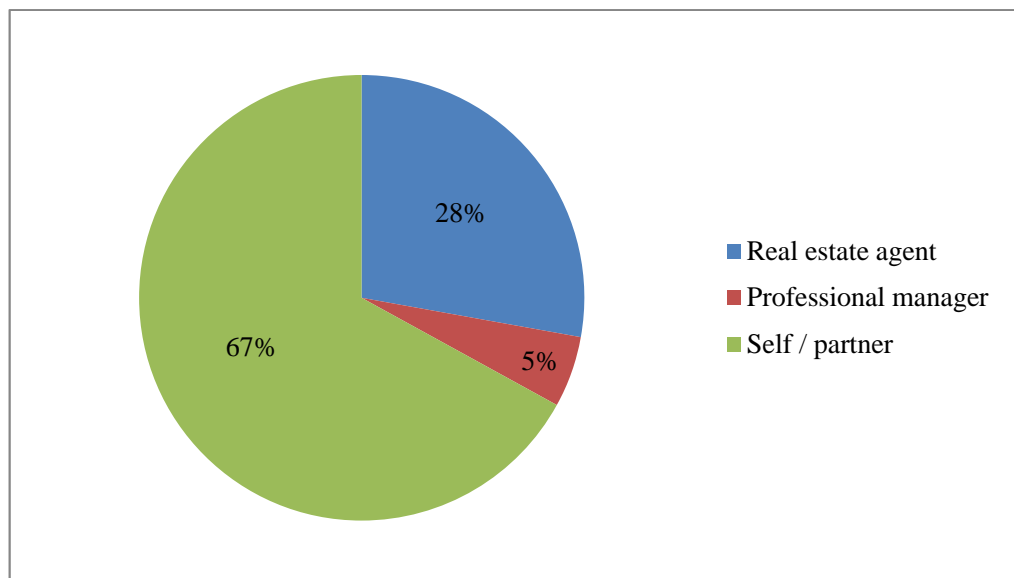


Figure 5.3 showed the percentage of participants who indicated that they were the sole investor in their real estate investment (45.9%). This is relatively large compared to the other three types of ownership. About 38% of the participants were joint owners, with their spouse or a family partner. The results also indicated that only 8% of the respondents were joint owners with others or owned by a trust/business (8.1% and 8.2% respectively).

Respondents from the Delphi study proposed that property management in Malaysia was not well established compared to Australia. They highlighted that Australian properties are primarily managed by property management companies, whilst Malaysian investors preferred to manage their own properties. To validate this claim, the survey queried the Malaysian individual investors and found that 67% of respondents reported managing their own properties by themselves or with a partner (see Figure 5.4). From the Figure 5.4, we can see that only 5% of respondents' properties were managed by professional managers. However, just over a quarter of respondents (28%) did indicate that their properties were managed by real estate agents.

Figure 5.4: **The management of the properties**



5.3 Measures of Validity

Quality research needs to use measurements that have been proven to have validity. Content validity is the extent to which a given measure represents all facets of a selected social construct (Bougie & Sekaran 2010). In this study, content validity was achieved through the literature review, panel evaluation, and pilot study. The questions were derived from the prior research and the panel evaluation and pilot study helped to ensure that each question included in the questionnaire was clear and easy to understand. The prior research on real estate investment assisted the formulation of questions in this study. A pilot study was conducted with 20 Malaysian investors.

5.4 Structure of the Analysis

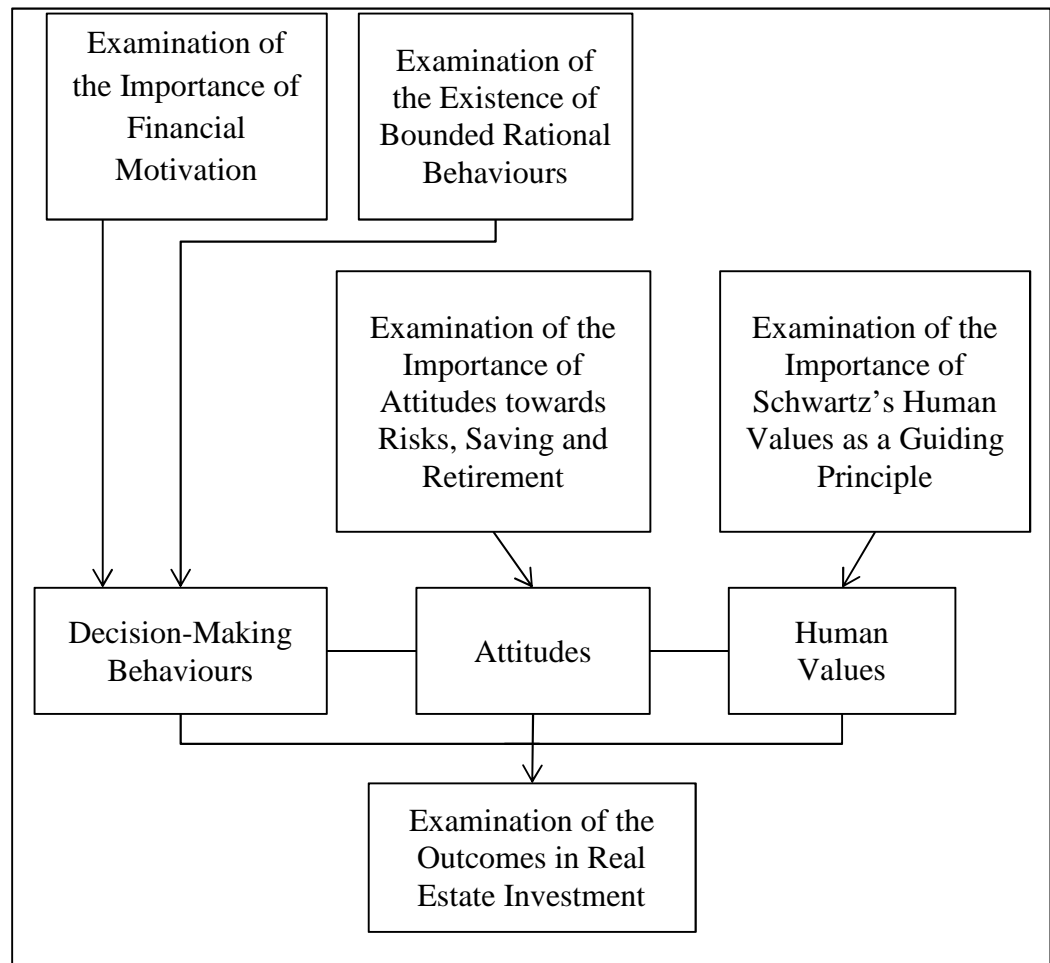
The present study was designed to determine the existence of rational and bounded rational behaviours of individual real estate investors. Financial motivation largely explains the rational behaviours of real estate investors. On the other hand, to answer the research question “what are the decision-making behaviours of individual investors in the real estate investment process when acquiring/selling property (?)”, a number of findings related to bounded rational behaviour must be examined. Therefore, this section will establish the significance of these findings in several areas, including the motivations, behaviours, and attitudes of individual real estate investors.

Motivation refers to the financial factors that motivate an individual investor to take part in property investment. Behaviours refers to the seven bounded rational behaviours that include: accessibility, endowment effect, loss aversion, herding, status quo bias, overconfidence, and anchoring. Finally, attitudes refers to investors’ attitudes toward risks, savings, and retirement. The study will also examine the importance of human values as guiding principles in real estate investment. As per the previous chapter’s discussion, this research utilises Schwartz’s 10 human values that include: power, achievement, hedonism, stimulation, self-direction, universalism,

benevolence, tradition, conformity, and security. Last, the level of agreement between individual investors regarding the outcome of their real estate investment will be discussed in final part of this section.

Figure 5.5 (below) depicts the analytical structure of this section. The analysis will start by examining the importance of financial motivation in real estate investment. Drawing upon the research objective to explore the decision-making process in real estate investment, the analysis will continue by detecting the existence of bounded rational behaviours. Subsequently, the importance of investors' attitudes towards risk, saving, and retirement will be examined. Additionally, the study will examine individual investors' responses regarding the importance of human values as guiding principles. Finally, the research will investigate the outcome of the investors' real estate investments.

Figure 5.5: **Structure of the analysis**



5.4.1 Investors' motivation

Motivators that urged investors to participate in the real estate market included: capital gain, change in stage of family life cycle, long term investment (5-10 years), lower risk compared to stocks, portfolio rebalancing, rental yield, and other factors (see Table 5.2). The importance of each financial motivator was analysed using a *t*-test to assess statistical significance. Table 5.2 (below) depicts the mean scores, statistical test values, and *p*-values for each financial motivator. $p < 0.05$ represents data that is statistically significant. All of the responses provided by individual investors for each financial factor were significantly statistically different from point 4 of the Likert scale (i.e., neutral), excepting taxes.

Table 5.2: The independent samples *t*-test on the financial motivators

Financial motivators	Mean scores	Test statistics, <i>t</i>	<i>p</i> -values
Capital gain	5.92	15.468	0.000
Change in stage of family life cycle	4.92	5.991	0.000
Long term investment (5 – 10 years)	5.34	10.106	0.000
Lower risk compared to stocks	5.40	10.023	0.000
Portfolio rebalancing	4.92	6.650	0.000
Rental yield	5.63	13.115	0.000
Source of income	5.53	11.779	0.000
Speculative investment (less than 3 years)	4.54	3.568	0.001
Supplementary income	5.55	12.090	0.000
Taxes	4.24	1.407	0.163
Wealth accumulation	5.98	17.477	0.000

Following the *t*-test, Table 5.3 (below) presents a descriptive analysis of investor agreement/disagreement regarding the importance of each financial motivator in stimulating them to participate in real estate investment.

Table 5.3: The importance of the financial and economic motivations to participate in real estate investment

Motivations	Levels of importance					
	Completely Unimportant – Slightly Important (1) – (3)		Neutral (4)	Moderately Important – The Utmost Importance (5) – (7)		
	Frequency	Percent (%)	Frequency	Percent (%)	Frequency	Percent (%)
Capital gain	4	4.0	6	6.0	89	90.0
Change in stage of family life cycle*	16	16.2	24	24.2	58	58.6
Long term investment (5-10 years)*	7	7.1	13	13.1	77	77.8
Lower risk compared to stocks	10	10.1	15	15.2	74	74.7
Portfolio rebalancing	10	10.1	30	30.3	59	59.6
Rental yield	6	6.1	10	10.1	83	83.8
Source of income	6	6.0	16	16.2	77	77.8
Speculative investment (less than 3 years)*	20	20.2	27	27.3	51	51.5
Supplementary income	6	6.1	12	12.1	81	81.8
Taxes*	27	27.3	32	32.3	39	39.4
Wealth accumulation*	3	3.0	5	5.1	90	90.9

* data contains missing values

The respondents rated the level of importance from completely unimportant (1) to utmost important (7). Table 5.3 reveals several important findings. First, almost 90% of respondents rated capital gain and wealth accumulation with more than 5-points, meaning moderately important, very important, or utmost important. Second, just over half of the respondents (51.5%) evaluated real estate investment as important as a speculative investment. Third, only 39.4% of the respondents identified taxes as an important driver to participate in Malaysian real estate investment. This table also shows that the majority of respondents (more than 60%) rated 5-points or more on several financial and economic drivers. These drivers included: long term investment, lower risk compared to stocks, rental yield, source of income, and supplementary income.

5.4.2 Investors' behaviours

This research posits that the decision-making process is not wholly rational and that parts of the process are, in fact, boundedly rational. Based on the literature review of behavioural economics and behavioural finance, this study proposes seven bounded rational behaviours that are believed to affect the real estate investment decision-making process. The following section will investigate the existence of accessibility, the endowment effect, loss aversion, herding, status quo bias, overconfidence, and anchoring in the real estate investment process and will outline the features of bounded rational behaviours that might be evident in real estate investment.

Proposition 1: [Accessibility]

Individual investors are likely to be affected by their prior experience when making an investment decision.

Participants were asked a series of questions regarding their character in two different scenarios. These two scenarios aimed to identify how love, affection, and experience influence the accessibility of information in the decision-making process. It was hypothesised that the information that caught the investors' attention, or related to their experiences, would strongly influence their preferences. Accessibility is an intuitive thought that comes to mind effortlessly and spontaneously in most situations. The first scenario was as follows:

You are going to invest your money in a residential property. You are the decision-maker in this investment and must take responsibility for it. As you are committed to the property investment, you are responsible for the repayments on the mortgage, insurance, repairs, renovations, and finding a reliable tenant. You have been staying on a residential property with land for more than 5 years. Hence, you suggest that investing in a property with land is a smart choice.

Here, respondents rated their levels of agreement towards this statement and requested to rate from 1 (strongly disagree) to 7 (strongly agree). The two response statements were as follows:

Access1: I will invest in a residential property with land regardless of the return on investment.

Access2: I am more likely to invest my money in a residential property with land than other types of property.

Table 5.4(a): **The bounded rational behaviour – accessibility (Scenario 1)**

	Levels of agreement		
	Strongly Disagree – Somewhat Disagree* (1) – (3)	Neither Agree Nor Disagree (4)	Somewhat Agree – Strongly Agree* (5) – (7)
I will invest in a residential property with land regardless of the return on investment.	44.4	23.2	32.4
I am more likely to invest my money in a residential property with land than other types of property.	19.2	32.3	48.5

*Developed for clearer presentation. All values are presented in percentage.

By referring to Table 5.4(a), we can see that only 32.4% of the respondents rated “strongly agree”, “agree”, and “somewhat agree” as their response to invest in a residential property with land, regardless of the return on investment ($t = 2.85, p = 0.005$). On the other hand, there were large numbers of respondents (48.5%) who agreed with Access2, stating they were more likely to invest in a residential property with land, given that they had been staying at a residence with land for more than 5 years ($t = 2.561, p = 0.012$). Thus, this data shows the existence of accessibility of experience.

Another shorter scenario was presented to the respondents to further examine the accessibility heuristic. The second scenario is stated as below:

There is a recently published report stating that, “Most young adults nowadays like to stay in condominiums/strata title instead of on landed residential property. It is expected that the demand for condominiums/strata title will rise in the near future.”

The three response statements were as follows:

Access3: I am changing my investment from landed residential property to condominium/strata title.

Access4: I am not convinced by the report and will persist with my initial decision.

Access5: I will invest in landed residential property instead of condominium/strata title.

Table 5.4(b): **The bounded rational behaviour – accessibility (Scenario 2)**

	Levels of agreement		
	Strongly Disagree – Somewhat Disagree* (1) – (3)	Neither Agree Nor Disagree (4)	Somewhat Agree – Strongly Agree* (5) – (7)
I am changing my investment from landed residential property to condominium/strata title.	34.3	28.3	37.4
I am not convinced by the report and will persist with my initial decision.	46.5	26.3	27.3
I will invest in landed residential property instead of condominium/strata title.	53.5	23.2	22.2

*Developed for clearer presentation. All values are presented in percentage.

Table 5.4(b) shows that just over 37% of respondents rated “somewhat agree”, “agree”, and “strongly agree” to the statement “I am changing my investment from landed residential property to condominium/strata title”. At the same time, only 27.3% agreed that they were not convinced by the report and would persist with their initial decision. However, the results of these two statements are statistically insignificant. The p values for both statements are 0.767 and 0.088, respectively. Nevertheless, only 22% of the respondents stated “somewhat agree”, “agree”, or “strongly agree” to Access5 ($t = 3.258$, $p = 0.002$). In other words, these 22% of investors were not affected by the published report and were unlikely to consider investing in condominium/strata title.

Proposition 2: [Endowment Effect and Loss Aversion]

Investors who sell property have an intention to earn revenue. There is no evidence of the endowment effect or loss aversion in the real estate investment decision-making process.

Following the scenario based questions, respondents were asked about their character when selling their property. Research has shown that people will set higher selling prices compared to buying prices due to painful sentiment in when letting go of an object (Kahneman & Tversky 1984). However, individual investors may not exhibit this behaviour, as they do not experience the endowment effect. Home owners may exhibit the endowment effect, but not investors as investors allocate the property as a transaction good (Ariely, Huber & Wertenbroch 2005). Hence, the following statements (see Table 5.5) were designed to investigate the presence of the endowment effect and loss aversion in property investment decision-making. The endowment effect and loss aversion are two related behaviours that both involve emotional attachment towards an object.

Table 5.5 (below) shows that 66% of respondents rated “somewhat agree”, “agree”, and “strongly agree” that they would set a higher than market price when selling their property. Interestingly, a majority of the respondents (72.2%) reported either “strongly agree”, “agree”, or “somewhat agree” that they would consider fairness and would sell the property at market value ($t = 7.2, p = 0.000$). In addition, over half (56.7%) of the respondents agreed that they did not take personal feelings into account when selling a property ($t = 5.074, p = 0.000$). Furthermore, 69.1% of the respondents also agreed with the statement “I view selling a property as potential gain. It is not a loss just because I am giving up the property” ($t = 8.364, p = 0.000$).

Table 5.5: The bounded rational behaviours – the endowment effect and loss aversion

	Levels of agreement		
	Strongly Disagree – Somewhat Disagree* (1) – (3)	Neither Agree Nor Disagree (4)	Somewhat Agree – Strongly Agree* (5) – (7)
I set a higher price than market value when selling my property.	14.4	19.6	66.0
I consider the fairness and will sell my property at market value.	14.4	13.4	72.2
I have an emotional attachment with the property and hence would like to sell it at a higher price.	37.5	21.9	40.6
I do not take personal feeling into account while giving up a property as that is not rational.	22.7	20.6	56.7
I view selling a property as potential gain. It is not a loss just because I am giving up the property.	11.3	19.6	69.1
I feel pain when selling my property even though the price is reasonable.	46.4	17.5	36.1
I keep an under-valued property longer than I should in order to get another chance of getting a higher value from other buyers.	19.6	26.8	53.6
I will let go of the property as long as the value is higher than the purchased value.	30.9	25.8	43.3
I will let go of the property as long as the yield is more than enough to cover my cost and earn me some profit.	41.7	15.6	42.7
I will hold on to the property if I believe I can get a better price even if there is a favourable offer price.	14.6	11.5	74.0

*Developed for clearer presentation. All values are presented in percentage.

Additionally, the data showed that 53.6% of the respondents agreed that they would keep an under-valued property longer than they should in order to obtain another chance to sell for a higher value. This result supported prior research that showed that investors were reluctant to realise losses. Another striking result is that 74% of the respondents rated either “somewhat agree”, “agree”, or “strongly agree” that they would hold on to the property if they believed they could get a better price, even if a favourable offer price was made ($t = 7.635$, $p = 0.000$). As such, it is apparent that letting go of a property is either painful or that weighted losses are judged as heavier than gains when making a decision.

It appears that the endowment effect and loss aversion behaviours profoundly affect real estate investment decision-making. To further understand this, the respondents were asked a few more questions related to the behaviours that may take place during the decision-making process. Decision-makers tend to follow the movement of their peers and conform to the practice of the majority. The results of these new questions are present in the following section.

Proposition 3: [Herding]

Individual investors conform to herding behaviour when they make an investment decision.

The current study requested that respondents rate the following statements by using a 7-point Likert-scale, demonstrated below.

Table 5.6: The bounded rational behaviour – herding

	Levels of agreement		
	Strongly Disagree – Somewhat Disagree* (1) – (3)	Neither Agree Nor Disagree (4)	Somewhat Agree – Strongly Agree* (5) – (7)
I am an independent-minded person where I do not follow others' choice in investment.	21.2	22.2	56.6
When making a decision, I judge the success of a property investment by looking at the attractiveness of the property to others.	7.1	13.1	79.8
I am more likely to invest in a type of property that has a lot of investors interested in investing in it.	16.2	23.2	60.6
When an advertisement emphasizes “most buyers prefer this location”, I may switch my decision from another property to the advertised property.	35.4	37.4	27.3
A rising price of a property is due to the acceptance from other investors. Thus, I may make investment on this property too.	21.2	27.3	51.5
I prefer not to follow the preferences or advice of my family members/friends when it comes to investment decision-making.	30.3	29.3	40.4

*Developed for clearer presentation. All values are presented in percentage.

As can be seen from Table 5.6, many respondents rated highly on statements that supported herding behaviour. For example, about 80% of the respondents judged the success of a property investment by looking at the attractiveness of the property to others ($t = 10.601, p = 0.000$). Also, 60.6% of respondents were more likely to invest in a property that had a lot of investors interested in it ($t = 5.757, p = 0.000$). In addition, about 51.5% of the participants rated either “strongly agree”, “agree”, or “somewhat agree” to the statement that a rising property price is due to high level acceptance from other investors ($t = 2.735, p = 0.007$). This finding, while preliminary, suggests that individual investors are inclined to follow the herd when making investment decisions.

Proposition 4: [Status Quo Bias]

Individual investors conform to social norms and are reluctant to make changes in investment decisions.

People make decisions based on their experiences and tend to follow the status quo. Hence, to explore status quo bias, respondents were requested to rate the levels of agreement on statements that explored status quo bias.

Table 5.7 (below) shows the somewhat surprising result that a majority of respondents (61.2%) rated either “strongly agree”, “agree”, or “somewhat agree” that they would change their investment style in order to gain new investment experience ($t = 4.978, p = 0.000$). However, when questioned about taking action, 61.2% of respondents strongly rated the first statement, which was “Given a new choice of options, I am going to stick with the types of property that I usually invest in” ($t = 5.250, p = 0.000$). Furthermore, 57.6% agreed that they would continue with their current investment, without selling/buying, when they felt uncertain ($t = 4.387, p = 0.000$). It was found that interest rates did not significantly affect investment decisions ($t = 1.108, p = 0.271$) but, on the other hand, a majority of respondents (63.6%) agreed that they would actively invest if the government introduced a new housing policy that benefitted investors ($t = 6.032, p = 0.000$).

Table 5.7: **The bounded rational behaviour – status quo bias**

	Levels of agreement		
	Strongly Disagree – Somewhat Disagree* (1) – (3)	Neither Agree Nor Disagree (4)	Somewhat Agree – Strongly Agree* (5) – (7)
Given a new choice of options, I am going to stick with the types of property that I usually invest in.	20.4	18.4	61.2
I like to change my investment style in order to gain new investment experience.	16.3	22.4	61.2
When I feel uncertainty, I continue my current commitment in investment without selling / buying.	19.2	23.2	57.6
A decrease in interest rate will not affect my investment decisions.	42.9	17.3	39.8
I actively invest in property when the government introduces a new housing policy which benefits investors.	13.1	23.2	63.6

*Developed for clearer presentation. All values are presented in percentage.

Proposition 5: [Overconfidence]

Overconfidence behaviour may be present in the investment decision-making process.

The research continued by investigating the existence of overconfidence in the real estate investment decision-making process. A person tends to be more confident and overrate a decision after having achieved one or a series of successes in that type of investment. Having said that, overconfidence is a hindsight bias. An overconfident investor tends to make wrong judgements if he/she failed to calibrate a decision in an investment portfolio. There are seven sentences that were designed to assess the involvement of

overconfidence behaviours in the decision-making process, found in the Table 5.8 below.

Table 5.8: **The bounded rational behaviour – overconfidence**

	Levels of agreement		
	Strongly Disagree – Somewhat Disagree* (1) – (3)	Neither Agree Nor Disagree (4)	Somewhat Agree – Strongly Agree* (5) – (7)
If I am familiar with the location of a property development, I am willing to pay higher price to get this property.	15.2	14.1	70.7
I always consider my selection of choice of property investment thoroughly even though I have benefited from my previous property investment.	2.0	13.3	84.7
My past investment successes are due to my excellent skills in investment.	13.1	28.3	58.6
When I make investment plans, I will always get advice from my financial advisor (s).	24.2	23.2	52.5
When I make investment plans, I will always get advice from my real estate agent (s).	24.2	25.3	50.5
My instinct has often helped me to make profitable investments.	19.2	23.2	57.6
I never miscalibrated the available information.	19.2	34.3	46.5

*Developed for clearer presentation. All values are presented in percentage.

Table 5.8 indicates that 70.7% of respondents rated “somewhat agree”, “agree”, and “strongly agree” to the statement that they would pay a higher price to obtain a property, if they were familiar with the property’s location ($t = 6.975, p = 0.000$). The results also show that a high percentage of the respondents (84.7%) were careful in their investment ($t = 14.555, p = 0.000$)

and would consider their new investment thoroughly, even though they had benefitted from previous investments. More than half of the respondents (58.6%) rated either “somewhat agree”, “agree”, or “strongly agree” to the idea that their past investment success was due to their skills in investment ($t = 5.324, p = 0.000$). Hence, this data shows that only about 50% of the respondents would seek advice from their financial advisors and real estate agents ($t = 2.847, p = 0.005$ and $t = 2.249, p = 0.027$ respectively). Finally, about half of the respondents believed that their instinct helped them to make profitable investments (57.6%) ($t = 4.654, p = 0.000$).

Proposition 6: [Anchoring]

Individual investors use an anchor price to adjust the value of a property.

The anchoring effect takes place when decision-makers use a reference point as anchor and the value of an object is adjusted based on that anchor. The reference point can be a previous investment value or the first asking price of a property. It may not be advisable to use a biased reference point, especially in property investment, although it is more viable if a property’s selling/buying price is set according to market value. The following four statements (see Table 5.9) were designed to investigate the outcomes of individual investors using a reference point as anchor in setting the value of a property investment.

Table 5.9: **The bounded rational behaviour – anchoring**

	Levels of agreement		
	Strongly Disagree – Somewhat Disagree* (1) – (3)	Neither Agree Nor Disagree (4)	Somewhat Agree – Strongly Agree* (5) – (7)
I use a previous investment value to decide how much to invest in current investment.	17.2	18.2	64.6
The value of current investment must be higher than the previous investment.	34.7	30.6	34.7
I set the pricing on my current property based on the market value.	11.2	14.3	74.5
I use first asking price as a starting point to adjust pricing, even if it is far different from the market price.	16.3	30.6	53.1

*Developed for clearer presentation. All values are presented in percentage.

Table 5.9 illustrates anchoring behaviour in real estate investment. The respondents were asked about their investment pricing strategy and 64.6% of respondents marked either “somewhat agree”, “agree”, or “strongly agree” to the statement “I use a previous investment value to decide how much to invest in current investment” ($t = 5.896, p = 0.000$). Almost 75% of respondents agreed that they set the price of current property based on the market value ($t = 8.372, p = 0.000$). Additionally, more than half of the interviewed investors agreed with the statement “I use first asking prices as a starting point to adjust pricing, even if it is far different from the market price” ($t = 4.088, p = 0.000$).

5.4.3 Investors' attitudes

It is important to understand investors' attitudes towards risk in real estate investments, saving, and retirement. There were 5 questions asked for each attitude that aimed to examine the individual investors' levels of agreement regarding their attitudes towards risk, saving, and retirement. The results obtained from the attitudes are presented in Table 5.10 (below). More than half of the respondents marked "strongly disagree", "somewhat disagree", and "disagree" that they were satisfied with their current state of wealth and would not take more risk. 68.4% of respondents invested in real estate markets to diversify their risk in their investment portfolio ($t = 4.952, p = 0.000$). Same percentage of respondents marked either "somewhat agree", "agree", or "strongly agree" that they invested in the property market because it could guarantee returns ($t = 7.046, p = 0.000$). A majority (67.4%) of the respondents were willing to take substantial risks in order to make a profit ($t = 6.345, p = 0.000$).

Table 5.10: Attitudes towards risk

	Levels of agreement		
	Strongly Disagree – Somewhat Disagree* (1) – (3)	Neither Agree Nor Disagree (4)	Somewhat Agree – Strongly Agree* (5) – (7)
I am satisfied with my current state of wealth and will not take more risk.	58.2	16.3	25.5
I am investing in real estate to diversify the risk in my investment portfolio.	18.4	13.2	68.4
To make a profit, I am ready to take substantial risks.	11.2	21.5	67.3
I invest in the property market because it can guarantee the returns.	12.2	19.4	68.4
I invest in the real estate market regardless of the risks.	38.8	23.4	37.8

*Developed for clearer presentation. All values are presented in percentage.

The analysis continued with an examination of the attitudes of real estate investors towards saving. Table 5.11 (below) shows that most respondents were likely to save. For example, 61.9% of respondents agreed with the statement “You cannot get far without a saving account” ($t = 3.170$, $p = 0.002$). In addition, about 88% of respondents marked “somewhat agree”, “agree”, and “strongly agree” to the statement “I believe in putting some money aside for a rainy day” ($t = 15.502$, $p = 0.000$). However, only 50% of real estate investors agreed (“somewhat agree”, “agree”, and “strongly agree”) that saving was not helping them to accumulate wealth ($t = 0.993$, $p = 0.323$). This result is not significant.

Table 5.11: **Attitudes towards saving**

	Levels of agreement		
	Strongly Disagree – Somewhat Disagree* (1) – (3)	Neither Agree Nor Disagree (4)	Somewhat Agree – Strongly Agree* (5) – (7)
When I save, it is usually because I want to use it for something special.	20.4	20.4	59.2
Money is for spending, not for holding onto.	45.9	21.4	32.7
Saving is not helping me to accumulate wealth.	41.8	8.2	50.0
You cannot get far without a saving account.	28.9	9.2	61.9
I believe in putting some money aside for a rainy day.	4.1	8.2	87.8

*Developed for clearer presentation. All values are presented in percentage.

Table 5.12: **Attitudes towards retirement**

	Levels of agreement		
	Strongly Disagree – Somewhat Disagree* (1) – (3)	Neither Agree Nor Disagree (4)	Somewhat Agree – Strongly Agree* (5) – (7)
I invest to smooth my consumption after retirement.	4.0	6.1	89.9
Retirement is just stepping into another phase of life, nothing special about it.	39.4	15.2	45.5
I never do planning for my retirement.	80.6	9.2	10.2
I invest in real estate because it is going to provide my retirement income.	12.1	11.1	76.8
Old age is another phase of life. There is no special plan for it.	64.6	15.2	20.2

*Developed for clearer presentation. All values are presented in percentage.

Table 5.12 presents results from the examination of real estate investors' attitudes towards retirement. Almost 90% of individual investors agreed that they would like to smooth their consumption after retirement by investing in real estate markets ($t = 18.632, p = 0.000$). Over 80% of respondents reported that they either "strongly disagree", "disagree", or "somewhat disagree" with the idea that they do not engage in planning for their retirement ($t = 11.824, p = 0.000$). To further support this statement, about 77% of real estate investors agreed that they invested in real estate because it was going to provide retirement income ($t = 8.180, p = 0.000$). Moreover, more than half of the respondents (64.6%) disagreed that "Old age is another phase of life. There is no special plan for it" ($t = 6.685, p = 0.000$). This shows that they are placed high priority on planning for retirement.

5.4.4 Investors' human values

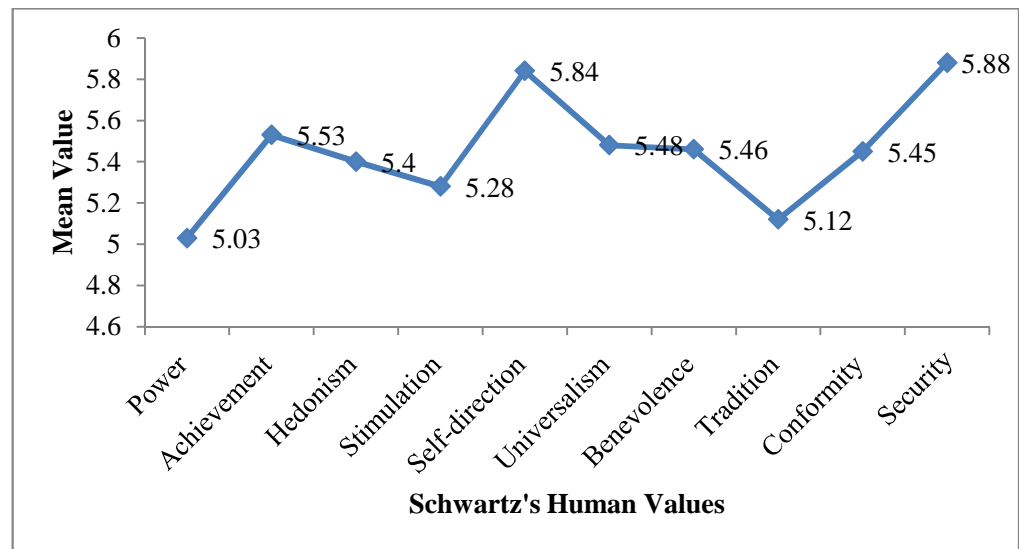
It is interesting to study the importance of human values as a guiding principle in real estate investment decision-making for individual investors. Ten (10) Schwartz's values were presented to respondents who were requested to rate the importance of each value according to their own experience in real estate investment. Respondents rated the human values from 1 (completely unimportant) to 7 (utmost important). Table 5.13 (below) outlines Schwartz's human values together with specific value items that represent each value.

Table 5.13: **List of the Schwartz's human values, in parentheses are specific value items that represent it**

Schwartz's Human Values
Power (<i>social power, authority, wealth</i>)
Achievement (<i>successful, capable, ambitious, influential</i>)
Hedonism (<i>pleasure, enjoying life</i>)
Stimulation (<i>daring, a varied life, an exciting life</i>)
Self-direction (<i>creativity, freedom, independent, curious, choosing own goals</i>)
Universalism (<i>broadminded, wisdom, a world of peace, protecting the environment</i>)
Benevolence (<i>helpful, honest, forgiving, loyal, responsible</i>)
Tradition (<i>humble, accepting portion in life, respect for tradition, moderate</i>)
Conformity (<i>politeness, obedient, self-discipline</i>)
Security (<i>family and national security, social order, reciprocation of favours</i>)

Figure 5.6 (below) shows the ratings of each human value. Each of the human value was rated, on average, at 5-points (moderately important) or above. Interestingly, power was rated the lowest with a mean value of 5.03, whilst security was rated the highest with a mean value of 5.88. On average, respondents valued security, self-direction, and achievement higher than the other human values.

Figure 5.6: **Schwartz's human values as a guiding principle in real estate investment decision-making**



5.4.5 Outcomes in real estate investments

This section of the questionnaire provided a list with several statements that queried the outcomes of respondents' investments and participants were asked to rate their level of agreement with each statement. The purpose of this section was to understand the investment outlook in the real estate market and how investors viewed their investment portfolio.

Overall, the responses to the statements were positive. As in Table 5.14 (below), 75.8% of respondents indicated that they either "somewhat agree", "agree", and "strongly agree" that they were happy with current real estate investment conditions and would remain in the market ($t = 9.165, p = 0.000$). 84.7% of respondents were willing to expand their investment portfolio ($t = 14.340, p = 0.000$) and 86.7% saw the possibility for return and the potential for growth ($t = 15.957, p = 0.000$). Approximately 72% of those surveyed agreed that their investment returns were good and that investment was growing ($t = 8.782, p = 0.000$). Nevertheless, a minority of participants (46.9%) anticipated low performance for their real estate investment ($t = 3.647, p = 0.000$).

Table 5.14: **Outcomes in real estate investment**

	Levels of agreement		
	Strongly Disagree – Somewhat Disagree* (1) – (3)	Neither Agree Nor Disagree (4)	Somewhat Agree – Strongly Agree* (5) – (7)
I am happy with the current real estate investment conditions and will remain in the market.	8.1	16.1	75.8
I would not be happy to withdraw from current investments.	20.4	27.6	52.0
I am not happy with my real estate investments but I will remain in the market for another chance.	41.8	26.6	31.6
I am happy with the real estate investment and will not exit from the market.	7.2	17.5	75.3
I am not satisfied with the current state of investment but will not exit from the market in the near future.	33.7	27.5	38.8
I am willing to expand my investment portfolio.	2.0	13.3	84.7
I feel the attractiveness of returns and its potential of growth.	3.1	10.2	86.7
For the investment that I have, the returns are very good and it is growing.	11.2	16.4	72.4
I will reduce the future size of my investment portfolio.	19.4	24.5	56.1
I anticipate a low performance for my real estate investment.	24.5	28.6	46.9

*Developed for clearer presentation. All values are presented in percentage.

5.5 Discussion and implications

The rational behaviours of real estate investors are primarily motivated by financial and economic drivers. The data revealed that a majority of individual investors nominated capital gain, wealth accumulation, rental yield, and supplementary income as primary motivations to participate in real estate investment. This is not surprising as investors are mission-oriented and aim to receive gain from their investment. De Bruin and Flint-Hartle (2003) asserted that wealth accumulation through long term gain and rental yield are the main motivations of investors to invest in the real estate market. The insignificant result regarding taxes is supported by Henderson and Ioannides (1983) who noted 'the tax treatment of renting versus owning is financially unimportant'.

It is believed that decisions involving love and affection, together with experience, are highly accessible (Lieberman et al. 1999). This study hypothesised that participants with a history of owning property with land would be influenced in their current investment decision. Results from the accessibility scenarios showed that investors were more likely to be affected by their own experience when making an investment decision. If they had past experience of owning a property with land, they were more prone to invest in the same type of property. A person is more accessible to new ideas or information if he/she is able to relate that idea to past experience. This heuristics bias can negatively affect the decision-maker as they may not consider the investment decision-making process objectively. However, the responses from respondents in the second accessibility scenario showed that they were not convinced by the publication of the report and that their decision-making process was not affected due to the potential of property investment to generate large monetary gains. Rather, these individual investors trusted their own experience and were not easily influenced. As such, the data shows that accessibility is evident in real estate investment decision-making when experience and affection are involved. In contrast, the effect of a publication may not be influential enough to affect a decision.

As mentioned in the literature review, people are reluctant to let go of an object that they possess. Past ownership influences evaluation of an object during the decision-making process. The data shows that this more likely to happen to a property owner than an investor. The reason for this being that the owner endowed much on their property compared to an investor. The research results showed that the endowment effect did not affect the decision-making process of respondents when they sold a piece of property. These results were consistent with Ariely, Huber and Wertenbroch (2005) who noted that home owners may exhibit the endowment effect but investors do not. They suggested that home owners allocated property as a consumption good but investors assigned property as a transaction good. As explained by Brueckner (1997), there are two different motives in property investment, namely consumption and investment. These two different motives may affect decision-making depending on the motives held by the decision-makers.

However, the most striking result that emerged from the data was the difference between the perceived and actual action of the real estate investors. Their perception was that they did not take personal feelings into account when they sold a property. They viewed selling a property as a potential gain, not a loss. Nevertheless, the majority of participants showed a strong emotional attachment to their property, attempting to sell it at a higher than market price. Further analysis showed that a majority of participants would keep an under-valued property longer than they should in an attempt to get a higher sale value from other buyers. As such, the real estate investors portrayed bounded rational behaviours, here the endowment effect, for a property that they were holding.

Individual investors conformed to a certain degree of bounded rational behaviour as they were reluctant to realise loss. A majority of respondents presented loss aversion behaviour when they sold their property. For example, around 75% of respondents suggested that they would hold on to a property, assuming that they would eventually receive a favourable offer that was higher than the current price.

Individual investors also tend to conform to social norms and are likely to follow trends when deciding to make an investment. Most of the participants perceived that they were independently-minded and agreed that they preferred to not follow the preferences of their family members and friends. However, a majority of respondents also confirmed that they would succeed in property investment when there were many other investors attracted to a property. Additionally, investors were more likely to invest in a property that received high investor attention. It is apparent from this data that individual investors demonstrate herding - a bounded rational behaviour, despite perceiving themselves as self-directed.

Herding behaviour can be a benefit to investors as it allows them to see trends in the current market. However, the downside to herding is that investors may become trapped by the movement. As such, investors must be farsighted and choose to sell before the herd in order to safeguard higher investment returns. Over-conforming to the movement of a herd can be disastrous, especially during a market downturn (i.e., the housing market crash that began after the global financial crisis of 2007-2012). Moreover, Banerjee (1992) stated that, during herding, people will sometimes abandoned personal information that otherwise might have been objective and useful in the decision-making process. Çelen and Kariv (2004) used a laboratory test to distinguish informational cascades from herd behaviour. In their study, they examined how individuals learn from the behaviours of the others. Consequently, herding may create negative effects on investors who do not make clear judgements by using available information.

Often, people fear change. They would rather stick disproportionately with the status quo to avoid making decisions. This course of inaction is even more appealing when the individual is indecisive and wishes to obtain stability (Lieberman et al. 1999). Moreover, people often tend to choose the option that is socially acceptable. However, it is important to question whether this is a positive phenomenon that will benefit real estate investment. The data showed that respondents believed they were likely to change their investment style in order to gain new investment experience, perceiving

themselves as willing to try new things. Nonetheless, the findings showed that participants conformed to the status quo and would continue their current investment plan (without selling/buying) when they felt uncertain. Taken together, these findings suggest that the status quo bias affects the decision-making process in real estate investment, despite investors' perceiving that it does not.

Results also showed that individual investors who are familiar with a property's location are more willing to pay a higher price for the property. One possible explanation for this might be that investors have already completed substantive research on properties in the same geographical area prior to investment and thus feel more confident. Interestingly, the data showed that almost 85% of respondents always considered their investment thoroughly, regardless of whether they had benefited from their previous investment. Yet again, this result shows that the actual action of investors is opposed to their perceptions. A majority of investors agreed that their success in property investment was due to their excellent investment skills. Here, people tend to be more confident after having achieved a positive return in a past investment. Furthermore, they agreed that their instinct helped them to make profitable investments. These findings further support the idea that investors are more likely to trade when they believe they are above average in terms of investment skill and past performance (Glaser & Weber 2007). Nonetheless, this can be disadvantageous to investors if they are overconfident. Overconfidence is a hindsight bias that contributes to the miscalibration of judgement. Indeed, only 50% of respondents would seek advice from financial advisors and real estate agents. This could potentially be interpreted as a lack of confidence in third party information caused by: poor service provided by advisors/agents, bad experiences with third parties, and agent incompetence.

Prior studies have primarily focused only on the anchoring effect amongst property valuers. The most significant study was conducted by Diaz (1998) and concluded that expert valuers use a reference point in the negotiation process. According to Scott and Lizieri (2011), valuation judgement of a property is profoundly influenced by the most recently-valued property. However, this reference point may not be an adequate anchor point if it is biased. This phenomenon was expected to affect the decision-making process of individual real estate investors. The findings of this study confirmed that the majority of investors use previous investment values to define the value of their current investment. Further, these investors also used first asking prices as a reference point to adjust the selling price of a property, even if it was significantly far different from the market price. These results imply that individual investors tend to fall into the anchoring trap - a heuristics bias. Strategic investment plans are essential to warrant financial gains in investment portfolios. As such, individual investors may want to avoid anchoring when they are making an investment decision.

The present study was also designed to identify the importance of human values in property investment decision-making behaviour. Schwartz's ten (10) human values were defined as 'desirable goals, varying in importance that serve as guiding principles in people's lives' (Schwartz & Sagiv 1995; Schwartz, cited in Lee et al. 2011). These values are: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. Bardi and Goodwin (2011) defined values as 'convey[ing] what is important to people in their lives'. Accordingly, investment activities are part of the investors' lives, so it was worthwhile to investigate the importance of human values in the investment decision-making process. The present findings show that all ten human values were rated as important. Security, self-direction, and achievement were the three values that were rated as most important. These results indicate that security, self-direction, and achievement are significant guiding principles in individual investors' decision-making processes. Human values are enduring beliefs that guide actions and judgements across specific situations (Rokeach 1973). Importantly, these value priorities are thought to affect investors'

behavioural orientations and choices. These findings may assist in understanding the characters, as well as the behaviours, of individual investors.

Each of Schwartz's value was defined by specific marker values. For instance, security was defined as an interest in attaining inner harmony, stability, and a safe environment. The specific value items for self-direction were independence, imagination, choosing one's goals and being logical. The marker values for achievement included success, capability, ambition, and social recognition (Schwartz & Bilsky 1987). The three values that were rated as most important in the investment decision-making process provide a new understanding of individual real estate investors. The values of self-direction and security were included in two 'bipolar' values dimension introduced by Schwartz and Sagiv (1995). These bipolar value dimensions were 'openness to change vs. conservatism' and 'self-transcendence vs. self enhancement'. In the value dimension of openness to change vs. conservatism, security emphasises self-restriction and resistance to change. Conversely, self-direction emphasises independent thought and action, which is a readiness to change (Schwartz & Sagiv 1995).

This study has attempted to enhance understanding of the value priorities of individual investors that might conflict, such as self-direction and security in this case. These findings provide important implications for developing a context of values for individual real estate investors. The conflicts of values may exist in the inner side of the investors when these values serve as a guiding principle in investment decision-making. In order to take a balance in this conflict, the value of achievement shall be taken into account in order to succeed in the investment.

5.6 Chapter summary

In summary, this chapter has discussed the comprehensive results of the research survey. The research survey provided useful data to investigate the decision-making behaviours of individual investors. There were seven bounded rational behaviours included in the discussion including: accessibility, the endowment effect, loss aversion, herding, status quo bias, overconfidence, and anchoring. This chapter explored each of these items along with the importance of human values in guiding property investors during the decision-making process.

The following chapter will summarise the findings of both the Delphi study and research survey and will discuss the status of bounded rational behaviours in real estate investment and their effect on the decision-making process. Finally, the following chapter will conclude the study as a whole.

CHAPTER 6

DISCUSSION AND CONCLUSION

6.1 Introduction

In the preceding two chapters, Phase 1 – Delphi study reported the responses from experts in the real estate market and Phase 2 – research survey reported the decision-making behaviours of individual investors who have sold at least one of their properties. Importantly, the study has confirmed that rational and bounded rational behaviours exist in the decision-making processes of real estate investors. Hence, the purpose of this chapter is to review the decision-making behaviours of individual real estate investors by analysing and discussing the findings from Phase 1 and Phase 2, including a summary on the status of bounded rational behaviours in real estate investment. This chapter will highlight the research contribution to the development of behavioural economics and discuss its implications in real estate investment. Additionally, this chapter will discuss the limitations of the current study and make recommendations for future research.

6.2 Review of findings

The analytical review of individual investors' bounded rational behaviours in property investment is divided into three parts. The first and second parts will review the individual findings of each phase of data collection, whilst the third part will compare and contrast the significant findings of both phases of data collection. The study's mixed methodology approach enabled the research objectives to be achieved successfully, with some limitations.

6.2.1 Phase 1 – Delphi study

The results of Phase 1 – Delphi study provided preliminary evidence for understanding the investors' investment behaviours. The expert responses provided significant insights and revealed the real world situation across the property markets. The panellists in the Delphi study were comprised of Australian and Malaysian experts who were recruited to provide independent thought and feedback on the real estate investment markets.

The findings of this research suggest that there are two distinct elements that influence the decision-making process of individual investors. These are financial and non-financial elements. The data from the first round of the Delphi study suggested that investors aimed to earn rental yield, as well as to enjoy capital gains from real estate investments. Additionally, there were also investors who invested to secure their costs for living after retirement. It is also worth noting that the family home can play a dual function that complicates the investment decision-making process, as both a consumption and investment good. Results from the Delphi study confirmed that investors can make an investment in the family home but, at the same time, become emotionally attached to the property – a non-financial element. Other non-financial elements that affect investment decision-making include: the location of the property and the reputation of a developer.

Results from the Delphi study indicated that attributes that enable individual investors to participate in the real estate market included: having enough capital (which signifies stronger holding power), sustainable income, and educational qualifications. Internal attributes were determined as the characteristics that sustained investors in real estate investment. These internal attributes included the ability and capability of investors to take part and sustain success in real estate investment. According to the panellists, investors also need to consider external attributes when making an investment decision. External attributes are those that cannot be controlled by individual investors and include: capital growth, rental yield, interest rate, national stability, and the reputation of developers.

Data from the Delphi study showed that emotional factors may or may not affect investors' judgement in property investment and that is largely depends on who the decision-makers are. If the decision-makers are owner occupiers, they are more likely to be affected by emotional factors. One Australian panellist commented that residential properties are also people's homes and that this has the strongest emotional influence on investors. In addition to this, the property is different to a daily consumer good, so it requires more consideration before an investment decision can be made. Using an Australian example, panellists commented that most Australians would aspire to own a property at some stage in their life course. Similarly, in Malaysia, emotional factors such as sense of basic needs, lifestyle living, safety, and security were found to affect the judgement in property investment. Nonetheless, investments in non-primary homes depend on financial viability. Proper financial planning and investment potentiality is more important to individual investors than emotional factors.

The Delphi study also aimed to gain insight from the panellists regarding the rational and bounded rational action of property investors. Evidently, property investors thought to be rational that they will search for complete information before making an investment decisions and are sensitive to market information and economic developments. They will act rationally by considering the importance of economic and financial motivators such as capital gain, rental yield, supplementary income, portfolio rebalancing, and short and long term investment. However, the Delphi study also identified the existence of bounded rational behaviours in real estate investors, including behaviours such as overconfidence and herding. An overconfident investor overrates the precision of private signals or assessment (Daniel, Hirshleifer & Subramanyam 1998) and sometimes overestimates the accuracy of information (Glaser & Weber 2007). For example, one of the panellists suggested some individual investors suffer from FIGJAM (F*** I'm Good, Just Ask Me!) syndrome, which correlates with the concept of overconfidence. Furthermore, it was found that individual investors tend to follow investment trends such as lifestyle concepts, design trends and fashionable property layouts. According to the findings, herding behaviour is

particularly evident when investors are extremely attracted to well-designed and decorated show units. The investors perceive that a property will be coveted by the others and hope to receive an appreciable amount of rental yield or capital gain from the property.

The results of the Delphi study also revealed that panellists perceived power, achievement, hedonism, self-direction, and security as the top five human values that guide an individual to become a real estate investor. Power signifies that real estate investors are motivated by social power and wealth and are seeking to achieve success in life. These investors are thought to be capable, ambitious, and influential. Hedonism signifies that individual investors value pleasure and an enjoyment of life and that these factors guide investment decision-making. Self-direction signifies a priority for freedom and the ability to choose one's own goals as guiding the real estate investment process. Additionally, security is thought to be necessary to invest, as evidenced when real estate investors seek family and national security before investing. Hence, the panellists proposed that power, achievement, hedonism, self-direction, and security are important values that guide an individual to become a real estate investor.

6.2.2 Phase 2 – research survey

The results of Phase 2 – Research survey provided additional data for understanding both rational and bounded rational investment behaviours. This study sought to bridge a gap in the literature of decision-making behaviours by collecting survey responses from individual real estate investors who had experience selling at least one property, intending to capture the thoughts and behaviours associated with forgoing an asset. Responses from Malaysian individual real estate investors provided significant insights into the real world situation in the property market.

More than 70% of individual investors suggested capital gain, long term investment (5-10 years), lower risk compared to stocks, rental yield, sources of income, supplementary income, and wealth accumulation were important financial and economic motivations for participating in real estate investment. It is important to understand the primary motivations of individual investors to participate in the real estate market as they make investment decisions, based on rational motivators, that sustain the market. However, this study proposed that seven bounded rational behaviours exist in the investment decision-making process. These are: accessibility, the endowment effect, loss aversion, herding, status quo bias, overconfidence, and anchoring. Results from Phase 2 – research survey showed that individual investors are likely to be affected by their prior experience in investment decision-making. However, they are not easily influenced by the publication of reports and news. These findings confirm the proposition that individual investors are accessible only through their personal experience and a sense of affection towards a property. When a property is expected to make a large return on investment, a report or news article has little effect on the decision-making process.

In addition to this, individual investors perceived that they considered fairness and were willing to sell their property at market value. This was further supported by a majority of the investors suggesting that they did not take personal feelings into account when selling their property. Concurrently, preliminary results suggested that investors were not endowed to the property they owned. However, results were far more interesting when individual investors were asked to rate their opinions towards holding their property. More than 70% of respondents suggested that they would hold on to the property if they believe they could achieve a better price, even when a favourable offer price was made. The majority of participants also suggested that they would keep an under-valued property longer than they should in an attempt to get a higher selling price from buyers. These results suggest that the perceived and actual actions of investors were inconsistent in their decision to let go of a property. Investors perceived that they were willing to let go of a property but, in fact, weighted losses heavier than gains. This

supports the idea that individual property investors are reluctant to realise loss. The close-knit relationship between the endowment effect and loss aversion has been proven in past research and was observed in the current research.

The absence of independent thought in the decision-making process can be due to behaviour that conforms to social norms. Herding behaviour in decision-makers may be a shortcoming when they are unable to take action before others in a market downturn. According to the research findings, individual investors rated highly on statements that anticipated property investment success relative to the attractiveness of the property to others. These individual investors agreed that they were more likely to invest in a property that interested other investors. This is thought to be because individual investors are reluctant to make changes and conform to social norms. There was a similar situation for status quo bias. A majority of individual investors perceived that they were willing to change their investment style in order to gain new investment experience. Nonetheless, they were more likely to remain with an initial plan, even when there were new choices available in the investment. In addition, investors were thought unlikely to take substantive action if they felt uncertain.

Individual investors are overconfident and, indeed, the results from this study showed that more than 70% of respondents agreed that they were willing to pay a higher price to attain a property, if they were familiar with the location of the property. This study showed that investors acquired higher confidence level when they are familiar with the location or surrounding areas of the property. Moreover, about half of the respondents agreed that their instinct often helped them to make profitable investments. To extend understanding of the anchoring effect in pricing strategy, the data showed that a majority of respondents agreed that they used a first asking price as a starting point to adjust pricing, even if it was markedly different from the market price. 64.6% of respondents agreed that they would use a previous investment value to decide how much should be invested in a current investment. Here, investment decision-makers use an easy access point as a reference point and

adjust pricing accordingly. This is a bias in the decision-making process as the real value of the property is not being taken into consideration.

The study also aimed to investigate the attitudes of investors towards risk, saving, and retirement. Here, individual investors invested in real estate markets to diversify the risk of their investment portfolio. Furthermore, the majority of respondents invested in property as it guaranteed a return. Investors were willing to take risks in order to accumulate wealth and to gain profit from real estate investment and were also prone to saving – demonstrated by a majority of respondents who believed that ‘putting some money aside for future usage’ was wise. Investors also viewed property investment as an appropriate retirement plan, demonstrated almost 90% of respondents who agreed that they invested in real estate to smooth their consumption after retirement.

As in the Delphi study, the research survey examined the importance of Schwartz’s ten human values as guiding principles in real estate investment decision-making. Respondents were asked to rate the importance of each value according to their actual self in the real estate investment process. On average, respondents strongly rated security, self-direction, and achievement when compared with the remaining seven human values. Lastly, the research survey explored the outcomes of real estate investment to better understand prospects in real estate markets. The research results for the property market were both positive and encouraging. Individual investors were happy with the current Malaysian real estate conditions and stated they would remain in the market. Additionally, they were willing to expand their investment portfolio and were attracted by the returns from property investment and the potential growth in the future.

6.2.3 Triangulations of findings from Delphi study and research survey

The connection between these two forms of knowledge was bridged, in this study, by the use of Delphi study and research survey. These two different methods provide a panoramic view of the phenomenon of decision-making in the real estate markets. The Delphi study generated a wealth of ideas and provided independent judgements (Van de Ven & Delbecq 1974) on the research questions. The Delphi study was used to collect qualitative data and to establish the questionnaire design for the research survey that was then used to collect quantitative data. By pooling information from expert groups regarding their viewpoints of the investment industry, the Delphi study generated useful and detailed questions used to prepare the questionnaire. The results of the two measures were then compared and contrasted to extract more data that was found to be rich and informative due to the appropriateness of the expert panellists and survey participants for the research inquiry. That is to say, the group of experts were academics, experienced key persons and agents from professional institutions, as well as personnel from property management companies, financial institutions and developers, and the research survey participants had sold at least one of their properties, meaning they had both selling and buying experience in property investment.

In the Delphi study, panellists suggested that the potential for capital growth (or gain) and a return on investment were the primary financial elements that motivated property investment. Investors treated rental yield as a long term investment that provided a steady income. In addition, rental income was often seen as a preferred source of retirement income to fund daily expenses. Investors who were risk averse were also in favour of real estate investment, rather than taking risks investing in stocks and bonds. These results were supported by the findings in the research survey. Approximately 90% of respondents rated capital gain and wealth accumulation with more than 5-points (i.e., moderately important, very important, or utmost important). Furthermore, more than 70% of the respondents rated more than 5-points on

motivations such as long term investment (5-10 years), lower risk compared to stocks, rental yield, source of income, and supplementary income.

As seen in the Delphi study discussion, most panellists suggested that only owner occupiers would have an emotional attachment to their property. On the other hand, non-owner occupiers, second property buyers, or institutional investors were thought to not be affected by emotional attachment when making a judgement. These results are consistent with those of other studies (Kahneman 2003a; Kahneman 2003c; Shapira & Venezia 2000), and suggests that institutional investors are less affected by emotional attachment and have less bias in their judgement. In other words, financial planning and investment viability is a vital consideration for non-owner occupiers, institutional investors, and second property buyers. However, one of the panellists commented that an emotional attachment towards renovation work on the property could contribute to poor decisions. Hence, the results obtained from the research survey have important implications for understanding the emotional attachment of individual investors. As pointed out in the endowment effect and loss aversion discussion, people are reluctant to let go of an object that is in their possession.

The preliminary research results show that the endowment effect does not exist in the decision-making process when individual investors and non-owner occupiers sell a piece of their property. However, the results also showed that there were inconsistencies in the decision-making process of these individual investors. The perceived intention and actual action taken by investors highlighted key aspects of the endowment effect and loss aversion, explicitly. Individual investors also perceived that they did not take personal feelings into account when they sold a property and that selling a property was a potential gain. Despite this, a majority of participants demonstrated that they had an emotional attachment to their property by stating that they would wait to sell it at a higher price, even when a reasonable offer was made. Likewise, they also set higher prices than market value when selling their property and would keep an under-valued property for longer than they should to obtain another chance to sell at a higher value. These results

demonstrate the existence of the endowment effect and loss aversion in the investment decision-making process.

Evidence from the Delphi study suggested that overconfidence and herding behaviours are elements that may direct people to move beyond rational behaviours. A majority of participants agreed that their success in property investment was due to their excellent investment skills. According to one of the panellists, most people seem to think that they are smarter than others and perceived that their style, tastes, and property renovations will increase the value of their property beyond its market value. Of course, this may not always be the case. Other panellists suggested that some investors are strongly influenced by the lifestyle concept portrayed by a property. These investors perceive that design and decoration being in accord with current market trends as important. The herding effect is evident when investors believe that design and decoration are sought after by other investors. The results of the research survey showed that participants exhibited herding behaviour by agreeing that they would succeed in property investment when other investors were attracted to the same property.

In both the Delphi study and research survey, Schwartz's human values were included to understand how important human values were as a guiding principle in the real estate investment decision-making process. The panellists were asked to rank the human values that they perceived as most important and these value priorities were analysed. The rating method was used to investigate the importance of each value to the actual self of individual investors in the real estate investment process. These ratings were examined and computed into actual values and ranked, in contrast, with the perceived value ranks of the Delphi study panellists.

Table 6.1: Top five perceived and actual Schwartz’s human values ranking

Perceived Values Ranking	Actual Values Ranking
Achievement (<i>successful, capable, ambitious, influential</i>)	Achievement (<i>successful, capable, ambitious, influential</i>)
Power (<i>social power, authority, wealth</i>)	Benevolence (<i>helpful, honest, forgiving, loyal, responsible</i>)
Self-direction (<i>creativity, freedom, independent, curious, choosing own goals</i>)	Self-direction (<i>creativity, freedom, independent, curious, choosing own goals</i>)
Hedonism (<i>pleasure, enjoying life</i>)	Universalism (<i>broadminded, wisdom, a world of peace, protecting the environment</i>)
Security (<i>family and national security, social order, reciprocation of favours</i>)	Security (<i>family and national security, social order, reciprocation of favours</i>)

It is apparent from Table 6.1 that Delphi panellists ranked achievement, power, self-direction, hedonism, and security as the top five perceived values that were important in leading an individual to become a real estate investor. The feedback from the research survey participants revealed that achievement, benevolence, self-direction, universalism, and security were important as guiding principles in their real estate investment decision-making process. Together, these results indicate that achievement, self-direction, and security are the three top-ranked human values that are important in real estate investment. The marker values of achievement include success, capability, ambition, and social recognition. The specific value items of self-direction were independence, imagination, choosing one’s own goals, and being logical. In addition, the marker values for sense of security were attaining inner harmony, stability, and a safe environment (Schwartz & Bilsky 1987). Achievement, self-direction, and security are the values that are important in investment decision-making. This outcome provides a better understanding of individual real estate investors and also has implications for developing context around these values in real estate

investment. As noted by Schwartz and Sagiv (1995), self-direction and security are located at opposite 'bipolar' ends on the value dimension of openness to change vs. conservatism, with security falling under conservatism and self-direction falling under openness to change. The pursuit of financial independence may conflict with the pursuit of stability and individual investors who choose their own investment goals may be conflicted by their desire to seek safety for their family and to attain inner harmony. However, the conflicts between these values are not necessarily obstacles for the individual investor to succeed in real estate investment.

The mixed methodological approach of this research has helped to shed light on both the bounded and unbounded decision-making behaviours of individual investors. Einhorn and Hogarth (1981) highlighted the advantage of using mixed methods in studying decision process that involved judgement and choice. Hence, the use of mixed methods in this study helped to elucidate the basic psychological processes in investment decisions. The feedback gathered from the Delphi panellists was supported by the responses that were collected from the research survey individual investors. Hence, the present study contributes to existing knowledge of behavioural economics by providing insightful results regarding real estate investment. Additionally, the investigation of human values as influencing factors further enhances understanding of the individual real estate investors' decision-making process.

6.3 The contributions of bounded rational behaviours and the implications of the six propositions in real estate investment

The study of bounded rational behaviour comes from the synergy of economics and psychology. The aim of this study was to bridge the gap between economic and psychological study to better understanding human behaviour. Economists believe that economic agents behave rationally whilst psychologists question rationality in the decision-making process (Hogarth & Reder 1987). According to Hogarth and Reder (1987), psychologists focus on the participants' characteristics and their endowment. Accordingly, this research has demonstrated that, in the real world, there is limited access to information, uncertainties in the markets, and that the cognitive abilities and emotions of investors, and other heuristic biases, result in bounded behaviours.

According to Camerer and Weber (1992, p. 361), economists use market-level data to make predictions that are testable whilst decision analysts 'want to help people make better decisions.' Markus and Kitayama (1991) proposed that all individuals act in accordance with their self-system, or internal values. Hence, individual investors would benefit from better understanding the personal values that guide their decision-making and acknowledging heuristic biases that may occur in the decision-making process. As explained by Loewenstein, John and Volpp (2012), behavioural economics will be in a better position to deliver policy solutions if it focuses on decision errors and judgement biases that are explicitly present in the decision-making process. This awareness would be advantageous as it would help people to make informed decisions and, therefore, improve the choices investors make.

Despite its exploratory nature, this study offers some insight into the contributions of bounded rational behaviours in investment decision-making. Tetlock (1992) highlighted that economists are interested in helping people make decisions based on self-interest and that psychologists want to 'help people make sense of the surrounding world.' This research suggests that bounded rational behaviours can play an important role in helping economists

to understand the decision-making process of real estate investors and lays the groundwork for policy makers to design policies that benefit stakeholders in the real estate investment markets. Overall, the investigation of bounded rational behaviours in this research has extended understanding of human behaviour and hopes to enable people to make informed decisions in real estate investment. This study explored the behaviours of individual real estate investors by presenting them with six propositions. Table 6.2 (below) lists the six propositions that were discussed in the previous chapter.

Table 6.2: The six propositions in real estate investment

Proposition 1: [Accessibility]	The individual investors are likely to be affected by their own experience in making an investment decision.
Proposition 2: [Endowment Effect and Loss Aversion]	Investors who sell the property have intention to earn revenue. There is no evidence of endowment effect or loss aversion in the real estate investment decision-making process.
Proposition 3: [Herding]	Individual investors conform to the herding behaviour when they make an investment decision.
Proposition 4: [Status Quo Bias]	Individual investors are conforming to the social norms and are reluctant to make changes in investment decision.
Proposition 5: [Overconfidence]	Overconfidence behaviour may be present in the investment decision-making process.
Proposition 6: [Anchoring]	Individual investors use an anchor price to adjust the value of a property.

The results of this study have shown that individual investors are more likely to be affected by their own experience and are less likely to be influenced by professional publications, such as a news report. Accessibility of information is developed through experience (Kahneman 2003c), hence, the skill develops after extended practice. The existence of accessibility in the decision-making process benefits decision-makers as it improves the quality of their decision.

Individual investors, who have little to no support from an organisation, need these skills as they do not enjoy the same benefits as institutional investors. Individual investors sometimes rely more on real estate agents and property managers when make investment decisions. As such, real estate agents and property managers should also learn how to better access their clients for promising investment prospects. A better understanding of accessibility by investors and agents/managers may help to improve the quality of decisions and improve the investment process.

Furthermore, accessibility heuristics allows an individual to accept a salient opinion or option without “unnecessary” cognitive work (Tetlock 1992) and strengthens the quality of the decision. De Bruin and Flint-Hartle (2003) highlighted that investors were influenced by ‘preference and feelings of comfort with a tried investment product.’ In other words, investors are mindful of past performances and information related to these performances is more accessible. Collectively, highly accessible information has a stronger impact on decisions compared to information that has low accessibility. However, Kahneman (2003a) suggested that the most accessible information may not be the most relevant to a good decision. In view of this, individual investors should consider their experience carefully and weigh it against available market research to avoid making a poor investment decision.

In real estate, the endowment effect and loss aversion refers to fact that investors’ willingness-to-pay to obtain a property is smaller than their willingness-to-accept when selling a property. As a result, the selling price of a property is generally higher than the buying price. Longer duration of object ownership promotes the endowment effect (Strahilevitz and Loewenstein, 1998). As such, a real estate investor’s valuation of a property is likely to be affected by the length of time that they have owned it. This could be a limiting factor in an investment portfolio. As suggested by some of the Delphi, investors value their property higher when the property has been renovated or carries a sentimental value. This is supported by Strahilevitz and Loewenstein (1998) who noted that the perceived attractiveness of an object to the self significantly increases its personal value. The results of this study

also suggest that a majority of individual investors that had an emotional attachment to their property would sell it at a higher price.

Interestingly, individual investors agreed that they would consider fairness and sell their property at market value and majority of these investors agreed that they did not take personal feeling into account when selling. However, a majority of individual investors stated that they would keep an under-valued property longer than they should in order to potentially sell it at a higher value. Here, the contradictions in the decision-making process are evident, thus, investors would be wise to be cautious when making decision as their perceived intentions differ from their actions. In view of this, individual investors should not be bound by their emotional attachment to a property as it may affect their optimal investment choice. In short, individual investors should avoid falling into endowment effect behaviours.

The above mentioned situation may happen when decision-makers overestimate losses and underestimate gains. This study shows that individual investors tend to hold on to a property if they believe they can get a better price, implying that they weight losses heavier than gains. Hence, individual investors must always consider both market conditions and their own holding power when evaluating a property. One of the purposes of this study was to raise awareness of bounded rational behaviours so that investors could avoid them by increasing their awareness of them. Specifically, awareness of bounded rational behaviours benefits individual investors by raising awareness of the phenomenon of underweighting losses and overweighting the gains. This is what Loewenstein, John and Volpp (2012) called as “correcting one error with another.” For instance, investors can let go of a property as soon as possible once they realise that the property is not generating capital gains or rental yield.

It is apparent that individual investors conform to herding behaviour when they make investment decisions. As discussed in the previous chapter, herding behaviour can be advantageous to individual investors if they understand market trends, receive perfect information and are farsighted,

being able to anticipate the actions of the herd. According to Gibler and Nelson (2003, p. 76), stakeholders in real estate investment markets such as real estate developers, investment bankers, real estate agents, or brokers can ‘identify the most important reference groups influencing real estate purchase, they can design and market their products in ways that assure consumers that the real estate purchase will be accepted and approved by these group members.’ Here, ‘group members’ refers to the herd and references that a successful investor possesses an ability to anticipate herding trends.

In addition to herding behaviours, decision-makers are also prone to align themselves disproportionately with the status quo when faced with new options (Samuelson & Zeckhauser 1988) and, thus, are less likely to alter their default course of action. Hence, to improve real estate investment, policy makers could stabilise market conditions by designing policies that set helpful default choices. Individual investors who are risk averse are also more likely to act in accordance with the status quo (by doing nothing) when faced with new options and challenges in the investment market. Conversely, there are also risk seekers who are willing to take substantial investment risks and could potentially be classified as overconfident.

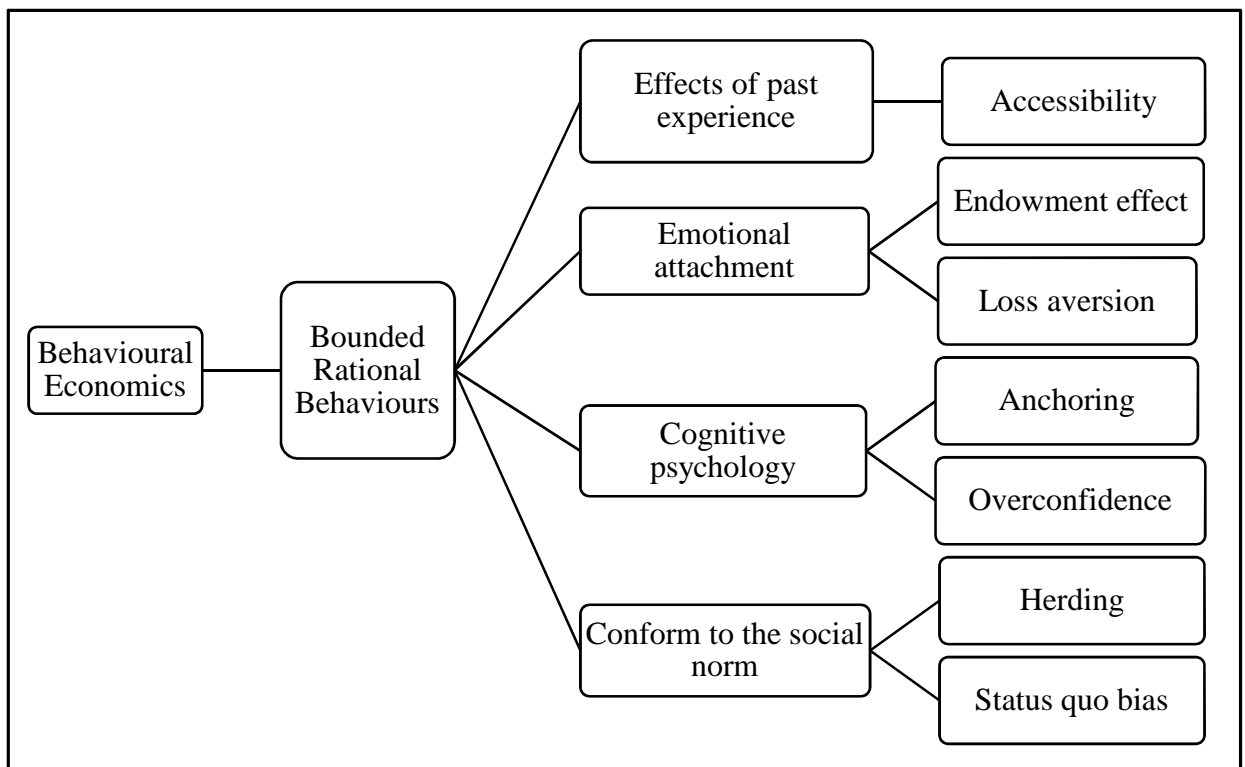
Overconfident behaviour may be present in the investment decision-making process, especially when investors have accumulated past experience. Often, investors believe that they can outwit other market participants and actively bet on the superiority of their information and investment skills. Here, it is difficult to tell whether they succeed due to luck or skill. An overconfident investor, undoubtedly, would argue that it is skill, however winning or losing a bet is as likely to depend on luck. The findings of this research showed that the majority of individual investors agreed that their success in property investment was due to their investment skills and about half of the investors believed that their instinct helped them to make profitable investments. This study emphasises that overconfidence is a hindsight bias that affects the judgement of decision-makers. As such, individual investors should always

consider their choice of property investment thoroughly, even if they have benefited from previous property investments.

The research results show that individual investors use an anchor price to adjust the value of their property. Anchoring is a cognitive 'short cut' that contributes to the judgemental bias of decision-makers. According to Hardin (1999), individuals begin at an initial point in the decision matrix and adjust accordingly from this point by obtaining and using additional information. Here, bias may be introduced if the initial anchor point is incorrect. Particularly, valuation assessment of subsequent properties is highly affected by the one most recently-valued (Scott & Lizieri 2012). For home buyers, anchoring has negative implications for certain stakeholders in the housing market. For example, estate agents may control the information given to home buyers in order to control power during the transaction, establishing certain anchors in the mind of home buyers that 'lead them to incorrect perceptions of housing value' (Scott & Lizieri 2012). This research showed that a majority of individual investors exhibit anchoring judgement in investment decision-making. Therefore, this study suggests that individual investors should be careful when judging real estate investments and escape from incorrect arbitrary anchors when deciding property pricing and investment value.

In conclusion of this section, behavioural economics has provided a robust foundation to understand human agents in the decision-making process. Understanding the advantages and drawbacks of bounded rational behaviours helps to protect investors and the seven bounded rational behaviours investigated during this study have offered significant insight into real estate investment decision-making. The present study confirms previous findings and contributes additional evidence that suggests the existence of accessibility, the endowment effect, loss aversion, anchoring, overconfidence, herding, and status quo bias in real estate investment. Figure 6.1 (below) summarises the seven bounded rational behaviours in real estate investment that contribute to the study of behavioural economics.

Figure 6.1: **The bounded rational behaviours in real estate investment**



6.4 Limitations

Although the study has successfully demonstrated that bounded rational behaviours exist in investment decision-making, it has certain limitations that need to be addressed. First, this research was not designed to generalise the behaviour of individual investors. More accurately, this study explored the possible existence of bounded rational behaviours in real estate investment markets. As such, the findings of the study cannot be used to predict human behaviours. In other words, generalisability of the research results is beyond the scope of this study.

Second, and in addition to the first point, the research survey sample size was not large enough to make generalised statements. However, the uniqueness of the sample is that the real estate investors are those who have sold at least one property. They are the right group of people for this study in order to achieve the research objectives. In fact, there are imperfections in real estate markets

where the limitations arise in this study. For instance, the real estate markets 'do not provide all of the data needed to calculate the value of the opinion that represents the owners' interest in a home' (Cauley & Pavlov 2002). It is further complicated that the investigation draws the individual investors who have experience in both buying and selling at least one of their properties.

Third, the research design had two weaknesses. First, the research survey included numerous investigative questions, to better understand investors' behaviours, that subsequently prolonged the length of the questionnaire and increased the time taken to complete all of the questions. As a result, some potential respondents refused to participate in the research survey reducing the research sample size. Second, the demographic imbalance of the research survey, such as the number of male and female participants, was a drawback. Some research suggests that males are more overconfident than females (Barber & Odean 2006; Ben-David & Hirshleifer 2012) while others (Deaves, Lüders and Luo, 2009) suggested otherwise. The research survey was unable to analyse the difference in overconfidence behaviour by comparing males and females.

Finally, the research findings are limited by the use of a cross-sectional design. Over time, a person's values are considered to be stable, despite some value-change due to 'important changes in personal and social circumstance' (Knafo, Roccas & Sagiv 2011; see also Bardi & Goodwin 2011). Thus, the values of individual investors may change over time and the inability of the research design to measure this is a suggested limitation of this study. As such, the results regarding the importance of human values as guiding principle in real estate investment decision-making may not be stable over time. A longitudinal study would help to confirm whether value changes in real estate investment are taking place.

6.5 Future research

This research has highlighted the existence of bounded rational behaviours in real estate investment and that human values play a role as guiding principles in the decision-making process. As such, this study has generated many questions that are in need of further investigation. Indeed, some of the findings of this study could be the starting point for future theoretical research into the effects behavioural economics in understanding real estate investors' decision-making processes. For example, the research survey showed that the majority of individual investors set a higher than market price when selling their property and agreed that they would keep an undervalued property longer than they should to attempt to receive a higher value from buyers. Some results also indicated that individual investors were reluctant to realise losses. However, the results also revealed that investors believed they did not take personal feelings into account when selling a property. A majority of respondents also agreed that they considered fairness and would sell at market value. These conflicts in perceived and actual action raise the concern that an experiment maybe necessary in this case. The same applies to the level of accessibility or the reaction of participations towards experience and reports or words. To stimulate a more informed debate, a deeper understanding of bounded rational behaviours needs to be developed. Some of the responses may not be easily accessed through a survey, and the respondents may not be conscious of the existence of heuristic biases in their decision-making process. An experimental study that is well-designed to access heuristic biases may further explore the endowment effect, loss aversion and accessibility of an individual investor.

For example, most of the experiments were conducted on loss aversion by analysing the behaviour of students except studies on cars (Johnson, Gaechter & Herrmann, 2006), real estate (Genesove & Mayer 2001; Scott & Lizieri 2011) and financial investments (Odean 1998). The experiment situation which was set up by Kahneman, Knetsch and Thaler (1991) can be modified by employing individual real estate investors as the participants in the experiment. The objective of such experiment is to investigate how the

investors set their selling price and buying price when they are randomly assigned as buyers, sellers and choosers. Nonetheless, the more experience an investor has, the less the investor may be affected by loss aversion. It was found that experience significantly improves the accuracy and consistency of economic decisions (List 2003). Hence, the number of transactions may be a mediator in the decision-making process and should not be neglected in the experimental study.

The inconsistencies between the perceived and actual action of individual investors provides a new understanding of decision-making behaviours. The theory of reasoned action, developed by Ajzen and Fishbein (1969), may provide further explanation regarding behavioural intentions. Southey (2011) suggested that Ajzen and Fishbein's theory provided benefits in 'predicting the intention to perform behaviour based on an individual's attitudinal and normative beliefs.' Ajzen (1991) recommended that people tend to favour behaviours that produce desirable consequences and form unfavourable attitudes towards behaviours that produce undesirable consequences. Considerably more work can be done to determine the perceived intention and actual action of individual real estate investors during the decision-making process.

There is also a need for extensive analysis regarding the differences between home buyers and individual investors, particularly addressing which of the bounded rational behaviours affect home buyers and the differences between home buyers and individual investors. Such research could compare the bounded rational behaviours of home buyers and individual investors to test whether there are any significance differences between the two groups. In addition, future studies need to be carried out in order to further investigate the financial and non-financial elements of the decision-making process that might affect home buyers and individual investors.

Further, more information regarding bounded rational behaviours would help to establish a greater degree of research accuracy. The current research survey only examined Malaysian individual investors in Klang Valley.

Therefore, future research is needed to test the bounded rational behaviours of investors in other regions of the country or different countries would help to confirm the effect of bounded rational behaviours in real estate investment markets. Moreover, further investigation in this field would be informative for investment or consumer markets. As per suggested in the literature review that a study using consumer behaviour theory is helpful in understanding the decision-making processes of investors. The reason is that investors are similar to consumers where they involve in the purchasing activities. Nonetheless, there are differences between investors and consumers especially in understanding human values in real estate investment. The real estate investors are making decisions on whether to invest in a property which is a durable product. On the other hand, consumers are making daily decisions on purchasing consumer goods that required relatively lower commitment compared to purchase a property. Hence, further extension into the areas of human values, behavioural economics, and psychological processes in either investment or consumer markets will possibly create new insight. The study on human values as a guiding principle in decision-making processes shall not be limited in the consumer markets only, but there is a need to expand it to the investment markets.

The current study was not able to conduct longitudinal research due to funding and time constraints. However, a longitudinal study of the dynamics of value changes over time would be illuminating. Schwartz (1992) suggested that 'value structures probably evolve over time as social conditions are transformed' as a result of major adjustments in technology, economics, politics, and security. In view of this, a longitudinal study would be suitable to investigate value changes over time in the real estate investment markets. Furthermore, recent scale development on human values shall not be ignored in order to understand the importance of values as a life-guiding principle. For example, Lindeman and Verkasalo (2005) examined the Short Schwartz's Value Survey (SSVS) and showed that the new scale is good in reliability and validity. In addition, Schwartz et al. (2012) extended the original theory of ten values to nineteen values to refine the theory.

6.6 Conclusion

The findings of the current study can be used to develop targeted interventions aimed at correcting market imperfection and addressing bounded rational behaviours in real estate investment markets.

In conclusion, this study has achieved its objective to investigate the decision-making behaviour in the real estate investment process. The use of mixed methodologies helped to explore variation in property management between Australia and Malaysia, as well as the importance of human values in guiding the decision-making behaviour in property investment. An important finding of this study was that complex human behaviours, such as bounded rational behaviours, are not easy to quantify. This study explored the individual processes in investment decision-making, referring to the individual's emotions, experiences, motivators, and values that lead the decision-making process. It was evident that inter-personal relations have an impact on the process and, in addition, that reciprocal relations are established between individual investors and institutional stakeholders. These relations refer to the connection of individual investors to larger institutional bodies such as policy makers, developers, financial institutions, and real estate management/investment institutes.

Notably, this study hopes to serve as a preliminary investigation of bounded rational behaviours in the real estate investment market. Therefore, this study significantly contributes to the expansion of behavioural economics and establishes that bounded rational behaviours exist in real estate investment markets. Further, this study has addressed the gap between neoclassical economics and behavioural economics therefore allowing a greater understand of human behaviour in investment decision-making.

APPENDIX 1

Information Letter

Project Title

What Drives Household Residential Property Investors? A Cross-Country Behavioural Analysis

Contact Person: Tan Consilz
Telephone No.: +6 012 – 530 5297
E-mail Addresses: Consilz.Tan@murdoch.edu.au or
L.Entrekin@murdoch.edu.au (Emeritus Professor Leland
Entrekin)

We would like to invite you to participate in a research study looking at the decision-making behaviours in property investment. This study is part of my a Degree in Doctor of Philosophy (Commerce), supervised by Professor Leland Entrekin and Professor David Butler at Murdoch University.

What will the study involve?

I would need your kind participation in a two rounds of Delphi procedure. There will be no more than 5 questions to be asked in each round. I will send the questions to you electronically. It is estimated that each round will take approximately 25 minutes. The sharing of your expertise and experience will be much appreciated. You do not need to have experience in both the Australian and Malaysian real estate sectors. The feedback of yours will assist me in the process to develop a comprehensive research instrument for a later phase of the study. An executive summary of each round will be available and reported in an aggregated form. In this project, the end results of study are useful to real estate investors, developers and agencies, policy makers and other stakeholders.

What is Delphi procedure?

The Delphi procedure is a consensus building exercise whereby the opinions of the expert panel members are shared in two rounds until consensus is reached in relation to research questions. There is no face-to-face confrontation and encourage supply of independent thought.

Voluntary Participation and Withdrawal from the Study

Your participation in this study is entirely voluntary. You may withdraw at any time without discrimination or prejudice. All information is treated as confidential and no names or other details that might identify you will be used in any publication arising from the research. If you withdraw, information you have provided is unable to be destroyed because information from all experts will be compiled and reported in an aggregated form.

If you would like to discuss any aspect of this study please feel free to contact either myself, Tan Consilz on +6 012 530 5297 (for Malaysian participants, 012 530 5297) or my Supervisor, Professor Leland Entrekim, on 08 9360 2528 (for Malaysian participants, +61 8 9360 2528). Either of us would be happy to discuss any aspect of the research with you.

We would like to thank you in advance for your assistance with this research project. We look forward to hear from you soon.

Sincerely

Consilz

Tan Consilz
PhD Candidate
Murdoch Business School

This study has been approved by the Murdoch University Human Research Ethics Committee (Approval 2011/003). If you have any reservation or complaint about the ethical conduct of this research, and wish to talk with an independent person, you may contact Murdoch University's Research Ethics Office (Tel. 08 9360 6677 (for Malaysian studies, +61 8 9360 6677) or e-mail ethics@murdoch.edu.au). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

APPENDIX 2

Consent Agreement

Research Project:

What Drives Household Residential Property Investors? A Cross-Country Behavioural Analysis

1. I agree voluntarily to participate in this study.

2. I have read the Information Letter provided and been given a full explanation of the purpose of this study, of the procedures involved and of what is expected of me. I have received satisfactory answers to all questions I have asked.

3. I understand that all information provided by me is treated as confidential.

4. I understand that my personal details will be stored separately from the data, and these are accessible only to the investigators. All data provided by me will be analysed anonymously using code numbers.

Name of Participant: _____

Signed: _____

Date: ____ / ____ / ____

Researcher: Tan Consilz

Signed: _____

Date: ____ / ____ / ____

APPENDIX 3

Delphi Study – First Round of Questionnaire

Project Title

What Drives Household Residential Property Investors? A Cross-Country Behavioural Analysis

PhD Researcher

Tan Consilz

Supervisors

Professor Leland Entrekin

Professor David Butler

First Round Questionnaire

Dear

Thank you for agreeing to participate in this Delphi procedure. The procedure will consist of two electronic mailed survey rounds. The sharing of your expertise and experience will be much appreciated. An executive summary of each round will be available and reported in aggregated form.

Please kindly answer all four questions in Section A in the space provided (can be extended) and complete your background information in Section B. Kindly return the completed questionnaire via electronic mail to Consilz.Tan@murdoch.edu.au by 30th April 2011. The second round of questions will be sent out 2 -3 weeks after 30th April 2011.

Please do not hesitate to contact Tan Consilz on +6 012 530 5297 or at above mentioned email address should you have any queries.

Section A: Research Questions

- 1) What are the main elements of property investment decision-making in the real estate industry?

- 2) What are the most important features of the real estate investment process (i.e., viewing, negotiating, legal, and financial advice)?

- 3) Are there any observed differences between Australian and non-Australian investors in terms of their decision-making behaviour?

- 4) What are the attributes that you think are important for potential investors to participate in property investment?

Section B: Background Information

- 1) Name of Institute, Organization or Company

- 2) Years of experience in real estate / property (academia or industry)

- 3) Current position

- 4) Highest qualifications

APPENDIX 4

Delphi Study – Second Round of Questionnaire

Project Title

What Drives Household Residential Property Investors? A Cross-Country Behavioural Analysis

PhD Researcher

Tan Consilz

Supervisors

Professor Leland Entrekin

Professor David Butler

Second Round Questionnaire

Dear

Thank you for agreeing to participate in this Delphi procedure. We are now in the second round of the procedure. The sharing of your expertise and experience will be much appreciated. The executive summary of first round is attached and reported in aggregated form.

Please kindly find the executive summary of the first round in Section A. Besides, please answer all FOUR (4) questions in Section B, in the space provided (can be extended). Kindly return the completed questionnaire via electronic mail to Consilz.Tan@murdoch.edu.au by 15th September 2011.

Please do not hesitate to contact Tan Consilz on +6 012 530 5297 or at above mentioned email address should you have any queries.

Section A: Executive Summary

Question 1: What are the main elements of the property investment decision-making in the real estate industry?

The elements can be categorized into two categories: financial and non-financial. Under financial grouping, capital growth (appreciation) potential is the most important elements in both Australia and Malaysia. According to one of the panellists, investors believe that they can obtain capital gains if they hold on their investment properties long enough.

Also, property investors will consider the return of investment in their decision-making process. The return can be seen as rental income either from residential or commercial properties. From the panellists' point of view, non-owner occupier treats rental yield as a long-term investment also as a steady income. Especially in Australia, rental income is often seen as a preferred source of retirement income, which received regularly (i.e., weekly or fortnightly). Investors who are risk adverse are also in favour of real estate investment rather than taking investment risks in stocks and bonds. Moreover, selling the properties during retirement will help in funding daily spending needs where panellist suggested this is consistent with life cycle hypothesis. Income security and diversification of investment portfolio is also highlighted as profound elements in property investment decision-making. In some cases, in Australia, people make investment in property to utilise the tax shelter benefits.

In term of non-financial category, Australian and Malaysian panellists suggested location as a main element in property investment decision-making. This refers to the closeness of the property to amenities, public transport, and schools. Besides, the emotive attachment is also an element in the property investment decision-making. According to one of the panellists, the decision is complicated by the dual function of the family home as both a roof over the head and in most cases the biggest investment in most households' lives. Furthermore, the reputation of the developer is important where branding and track records are taken into account.

Question 2: What are the most important features of the real estate investment process (i.e., viewing, negotiation, legal, and finance advice)?

Most of the panellists see viewing as most important features in the real estate investment process. One of the reasons is that the investor needs to determine whether the prospective purchase will fetch the required rent and favourable capital gain. Investors would want to view the property first to identify whether it is the 'right' property to invest. As per suggested by a Malaysian panellist, no two properties are the same and external factors, such as facing a junction or the presence of a graveyard behind the property may cause its value to drop.

The second important feature of the real estate investment process is financial advice, where investors seek to ensure that there is available capital and financing. Although, according to an Australian panellist, most owner occupiers would not seek financial advice before purchasing a property. A partial reason for this is that the principal place of residence is exempt from capital gains tax.

Few panellists highlighted that negotiation as more important as the two features discussed above. However, the process of negotiation (to obtain the best price) would provide investor a greater leeway in the future especially when the investor wants to sell or rent the dwelling.

Panellist recommended that some legal and finance knowledge is important in the real estate investment process, but that it can be learnt. Furthermore, information search, analysis, and selection process are important too.

Question 3: Are there any observed differences between Australian/Malaysian and non-Australian/non-Malaysian investors in terms of their decision-making behaviour?

Feedback from Australian panellists:

The exchange rates will affect the non-local investors; including the risk of large movements and the trajectory of absolute and relative prices. Non-Australians are more focussed on rental returns rather than capital gains. They are more likely to make an investment decision based on need and practical usage. On the other hand, Australians generally will be more likely to be driven by status and greed.

Feedback from Malaysian panellists:

There are differences in terms of more choices and options available for local investors compared to non-Malaysian investors. Also, there is restriction placed on foreign investors especially when it comes to the land ownerships. Panellists suggested that Malaysians are more interested in the longer term of investment, but non-Malaysians tend to select properties based on their own usage of the dwelling. Even so, non-Malaysians investors like to invest in property which are built by reputable developers and provide good after sales service. Local Malaysians who are owner occupiers will consider the location, amenities, and facilities of the property in their decision-making process.

Nevertheless, there are panellists from both countries who provided feedback that eventually there are no major differences between either Australian vs. non-Australian or Malaysian vs. non-Malaysian investors. There might be some cultural preferences in housing styles, or investor tends to choose a location he/she feel comfortable. One of the Australian panellists also added that, in a previous property investment decisions modelling, the ethnicity variable turned out to be statistically insignificant.

Question 4: What are the attributes that you think are important for potential investors to participate in property investment?

The attributes suggested by panellists can be organized and segregated into two categories: internal and external attributes. The internal attributes can be controlled by the investors whilst the external attributes are not.

The internal attributes can be divided into two groups: the inner self of an investor and outer characteristics of the individual. The inner self of an investor refers to the ability and capability of investors to participate in property investment. An investor need to be able to identify different types of investment alternatives and the right type of property to choose before stepping into the property investment arena. The investor must show a certain level of capability in gathering and analysing the data while at the same time willing to take an amount of risk in the investment. By having said that, vision and high level of confidence plays a prominent role in creating a successful property investor.

In terms of the outer characteristics of an individual investor, he/she have to make sure that there is sufficient fund and adequate capital to sustain in property investment. Also, potential investors should ensure that they have enough human capital and financial aids such as mortgage loan to realise their investment plan. This attribute is essential to enhance an investor's holding power. Furthermore, based on the result from an earlier research, panellist reveals that investors who are in the middle age (ages of 30-50), possess relatively high levels of income and educational qualifications are prone to retain their property investment. Of course, an investor needs a secure job too.

The external attributes include the prospect of capital growth, rental yield, low interest rate, and national stability. A trustworthy and outstanding reputation developer also plays a prominent role in encouraging a potential investor to invest. The developer must have good quality of finished products, innovative design, and provide after sales service and prompt defects rectification.

Section B: Research Questions

This study is interested in examining the drivers of household residential properties market investment. We are seeking to understand whether differences exist between two countries (Australia and Malaysia) in terms of household residential investment behaviour.

After gathering feedback from panellists in the first round Delphi procedure, we find that there are several discrepancies between the two countries. The key differences can be divided into financial and non-financial factors. The non- financial/economic drivers (i.e. emotional attachment and rationality) are bolstering the significance of this study.

Hence, the researcher designed the following questions with the hope that more insight can be drawn out in this second round of Delphi procedure.

- 1) If emotional attachment is one of the elements in property investment decision-making, how much do you think emotional factors affect judgement in property investment? Please provide your comment.

- 2) Do you think investors are acting rationally in property investment? Please provide examples of rational and irrational action that you have noticed.

It is also important to determine whether the inner self of an investor is the primary motivational element to participate in property investment. Shalom H. Schwartz tested the value priorities of people from 20 countries. Hence, we are using Schwartz's 10 universal values in this study. We need to know how far the human values have in playing a role in an inner self.

3) Given following Schwartz's ten (10) values, in parentheses, specific value items that represent it. Please kindly rank the top five (5) human values that you think are important in leading an individual to become a real estate investor.

- i. Power (*social power, authority, wealth*) _____
- ii. Achievement (*successful, capable, ambitious, influential*) _____
- iii. Hedonism (*pleasure, enjoying life*) _____
- iv. Stimulation (*daring, a varied life, an exciting life*) _____
- v. Self-direction
(*creativity, freedom, independent, curious, choosing own goals*) _____
- vi. Universalism
(*broadminded, wisdom, a world at peace, protecting the environment*) _____
- vii. Benevolence (*helpful, honest, forgiving, loyal, responsible*) _____
- viii. Tradition
(*humble, accepting portion in life, respect for tradition, moderate*) _____
- ix. Conformity (*politeness, obedient, self-discipline*) _____
- x. Security
(*family and national security, social order, reciprocal of favours*) _____

Do you perceived any other personal values that needed in an inner self in order to promote a success investor? Please specify the values and reasons.

Last but not least, the study also aimed to examine the variations in property management between Australia and Malaysia. Property management is essential for a real estate investor, and it can be managed by the investor him/herself or by a third party (i.e. property management agency).

- 4) How does property management works in Australia? What are the behaviour patterns of real estate investors in property management?

APPENDIX 5

Research Survey – Questionnaire

Section A: Investor’s Motivations

For each of the statements, please mark an **X** in the box that best describes your response.

Please rate the importance of the following items as your motivations to participate in real estate investment?

		1	2	3	4	5	6	7	
		Completely Unimportant			Neutral	The Utmost Importance			
		1	2	3	4	5	6	7	
1	Capital gain								
2	Change in stage of family life cycle								
3	Long term investment (5 – 10 years)								
4	Lower risk compared to stocks								
5	Negative gearing								
6	Portfolio rebalancing								
7	Rental yield								
8	Source of income								
9	Speculative investment (less than 3 years)								
10	Supplementary income								
11	Taxes								
12	Wealth accumulation								

Section B: Investor’s Characteristics

Scenario:

You are going to invest your money in a residential property. You are the decision-maker in this investment where you must take responsibility for it. As you are committed to the property investment, you are responsible for the repayments on the mortgage, insurance, repairs, renovations, and finding a reliable tenant. You have been staying on a residential property with land for more than 5 years. Hence, you suggest that investing in a property with land is a smart choice.

Based on the above scenario, how accurately do the following statements describe you in real estate investments?

		1	2	3	4	5	6	7	
		Strongly Disagree		Neither Agree nor Disagree			Strongly Agree		
1	I will invest in a residential property with land regardless of the return of investment.								
2	I am more likely to invest my money in a residential property with land than other types of property.								
<p>There is a recently published report that stating, “Most young adults nowadays like to stay in condominiums/strata title instead of on landed residential property. It is expected that the demand for condominiums / strata title will rise in the near future.”</p>									
3	I am changing my investment from landed residential property to condominium/strata title.								
4	I am not convinced by the report and will persist with my initial decision.								
5	I will invest in landed residential property instead of condominium/strata title.								

How accurately do the following statements describe your character when sell a piece of your property?

		1	2	3	4	5	6	7				
		Strongly Disagree			Neither Agree nor Disagree		Strongly Agree					
						1	2	3	4	5	6	7
1	I set a higher price than market value when selling my property.											
2	I consider the fairness and will sell my property at market value.											
3	I have an emotional attachment with the property and hence would like to sell it at a higher price.											
4	I do not take personal feeling into account while giving up a property as that is not rational.											
5	I view selling a property as potential gain. It is not a loss just because I am giving up the property.											
6	I feel pain when selling my property even though the price is reasonable.											
7	I keep an under-valued property longer than I should in order to get another chance of getting a higher value from other buyers.											
8	I will let go of the property as long as the value is higher than the purchased value.											
9	I will let go of the property as long as the yield is more than enough to cover my cost and earn me some profit.											
10	I will hold on to the property if I believe I can get a better price even if there is a favourable offer price.											

How accurately do the following statements describe your character in real estate investments?

		1	2	3	4	5	6	7				
		Strongly Disagree			Neither Agree nor Disagree		Strongly Agree					
						1	2	3	4	5	6	7
1	I am an independent-minded person where I do not follow others' choice in investment.											
2	When making a decision, I judge the success of a property investment by looking at the attractiveness of the property to others.											
3	I am more likely to invest in a type of property that has a lot of investors interested in investing in it.											
4	When an advertisement emphasizes "most buyers prefer this location", I may switch my decision from another property to the advertised property.											
5	A rising price of a property is due to the well acceptance from other investors. Thus, I may make investment on this property too.											
6	I prefer not to follow the preferences or advice of my family members / friends when it comes to investment decision-making.											
7	Given a new choice of options, I am going to stick with the types of property that I usually invest in.											
8	I like to change my investment style in order to gain new investment experience.											
9	When I feel uncertainty, I continue my current commitment in investment without selling/buying.											

10	A decrease in interest rate will not affect my investment decisions.							
11	I actively invest in property when the government introduces a new housing policy which benefits investors.							
12	If I am familiar with the location of a property development, I am willing to pay a higher price to get this property.							
13	I always consider my selection of choice of property investment thoroughly even though I have benefited from my previous property investment.							
14	My past investment successes are due to my excellent skills in investment.							
15	When I make investment plans, I will always get advice from my financial advisor(s).							
16	When I make investment plans, I will always get advice from my real estate agent(s).							
17	My instinct has often helped me to make profitable investments.							
18	I never miscalibrated the available information.							

How accurately do the following statements describe your pricing strategy in real estate investments?

		1	2	3	4	5	6	7		
		Strongly Disagree			Neither Agree nor Disagree		Strongly Agree			
				1	2	3	4	5	6	7
1	I use a previous investment value to decide how much to be invested in current investment.									
2	The value of current investment must be higher than the previous investment.									
3	I set the pricing on my current property based on the market value.									
4	I use the first asking price as a starting point to adjust pricing, even if it is far different from the market price.									

Section C: Investor's Attitudes

For each of the statements, please mark an **X** in the box that best describes your response.

How accurately do the following statements describe your attitudes towards risk in real estate investments?

		1	2	3	4	5	6	7	
		Strongly Disagree	Neither Agree nor Disagree				Strongly Agree		
			1	2	3	4	5	6	7
1	I am satisfied with my current state of wealth and will not take more risk.								
2	I am investing in real estate to diversify the risk in my investment portfolio.								
3	To make a profit, I am ready to take substantial risks.								
4	I invest in the property market because it can guarantee the returns.								
5	I invest in the real estate market regardless of the risks.								

How accurately do the following statements describe your attitudes towards saving?

		1	2	3	4	5	6	7	
		Strongly Disagree			Neither Agree nor Disagree		Strongly Agree		
			1	2	3	4	5	6	7
1	When I save, it is usually because I want to use it for something special.								
2	Money is for spending, not for holding onto.								
3	Saving is not helping me to accumulate wealth.								
4	You cannot get far without a saving account.								
5	I believe in putting some money aside for a rainy day.								

How accurately do the following statements describe your attitudes towards retirement?

		1	2	3	4	5	6	7	
		Strongly Disagree			Neither Agree nor Disagree		Strongly Agree		
			1	2	3	4	5	6	7
1	I invest to smooth my consumption after retirement.								
2	Retirement is just stepping into another phase of life, nothing special about it.								
3	I never do planning for my retirement.								
4	I invest in real estate because it is going to provide my retirement income.								
5	Old age is another phase of life. There is no special plan for it.								

Section D: Investor's Values

How important are human values as a guiding principle in your real estate investment decision-making?

Given the following Schwartz's ten (10) Human Values, in parentheses are specific value items that represent it. Please rate the importance of each value according to your actual self values in the real estate investments process.

		1	2	3	4	5	6	7
		Completely Unimportant			Not Important			The Utmost Importance
Schwartz's Human Values								
		1	2	3	4	5	6	7
1	Power (<i>social power, authority, wealth</i>)							
2	Achievement (<i>successful, capable, ambitious, influential</i>)							
3	Hedonism (<i>pleasure, enjoying life</i>)							
4	Stimulation (<i>daring, a varied life, an exciting life</i>)							
5	Self-direction (<i>creativity, freedom, independent, curious, choosing own goals</i>)							
6	Universalism (<i>broadminded, wisdom, a world at peace, protecting the environment</i>)							
7	Benevolence (<i>helpful, honest, forgiving, loyal, responsible</i>)							
8	Tradition (<i>humble, accepting portion in life, respect for tradition, moderate</i>)							
9	Conformity (<i>politeness, obedient, self-discipline</i>)							
10	Security (<i>family and national security, social order, reciprocation of favours</i>)							

Section E: Outcomes in Real Estate Investments

For each of the statements, please mark an **X** in the box that best describes you in the real estate investments.

		1	2	3	4	5	6	7	
		Strongly Disagree			Neither Agree nor Disagree		Strongly Agree		
1	I am happy with the current real estate investment conditions and will remain in the market.								
2	I would not be happy to withdraw from current investments.								
3	I am not happy with my real estate investments but I will remain in the market for another chance.								
4	I am happy with the real estate investment and will not exit from the market.								
5	I am not satisfied with the current state of investment but will not exit from the market in the near future.								
6	I am willing to expand my investment portfolio.								
7	I feel the attractiveness of returns and its potential of growth.								
8	For the investment that I have, the returns are very good and it is growing.								
9	I will reduce the future size of my investment portfolio.								
10	I anticipate a low performance for my real estate investment.								

Section F: Investor's Profile and Investment Background

Investor's Profile: Please kindly complete this section about yourself.

- 1 Gender Male
 Female
- 2 Age Under 25 years
 25 to 34 years
 35 to 44 years
 45 to 54 years
 55 to 64 years
 65 years and above
- 3 Marital status Single
 Married
 Divorced
 Widowed
- 4 Have you had any children? No children
 One child
 Two children
 Three children
 Four children
 Five or more children
- 5 Employment status Employed
 Full time
 Part time
 Retired from work
 Own business/partnership
 Family business

- 6 Level of education
- Primary school
 - Secondary school
 - Certificate level
 - Advanced diploma
 - Bachelor degree
 - Graduate Diploma
 - Postgraduate degree

- 7 Gross annual household income
- Less than \$40, 000
 - \$ 40, 000 - \$ 79, 999
 - \$ 80, 000 - \$119, 999
 - \$120, 000 - \$159, 999
 - \$160, 000 - \$199, 999
 - \$200, 000 - \$239, 999
 - \$240, 000 or more

8 What was your country of birth? _____

9 What were your parents' countries of birth?

Father: _____ Mother: _____

Investment background: Please kindly complete this section about your real estate investment.

- 1 Length of time in real estate investment
- Less than 2 years
 - 2 years to less than 5 years
 - 5 years to less than 10 years
 - 10 years or more

2 What ownership arrangement best describes your current real estate investment situation?

- Sole investor
- Joint owner with spouse/family partner
- Joint owner with others
- Trust/business

3 Most of my properties are managed by

- Real estate agent
- Professional manager
- Self/partner

END OF THE QUESTIONNAIRE

Thank you very much for your kind participation.

LIST OF REFERENCES

This reference list has been compiled using the EndNote version of Harvard referencing system.

ADAIR, A., BERRY, J. & MCGREAL, S. 1996. Valuation of residential property: analysis of participant behaviour. *Journal of Property Valuation and Investment*, 14, 20-35.

AJZEN, I. 1991. The Theory of Planned Behaviour. *Organizational Behaviour and Human Decision Processes*, 50, 179-211.

AJZEN, I. & FISHBEIN, M. 1969. The Prediction of Behavioural Intentions in a Choice Situation. *Journal of Experimental Social Psychology*, 5, 400-416.

AJZEN, I. & FISHBEIN, M. 1977. Attitude-Behaviour Relations: A Theoretical Analysis and Review of Empirical Research. *Psychological Bulletin*, 84, 888-918.

ALLEN, M. W., NG, S. H. & WILSON, M. 2002. A functional approach to instrumental and terminal values and the value-attitude-behaviour system of consumer choice. *European Journal of Marketing*, 36, 111-135.

ANDERSEN, H. S. 1998. Motives for Investments in Housing Rehabilitation among Private Landlords under Rent Control. *Housing Studies*, 13, 177-200.

ANDREWS, D. & SÁNCHEZ, A. C. 2011. The Evolution of Homeownership Rate in Selected OECD Countries: Demographic and Public Policy Influences. *OECD Journal: Economic Studies*, 2011, 207-243.

ARBEL, Y., BEN-SHAHAR, D. & SULGANIK, E. 2009. Mean Reversion and Momentum: Another Look at the Price-volume Correlation in the Real Estate Market. *Journal of Real Estate Finance and Economics*, 39, 316-335.

ARIELY, D. 2009. *Predictably Irrational: The Hidden Forces that Shape Our Decisions*, United States of America, Harper-Collins.

ARIELY, D. 2010. *The Upside of Irrationality: The Unexpected Benefits of Defying Logic at Work and at Home*, United States of America, Harper-Collins.

ARIELY, D., HUBER, J. & WERTENBROCH, K. 2005. When Do Losses Loom Larger Than Gains. *Journal of Marketing Research*, 42, 134-138.

ARRONDEL, L. & LEFEBVRE, B. 2001. Behaviour of Household Portfolios in France: The role of housing. *Review of Income and Wealth*, 47, 489-514.

AVERY, C. & ZEMSKY, P. 1996. Multi-Dimensional Uncertainty and Herd Behaviour in Financial Markets. *INSEAD Working Paper Series*. INSEAD, Fontainebleau, France.

BANERJEE, A. V. 1992. A Simple Model of Herd Behaviour. *The Quarterly Journal of Economics*, 107, 797-817.

BARBER, B. M. & ODEAN, T. 2006. All that Glitters: The Effect of Attention and News on the Buying Behaviour and Institutional Investor.

BARBERIS, N., SHLEIFER, A. & VISHNY, R. 1998. A Model of Investor Sentiment. *Journal of Financial Economics*, 49, 307-343.

BARDI, A. & GOODWIN, R. 2011. The Dual Route to Value Change Individual Processes and Cultural Moderators. *Journal of Cross-Cultural Psychology*, 42, 271-287.

BARDI, A. & SCHWARTZ, S. H. 2003. Values and Behaviour: Strength and Structure of Relations *Personality and Social Psychology Bulletin*, 29, 1207-1220.

- BARGH, J. A. 1997. The Automaticity of Everyday Life. *In*: ROBERT S. WYER, J. (ed.) *The Automaticity of Everyday Life*. Mahwah, N.J. : Lawrence Erlbaum Associates.
- BECKER, A., DECKERS, T., DOHMEN, T., FALK, A. & KOSSE, F. 2012. The Relationship between Economic Preferences and Psychological Personality Measures. *CESifo Working Papers*.
- BELL, D. E. 1982. Regret in Decision Making under Uncertainty. *Operations Research*, 30, 961-981.
- BENARTZI, S. & THALER, R. H. 1995. Myopic Loss Aversion and the Equity Premium Puzzle. *The Quarterly Journal of Economics*, 110, 73-92.
- BENARTZI, S. & THALER, R. H. 1999. Risk Aversion or Myopia? Choices in Repeated Gambles and Retirement Investments. *Management Science*, 45, 364-381.
- BENARTZI, S. & THALER, R. H. 2007. Heuristics and Biases in Retirement Savings Behaviour. *Journal of Economic Perspectives*, 21, 81-104.
- BEN-DAVID, I. & HIRSHLEIFER, D. 2012. Are Investors Really Reluctant to Realize Their Losses? Trading Responses to Past Returns and the Disposition Effect *The Review of Financial Studies*, 25, 2485-2532.
- BENJAMIN, J. D., CHINLOY, P. & JUD, G. D. 2004. Why Do Households Concentrate Their Wealth in Housing? *Journal of Real Estate Research*, 26, 329-343.
- BERRY, J. W. & SAM, D. L. 1997. Acculturation and Adaptation. *In*: BERRY, J. W., SEGALL, M. H. & KAGITÇIBASI, C. (eds.) *Handbook of Cross-cultural Psychology: Social Behaviour and Applications*. Allyn and Bacon.

BLACK, R. T., BROWN, M. G., III, J. D., GIBLER, K. M. & GRISSOM, T. V. 2003. Behavioural Research in Real Estate: A Search for the Boundaries. *Journal of Real Estate Practice and Education*, 6, 85-112.

BOSCH-DOMENECH, A., MONTALVO, J. G., NAGEL, R. & SATORRA, A. 2002. One, Two, (Three), Infinity, ...: Newspaper and Lab Beauty-Contest Experiments. *The American Economic Review*, 92, 1687-1701.

BROWN, G. R. & ONG, S. E. 2001. Estimating Serial Cross correlation in Real Estate Returns. *Managerial and Decision Economics*, 22, 381-387.

BROWN, R., SCHWANN, G. & SCOTT, C. 2006. Personal Residential Real Estate Investment in Australia: Investor Characteristics and Investment Parameters. *AREUEA Conference*. Vancouver.

BRUECKNER, J. K. 1997. Consumption and Investment Motives and the Portfolio Choices of Homeowners. *Journal of Real Estate Finance and Economics*, 15, 159-180.

BRYMAN, A. 2006. Integrating quantitative and qualitative research: how is it done? *Qualitative Research*, 6, 97-113.

CAMERER, C. F. 1998. Prospect Theory in the Wild: Evidence from the Field. *Social Science Working Paper 1037*. Pasadena, California 91125: Division of the Humanities and Social Sciences, California Institute of Technology.

CAMERER, C. F. & FEHR, E. 2006. When Does "Economic Man" Dominate Social Behaviour. *Science*, 311, 47-52.

CAMERER, C.F., ISSACHAROFF, S., LOEWENSTEIN, G., O'DONOGHUE, T. & RABIN, M. 2003. Regulation for Conservatives: Behavioural Economics and the Case for "Asymmetric Paternalism". *University of Pennsylvania Law Review*, 151, 1211-1254.

CAMERER, C. F., LOEWENSTEIN, G. & RABIN, M. (eds.) 2004. *Advances in Behavioural Economics* Russell Sage Foundation, New York, Princeton University Press, Princeton and Oxford.

CAMERER, C.F. & LOVALLO, D. 1999. Overconfidence and Excess Entry: An Experimental Approach. *The American Economic Review*, 89, 306-318.

CAMERER, C.F. & WEBER, M. 1992. Recent Developments in modelling Preferences: Uncertainty and Ambiguity. *Journal of Risk and Uncertainty*, 5, 325-370.

CARMON, Z. & ARIELY, D. 2000. Focusing on the Forgone: How Value Can Appear so Different to Buyers and Sellers. *The Journal of Consumer Research*, 27, 360-370.

CARROLL, J. S. 1980. Analysing Decision Behaviour: The Magician's Audience. In: WALLSTEN, T. S. (ed.) *Cognitive Processes in Choice and Decision Behaviour*. Hillsdale, New Jersey: Lawrence Erlbaum Associates.

CASE, K. E. & SHILLER, R. J. 1988. The Behaviour of Home Buyers in Boom and Post Boom Markets. National Bureau of Economic Research NBER Working Paper No. 2748.

CAULEY, S. D. & PAVLOV, A. D. 2002. Rational Delays: The Case of Real Estate. *Journal of Real Estate Finance and Economics*, 24, 143-165.

ÇELEN, B. & KARIV, S. 2004. Distinguishing Informational Cascades from Herd Behaviour in the Laboratory. *American Economic Review*, 94, 484-498.

CHEW, J. C. L. 2004. *The Influence of Human Resource Management Practices on the Retention of Core Employees of Australia Organisations: An Empirical Study*. Doctor of Philosophy, Murdoch University.

- CONLISK, J. 1996. Why Bounded Rationality? *Journal of Economic Literature*, 34, 669-700.
- CRESWELL, J. W. 2009. Editorial: Mapping the Field of Mixed Methods Research. *Journal of Mixed Methods Research*, 3, 95-108.
- CRESWELL, J. W. & TASHAKKORI, A. 2007. Editorial: Differing Perspectives on Mixed Methods Research. *Journal of Mixed Methods Research*, 1, 303-308.
- DALKEY, N. & HELMER, O. 1963. An Experimental Application of the Delphi Method to the use of Experts. *Management Science*, 9, 458-467.
- DAMASIO, A. R. 1994. *Descartes' Error: Emotion, Reason, and the Human Brain*, New York, Avon Books.
- DAMASIO, A. R. 1996. The somatic marker hypothesis and the possible functions of the prefrontal cortex. *Philosophical Transactions: Biological Sciences*, 351, 1413-1420.
- DANIEL, K., HIRSHLEIFER, D. & SUBRAHMANYAM, A. 1998. Investor Psychology and Security Market Under- and Overreactions. *The Journal of Finance*, 53, 1839-1884.
- DANIS, W. M., LIU, L. A. & VACEK, J. 2011. Values and Upward Influence Strategies in Transition: Evidence From the Czech Republic. *Journal of Cross-Cultural Psychology*, 42, 288-306.
- DE BONDT, W. F. M. & THALER, R. H. 1995. Financial Decision-Making in Markets and Firms: A Behavioural Perspective. In: R. JARROW AND ET AL. (ed.) *Handbook in Operations Research and Management Science*. Elsevier Science B.V.
- DE BRUIN, A. & FLINT-HARTLE, S. 2003. A Bounded Rationality Framework for Property Investment Behaviour *Journal of Property Investment & Finance*, 21, 271-284.

DEAVES, R., LÜDERS, E. & LUO, G. Y. 2009. An Experimental Test of the Impact of Overconfidence and Gender on Trading Activity. *Review of Finance*, 13, 555-575.

DENZIN, N. K. & LINCOLN, Y. S. 2008. Introduction: Collecting and Interpreting Qualitative Materials. In: DENZIN, N. K. & LINCOLN, Y. S. (eds.) *Collecting and Interpreting Qualitative Materials*. 3rd ed. Los Angeles, London, New Delhi, Singapore: Sage.

DIAZ III, J. 1998. The First Decade of Behavioural Research in the Discipline of Property. *Journal of Property Investment & Finance*, 17.

DITTRICH, D., GÜTH, W. & MACIEJOVSKY, B. 2001. Overconfidence in Investment Decisions: An Experimental Approach. CESifo Working Paper Series No. 626.

DORN, D. & HUBERMAN, G. 2005. Talk and Action: What Individual Investors Say and What They Do. *Review of Finance*, 9, 437-481.

EINHORN, H. J. 1980. Learning from Experience and Suboptimal Rules in Decision Making. In: WALLSTEN, T. S. (ed.) *Cognitive Processes in Choice and Decision Behaviour*. Hillsdale, New Jersey: Lawrence Erlbaum Associates.

EINHORN, H. J. & HOGARTH, R. M. 1981. Behavioural Decision Theory: Processes of Judgment and Choice. *Annual Review Psychology*, 32, 53-88.

ELSTER, J. 1989. Social Norms and Economic Theory. *The Journal of Economic Perspectives*, 3, 99-117.

ELSTER, J. 1998. Emotions and Economic Theory. *Journal of Economic Literature*, 36, 47-74.

ENGELHARDT, G. 2001. Nominal Loss Aversion, Housing Equity Constraints, and Household Mobility: Evidence from the United States. Center for Policy Research Working Paper No. 42.

FINUCANE, M. L., ALHAKAMI, A., SLOVIC, P. & JOHNSON, S. M. 2000. The Affect Heuristic in Judgments of Risks and Benefits. *Journal of Behavioural Decision Making*, 13, 1-17.

FISCHER, R., MILFONT, T. L. & GOUVEIA, V. V. 2011. Does Social Context Affect Value Structures? Testing the Within-Country Stability of Value Structures with a Functional Theory of Values. *Journal of Cross-Cultural Psychology*, 42, 253-270.

FRENCH, N. 2001. Decision Theory and Real Estate Investment: An Analysis of the Decision Making Processes of Real Estate Investment Fund Managers. *Managerial and Decision Economics*, 22, 399-410.

FRIDAY, H. S. & HIGGINS, E. J. 2000. The day of the Week Effect in Real estate investment trusts. *Journal of Real Estate Portfolio Management*, 6, 273-282.

FRITZSCHE, D. J. 1995. Personal Values: Potential Keys to Ethical Decision Making. *Journal of Business Ethics*, 14, 909-922.

FROMLET, H. 2001. Behavioural Finance - Theory and Practical Application. *Business Economics*, 36, 63-69.

GALLIMORE, P., HANSZ, J. A. & GRAY, A. 2000. Decision making in small property companies. *Journal of Property Investment & Finance*, 18, 602-612.

GENESOVE, D. & MAYER, C. 1993. Equity and Time to Sale in the Real Estate Market. Federal Reserve Bank of Boston Working Paper Series No. 93-6.

GENESOVE, D. & MAYER, C. 2001. Loss Aversion and Seller Behaviour: Evidence from the Housing Market. *Quarterly Journal of Economics*, 1233-1260.

GIBLER, K. M. & NELSON, S. L. 2003. Consumer Behaviour Applications to Real Estate Education. *Journal of Real Estate Practice and Education*, 6, 63-83

GILBOA, I. & SCHMEIDLER, D. 1995. Case-based Decision Theory. *The Quarterly Journal of Economics*, 605-639.

GLASER, M. & WEBER, M. 2007. Overconfidence and Trading volume. *Geneva Risk and Insurance Review*, 32, 1-36.

Global Property Guide [Online]. Available from: <http://www.globalpropertyguide.com/Asia/malaysia> [Accessed 12 May 2014].

GRENADIER, S. R. 1996. The Strategic Exercise of Options: Development Cascades and Overbuilding in Real Estate Markets. *The Journal of Financial*, 51, 1653-1679.

GREYER, D. M. 1978. Recent Psychological Studies of Behaviour under Uncertainty. *The American Economic Review*, 68, 70-74.

GRINBLATT, M. & KELOHARJU, M. 2001. What Makes Investors Trade? *The Journal of Finance*, LVI, 589-616.

GROSSKOPF, B. & NAGEL, R. 2006. The Two-Person Beauty Contest. *Games and Economic Behaviour*, 62, 93-99.

GRUNERT, S. C. & JUHL, H. J. 1995. Values, environmental attitudes and buying of organic foods. *Journal of Economic Psychology*, 16, 39-62.

HARDIN, W. 1999. Behavioural research into heuristics and bias as an academic pursuit: Lessons from other disciplines and implications for real estate. *Journal of Property Investment & Finance*, 17, 333-352.

HENDERSON, J. V. & IOANNIDES, Y. M. 1983. A Model of Housing Tenure Choice. *The American Economic Review*, 73, 98-113.

HIRSHLEIFER, D. & TEOH, S. H. 2001. Herd Behaviour and Cascading in Capital Markets: A Review and Synthesis. *European Financial Management*, 19, 25-66.

HOFSTEDE, G. 1991. *Cultures and Organizations: Software of the Mind*, London, McGraw-Hill.

HOFSTEDE, G. & BOND, M. H. 1984. Hofstede's Culture Dimensions: An Independent Validation Using Rokeach's Value Survey. *Journal of Cross-Cultural Psychology*, 15, 417-433.

HOGARTH, R. M. & REDER, M. W. 1987. Introduction: Perspectives from Economics and Psychology. In: HOGARTH, R. M. & REDER, M. W. (eds.) *Rational Choice: The Contrast between Economics and Psychology*. Chicago and London: The University of Chicago Press.

HOMER, P. M. & KAHLE, L. R. 1988. A Structural Equation Test of the Value-Attitude-Behaviour Hierarchy. *Journal of Personality and Social Psychology*, 54, 638-646.

HOMMES, C. & WAGENER, F. 2009. Complex Evolutionary Systems in Behavioural Finance *Handbook of Financial Markets: Dynamics and Evolution*. North-Holland, Elsevier, Inc.

HUISMAN, K. J. M., KORT, P. M., PAWLINA, G. & THIJSSSEN, J. J. J. 2004. Strategic Investment under Uncertainty: Merging Real Options with Game Theory. Andreas Lindinger.

IDSON, L. C., LIBERMAN, N. & HIGGINS, E. T. 2000. Distinguishing Gains from Nonlosses and Losses from Nongains: A Regulatory Focus Perspective on Hedonic Intensity. *Journal of Experimental Social Psychology*, 36, 252-274.

IOANNIDES, Y. M. & ROSENTHAL, S. S. 1994. Estimating the Consumption and Investment Demands for Housing and Their Effect on Housing Tenure Choices. *The Review of Economics and Statistics*, 76, 127-141.

ISONI, A. 2011. The willingness-to-accept/willingness-to-pay disparity in repeated markets: loss aversion or "bad-deal" aversion? *Theory and Decision*, 71, 409-430.

ISONI, A., LOOMES, G. & SUGDEN, R. 2011. The Willingness to Pay - Willingness to Accept Gap, the "Endowment Effect," Subject Misconceptions, and Experimental Procedures for Eliciting Valuations: Comment. *American Economic Review*, 101, 991-1011.

JANIS, I. L. & MANN, L. 1977. Man, the Reluctant Decision Maker. *Decision Making: A Psychological Analysis of Conflict, Choice, and Commitment*. New York: The Free Press: A division of Macmillan Publishing Co., Inc. New York.

JOHNSON, E. J., GÄCHTER, S. & HERRMANN, A. 2006. Exploring the nature of loss aversion. CeDEx Discussion Paper No. 2006-02.

JOHNSON, R. B., ONWUEGBUZIE, A. J. & TURNER, L. A. 2007. Toward a Definition of Mixed Methods Research. *Journal of Mixed Methods Research*, 1, 112-133.

KACEN, J. J. & LEE, J. A. 2002. The Influence of Culture on Consumer Impulsive Buying Behaviour. *Journal of Consumer Psychology*, 12, 163-176.

KAHLE, L. R. & KENNEDY, P. 1989. Using the List of Values (LOV) to Understand Consumers. *The Journal of Consumer Marketing*, 6, 5-12.

KAHNEMAN, D. 2003a. A Perspective on Judgment and Choice: Mapping Bounded Rationality. *American Psychologist*, 58, 697-720.

KAHNEMAN, D. 2003b. A Psychological Perspective on Economics. *The American Economic Review*, 93, 162-168.

KAHNEMAN, D. 2003c. Maps of Bounded Rationality: Psychology for Behavioural Economics. *The American Economic Review*, 95, 1449-1475.

KAHNEMAN, D. 2011. *Thinking, Fast and Slow*, Penguin Books.

KAHNEMAN, D., KNETSCH, J. L. & THALER, R. 1986. Fairness as a Constraint on Profit Seeking: Entitlements in the Market. *The American Economic Review*, 76, 728-741.

KAHNEMAN, D., KNETSCH, J. L. & THALER, R. H. 1991. Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias. *Journal of Economic Perspectives*, 5, 193-206.

KAHNEMAN, D. & TVERSKY, A. 1979. Prospect Theory: An Analysis of Decision Under Risk. *Econometrica*, 47, 263-292.

KAHNEMAN, D. & TVERSKY, A. 1984. Choices, Values and Frames. *American Psychologist*, 39, 341-350.

KAMAKURA, W. A. & MAZZON, J. A. 1991. Value Segmentation: A Model for the Measurement of Values and Value Systems. *Journal of Consumer Research* 18, 208-218.

KIM, J. O., FORSYTHE, S., GU, Q. & MOON, S. J. 2002. Cross-cultural consumer values, needs and purchase behaviour. *Journal of Consumer Marketing*, 19, 481-502.

KLAES, M. & SENT, E.-M. 2003. A conceptual history of the emergence of bounded rationality. *2003 ESHET Conference*. Paris.

KLUCKHOHN, F. R. & STRODTBECK, F. L. 1961. *Variations in Value Orientations*, Evanston, Illinois and Elmsford, New York, Row, Peterson and Company.

- KNAFO, A., ROCCAS, S. & SAGIV, L. 2011. The Value of Values in Cross-Cultural Research: A Special Issue in Honour of Shalom Schwartz. *Journal of Cross-Cultural Psychology*, 42, 178-185.
- KNEZ, P., SMITH, V. L. & WILLIAMS, A. W. 1985. Individual Rationality, Market Rationality, and Value Estimation. *The American Economic Review*, 75, 397-402.
- KOGUT, T. & RITOV, I. 2005. The "Identified Victim" Effect: An Identified Group, or Just a Single Individual? *Journal of Behavioural Decision Making*, 18, 157-167.
- KUPKE, V., ROSSINI, P., MARANO, W. & KERSHAW, P. 2001. An Analysis of the Private Rental Investment Market: Some Preliminary Findings. *4th Australasian Conference of Tenancy Tribunals and Associated Bodies*. Adelaide
- LEE, J. A. 2000. Adapting Triandis's Model of Subjective Culture and Social Behaviour Relations to Consumer Behaviour. *Journal of Consumer Psychology*, 9, 117-126.
- LEE, J. A., SOUTAR, G. N., DALY, T. M. & LOUVIERE, J. 2011. Schwartz Values Clusters in the United States and China. *Journal of Cross-Cultural Psychology*, 42, 234-252.
- LEE, J. A., SOUTAR, G. N. & LOUVIERE, J. 2008. The Best-Worst Scaling Approach: An Alternative to Schwartz's Values Survey. *Journal of Personality Assessment*, 90, 335-347.
- LENARTOWICS, T. & ROTH, K. 2001. Subculture within a Country Matter? A Cross-Culture Study of Motivational Domains and Business Performance in Brazil. *Journal of International Business Studies*, 32, 305-325.
- LEVY, J. S. 1992. An Introduction to Prospect Theory. *Political Psychology*, 13, 171-186.

- LEWELLEN, W. G., LEASE, R. C. & SCHLARBAUM, G. G. 1977. Patterns of Investment Strategy and Behaviour among Individual Investors *The Journal of Business*, 50, 296-333.
- LIBERMAN, N., IDSON, L. C., CAMACHO, C. J. & HIGGINS, E. T. 1999. Promotion and Prevention Choices Between Stability and Change. *Journal of Personality and Social Psychology*, 77, 1135-1145.
- LIM, L. C., MCGREAL, S. & WEBB, J. R. 2006. Perception of Real Estate Investment Opportunities in Central/South America and Africa. *Journal of Real Estate Portfolio Management*, 12, 261-276.
- LINDEMAN, M. & VERKASALO, M. 2005. Measuring Values with the Short Schwartz's Value Survey. *Journal of Personality Assessment*, 85, 170-178.
- LIST, J. A. 2003. Neoclassical Theory Versus Prospect Theory: Evidence from the Marketplace. National Bureau of Economic Research Working Paper Series 9736.
- LOEWENSTEIN, G. 2001. The Creative Destruction of Decision Research. *Journal of Consumer Research*, 28, 499-505.
- LOEWENSTEIN, G., JOHN, L. & VOLPP, K. G. 2012. Using Decision Errors to Help People Help Themselves. In: SHAFIR, E. (ed.) *The Behavioural Foundations of Public Policy*. Princeton University Press.
- MACCOWAN, R. J. & ORR, A. M. 2008. A behavioural study of the decision processes underpinning disposals by property fund managers. *Journal of Property Investment & Finance*, 26, 342-361.
- MADRIAN, B. C. & SHEA, D. F. 2001. The Power of Suggestion: Inertia in 401(k) Participation and Savings Behaviour. *The Quarterly Journal of Economics*, 116, 1149-1187.

- MALMENDIER, U. & TATE, G. 2005. Does Overconfidence Affect Corporate Investment? CEO Overconfidence Measures Revisited. *European Financial Management*, 11, 649-659.
- MANKIW, N. G. 2008. *Principles of Economics*, Harvard University, South-Western Cengage Learning.
- MARKUS, H. R. & KITAYAMA, S. 1991. Culture and the Self: Implications for Cognition, Emotion, and Motivation. *Psychological Review*, 98, 224-253.
- MARSHALL, C. & ROSSMAN, G. B. 1989. *Designing Qualitative Research*, Newbury Park, London, New Delhi, SAGE
- MASINI, A. & MENICHETTI, E. 2012. The impact of behavioural factors in the renewable energy investment decision making process: Conceptual framework and empirical findings. *Energy Policy*, 40, 28-38.
- MCCRAE, R. R. 2000. Trait Psychology and the Revival of Personality and Culture Studies. *American Behavioural Scientist*, 44, 10-31.
- MEI, J. & SAUNDERS, A. 1997. Have U.S. Financial Institutions' Real Estate Investments Exhibited "Trend-Chasing" Behaviour? *The Review of Economics and Statistics*, 79, 248-258.
- MODIGLIANI, F. 1966. The Life Cycle Hypothesis of Saving, the Demand for Wealth and the Supply of Capital. *Social Research*, 33, 160-217.
- MOHAMED, R. 2006. The Psychology of Residential Developers: Lessons from Behavioural Economics and Additional Explanations for Satisficing. *Journal of Planning Education and Research*, 26, 28-37.
- MULLAINATHAN, S. & THALER, R. H. 2000. Behavioural Economics. National Bureau of Economic Research Working Paper 7948.

- NAPPI-CHOULET, I. 2006. The Role and Behaviour of Commercial Property Investors and Developers in French Urban Regeneration: The Experience of the Paris Region. *Urban Studies*, 43, 1511-1535.
- NG, S. H. 1982. Choosing between the ranking and rating procedures for the comparison of values across cultures. *European Journal of Social Psychology*, 12, 169-172.
- NORTHCRAFT, G. B. & NEALE, M. A. 1987. Experts, Amateurs, and Real Estate: An Anchoring-and-Adjustment Perspective on Property Pricing Decisions. *Organizational Behaviour and Human Decision Processes*, 39, 84-97.
- ODEAN, T. 1998. Are Investors Reluctant to Realize Their Losses. *The Journal of Finance*, 53, 1775-1798.
- O'DONOGHUE, T. & RABIN, M. 1999. Doing It Now or Later. *The American Economic Review* 89, 103-124.
- O'DONOGHUE, T. & RABIN, M. 2000. The Economics of Immediate Gratification. *Journal of Behavioural Decision Making*, 13, 233-250.
- PARASCHIV, C. & L'HARIDON, O. 2008. Loss Aversion: Origin, Components and Marketing Implications. *Recherche et Applications en Marketing (English Edition)*, 23, 67-82.
- PAYNE, J. W., BETTMAN, J. R. & JOHNSON, E. J. 1992. Behavioural Decision Research: A Constructive Processing Perspective. *Annual Review of Psychology*, 43, 87-131.
- PLOTT, C. R. & ZEILER, K. 2011. The Willingness to Pay - Willingness to Accept Gap, the "Endowment Effect," Subject Misconceptions, and Experimental Procedures for Eliciting Valuations: Reply. *American Economic Review*, 101, 1012-1028.

QUAN, D. C. & QUIGLEY, J. M. 1991. Price Formation and the Appraisal Function in Real Estate Markets. *Journal of Real Estate Finance and Economics*, 4, 127-146.

RABIN, M. 2002. A Perspective on Psychology and Economics. Department of Economics, UCB, UC Berkeley Working Paper No. E02-313.

Real Estate Institute of Western Australia 2014. *Perth House Prices 1978-2014*. Available from: <http://reiwa.com.au/Research/Pages/Perth-quarterly-market-charts.aspx> [Accessed 12 May 2014].

Real Estate Institute of Western Australia 2014. *Perth Rent and Vacancy Rate*. Available from: <http://reiwa.com.au/Research/Pages/Perth-listings-and-rental-trends.aspx> [Accessed 12 May 2014].

ROBERTS, C. & HENNEBERRY, J. 2007. Exploring office investment decision-making in different European contexts. *Journal of Property Investment & Finance*, 25, 289-305.

ROKEACH, M. 1973. *The Nature of Human Values*, Collier Macmillan Publishers, London.

ROWE, G. & WRIGHT, G. 1999. The Delphi technique as a forecasting tool: issues and analysis. *International Journal of Forecasting*, 15, 353-375.

SAMUELSON, W. & ZECKHAUSER, R. 1988. Status Quo Bias in Decision Making. *Journal of Risk and Uncertainty*, 1, 7-59.

SCHMIDT, R. C. 1997. Managing Delphi Surveys Using Nonparametric Statistical Techniques. *Decision Science*, 28, 763-774.

SCHWARTZ, S. H. 1990. Individualism-Collectivism: Critique and Proposed Refinements. *Journal of Cross-Cultural Psychology*, 21, 139-157.

SCHWARTZ, S. H. 1992. Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries. *Advances in Experimental Social Psychology*, 25, 1-65.

SCHWARTZ, S. H. 2011. Studying Values: Personal Adventure, Future Directions. *Journal of Cross-Cultural Psychology*, 42, 307-319.

SCHWARTZ, S. H. & BARDI, A. 2001. Value Hierarchies Across Cultures: Taking a Similarities Perspective. *Journal of Cross-Cultural Psychology*, 32, 268-290.

SCHWARTZ, S. H. & BILSKY, W. 1987. Toward A Universal Psychological Structure of Human Values. *Journal of Personality and Social Psychology*, 53, 550-562.

SCHWARTZ, S. H., CIECIUCH, J., VECCHIONE, M., DAVIDOV, E., FISCHER, R., BEIERLEIN, C., RAMOS, A., VERKASALO, M., LÖNNQVIST, J.-E., DEMIRUTKU, K., DIRILEN-GUMUS, O. & KONTY, M. 2012. Refining the Theory of Basic Individual Values. *Journal of Personality and Social Psychology*, 103, 663-688.

SCHWARTZ, S. H. & SAGIV, L. 1995. Identifying Culture-Specifics in the Content and Structure of Values. *Journal of Cross-Cultural Psychology*, 26, 92-116.

SCOTT, P. J. & LIZIERI, C. 2011. Consumer House Price Judgments: New Evidence of Anchoring and Arbitrary Coherence. Available: <http://ssrn.com/abstract=1765974> [Accessed 5 June 2013].

SEELIG, T., BURKE, T. & MORRIS, A. 2006. Motivations of investors in the private rental market. *AHURI Positioning Paper No. 87*. Queensland, Swinburn/Monash and UNSW/UWS AHURI Research Centres.

SEELIG, T., THOMPSON, A., BURKE, T., PINNEGAR, S., MCNELIS, S. & MORRIS, A. 2009. Understanding what motivates households to become and remain investors in the private rental market. *AHURI Final Report No. 130*. Australian Housing and Urban Research Institute Queensland, UNSW-UWS, and Swinburne-Monash Research Centres.

SENT, E.-M. 1967. Behavioural Economics: How Psychology Made Its (Limited) Way Back Into Economics. *History of Political Economy*, 36, 735-760.

SHAPIRA, Z. & VENEZIA, I. 2001. Patterns of Behaviour of Professionally Managed and Independent Investors. *Journal of Banking and Finance*, 25, 1573-1587.

SHEFRIN, H. & STATMAN, M. 1985. The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence. *The Journal of Finance*, 40, 777-790.

SHILLER, R. J. 2001. Bubbles, Human Judgment and Expert Opinion. New Haven, Connecticut: Cowles Foundation for Research in Economics Yale University.

SILVER, N. 2012. *The Signal and the Noise: Why so many predictions fail-but some don't*, Penguin Books.

SIMON, H. A. 1987. Rationality in Psychology and Economics. In: HOGARTH, R. M. & REDER, M. W. (eds.) *Rational Choice: The Contrast between Economics and Psychology*. Chicago and London: The University of Chicago Press.

SIMON, H. A. 1992. Introductory Comment. In: SIMON, H. A., EGIDI, M. & MARRIS, R. L. (eds.) *Economics, Bounded Rationality and the Cognitive Revolution*. Edward Elgar Pub. Co.

SLOVIC, P. 1972. Psychological Study of Human Judgment: Implications for Investment Decision Making. *Journal of Finance*, 27, 779-799.

SMITH, P. B. & SCHWARTZ, S. H. 1997. Values. *In: BERRY, J. W., SEGALL, M. H. & KAGITÇIBASI, C. (eds.) Handbook of Cross-cultural Psychology: Social Behaviour and Applications.* Allyn and Bacon.

SOUTAR, G. N., GRAINGER, R. & HEDGES, P. 1999. Australian and Japanese Value Stereotypes: A Two Country Study. *Journal of International Business Studies*, 30, 203-216.

SOUTHEY, G. 2011. The Theories of Reasoned Action and Planned Behaviour Applied to Business Decisions: A Selected Annotated Bibliography. *Journal of New Business Ideas & Trends*, 9, 43-50.

STANOVICH, K. E. & WEST, R. F. 1998. Individual Differences in Rational Thought. *Journal of Experimental Psychology: General*, 127, 161-188.

STEENKAMP, J.-B. E. M., HOFSTEDE, F. T. & WEDEL, M. 1999. A Cross-National Investigation into the Individual and National Cultural Antecedents of Consumer Innovativeness. *Journal of Marketing* 63, 55-69.

STRAHILEVITZ, M. A. & LOEWENSTEIN, G. 1998. The Effect of Ownership History on the Valuation of Objects. *Journal of Consumer Research*, 25, 276-289.

TAN, B. C. 2011. The Role of Perceived Consumer Effectiveness on Value-Attitude-Behaviour Model in green Buying Behaviour Context. *Australian Journal of Basic and Applied Sciences*, 5, 1766-1771.

TETLOCK, P. E. 1992. The Impact of Accountability on Judgment and Choice: Contingency Model. *Advances in Experimental Social Psychology*, 25, 331-376.

THALER, R. 1980. Toward A Positive Theory of Consumer Choice. *Journal of Economic Behaviour*, 1, 39-60.

THALER, R. H. & BENARTZI, S. 2004. Save More Tomorrow: Using Behavioural Economics to Increase Employee Saving. *Journal of Political Economy*, 112, 164.

THALER, R. H. & SUNSTEIN, C. R. 2009. *Nudge: Improving Decisions About Health, Wealth, and Happiness*, United States of America, Penguin Books.

The iProperty Group 2012. *Asia Property Market Sentiment Report 2012*. Available from: <http://www.iproperty.com.my/news/4958/iproperty-com-asia-property-market-sentiment-report-2012-h1> [Accessed 13 March 2012].

The iProperty Group 2013. *Asia Property Market Sentiment Report 2013*. Available from: http://invst8r.com/downloads/files/iProperty_Asia_Sentiment_Survey.pdf [Accessed 31 May 2014].

TRIANDIS, H. C. 1996. The Psychological Measurement Of Cultural Syndromes. *American Psychologist*, 51, 407-415.

TRIANDIS, H. C. 2001. Individualism-Collectivism and Personality. *Journal of Personality* 69, 907-924.

TRIANDIS, H. C., ROBERT BONTEMPO, VILLAREAL, M. J., ASAI, M. & LUCCA, N. 1988. Individualism-Collectivism: Cross-Cultural Perspectives on Self-Ingroup Relationship *Journal of Personality and Social Psychology*, 54, 323-338.

TVERSKY, A. & KAHNEMAN, D. 1974. Judgment under Uncertainty: Heuristics and Biases. *Science*, 185, 1124-1131.

TVERSKY, A. & KAHNEMAN, D. 1981. The Framing of Decisions and the Psychology of Choice. *Science*, 211, 453-458.

TVERSKY, A. & KAHNEMAN, D. 1987. Rational Choice and the Framing of Decisions. In: HOGARTH, R. M. & REDER, M. W. (eds.) *Rational Choice: The Contrast between Economics and Psychology*. Chicago and London: The University of Chicago Press.

TVERSKY, A. & KAHNEMAN, D. 1991. Loss Aversion in Riskless Choice: A Reference-Dependent Model. *The Quarterly Journal of Economics*, 106, 1039-1061.

TVERSKY, A. & KAHNEMAN, D. 1992. Advances in Prospect Theory: Cumulative Representation of Uncertainty. *Journal of Risk and Uncertainty*, 5, 297-323.

UPSHAW, H. S. 1975. Judgment and Decision Processes in the Formation and Change of Social Attitudes. In: KAPLAN, M. F. & SCHWARTZ, S. (eds.) *Human Judgment and Decision Processes*. New York, San Francisco, London: Academic Press, Inc.

VAN DE VEN, A. H. & DELBECQ, A. L. 1974. The effectiveness of Nominal, Delphi, and Interacting Group Decision Making Processes. *Academy of Management Journal (pre-1986)*, 17, 605-621.

VINSON, D. E., SCOTT, J. E. & LAMONT, L. M. 1977. The Role of Personal Values in Marketing and Consumer Behaviour. *Journal of Marketing*, 41, 44-50.

WEBER, M. & CAMERER, C. F. 1998. The disposition effect in securities trading: an experimental analysis. *Journal of Economic Behaviour and Organization*, 33, 167-184.

WOOD, G. & ONG, R. 2008. Redesigning AHURI's Australian Housing Market Microsimulation Model. *Australian Housing and Urban Research Institute*. RMIT-NATSEM Research Centre and Western Australia Research Centre.

WOOD, G. & ONG, R. 2010. Factors shaping the decision to become a landlord and retain rental investments. *AHURI Final Report No. 142* Melbourne: Australian Housing and Urban Research Institute, RMIT Research Centre and Western Australia Research Centre

World Economic Forum 2013. *The Global Competitiveness Report 2013*. Available from: http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2013-14.pdf [Accessed 21 June 2013].

WORZALA, E. & NEWELL, G. 1997. International Real Estate: A review of Strategic Investment Issues. *Journal of Real Estate Portfolio Management*, 3, 87-96.

YANG, F. 2005. Consumption Along the Life Cycle: How Different is Housing? : Federal Reserve Bank of Minneapolis Research Department Working Paper 635.

YINGER, J. 1981. A search model of Real Estate Broker Behaviour. *The American Economic Review*, 71, 591-605.

BIBLIOGRAPHY

This list has been compiled using the EndNote version of Harvard referencing system.

ADAMS, J., KHAN, H. T. A., RAESIDE, R. & D., W. 2007. Qualitative data analysis. *Research methods for graduate business and social science students*. Los Angeles: Response (Sage).

ALWIN, D. F. & KROSNICK, J. A. 1985. The Measurement of Values in Surveys: A Comparison of Ratings and Rankings. *Public Opinion Quarterly*, 49, 535-552.

ANDO, A. & MODIGLIANI, F. 1963. The "Life Cycle" Hypothesis of Saving: Aggregate Implications and Tests. *The American Economic Review*, 53, 55-84.

ARKES, H. R. & BLUMER, C. 1985. The Psychology of Sunk Cost. *Organizational Behaviour and Human Decision Processes*, 35, 124-140.

ARROW, K. J. 1982. Risk Perception in Psychology and Economics. *Economic Inquiry*, 20, 1-9.

BADDELEY, M. C. 2003. Residential investment: bubbles and crashes in the UK housing market, 1980-99. *Investment Theories and Analysis*. Palgrave Macmillan.

BAILEY, J. J., NOFSINGER, J. R. & O'NEILL, M. 2003. A Review of Major Influences on Employee Retirement Investment Decisions. *Journal of Financial Services Research*, 23, 149-165.

BARON, R. M. & KENNY, D. A. 1986. The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.

BASHIR, M., AFZAL, M. T. & AZEEM, M. 2008. Reliability and Validity of Qualitative and Operational Research Paradigm. *Pakistan Journal of Statistics and Operation Research*, 4, 35-45.

BELGRAVE, L. L., ZABLOTSKY, D. & GUADAGNO, M. A. 2002. How we talk to each other? Writing Qualitative Research for Quantitative Readers. *Qualitative Health Research*, 12, 1427-1439.

BERNOULLI, D. 1954. Exposition of a New Theory on the Measurement of Risk. *Econometrica*, 22, 23-36.

BERRY, M. & HALL, J. 2005. Institutional Investment in Rental Housing in Australia: A Policy Framework and Two Models. *Urban Studies*, 42, 92-111.

BOWEN, G. A. 2005. Preparing a Qualitative Research-Based Dissertation: Lessons Learned. *The Qualitative Report*, 10, 208-222.

BOWEN, G. A. 2010. From Qualitative Dissertation to Quality Articles: Seven Lesson Learned. *The Qualitative Report*, 15, 864-879.

BRAITHWAITE, F. D. & KEMP, S. 2007. Safe as Houses: Investor Confidence in New Zealand. *New Zealand Economic Papers*, 41, 225-236.

BROWN, M. G. & TEERNSTRA, T. 2008. Examining investor perceptions of obsolescence and value through a behavioural economics lens. *Journal of European Real Estate Research*, 1, 267-290.

CHENG, C. K. 2008. The effect of shared decision-making on the improvement in teachers' job development. *New Horizons in Education*, 56, 31-46.

CHURCH, A. T. 2000. Culture and Personality: Toward an Integrated Cultural Trait Psychology. *Journal of Personality*, 68, 651-703.

CHURCH, A. T. & LONNER, W. J. 1998. The Cross-Cultural Perspective in the Study of Personality: Rationale and Current Research. *Journal of Cross-Cultural Psychology*, 29, 32-62.

CLAYTON, J., GORDON, J., FABOZZI, F., GILIBERTO, S. M., LIANG, Y. & HUDSON-WILSON, S. 2007. Real Estate Comes of Age. *The Journal of Portfolio Management*, 15-26.

DE BONDT, W. F. M. 1998. A portrait of the individual investor. *European Economic Review*, 42, 831-844.

EICHHOLTZ, P. M. A. 1996. Does International Diversification Work Better for Real Estate than for Stocks and Bonds? *Financial Analysts Journal*, 56-62.

FONTANA, A. & FREY, J. H. 1994. Interviewing: The Art of Science. In: DENZIN, N. K. & LINCOLN, Y. S. (eds.) *Handbook of Qualitative Research*. London: Sage.

FONTANA, A. & FREY, J. H. 2000. The Interview: From Structure Questions to Negotiated Text. In: DENZIN, N. K. & LINCOLN, Y. S. (eds.) *Handbook of Qualitative Research*. 2 ed. Thousand Oaks, London, New Delhi: Sage.

FONTANA, A. & FREY, J. H. 2008. The Interview: From Neutral Stance to Political Involvement. In: DENZIN, N. K. & LINCOLN, Y. S. (eds.) *Collecting and Interpreting Qualitative Methods*. 3rd ed. Los Angeles, London, New Delhi, Singapore: Sage.

GÄCHTER, S., HERRMANN, B. & THÖNI, C. 2004. Trust, Voluntary Cooperation, and Scio-economic Background: Survey and Experimental Evidence. *Journal of Economic Behaviour and Organization*, 55, 505-531.

GERSON, K. & HOROWITZ, R. 2002. Observation and Interviewing: Options and choices in qualitative research. In: MAY, T. (ed.) *Qualitative research in action*. London: Sage.

GOLAFSHANI, N. 2004. Understanding Reliability and Validity in Qualitative Research. *The Qualitative Report*, 8, 597-607.

GRIMM, S. D., CHURCH, A. T., KATIGBAK, M. S. & REYES, J. A. S. 1999. Self-Described Traits, Values, and Moods Associated with Individualism and Collectivism: Testing I-C Theory in an Individualistic (US) and Collectivistic (Philippine) Culture. *Journal of Cross-Cultural Psychology*, 30, 466-500.

GUBA, E. G. & LINCOLN, Y. S. 1994. Competing Paradigm in Qualitative Research. In: DENZIN, N. K. & LINCOLN, Y. S. (eds.) *Handbook of Qualitative Research*. London: Sage.

HAISLEY, E., MOSTAFA, R. & LOEWENSTEIN, G. 2008. Subjective Relative Income and Lottery Ticket Purchases *Journal of Behavioural Decision Making*, 21, 283-295.

HARDIE, B. G. S., JOHNSON, E. J. & FADER, P. S. 1993. Modelling Loss Aversion and Reference Dependence Effects on Brand Choice. *Marketing Science*, 12, 378-394.

HARDIN, C. D. & ROTHMAN, A. J. 1997. Rendering Accessible Information Relevant: The Applicability of Everyday Life. In: ROBERT S. WYER, J. (ed.) *The Automaticity of Everyday Life*. Mahwah, N.J. : Lawrence Erlbaum Associates.

HENDERSHOTT, P. H., ONG, R., WOOD, G. A. & FLATAU, P. 2009. Marital History and home ownership: Evidence from Australia. *Journal of Housing Economics*, 18, 13-24.

HERTWIG, R. & ORTMANN, A. 2001. Experimental practices in economics: A methodological challenge for psychologists? *Behavioural and Brain Sciences*, 24, 383-451.

HESSE-BIBER, S. N. & LEAVY, P. 2006. *The Practice of Qualitative Research*, Thousand Oaks, London, New Delhi, SAGE.

HOFSTEDE, G., NEUIJEN, B., OHAYV, D. D. & SANDERS, G. 1990. Measuring Organizational Cultures: A Qualitative and Quantitative Study Across Twenty Cases. *Administrative Science Quarterly*, 35, 286-316.

HOLLAND, S., OTT, S. H. & RIDDIOUGH, T. J. 2000. The Role of Uncertainty in Investment: An Examination of Competing Investment Models using Commercial Real Estate Data. *Real Estate Economics*, 28, 33-64.

JAHODA, G. & KREWER, B. 1997. History of Cross-Cultural and Cultural Psychology. In: BERRY, J. W., POORTINGA, Y. H. & PANDEY, J. (eds.) *Handbook of Cross Cultural Psychology: Theory and Method*. Allyn and Bacon.

JICK, T. D. 1979. Mixing Qualitative and Quantitative Methods: Triangulation in Action. *Administrative Science Quarterly*, 24, 602-611.

JOHN, O. P. & SRIVASTAVA, S. 1999. The Big Five Trait Taxonomy: History, Measurement, and Theoretical Perspectives. In: PERVIN, L. & JOHN, O. P. (eds.) *Handbook of Personality: Theory and Research*. Second ed. Guildford, New York.

KAGITÇIBASI, C. 1997. Individualism and Collectivism. In: BERRY, J. W., SEGALL, M. H. & KAGITÇIBASI, C. (eds.) *Handbook of Cross-cultural Psychology: Social Behaviour and Applications*. Allyn and Bacon.

KALLBERG, J. G., LIU, C. L. & TRZCINKA, C. 2000. The Value Added from Investment Managers: An Examination of Funds of REITs. *The Journal of Financial and Quantitative Analysis*, 35, 387-408.

KEERIS, W. G. 2008. A different look on risks by property investments. *Journal of European Real Estate Research*, 1, 151-161.

KUM, H. & MASTERSON, T. 2008. Statistical Matching Using Propensity Scores: Theory and Application to the Levy Institute Measure of Economic Well-Being. *The Levy Economics Institute Working Paper No. 535*. New York: The Levy Economics Institute of Bard College.

LACHMAN, M. L. 2006. Global Demographics and their Real Estate Investment Implications *World Cities Forum*. Urban Land Institute.

LENARTOWICS, T. & ROTH, K. 1999. A Framework for Culture Assessment. *Journal of International Business Studies*, 30, 781-798.

LINCOLN, Y. S. & GUBA, E. G. 2000. Paradigmatic Controversies, Contradictions, and Emerging Confluences. In: DENZIN, N. K. & LINCOLN, Y. S. (eds.) *Handbook of Qualitative Research 2ed*. Thousand Oaks, London, New Delhi: Sage.

LINSTONE, H. A. & TUROFF, M. 2002. The Delphi Method: Techniques and Applications. Available from: <http://is.njit.edu/pubs/delphibook/delphibook.pdf> [Accessed 26 Nov 2010].

LOEWENSTEIN, G. 1999. Experimental Economics from the Vantage Point of Behavioural Economics. *The Economic Journal*, 109, F25-F34.

LOEWENSTEIN, G. 2000. Emotions in Economic Theory and Economic Behaviour. *The American Economic Review*, 90, 426-432.

LONNER, W. J. & ADAMOPOULOS, J. 1997. Culture as Antecedent to Behaviour. In: BERRY, J. W., POORTINGA, Y. H. & PANDEY, J. (eds.) *Handbook of Cross-Cultural Psychology: Theory and Method*. Allyn and Bacon.

MAHER, C. & BURKE, T. 1991. Housing. *Informed Decision Making: the use of secondary data sources in policy studies* Melbourne: Longman Cheshire.

- MARSELLA, A. J., DUBANOSKI, J., HAMADA, W. C. & MOSE, H. 2000. The Measurement of Personality across Cultures: Historical, Conceptual and Methodological Issues and Considerations. *American Behavioural Scientist*, 44, 41-62.
- MARSHALL, M. N. 1996. Sampling for qualitative research. *Family Practice*, 13, 522-525.
- MASSA, M. & SIMONOV, A. 2005. Behavioural Biases and Investment. *Review of Finance*, 9, 483-507.
- MUNSON, J. M. & MCINTYRE, S. H. 1979. Developing Practical Procedures for the Measurement of Personal Values in Cross-Cultural Marketing. *Journal of Marketing Research*, 16, 48-52.
- NEUMAN, W. 2006. The Literature Review and Ethical Concerns. *Social research methods: Qualitative and quantitative approaches*. 6th ed.: Boston: Allyn & Bacon.
- ORTALO-MAGNÉ, F. & RADY, S. 1998. Housing Market Fluctuations in a Life-Cycle Economy with Credit Constraints. *Research Paper No. 1501*. Stanford, CA: Graduate School of Business, Stanford University.
- RICHARDSON, L. 2000. Writing: A Method of Inquiry. In: DENZIN, N. K. & LINCOLN, Y. S. (eds.) *Handbook of Qualitative Research*. 2 ed. Thousand Oaks, London, New Delhi: Sage.
- RICHARDSON, L. & PIERRE, E. A. S. 2008. Writing: A Method of Inquiry. In: DENZIN, N. K. & LINCOLN, Y. S. (eds.) *Collecting and Interpreting Qualitative Materials*. 3rd ed. Los Angeles, London, New Delhi, Singapore: Sage.
- ROSNOW, R. L. & ROSENTHAL, R. 2002. *Beginning Behavioural Research A Conceptual Primer*, International Edition Upper Saddle River, N.J. : Pearson Prentice Hall.

RUBINSTEIN, A. Jan., 1982. Perfect Equilibrium in a Bargaining Model. *Econometrica*, 50, 97-110.

RYAN, G. W. & BERNARD, H. R. 2000. Data Management and Analysis Methods. *In: DENZIN, N. K. & LINCOLN, Y. S. (eds.) Handbook of Qualitative Research*. 2 ed. Thousand Oaks, London, New Delhi: Sage.

SHEILER, M. J., WEBB, J. R. & MYER, F. C. N. 1999. Diversification Issues in Real Estate Investment. *Journal of Real Estate Literature*, 7, 163-179.

SHRIVASTAVA, P. & GRANT, J. H. 1985. Empirically Derived Models of Strategic Decision-making processes. *Strategic Management Journal*, 6, 97-113.

SILVERMAN, D. 2000. *Doing Qualitative Research: A Practical Handbook*, London, SAGE.

SILVERMAN, D. 2000. Analysing Talk and Text. *In: DENZIN, N. K. & LINCOLN, Y. S. (eds.) Handbook of Qualitative Research*. 2 ed. Thousand Oaks, London, New Delhi: Sage.

SMITH, J. A. 1995. Semi-Structured Interviewing and Qualitative Analysis. *In: SMITH, J. A., HARRE, R. & LANGENHOVE, L. V. (eds.) Rethinking Methods in Psychology*. London: Sage.

SPINI, D. 2003. Measurement Equivalence of 10 Value Types from the Schwartz Value Survey across 21 Countries. *Journal of Cross-Cultural Psychology*, 34, 3-23.

STEINERT, M. & CROWE, S. 2001. Global Real Estate Investment: Characteristics, Optimal Portfolio Allocation and Future Trends. *Pacific Rim Property Research Journal*, 7, 223-239.

THALER, R. H., TVERSKY, A., KAHNEMAN, D. & SCHWARTZ, A. 1997. The Effect of Myopia and Loss Aversion on Risk Taking: An Experimental Test. *The Quarterly Journal of Economics*, 112, 647-661.

VALLERAND, R. J., DESHAIES, P., CUERRIER, J.-P., PELLETIER, L. G. & MONGEAU, C. 1992. Ajzen and Fishbein's Theory of Reasoned Action as Applied to Moral Behaviour: A Confirmatory Analysis. *Journal of Personality and Social Psychology*, 62, 98-109.

VAUCLAIR, C.-M., HANKE, K., FISCHER, R. & FONTAINE, J. 2011. The Structure of Human Values at the Cultural Level: A Meta-Analytical Replication of Schwartz's Value Orientations Using the Rokeach Value Survey. *Journal of Cross-Cultural Psychology*, 42, 186-205.

VELLA, P. J. 2010. *The Relationships Between Personality Orientations and Consumer Values: A Study in Real Estate Industry*. Doctor of Philosophy, La Trobe University.

VIJVER, F. V. D. & LEUNG, K. 1997. Methods and Data Analysis of Comparative Research. In: BERRY, J. W., POORTINGA, Y. H. & PANDEY, J. (eds.) *Handbook of Cross-Cultural Psychology: Theory and Method*. Allyn and Bacon.

VISSING-JORGENSEN, A. 2004. Perspectives on Behavioural Finance: Does "Irrationality" Disappear with Wealth? Evidence from Expectations and Actions. In: GERTLER, M. & ROGOFF, K. (eds.) *NBER Macroeconomics Annual 2003*. National Bureau of Economic Research.

VOHS, K. D., BAUMEISTER, R. F., SCHMEICHEL, B. J., TWENGE, J. M., NELSON, N. M. & TICE, D. M. 2008. Making Choices Impairs Subsequent Self-Control: A Limited Resource Account of Decision Making, Self-Regulation, and Active Initiative. *Journal of Personality and Social Psychology*, 94, 883-898.

WEITZMAN, E. A. 2000. Software and Qualitative Research. In: DENZIN, N. K. & LINCOLN, Y. S. (eds.) *Handbook of Qualitative Research*. 2 ed. Thousand Oaks, London, New Delhi: Sage.

WILEY, R. J. 1976. Real Estate Investment Analysis: An Empirical Study. *the Appraisal Journal*, 586-592.

WILLIAMS, C. A., JR. 1986. Attitudes toward Speculative Risks as an Indicator of Attitudes Toward Pure Risks. *Journal of Risk and Insurance*, 33, 577-586.

WILLIG, C. 2008. *Introducing Qualitative Research in Psychology*, McGraw Hill Open University Press.