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Role of Psychological Bias and Social Interactions in Investment Decisions: Comparison between Direct and Indirect Real Estate Investors

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ABSTRACT

The main objectives of this study are to examine the decisive factors of real estate investors associated with two principles of behavioural economics, namely psychological bias (internal factor) and social interaction (external factor), and to study the unique characteristics of the real estate sector that are important bases for research design. A quantitative method using online and offline questionnaires was employed through judgemental sampling, of which 254 valid questionnaires were returned. The results indicate four interesting conclusions as follows: 1) There is almost no difference between the influence of the investors" psychological bias and social interactions on direct and indirect real estate investment as was initially expected. 2) Even though, direct real estate investment has a higher barrier to entry compared with indirect real estate investment, investing in the former is more likely to earn a better return. As a result, only some well-off investors with particular profiles invest in it. 3) Real estate investors are more rational and less emotional. 4) Investors tend to trust themselves more than influencers or are more thorough in choosing influencers whom they can trust.

JEL Classification: M21

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INTRODUCTION

Over the last decades, business environment factors in Thailand, such as minimum wages, cost of living, weather, infrastructure, facilities, transportation, education, attitudes, and behaviours, have been considerably developed, attracting significant foreign direct investment (FDI), especially in the heavy industries, tourism (Chen et al., 2018), and real estate sectors. Figure 1 illustrates that the FDI inflows in Thailand"s real estate activities amounted to USD 2.6 billion in 2019. A majority of these inflows are from Hong Kong, Singapore, the United States, and China, accounting for 31%, 14%, 14%, and 7% respectively, of the total FDI in real estate activities. As a result, many investors and expatriates come to work and stay in various parts in Thailand, such as Bangkok, Pattaya, Phuket, and Sriracha, leading to an increase in foreign demand for accommodation. This opportunity has incentivised many Thai investors to invest in residential, rental real estate, especially targeting expatriates who have high company accommodation budgets at their disposal.

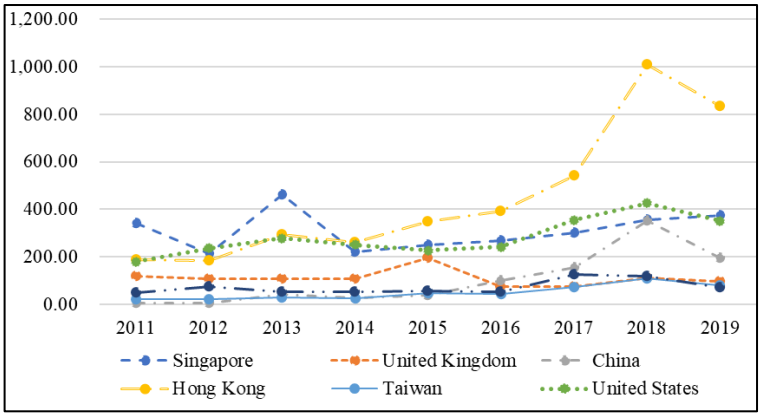

Figure 1 FDI Inflows (millions of USD) in Real Estate Activities (2011–2019)

Additionally, due to local demand, urbanisation is a major factor influencing the increased demand for Bangkok"s accommodations. The rapid development of Bangkok city has attracted people from around the country to migrate there for better job opportunities, higher salary or benefits, or a higher quality of life. Therefore, domestic demand has also attracted real estate investors. With these investment opportunities in rental real estate, investors could earn a 3–7% yield (Rattanaprichavej and Teeramungcalanon, 2020), which is an attractive return, particularly when compared with the local banks" 12 month–interest rate of not more than 1% and the global rental yield rates of 5–7% in Southeast Asian countries. It is even lower than 3% in developed countries such as England, Japan, Singapore, and the United States (Global Property Guide, 2020). Figure 2 illustrates the house price index (percentage growth) of land, condominiums, town houses, and single-detached houses. Since 2011, the prices for each property type have been rising every year, with an average growth rate of 5.5% for land, 5.2% for condominiums, 5.1% for town houses, and 3.9% for single-detached houses. Although Thailand"s property demand has appeared to have weakened since 2017, with slow residential construction and low transaction levels, property prices have continued to rise. This is due to the attractiveness of luxury condominiums in Thailand, which provide high rental income yields when compared with the other global rental income yields.

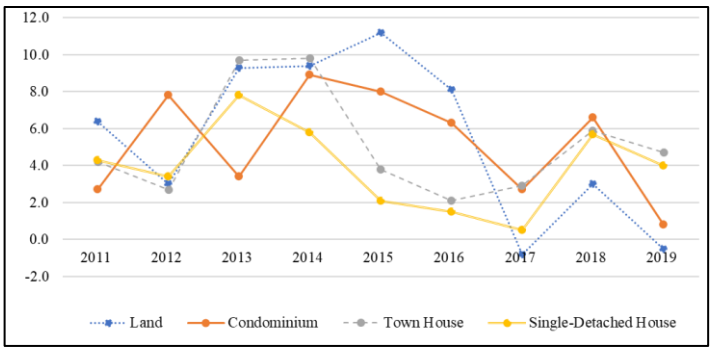

Figure 2 House Price Index – Percentage Growth (2011–2019)

Investing in rental real estate is reportedly different from other common investments as it has several unique characteristics such as immobility, illiquidity, huge capital, property tax, obsolescence, and non-substitutable locations (Appraisal Institute, 2013; Whipple, 2006). Therefore, decision-making for real estate investment must be carefully considered and based on unique analytics. In the past, investing in rental real estate (such as condominiums, apartments, rental land, housing estates, and commercial buildings) was limited to a group of real estate experts who commanded land, tenants, capital, and knowledge. In contrast, today"s fast-growing and accessible technology has transformed the investment scenario in various ways for Thai individual investors, especially regarding real estate investment. The advancement of online two-way communication platforms (such as WhatsApp, LINE, WeChat, Instagram, Twitter, and Facebook) has enabled new investors to have a better chance for learning and better understanding the unique nature of investment in rental real estate.

Consequently, combined with significant related information, the concept of ensuring financial freedom through rental real estate has been widely discussed among groups of fledgling investors and seems to be the ultimate financial goal among younger generations who desire an early retirement. Social interaction and herd behaviour concerning investment occur through various online and offline channels, including real estate communities, seminars, coaching, and online news or articles. The presence of online and offline influencers has shaped the investment decisions of Thai investors in new ways. In comparison, the history of Thailand"s economic crisis during 1997–2000 (Vanichvatana and Puengchuer, 2009) was the result of extremely irrational real estate investments that were shaped by both psychological bias and social interactions (Shiller, 2007). Hence, this study monitors investors" investment decisions with the aim of preventing such crises in the future.

This study seeks to investigate two issues regarding real estate investors: 1) their psychological bias, based on personality, investment reasons, and other related factors; and 2) their social interactions through online and offline investment influencers (such as people in their environment, idols, media, and social platforms). The results of this study provide two main insights into real estate investment decisions, yielding contributions for both academics and practices. In academics, the results will fulfil the notions of behavioural finance through the lens of real estate investment, which will be good evidence for showing and explaining the details of the assumptions behind investment decisions with regard to the uniqueness of characteristics between direct and indirect investment in real estate as well as the understanding the factors affecting them. In terms of practices, the result will be a good guideline for both individual investors and policy makers to learn and understand the assumptions behind investment decisions so that they can make investment plans logically in order to minimise risks from an illogical investment, which will make the investment market more sustained.

LITERATURE REVIEW

Although research on real estate investment largely involves scientific evidence, proofs, and calculations, this study engages with behavioural and social perspectives. This is especially important because real estate investments have their own characteristics; therefore, these investment decisions tend to be more complicated and are likely to reflect investors" psychological biases and social interactions.

Investment Decision

The concept of investment decisions has been studied for more than a century using both structural and non-structural approaches. Many theorists and thinkers have studied diverse concepts involving investment decisions, which include risk, uncertainty, resource allocation, information, choices, opportunity cost, chances, gains or losses, and probabilities (Buchanan and Connell, 2006). Each of these keywords reflects various perspectives and focal concerns in decision-making. Many economic assumptions and theories are based on rational choice theory, which assumes that when individuals are given a choice between alternatives, they tend to use information to make rational decisions by comparing the costs and benefits of each option in order to determine whether an action is worth pursuing to achieve the best possible outcomes. When making economic decisions, individuals are expected to be rational, making rational choices to actively maximise their own benefits and minimise their losses (Scott, 2000).

However, as studied by several economic behaviouralists, the concept behind an investment decision is not only straightforward or rational, (Jariwala, 2015) based on assumptions or calculations, but also influenced by the intuition, instinct (Buchanan and Connell, 2006), and experience (Kida et al., 2010; Sah et al., 2010) of

investors. These studies demonstrate that decision-making is affected by the human mind and behaviour. Specifically, this is based on the prospect theory by Kahneman and Tversky (1973), who introduced the discussion on behavioural investment through risk aversion. Decision-making refers to the cognitive process of human beings underlying the selection of an optimal choice among numerous alternatives under specific situations (Jariwala, 2015), and it marks the end of the thinking process right before starting the action. Decision-making is part of any situation in every individual"s life, entailing small to large decisions. This includes common daily life decisions such as shopping, eating, and travelling, to the more crucial decisions related to work, relationships, and investment (Jonassen, 2012). In other words, any result or status quo is a consequence of yesterday"s decision-making.

With a rapidly changing environment and an increasing complexity of investments, decision-making is often illustrated across various dimensions such as fund management, trading, returns, risk, economic forecast, portfolio management as well as real estate, with the same objectives of maximising profit while minimising risk (MacCowan and Orr, 2008). Among other forms of investment, real estate investment appears to be of constant interest as it is widely accepted as an investment asset class (Chun et al., 2004; Sieracki et al., 2008; Lee and Stevenson, 2006; Lekander, 2015; MacKinnon and Zaman, 2009) and an instrument for generating long-term returns (the so-called passive income). Additionally, it agrees with multiple case studies by Bangura and Lee (2020) and Shiller (2007), who presented different perspectives due to different goals, motives, and mindsets between landlords and homeowner-occupiers. Landlords consider housing a short-term investment while owner-occupiers considered it for consumption as well as long-term investment. As a result, landlords" investments are more likely to lead to economic crisis than those of owner-occupiers.

The two main reasons why real estate investment is always included in portfolios are to manage the risk-return diversification due to relatively low correlation between its returns and those of other financial assets, and to gain stability through long-term contractual rent (Adair et al., 1994; Sieracki et al., 2008; Sweeney, 1987), which is distinctive from general investment. Therefore, in diversifying the structure of real estate investment, the sector" s regionals or internationals constitute a unique decisive factor (Byrne and Lee, 2011).

The myriad alternatives for investing in real estate include investing in indirect real estate such as real estate investment trusts (REITs), real estate funds, and real estate stocks; and in direct real estate such as developing apartments, condominiums, or hotels. Both investment approaches have their own advantages and disadvantages involving liquidity, management intensity, and freedom of management (Sieracki et al., 2008). However, investing in different kinds of rental real estate is a concern due to unique business risks arising from its special characteristics such as immobility, non-substitutability, long economic life, and low liquidity, among other factors (Appraisal Institute, 2013; Sieracki et al., 2008; Whipple, 2006). While many studies on real estate investment decision-making have been conducted at an institutional level, this study focuses on individual or personal perspectives with the assumption that rental real estate investors" drives are likely different from those involved in other investments, basing on their distinctive characteristics, rationales, reasons, and goals. In order to understand the real estate investment behaviour of these investors, this study focuses on psychological bias and social interaction.

Psychological Bias

Institutional and individual investors are correlated, as institutional investors tend to influence individual investors in decision-making. Individual investors often make decisions following institutional investors, especially during crises and uncertain situations (Lin et al., 2007). Many researches on behavioural finance have been developed, particularly on psychological biases between institutional and individual investors in making investment decisions , as they are explicitly different in terms of size, goals, structures, risk tolerance levels, or other complications. While institutional investors deal with investment funds, insurance companies, pension funds, and so on, individual investors comprise household and retail investors. The interesting factors that influence institutional and individual investors behave differently are information, sentiment, and time; it is believed that institutional investors have a higher ability to access more information than individual investors, who gain information only from public, often contaminated with sentiments and without reliable analytics (Carpentier and Suret, 2020; Han and Chung, 2013; Jaiyeoba et al., 2018; Lin et. al, 2007). The period of investment is another factor causing the difference as institutional investors have a higher threshold for time, as well as budget, in order to play around their assets during tough situations than individual investors (Chung et al., 2014). They also have a higher ability to dynamically respond to the uncertain market (Li et al., 2014; Lin

et al., 2007).Unlike individual investors who invest directly in the market, institutional investors, using agency theory, work on behalf of all investors with other investors" money; therefore, corporate governance and long-term trust are important (Suto and Toshino, 2005).

Some scholars claim that institutional investors are inclined to have a higher rational level than individual investors (Aktar and Das, 2019; Carpentier and Suret, 2020; Li et al., 2017). On the other hand, some assert that no matter the differences between institutional and individual investors, they are both likely to be subject to psychological biases but from different perspectives (Ahmad et al., 2017; Ahmad et al., 2017; Aren et al., 2016; George et al., 2005; Jaiyeoba et al., 2018; Sayim and Rahman, 2015). Institutional investors" psychological biases, for example, cognitive heuristics, affective biases, information uses, investment analysis uses, investment strategies, and portfolio statement strategies, affect irrational investment behaviours and impact investment performances (Ahmad et al., 2017), since they are usually overconfident about relying on their models to make decision (Nofsinger, 2017). In other words, studying institutional investors is about likely studying the decision-making models of individual investors having different criteria and contexts, such as the example of behavioural finance study of fund managers in Malaysian investment management industry (Ahmad et al., 2017).

The concept of psychological bias has been studied in individual investors from many perspectives, but is typically grouped as cognitive, emotional, and social bias (Ahmad et al., 2017; Baker and Puttonen, 2017; Mittal, 2019; Pandey and Jessica, 2018; Rasheed et al., 2018). Investors" psychological bias is the prejudice caused by self-confidence (as well as an excess/lack of confidence), perspectives, beliefs, conservatism, and other emotional biases. It is stipulated that limitations due to budget, time, knowledge, and attention pressure investors to simplify their information processing (Baker et al., 2020). Thus, these reasons affect the investment decisions of individual investors and cause irrational investments (Ahmad et al., 2017; Baker and Puttonen, 2017; Baker and Nofsinger, 2002; Dittrich et al., 2005; Kahneman and Tversky, 1979; Kida et al., 2010; Sawar and Afaf, 2016; Slovic, 2010).

Regarding the concept of investment behaviour, it is believed that investors tend to make decisions based not only on rationality but also on emotions (Bakar and Yi, 2015; Buchanan and Connell, 2006; Jaiyeoba et al., 2018; Kida et al., 2010; Sah et al., 2010). As each investor has different traits and emotional biases concerning investment, their investment decisions are predominantly based on their experience, expertise, or interests, as they believe they can make better profits and returns (Jagongo and Mutswenje, 2014; Jariwala, 2015; Mahalakshmi and Anuradha, 2018; Riffin and Ahmad, 2012; Sah et al., 2010; Tronnberg and Hemlin, 2019). For example, those who have had success in past investments tend to have greater confidence and risk thresholds. For profiting from investments, they tend to make decisions mainly based on their own confidence levels (Bakar and Yi, 2015; Mahalakshmi and Anuradha, 2018; Riffin and Ahmad, 2012). In contrast, those with frequent unsuccessful investment experiences tend not to believe in themselves. Consequently, they tend to value others" opinions, especially from those who have experienced success (Bakar and Yi, 2015; Jaiyeoba et al., 2018; Mahalakshmi and Anuradha, 2018; Riffin and Ahmad, 2012). Investors who possess more experience and informative resources, such as stock market data, company reports, or financial research, are inclined to have more confidence and a higher risk tolerance than those who do not (Jariwala, 2015; Mittal, 2019; Rasheed et al., 2018; Tronnberg and Hemlin, 2019).

Several studies have shown that financial knowledge, such as information search, investment strategy, changes in retirement and pension funds, choosing products or providers in financial services, risk avoidance etc., is an important driver that enhances the financial literacy of investors and consequently influences their investment decisions (Al-Tamimi and Kalli, 2009; Aydemer and Aren, 2017; Jariwala, 2015; Riffin and Ahmad, 2012; Sivaramakrishnan et al., 2017). Studies on financial knowledge often engage with financial literacy and risky investment behaviour (Aydemir and Aren, 2017, Edmiston and Gillett-Fisher, 2006; Wang, 2009; Wang et al., 2011). Aydemir and Aren (2017), and Wang (2009) pointed out that investors" financial knowledge is important to comprehensively process all related information to ensure proper decision-making, which can be guaranteed with greater knowledge. However, Aydemir and Aren (2017) state that financial literacy alone might not be sufficient for explaining investment behaviour, as subjective financial knowledge such as investment experience and familiarity with the functioning of money or capital markets is also vital (Wang, 2009; Wang et al., 2011). In fact, the relationship between investment or financial knowledge and risky investment behaviour comes from the "high risk–high return" concept, whereby investors aim to gain higher returns with acceptable risks. Therefore, while financial knowledge is viable for investors, investment experience also plays a key role

in enhancing knowledge and confidence (Jagongo and Mutswenje, 2014; Jariwala, 2015; Mahalakshmi and Anuradha, 2018; Riffin and Ahmad, 2012; Wang, 2009). Knowledge is also an independent factor affecting confidence (Bakar and Yi, 2015; Mahalakshmi and Anuradha, 2018; Riffin and Ahmad, 2012; Sivaramakrishnan et al., 2017) and helps investors to avoid investment biases (Mushinada and Veluri, 2019).

As mentioned previously, financial knowledge and experience can affect confidence, and vice versa; they can also make investors overconfident (Mushinada and Veluri, 2019; Zaidi and Tauni, 2012). Overconfidence is a factor that is consistently part of studies on psychological bias and investment decisions. It implies the unrealistic weighing or valuing of investors" attributes (such as skills, knowledge, or information) while underestimating or overestimating investment risks (Aktar and Das, 2019; Kumar and Goyal, 2016), thereby resulting in illogical decision-making (Mushinada and Veluri, 2019). Jain et al. (2019) examined biases and reported that overconfidence appears to be one of the most influential criteria affecting investment decisions. An investor"s confidence level is commonly studied in terms of age, gender, education, income, and occupation. (Kumar and Goyal, 2016; Mittal, 2018; Mushinada and Veluri, 2019). Therefore, these studies imply that confidence levels concerning investment can vary due to personality traits. As a result, selecting investment alternatives such as real estate, indirect real estate, and non-real estate tend to be influenced by the confidence levels of the investors.

From an overview of existing literature, it can be seen that investor"s psychological biases significantly affect investment decisions, yet this has not been sufficiently researched in the real estate investment context. This study investigates factors such as budget, knowledge, experience, and confidence in terms of direct and indirect real estate investment.

Social Interaction

Essentially, social interaction is part of the psychological bias referred to as "social bias", which concerns the external factors that affect investors" decisions (Baker and Puttonen, 2017). Commonly, social bias or social interaction is an investment behaviour wherein investors often discuss within groups when deciding to invest (Hirshleifer, 2001; Tronnberg and Hemlin, 2019; Bakar and Yi, 2015). It is about affecting each other"s decision (Jaiyeoba et al., 2018). Interpersonal discussions to exchange investment information or experiences often comprise interesting information, exciting events, and shared beliefs. Studies have found that new high-income investors tend to have conversations with various people to exchange news or information on companies they have invested in (Shiller and Pound, 1989; Tronnberg and Hemlin, 2019; Jaiyeoba et al., 2018). Interpersonal discussions involve communication between people who are in similar or different businesses, such as customers, colleagues, supervisors, neighbours, and others. These discussions include consulting financial advisors as well as family members, including parents, partners, or siblings (Al-Tamimi and Kalli, 2009; Arora and Marwaha, 2014; Jaiyeoba et al., 2018; Jariwala, 2015; Al-Tamimi, 2006; Khan and Tan, 2019). The information obtained from discussions with these close relatives is crucial for preventing risks and overestimating returns (Mahalakshmi and Anuradha, 2018; Al-Tamimi, 2006; Jagongo and Mutswenje, 2014). The concept of social interaction can be compared to that of marketing influencers. Several strands of marketing research have reported that customer decisions are significantly affected by influencers (Chetioui et al., 2020; Langner et al., 2013; Livette, 2007). Similarly, regarding real estate investment, influencers or close relations of these investors are likely to be a key factor in influencing investment decisions.

Communication through the media entails using online channels such as the Internet, Instagram, Facebook, YouTube, and offline channels such as television programmes, seminars, articles, various reports, and company information news on the stock exchange that provide information on investment and finance (Al-Tamimi and Kalli, 2009; Jaiyeoba et al., 2018; Jariwala, 2015; Shiva and Singh, 2019). Most investment-related information is often available on mass communication platforms between investors and a well-known individual in the field. Communication through the media may be a result of the preference in receiving information from the media or people of interest that have the same norms as investors. With their less formal presentation, the media can easily attract the attention of investors with similar norms and beliefs. Most media tend to alter people"s perceptions (Almaida et al., 2020) and behaviours (Borowski et al., 2020; Manning et al., 2008), thereby making investors biased and overestimated (Nofsinger, 2017). Therefore, receiving information through the media requires careful consideration in rationally filtering information.

The interaction between investors and the media is considered a social psychological influence on investors. Investors choose to receive news from the media or people they trust (Singh and Yadav, 2016;

Mahalakshmi and Anuradha, 2018) or from neutral information sources (Al-Tamimi, 2006; Jagongo and Mutswenje, 2014) that will affect their investment decisions.

RESEARCH METHODOLOGY

The research method of this study involved a quantitative approach. A questionnaire, developed from a literature review, was distributed online and offline through judgemental sampling. General questions were posed for collecting participant profiles, investment details, investment reasons, and social media details, and a five-point Likert scale was applied for quantifying psychological bias and social interaction (Table 1).

Table 1 Measurement Items

Items	References
Investment Reasons	
- To earn additional income, To build stability, To spread risks, To obtain a tax shield, Personal enjoyment, Social recognition	Adapted from Adair et al. (1994) and Sieracki et al. (2008)
Psychological Bias	
Budget	Adapted from Kumar and Goyal (2016), Mittal (2018), Mushinada and Veluri (2019) and Riffin and Ahmad (2012)
Confidence	Adapted from Bakar and Yi (2015), Mahalakshmi and Anuradha (2018) and Riffin and Ahmad (2012)
Knowledge	Adapted from Al-Tamimi and Kalli (2009), Aydemer and Aren (2017), Jariwala (2015) and Riffin and Ahmad (2012)
Experience	Adapted from Jagongo and Mutswenje (2014), Jariwala (2015), Riffin and Ahmad (2012), Sah et al. (2010) and Tronnberg and Hemlin (2019)
Preference	Adapted from Buchanan and Connell (2006)
Influencers	
- expert, family, successful person, media, friend, celebrities	Adapted from Hirshleifer (2001), Tronnberg and Hemlin (2019) and Bakar and Yi (2015)
Social Media	
- Facebook, LINE Chat Application, investment website, investment seminar, Facebook, Youtube, print media, TV/ radio, Instagram, investment blog, Twitter.	Adapted from Al-Tamimi and Kalli (2009), Jaiyeoba et al. (2018), Jariwala (2015) and Shiva and Singh (2019)

The locations of sampling included bank headquarters, community malls, and universities in Bangkok city. The scope of this study was mainly focused on individual investors; therefore, the data were collected from those aged above 20 years who invest in direct and indirect real estate. In this study, direct real estate investment includes renting or speculating on apartments, housing estates, commercial buildings, condominiums, and land, while indirect real estate investment involves property funds, real estate debenture, real estate investment trusts (REITs), and real estate stock. A non-comparative scale questionnaire about investors" demographics, psychological bias, and social interactions was employed, and a pre-test with 10 samples was conducted to ensure the questionnaire"s quality. Content validity was tested by consulting with three real estate investment professionals. Data from investors who invested either in direct real estate investment or indirect real estate investment were analysed and compared using descriptive statistics and ANOVA techniques to explain and clearly compare investor"s psychological bias and social interactions concerning investment decisions. Furthermore, Pearson correlation analysis was applied to investigate the relationship between psychological bias and social interaction.

RESEARCH RESULTS

Online and offline questionnaires were distributed to the participants, and 254 valid questionnaires were returned. The study results are composed of four main parts that compare direct and indirect real estate investment: 1) investors" demographics, 2) descriptive information about real estate investment, 3) psychological bias of an investor, and 4) social interaction of an investor.

Participants Profiles

Table 2 illustrates that most direct and indirect real estate investors were male, accounting for 58.2% and 65.5% respectively. In terms of age group, those aged > 30–40 years constituted most of the respondents for both direct

and indirect real estate investment. Interestingly, younger investors in the age group of 20–30 years appeared to be more interested in indirect real estate investment than older investors. Additionally, more than half of the direct and indirect real estate investors were single, and more than 90% of the respondents had completed bachelor"s degrees and higher.

In the case of both direct and indirect real estate investment, the major occupations of respondents were as private employees and business owners. In terms of work designation, high-level owners, and managers were in the majority in direct real estate investment, accounting for 44.9% and 19.4% respectively, while staff constituted the majority in indirect real estate investment, accounting for 34.5%. In terms of income, 21.9% of direct real estate investment respondents had monthly incomes greater than incomes of USD 3,000–10,000, while almost one-third of indirect real estate investment respondents (27.6%) had a monthly income of USD 500–1,000. These data on work position and monthly income might be inferred as resulting from the uniqueness of direct real estate investment; it needs a higher investment budget than indirect real estate investment. Thus, staff and lower-income groups found indirect investment easier.

Table 2 Comparison between Direct and Indirect Investor Demographics

Investor Attributes	Real Estate Investment	
	Direct Investment (n = 196) Number (Percentage)	Indirect Investment (n = 58) Number (Percentage)
Gender		
Female	80 (40.8)	19 (32.8)
Male	114 (58.2)	38 (65.5)
Others	2 (1.0)	1 (1.7)
Age (years)		
20–30	39 (19.9)	19 (32.8)
>30–40	72 (36.7)	22 (37.9)
>40–50	35 (17.9)	10 (17.2)
>50–60	39 (19.9)	4 (6.9)
>60	11 (5.6)	3 (5.2)
Marital Status		
Single	105 (53.6)	42 (72.4)
Married	87 (44.4)	16 (27.6)
Others	4 (2.0)	0
Educational Degree		
Below Bachelor"s Degree	13 (6.6)	3 (5.2)
Bachelor"s Degree	69 (35.2)	19 (32.8)
Above Bachelor"s Degree	114 (58.2)	36 (62.1)
Occupation		
Government Agent	15 (7.7)	10 (17.2)
Private Employee	75 (38.3)	30 (51.7)
Business Owner	74 (37.8)	8 (13.8)
Freelancer	20 (10.2)	6 (10.3)
Others	12 (6.1)	4 (6.9)
Work Position		
Staff	30 (15.3)	20 (34.5)
Chief	23 (11.7)	7 (12.1)
Manager	38 (19.4)	11 (19.0)
High-level/owner	88 (44.9)	16 (27.6)
Others/freelance	17 (8.7)	4 (6.9)
Monthly income (USD)		
No income	14 (7.1)	3 (5.2)
<500	4 (2.0)	0
500–1,000	23 (11.7)	16 (27.6)
>1,000–1,500	24 (12.2)	10 (17.2)
>1,500–2,000	29 (14.8)	9 (15.5)
>2,000–2,500	20 (10.2)	3 (5.2)
>2,500–3,000	25 (12.8)	5 (8.6)
>3,000–10,000	43 (21.9)	9 (15.5)
>10,000–160,000	4 (2.0)	0
>160,000	10 (4.5)	3 (5.2)

Table 3 reveals the investment types in direct and indirect real estate investment. Condominiums (34.6%), housing estates (27.3%), and land (15.1%) were the most popular investment types among direct real estate investment options, while apartments (11.2%) were the least popular investment type; this might be due to higher investment costs. The results further show that real estate stock (41.09%) was the most popular among

indirect real estate investment options, whereas real estate debentures (9.5%) were the least popular type, as it might be less attractive in terms of yields and returns when compared with other indirect real estate investments.

Most of the tenants were Thais, with their common rental period being about 1–3 years, which was similar to that in indirect real estate investment. The rental investment values appeared widespread in various ranges, with the majority valued at above USD 30,000, and more than half of the yields ranged below USD 1,000. Similarly, most indirect real estate investment yields were less than USD 1,000, but more than half of the investment value range was greater than USD 10,000. This illustrates the unique characteristics of investments regarding the entry investment cost between direct and indirect real estate investment. Therefore, the differences in investment choices between direct and indirect real investors are likely due to different factors—, psychological bias and social interaction.

Table 3 Comparison of Investment Details between Direct and Indirect Real Estate Investment

Direct Real Estate Investment	Frequency (Percentage) (n = 196)	Indirect Real Estate Investment	Frequency (Percentage) (n = 58)
Investment Types		**Investment Types**	
Apartment	34 (11.2)	Property Fund	20 (27.3)
Housing Estate	83 (27.3)	Real Estate Debenture	7 (9.5)
Commercial Building	35 (11.5)	REITs	16 (21.9)
Condominium	105 (34.6)	Real Estate Stock	30 (41.09)
Land	46 (15.1)	Total chosen types	73 (100)
Total chosen types	303 (100)		
Tenant Nationalities			
Thai	172 (87.8)		
Japanese	9 (4.6)		
Chinese	3 (1.5)		
European	11 (5.6)		
Others	1 (0.5)		
Rental Period		**Investment Period**	
Daily	7 (3.6)	Daily	1 (1.7)
Monthly	40 (20.4)	Monthly	10 (17.2)
1–3 years	119 (60.7)	1–3 years	33 (56.9)
> 3–5 years	18 (9.2)	> 3–5 years	5 (8.6)
> 5–10 years	5 (2.6)	> 5–10 years	5 (8.6)
> 10 years	7 (3.6)	> 10 years	4 (6.9)
Rental Investment Value (USD)		**Investment Value (USD)**	
<3,000	15 (7.7)	<3,000	22 (37.8)
3,000–10,000	8 (4.1)	3,000–10,000	14 (24.1)
> 10,000–15,000	6 (3.1)	> 10,000–15,000	6 (10.3)
> 15,000–25,000	3 (1.5)	> 15,000–25,000	4 (6.9)
>25,000–30,000	11 (5.6)	>25,000–30,000	4 (6.9)
>30,000–100,000	51 (26.0)	>30,000–100,000	5 (8.6)
>100,000–150,000	36 (18.4)	>100,000–150,000	0
> 150,000–300,000	36 (18.4)	> 150,000–300,000	2 (3.4)
> 300,000	30 (15.3)	> 300,000	1 (1.7)
Net Rental yields (USD/month)		**Net Investment Dividend (USD/month)**	
No rental yields/ loss	1 (0.5)	No dividend/loss	6 (10.9)
<300	41 (20.9)	<300	28 (50.9)
300–1,000	77 (39.3)	300–1,000	15 (27.2)
>1,000–1,500	23 (11.7)	>1,000–1,500	1 (1.8)
>1,500–2,500	9 (4.6)	>1,500–2,500	2 (3.6)
>2,500–3,300	11 (5.6)	>2,500–3,300	1 (1.8)
>3,300–10,000	20 (10.2)	>3,300–10,000	0 (0.0)
>10,000–160,000	5 (2.6)	>10,000–160,000	2 (3.6)
>160,000	9 (4.6)	>160,000	3 (4.8)

Investment Reasons

Table 4 reveals that the major reasons for both direct and indirect real estate investments were to earn additional income, build stability, spread risks, and reduce taxes, and personal enjoyment and social recognition were the least reported reasons. Notably, more than half of indirect real estate investors" reason was to earn additional income (51.4%). Similarly, a majority of the direct real estate investors" reasons were to earn additional income (32.8%) and build stability (26.3%). This result is in line with previous studies, such as that of Lekander (2015), who revealed that real estate investment is an instrument for generating long-term returns or passive income. This implies that in building long-term stability, direct investment is more attractive than indirect investment. As investors are rational individuals, they make economic decisions by comparing costs and benefits before taking action. Therefore, no matter the type of direct or indirect real estate investment, it could be inferred that rational investment reasons influenced investors" minds. It appears that the rational reasons of investment such

as to earn additional income, build stability, spread risks, and obtain a tax shield, were more important than emotional reasons like personal enjoyment and social recognition.

Table 4 Comparison between Direct and Indirect Real Estate Investment Reasons

Investment Reasons	Real Estate Investment	
	Direct Investment (n = 196) Number (Percentage)	Indirect Investment (n = 58) Number (Percentage)
To earn additional income	167 (32.8)	52 (51.4)
To build stability	134 (26.3)	32 (19.8)
To spread risks	99 (19.44)	38 (23.6)
To obtain a tax shield	54 (10.6)	23 (14.2)
Personal enjoyment	28 (5.5)	14 (8.6)
Social recognition	12 (2.35)	2 (1.2)
Others	15 (2.9)	0 (0.0)
Total	509 (100)	161 (100)

Note: As respondents invest due to more than one reason, the total frequency is counted as the total investment reasons by 196 respondents and 58 respondents.

Psychological Bias

Table 5 presents a comparison between direct and indirect real estate investors" psychological bias. The dimensions of psychological bias were derived and scoped from literature review including budget, confidence, knowledge, and experience. Even though it was expected that the psychological biases underlying direct and indirect real estate investments were likely different due to their distinctive characteristics, the ANOVA results confirmed that no factors between direct and indirect real estate investments were significantly related at 0.05 levels. Specifically, scores for budget, confidence, and knowledge of investors, which did not vary significantly for both direct and indirect real estate investments, were the highest-rated factors that impact investors" psychological bias. The overall scores of the factors were rather high. Similar to the results regarding investment reasons, it was found that real estate investors were rather rational because personal preference (an emotional factor) was the least important factor in direct real estate investment and almost the least important factor in indirect real estate investment.

Table 5 Comparison between Direct and Indirect Real Estate Investors" Psychological Bias

Psychological bias	Real Estate Investment (5-point rating scales)				ANOVA	
	Direct Investment (n = 196)		Indirect Investment (n = 58)			
	Mean	Std.	Mean	Std.	f	p
Budget	4.23	0.85	4.31	0.86	0.33	0.56
Confidence	4.22	0.73	4.15	0.81	0.43	0.50
Knowledge	3.98	0.79	4.12	0.81	1.13	0.60
Experience	3.93	0.82	3.82	0.99	0.65	0.28
Preference	3.85	0.89	3.91	0.77	0.27	0.41

Social Interaction

Table 6 reveals that the three highest-rated influencers of direct real estate investors were scattered among experts, family members, and successful persons with moderate scores. Similar to results regarding indirect real estate investment, the three highest-rated influencers were experts, successful people, and social media. The ANOVA results show that family was the only significant factor that differed between direct and indirect real estate investments, while the other factors were not significantly different. This might be due to the high budget and long-term conditions of investing in direct real estate in Thailand, where partnering or financing with family is common. Moreover, it was interesting to find that celebrities do not influence investors" decisions in direct or indirect real estate investment.

The aforementioned results illustrate three interesting findings: 1) Presently, direct and indirect real estate investors do not rely on influencers, which is in line with the results related to high confidence level, as investors tend to put more faith in their own decisions. It appears that indirect real estate investors are more influenced than direct real estate investors. 2) Investors were influenced by more than one type of influencer. 3) Investors choose to be influenced by reliable sources like experts and successful persons. It was moderately confirmed that real estate investors were likely to be more rational than emotional.

Table 6 Comparison between Direct and Indirect Real Estate Investors" Influencers

Influencers	Real Estate Investment (5-point rating scales)				ANOVA	
	Direct Investment (n = 196)		Indirect Investment (n = 58)			
	Mean	Std.	Mean	Std.	f	p
Expert	3.60	0.91	3.79	0.89	1.85	0.17
Family	3.56	1.06	3.20	1.19	4.83	0.02
Successful person	3.52	1.06	3.74	1.06	1.83	0.17
Media	3.38	1.00	3.68	0.95	4.09	0.44
Friend	3.16	0.99	3.18	1.05	0.31	0.86
Celebrities	2.19	1.06	2.24	1.04	0.07	0.78

Psychological Bias and Social Interaction

Table 7 Relationship between Psychological Bias and Social Interaction

Psychological Bias	Influencers					
	Experts	Families	Successful persons	Media	Friends	Celebrities
Budget	0.207**	0.238**	0.179**	0.173**	0.075	-0.081
Confidence	0.204**	0.124*	0.165**	0.193**	0.083	-0.053
Knowledge	0.110*	-0.003	0.219**	0.148**	0.191**	0.080
Experience	0.278**	0.086	0.312**	0.256**	0.106	0.029
Preference	0.154**	0.184**	0.187**	0.118*	0.083	-0.012

Note: *, ** = Correlation is significant at the 0.05 and 0.01 level (2-tailed), respectively.

Table 7 reveals that experts, families, successful persons, and media were positively correlated with budget, confidence, and preference; experts, successful persons, media, and friends with knowledge; and experts, successful persons, and media with experience. In general, this can be explained by the fact that experts and successful persons seem to be the most important factors affecting all psychological bias attributes, which is aligned with the results in Table 5. On the other hand, friend and celebrities did not affect psychological bias attributes in terms of either direct or indirect investment.

Social Media

Table 8 shows the influence of social media on direct and indirect real estate investment, with Facebook being the most powerful source that influenced investors" decisions, followed by the LINE chat application, investment websites, and seminars. It is worth noting that not every social media platform such as Instagram, investment blogs, and Twitter have successfully influenced investors. Nowadays, social media trends are increasingly popular, while general media such as seminars, print media, and TV or radio are less so. Interestingly, seminars ranked fourth among the sources of social media that had influenced investors in both direct and indirect real estate investment. This might imply that some investors still place value on tangible contacts and experiences.

Table 8 Comparison of Social Media Influence on Direct and Indirect Real Estate Investment

Social Media	Real Estate Investment	
	Direct Investment (n = 196) Frequency (Percentage)	Indirect Investment (n = 58) Frequency (Percentage)
Facebook	136 (20.6)	46 (22.3)
LINE Chat Application	112 (16.9)	31 (15.0)
Investment Website	101 (15.3)	39 (18.9)
Seminar	66 (10.0)	22 (10.6)
YouTube	65 (9.8)	19 (9.2)
Print Media	65 (9.8)	16 (7.7)
TV/Radio	61 (9.2)	15 (7.3)
Instagram	27 (4.0)	6 (2.9)
Blog	16 (2.4)	6 (2.9)
Twitter	11 (1.6)	6 (2.9)
Total	660 (100)	206 (100)

Note: As respondents could choose more than one type of social media, the total frequency was counted as total chosen types of social media by 196 respondents and 58 respondents.

DISCUSSION AND CONCLUSION

This study assumes that the unique characteristics of direct and indirect real estate investments such as liquidity, immobility, responsibility, and risks influence behavioural investment differently. The two main objectives of this research were to study investment decisions in various dimensions comprising descriptive information on direct and indirect real estate investor" profiles and the internal and external factors that affect investors" decisions due to each investor"s psychological bias and social interaction the environment.

Using descriptive statistics on direct and indirect real estate investors, this study found that those who invest in direct real estate, especially in apartment buildings, are older and generally have higher investment budgets and work positions than indirect real estate investors. Thus, it can be concluded that the barrier to entry is higher in direct real estate investment than in indirect real estate investment. The choice between direct and indirect real estate investments can be explained largely by the latter"s unique characteristics such as low liquidity, higher initial investment cost, long-term engagement, and high responsibility. In contrast, the most preferred indirect investment type is real estate stock as it has high liquidity, lower initial investment cost, short-term engagement, and low responsibility. Nevertheless, the comparison between the yields from direct investment and dividends from indirect real estate confirms that investing in direct investment has a higher chance of earning higher returns.

Even though behavioural economics posits the idea that investors make illogical investment decisions under different types of psychological biases, this study indicates that most direct and indirect real estate investors make decisions mainly based on rational factors like budget, confidence, and knowledge (wherein, confidence comes from knowledge and experience of investors) more than irrational factors such as personal preferences. However, it is quite surprising to note that there is almost no difference between the psychological biases of direct and indirect investors as compared with the initial assumption that direct real estate investors tend to make more rational investment decisions than indirect real estate investors, or that indirect real estate investors are likely to make lesser rational investment decisions due to its unique characteristics. Presently, investors are more educated and have easier channels for gaining insightful information and knowledge that equipped them with better decision-making tools, regardless of the type of real estate investment.

In addition to the internal factors of psychological bias, the external factors involved in investors" decisions, like social interaction, are similar in both direct and indirect real estate investments. The investors tend not to rely much on influencers or any specific investor; they instead place their trust in reliable sources. These results also highlight the fact that in today"s investment environment, investors are likely to be equipped with more self-confidence in investing. With regard to direct real estate investment, family is still an important influencer for investors, which on the other hand, can also lead to bias in investment decisions.

The results regarding investors" psychological bias and social interaction indicate that they nowadays appear to be investing rationally. They base their decisions on rational decisive factors, have logical investment reasons, believe in reliable influencers, and are likely to have more self-confidence. This is a promising sign for the Thai real estate investment market as well as economic sustainability because individual investors are now found to possess better investment mindsets and tools, in contrast to the period 1997–2000 when the Thai economy faced one of its worst-ever crises due to extremely irrational real estate investment. The situation was similar in 2013, when the Bank of Thailand (BOT) issued its first loan-to-value policy. The BOT tried to slow down the growing real estate boom—due to investors" over-speculation and excessive debt creation—with the aim of building sustainable investment (Bank of Thailand, 2021). During that period, Thai investors seemed focused on speculative investment in the real estate sectors, creating higher risks another economic crisis. The public anticipated future price increases without a solid market mechanism, most likely due to psychological biases and social interactions (Shiller, 2007). In comparison with 2020, before the COVID-19 pandemic spontaneously affected the real estate sector, the economic situation was already showing a less positive trend (CBRE, 2020). As a result, some developers attempted to use various marketing tactics to maintain their sale volumes; however, they were not successful as direct and indirect investors seemed to reduce their investments. Consequently, the absorption rate of condominium unit sales also slowed down (DDProperty, 2020). This seems to confirm the research result that Thai people are currently equipped with better decisive factors than in the past as they are more concerned over their budgets, as well as their own knowledge and confidence. In addition, they are more selective in terms of relying on influencers as well as media. Otherwise, they tend to continue with their investment as they are influenced by various marketing strategies. Although rational investment is

acceptable, irrational investment also plays an important role to some extent as all investments are affected by a number of decisive factors. Therefore, before making any investment decisions, real estate investors must balance these factors well. considering their own investment reasons with the awareness of psychological bias and social interaction in a suitable investment is critical, especially due to the unique nature of real estate investment. As the research"s scope is focused on individual investors, the results and analyses may not be generalisable to institutional investors since their views and behaviours differ significantly. The only limitation of this study is the small sample size of the indirect real estate investors, which might indicate that investing in direct real estate is more popular than in indirect real estate despite that entry into direct real estate investment has higher barriers than in indirect real estate investment.

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APPENDIX

Measurement Items

Investment Reasons

I invest in direct (or indirect) real estate in order to earn additional income.
I invest in direct (or indirect) real estate in order to build stability.
I invest in direct (or indirect) real estate in order to spread risks.
I invest in direct (or indirect) real estate in order to obtain a tax shield.
I invest in direct (or indirect) real estate for personal enjoyment.
I invest in direct (or indirect) real estate for social recognition.

Psychological Bias

I always think about my budget before making any investment decision.
I believe myself in order to make any investment decision.
I have sufficient knowledge in order to make any investment decision.
I am always concerned over my personal preference before making any investment decision.

Influencer

When I make an investment decision, I trust the expert.
When I make an investment decision, I trust my family.
When I make an investment decision, I trust the successful person.
When I make an investment decision, I trust media.
When I make an investment decision, I trust my friends.
When I make an investment decision, I trust the celebrities.

Social Media

When I make an investment decision, I search information and learn via Facebook.
When I make an investment decision, I search information and learn via LINE Chat Application.
When I make an investment decision, I search information and learn via an investment website.
When I make an investment decision, I search information and learn via an investment seminar.
When I make an investment decision, I search information and learn via Facebook.
When I make an investment decision, I search information and learn via YouTube.
When I make an investment decision, I search information and learn via print media.
When I make an investment decision, I search information and learn via TV/ radio.
When I make an investment decision, I search information and learn via Instagram.
When I make an investment decision, I search information and learn via investment blog.
When I make an investment decision, I search information and learn via Twitter.