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**Cognitive Biases in Real Estate Investment
Decisions**

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Introduction

a. Background Rationale

The real estate investment paradigm assumes rational decision making and investment choices are based on objective and logical analysis. However, recent developments in behavioural economics and psychology propose that this may not always be the case. As such, investment decisions are often influenced by cognitive biases that surpass rational analysis and lead to decisions that deviate from optimal financial maximization. Moreover, with the real estate market experiencing significant transformations due to economic volatility and technological disruptions, comprehending these psychological variations is crucial. On this note, this dissertation examines the pervasive impact of such cognitive biases on real estate investments, highlighting the complex interplay between psychology and economic performance of such a dynamic industry. Thus, cognitive biases such as anchoring, loss aversion and herding are explored to examine how they may be shaping investor's strategies and outcomes, offering insights that challenge the conventional assessment of market behavior and decision-making in real estate.

b. Structure of the thesis

This thesis is separated into three distinct chapters, each building upon the insights of the previous one, to develop a thorough understanding of the topic at hand.

As such, chapter one introduces the basic concepts of real estate investments, analyzing thoroughly the dynamics of the European real estate market. It delves into the real estate investment vehicles, highlighting the key aspects of each investment strategy. The chapter further sets the stage by discussing the theoretical frameworks that underpin these investments, and gives the audience an understanding of critical aspects of valuation inside the realm of the property market.

Transitioning from theory to application, the second chapter chapter explores how behavioral economics can be applied to real estate investment strategies. It discusses three of the most significant and intensively researched psychological biases such as anchoring, herding, and loss aversion, as well as their pervasive effects on investment decisions. Moreover, the interplay between cognitive biases and market conditions are

analysed to illustrate how these biases can impact decision-making processes and market dynamics.

The third and final chapter continues into the exploration of cognitive biases within the realm of real estate investments. Building on the analysis commenced in the first two chapters, this section identifies and investigates less-researched biases that critically impact investment decisions. It specifically focuses on confirmation bias, familiarity bias, and the endowment effect, offering a unique understanding of how these biases change investor perceptions and behaviors in the real estate market.

c. Aim and objective of study

The aim of this dissertation was to investigate the influence of cognitive biases on real estate investment decisions, analyzing the property sector and assessing existing research on cognitive biases. The primary objective included a detailed exploration for deeper insights, selecting a total of six biases to investigate their varying degrees of recognition within the framework of the real estate market.

d. Relevance of study

The following study aspires to contribute to existing academic research and literature surrounding the topics of cognitive biases within real estate, specifically looking into investment decisions. Its relevance lies in providing insights into behavioral analysis by increasing awareness on the effects that result from the influence of cognitive biases, which may hinder profit maximization and investment success. Additionally, this dissertation highlights the need for future academia to widen research efforts and direct more focus onto less explored biases which may carry significant influence on investor's decision making.

Chapter 1

Core Principles of Real Estate Investments

1.1 Key Dynamics of Real Estate Investment

The following chapter discusses existing literature in order to evaluate the intricacies of real estate dynamics and the different forms of strategies often employed by investors. A critical assessment of various studies, journals, articles, and publications has been carried out as a means to eliminate the presence of bias through the study. It must be noted how for abbreviation purposes, following this initial excerpt, recurring terms of relevance to this thesis will be referred to as their assigned acronyms, as a means to avoid unneeded repetition (See Table 1.1).

Term	Selected Acronym for Purpose of Dissertation
Real Estate	RE
Real Estate Investment/s	REI /s
Cognitive Bias/es	CB/s
Residential Real Estate	RRE
Commercial Real Estate	CRE

Table 1.1 Key Terms Acronym Association (Fradusco, 2024)

Moreover, concepts such as that of key-term analysis, the current European economic environment, private and public REI Vehicles, Valuation and Property Management in the chosen segment will be explored. Thus, the following section hopes to offer valuable insights in contribution to existing research and inspire future comprehension in regards to cognitive bias's influence on European real estate investments.

1.1.1 Economic and Geopolitical Impact on the European Market

Following the harsh economic climate resulting from 2019's COVID Sars Pandemic, rising inflation rates and geopolitical tensions have all contributed to an imminent global recession with influence on declining growth rates and GDPs (The World Bank, 2023). As outlined by Forbes (2023), a recession is defined as "slowdown

in economic activity for a minimum of two consecutive financial quarters". Recessions are often preceded by inflation and grow influence across all sectors and industries of the economy and as such could significantly impact the RE market. The ‘Emerging trends in real estate®’ report (2023) highlights the RE industry’s challenge in “coming to terms with hugely challenging economic circumstances after a decade of cheap debt which drove deals and globalisation trends that enabled construction, followed by monetary policies that papered over the cracks caused by the pandemic”. Thus, industry professionals must rely on solid footing of investment strategies as geopolitical tensions, an uncertain economy and increasing ESG requirements disrupt the status quo of the post-Covid era (ULI, 2024). Nonetheless, industry leaders across Europe identify economic performance as their principal consideration when selecting a city for investment or development (PwC, 2023). In fact, 75% of RE investors outline that interest rate movements, inflation and European economic growth remain their top concerns of 2024 over a 5-year horizon (ULI, 2024).

Despite unforeseen economic downturns and variables such as the pandemic and political strains in Ukraine and Palestine strongly contributing to a climate of uncertainty, RE’s European market value has been consistently increasing since 2017 (Statista, 2024). In fact, future estimates for RE business sentiment have also increased for the year of 2024, following sudden plummeting in 2022 (See Figure 1.1). As it may thus be observed in Figure 1.1, despite RE business sentiment experienced several variabilities, business profitability remained equal or scored higher than ‘business confidence’ for the majority of the past decade.

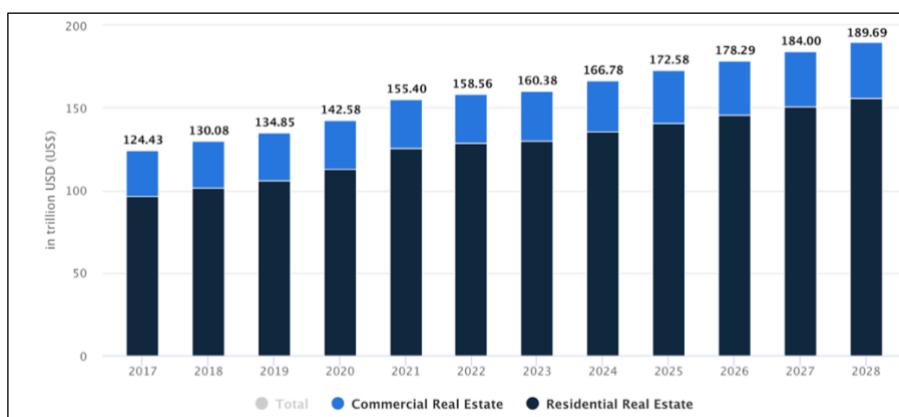


Figure 1.1: (Statista, 2024) Real Estate Business Sentiment 2011-2024.

A further key discovery in the Emerging trends in real estate®’ report (2023) has been the rise and establishment among national capitals and economic hubs of what can be considered to be ‘tier one’ cities. Tier One cities attract the most capital and attention from RE investors, these include but are not limited to London, Milan, Paris, Lisbon and Brussels and confirm investors’ premium place on liquidity (PwC, 2023). As cost of living in Europe has seen a surge of 45% in the past 10 years, salaries have only increased by 17%, indicating lower income per household and a market tendency for rent instead of sale (ULI, 2024). Nevertheless, RE sentiment shows belief that Tier One and market fundamentals will remain resilient, as one REIT CEO states “direct investors, sovereign wealth, pension funds and foreign capital still believe the long-term benefits, wealth preservation and income that London can provide” noting similar belief to be true for Paris (PwC, 2023).

1.1.2 Introduction to Real Estate: Opportunities and Risks

Real Estate (RE) classifies as a significant and lucrative investment class. As of 2024, Statista (2024) estimated the European RE market to have a value of US\$166.8 tn, of which US\$31tn were part of Commercial Real Estate (CRE) and the rest were part of Residential Real Estate (RRE). Unlike stocks and bonds, RE mostly consists in tangible assets, which allow to be held for investment purposes by private and public management to generate wealth, diversify portfolios and achieve capital appreciation (Sagi, 2020). As suggest by Adetiloye (2013) RE can be divided into four categories: the first consisting in the land, sub and air surfaces, followed by permanent affixed objects and fixtures, the incidental rights attached to the use of property and lastly immovable properties belonging to landowners.

Despite its significance as an investment class, price behavior of individual assets within CRE lacks similar understanding and recognition as more liquid categories such as fixed income, currencies, commodities and equities, thus prompting action. In fact, since the pricing of non-recourse mortgages (highly focused portfolios owned by numerous real estate investors) as well as the option-like features in investment management contracts (common among private equity firms) are highly susceptible to asset-specific price dynamics, it becomes fundamental to address this gap in CRE (Sagi, 2020). Commercial Real Estate (CRE) involves numerous stages of investment such as

ownership, acquisition, management and sale of physical property. Rental income and tax benefits contingent to commercial REIs offer investors the opportunity to earn stable cash flows (Chambers et. al., 2021). Moreover, due to its tangibility, the ownership of property provides protection against inflation, thus establishing CRE as a safer investment in comparison to other investment vehicles in RE (Chinloy, 1988).

In comparison to more traditional investing vehicles, investing in RE is often regarded as the most efficient strategy to diversify plan assets and portfolios (Cozort and Brooke, 2023). However, of the 1,090 property professionals who completed surveys and interviews for the ‘Emerging trends in real estate®’ report (2023), 76% “believe that current valuations do not accurately reflect all the challenges and opportunities” (PwC, 2023). Consequently, when considering making REIs, trustees must assess whether an investment is prudent, if it allows for diversification of the plan assets and whether there is any previous ownership of the investment by a party in interest (Cozort and Brooke, 2023). Although seen as a safe investment, these opportunities come with their own risks and complexities. The cyclical nature of the CRE market; characterized by constant variations in market value; motivates investors to stay on top of changes in economy, interest rates, demographic trends and bureaucratic policies to adjust their tactics accordingly.

1.1.3 Adapting to new Investment Strategies: Digital Marketing and ESG

Marketing strategies play a crucial role in the success of real estate investment. By leveraging digital platforms and real estate networks, investors can effectively maintain a source of income by reaching potential buyers or tenant pools, thus maintaining a steady occupancy rate (Kyle et. al., 2004). The internet offers the opportunity to include visual information that lead the buyer to an acquisition proposal. In particular, online real estate listings may be enhanced with pictures and virtual tours which, typically, ease the buyer’s task of identifying a subset of properties for a personal visit (Carrillo, 2008). In fact, when considering foreign investments, specifically in Residential Real Estate (RRE), technology such as that of AI becomes intrinsically valuable to the initial phase of investment (BNP, 2024). According to PwC (2023), 95% of Real Estate professional investors believe marketing and leasing to be the most

promising in the application of AI (Artificial Intelligence) technology. Nevertheless, it may be noted that sectors that are supposedly perceived as ‘niche’ by institutional investors have already become ‘mainstream’ in the capital markets. Moreover, evidence that RE investors have been wishing to increasingly place their capital into alternative sectors prompts professionals to consider emerging trends such as that of AI (Artificial Intelligence) or ESG (Environmental Social and Governance) in their investment choices (ULI, 2024).

It may be noted that priorities in investments are constantly evolving: environmental considerations are emerging and reflect a broader societal shift towards green living and sustainable development. In regards to RE, construction practices such as that of retrofitting or repurposing buildings increase investor’s reticence on new development and are viewed as high-quality secure investments (Esajian et. al., 2021). In fact, among RE industry leaders lies a common belief on the significance of adopting ESG in future RE capital values, as a majority of 90% agree it will dominate the industry by 2050 (PwC, 2023). Research further suggests an increased understanding amongst RE investors that ESG’s added value to investments retains more importance than the costs it entails.

As defined by the ‘Big Four’ consultancy giant Deloitte (2021), ESG is a framework consisting of three pillars (Environmental, Social and Governments) with the goal to “capture all the non-financial risks and opportunities inherent to a company’s day to day activities. As such, in their agenda, investors must consider the environmental impact of their transactions and properties that are bound to adhere to these principles appeal to a growing segment of the market, potentially increasing property value.

Furthermore, the legal framework that surrounds the investments in this sector cannot be overlooked, as investors must navigate and understand a complex framework of state, local and international laws that govern property transactions (Sagi, 2020). The bureaucracies inside the property sector are different from state to state, and often even from region to region. Therefore, investors must have a clear comprehension of zoning regulations as well as the building codes and the legalities of lease agreements. This being said, in a time of financial restraints resulting from high construction costs and interest rates, market participants are having a hard time incorporating and complying to ESG

measures (Deloitte, 2024). Specifically, investors are struggling to measure the benefits of the ‘Societal’ pillar and its application to concrete investment plans (McKinsey, 2024).

Moreover, the economics of decarbonisation (reduction of carbon emissions); which includes labor shortages and raised construction costs, are only a few of the challenges currently faced by investors. Despite regulatory issues surrounding the implementation of ESG, the ‘New energy infrastructure’ sector has repeatedly emerged as the sector within RE presenting unsurpassed business prospects for investment, development and rental income (BNP, 2024). Hence, the simultaneous combination of rising efforts towards decarbonisation, with increasing energy prices, has further reinforced this sector’s appeal. Consequently, as stated by the CEO of a pan-European property company “ESG compliance is not a ‘nice-to-have’. It’s a license to play”, thus confirming the notion that environmental issues dominate the RE industry’s and investor agenda (PwC, 2023).

1.2 Real Estate Investment Vehicles: The Private and Public Market

Exploring the intricate landscape of real estate investment behoves an understanding of the vehicles through which investors can enter this lucrative yet difficult market. At the basis of an investment lies the critical decision between two primary pathways: the private and public market. By conventional measures, public and private investments offer different return and risk profiles. Private real estate appears less volatile than its public counterpart, even after accounting for differences in leverage (Stefek and Raghu, 2012). This analysis into the vehicles of real estate investment draws attention to the importance of a strategic approach towards the initial background needed to execute an investment. Whether through the direct control and potential high returns of private market investments or the diversified, accessible nature of the public market

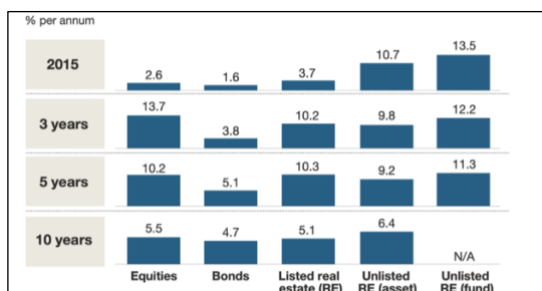


Figure 1.2: (McKinsey, 2024) Comparative Global Performance Across Asset Class

The private market is characterized by the direct transactions that occur between the buyer and the seller. A private market is one in which an investor buys a direct interest in one or more properties (Baker and Kent, 2014). Investors will have full ownership over the property and will receive the rent payments and value changes from the selected investment. These investments are characterized by their lack of liquidity, meaning they cannot be quickly sold or exchanged for cash without a significant loss in value (Glossary for investors). Ziering and McIntosh (2014) analyzed the impact of both private and public real estate inside a mixed-asset portfolio, concluding that private real estate provides portfolio diversification benefits. This control allows for direct decision-making regarding renovations, leasing, and property management. Moreover, the private real estate market's entry barriers, such as the need for substantial initial capital and access to financing, often exclude smaller investors, thus favoring institutional investors or high-net-worth individuals who can afford the associated risks and upfront costs.

1.2.1 Real Estate Investment Trusts (REITs)

Investing in real estate can be approached through various channels, each offering different benefits and challenges. An alternative approach, only recently emerging into practice, is to invest in publicly traded vehicles, such as REITs, an approach known as public real estate (Geltner and Mei, 1995). Liu et al. (1990) demonstrated that REITs were integrated with common equities and the private domestic real estate market was segmented from the stock market. The REITs are traded on the stock exchange; therefore, it pays the stockholders a dividend at the end of the year, which is a percentage of the total rent payments received from renters (Bertrand and Prigent, 2016). The REITs are companies and must comply with severe requirements to be operational. For instance, 75% of investments must be allocated in real estate assets and shareholders must be more than one hundred after the first year of existence. REITs are a means of real estate investment that provide good liquidity and good transparency (Holly et. al., 2011). The equivalent of the United States REITs in Italy is called the "Società D'Investimento Immobiliare Quotata" or SIIQ. Introduced in 2007, it came into effect as an ad-hoc regime applicable to ordinary joint stock companies. The SIIQ has very strict regulations that the company must adhere to take advantage of the special regime (Sureshbabu, 2019). By adhering to shareholders percentages and characteristics of investment among the others,

the company may be tax-exempt towards IRES and IRAP. This approach exemplifies the ongoing global adaptation and integration of REIT models, demonstrating their increasing importance in international real estate investment strategies.

1.2.2 Introduction to Cognitive Biases

Cognitive biases have increasingly gained recognition as topic of interest among many industries, particularly in the real estate sector in which their influence on investor decision making has proven to be significant (Anderson et. al., 2022). As highlighted in recent research, these biases stem from heuristic shortcuts that individuals use, to manage complex information. In fact, Gonzalez (2017, p. 251) defines heuristics as "shortcuts that humans use to reduce task complexity in judgment and choice," while biases are the resultant deviations from what would be considered normative decision-making. Wofford et al. (2010) further elaborate that these mental shortcuts are particularly utilized by investors to navigate the complexities of an inefficient market. The implications of such biases on decision quality are profound, as emphasized by scholars like Lockton (2012) and Wang and Ruhe (2007), who assert that cognitive biases significantly affect the intrinsic quality of human (and thus investor's) decisions.

Investment decisions in RE often involve complex decisions, underscoring the role of rational choices in many economic theories. Thus, this assumption is challenged in practical decision-making scenarios, particularly when investors are faced with an overload of information and limited time to invest. Through the decision-making process, the assumption of rational choice underpins many economic theories. However, cognitive biases and heuristics challenge this assumption, particularly in environments where investors face a wealth of information and limited time to make decisions. Heuristics represent an own-way decision-making process that, while often efficient, can lead to systematic errors critical in high-standard environments such as RE investment (Blasi, 2018). Tversky and Kahneman's seminal work in 1974 elucidated how individual investors employ heuristics under times of uncertainty to simplify the evaluation and predictions of values, moreover creating biases that result in choices deviating from those expected following rational models.

Behavioral economics, bridging psychology and economics, provides significant insights into how emotional and psychological factors affect economic decisions. This

subfield is pivotal for understanding why even experienced investors may choose paths that deviate from expected utility theory and rational choice models (Kumar and Goyal, 2015). Emerging as a distinct area of study in 1980s, behavioral finance specifically addresses the irrational elements in decision-making and the psychological drives behind them. According to Baker and Ricciardi (2014), behavioral biases lead investors away from rational decisions, making them prone to errors as noted by Shefrin and Statman (1985). Amidst the ongoing debate between rational and irrational decision-making, Lo (2012) suggested that investor behavior does not strictly adhere to rationality but rather exhibits a situational adaptiveness. Moreover, according to recent studies by Apau and Jeke (2022) and Muzindutsi et al. (2023), this adaptiveness manifests as investors behaving more rationally during stable market conditions and tending towards irrationality in times of market turbulence. As such, Singh et al. (2024) further explore this concept, suggesting that the interplay of market conditions and cognitive biases significantly influences investment decisions, emphasizing the need for a nuanced understanding of these dynamics in the study of real estate investments. Various behavioural biases influence investors when making investment decisions (Dervishaj, 2021). Among the 180 identified cognitive biases, the most commonly discussed in investment avenues (i.e., Stock market, mutual fund etc.) are overconfidence, disposition effect, anchoring bias, availability bias, loss aversion, regret aversion, herding, representativeness, mental accounting and so on (Singh et. al., 2024). Additionally, it is important to note that real estate investments are characterized by financial commitments and complex forecasting, thus making them particularly susceptible to multiple cognitive bias.

1.3 Valuation of Real Estate Investments

Among real estate investments, the accurate valuation of properties becomes intrinsic to the success and sustainability of transactions and profitable investment results. As stated by Roulac et. al. (2006), “From an economic perspective, value is defined as the price that will be paid for the highest and best use of real estate, which in an unfettered market, is determined by the forces of demand and supply”. Issues about the concepts and theory of value of property have dominated the academic debate over an exact definition of value. In fact, Kummerow (2002) believes “Traditional definitions create confusion

about whether valuers’ role is to measure and predict market prices or alternatively to define and create price estimates under a set of standardised assumptions.”. This being said, valuation in RE investment provides a snapshot of a property’s value at an exact point in time and is a key process in the acquisition and sale of RE (Chinloy, 1988).

Three essential methods of valuation exist: comparative market analysis, income capitalization approach and cost approach. For instance, comparative market analysis is the approach that estimates a property’s value by examining the sales of similar properties inside the same area Kummerow (2002). Income capitalization approach is ideal for income-based properties, in which the net income the property generates is divided by the capitalization rate. Lastly the cost approach is used for a new construction, as it adds to the property value and decreases costs of construction by depreciation.

The cost, market and income capitalization methods of valuation retain advantages and disadvantages, but all suffer from the fundamental problem that statistical inference cannot easily be drawn from them (Chinloy, 1988). Over the last decade, RE has established itself as a sector delivering attractive investment returns (Favilukis et. al., 2017; Ghent et. al., 2019; Giglio et. al., 2021). As opposed to individual investor portfolios, CRE features notably in institutional portfolios and has done so both today and in the past. In fact, as it may be observed in Figure 1.3, future estimates for market value demonstrate optimistic market growth, further highlighting a pattern in increased residential RE in comparison to Commercial RE.

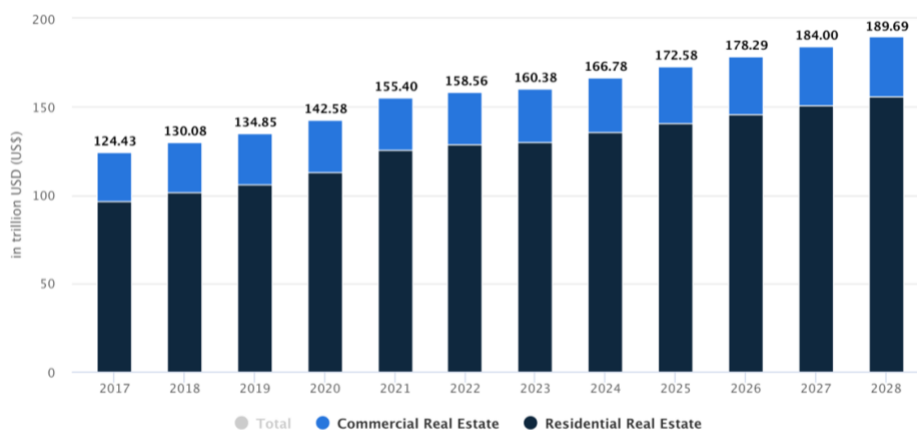


Figure 1.3 (Statista, 2024) Commercial and Residential Real Estate Value Over Time

However, compared to existing longer-term record of historical bond and equity returns, we retain only limited understanding of RE investment returns over a longer period of

time (Dimson, Marsh, and Staunton, 2022). Existing literature on RE valuation exhibits the recurring assumption that an individual property's value evolves over time by following what is known as 'random walk with drift' (RWD). This belief acts as the foundation of the dominant asset-pricing paradigm (Campbell, Lo, and MacKinlay, 1997) and is most widely adopted in all RE applied theory literature (Williams, 1993). RWD price dynamics are expected to follow a specific pattern over time: the average change in prices and how much they vary (Variance) corresponds to the time-frame between those changes (Scaling). However, multiple studies (Case and Shiller, 1987; Abraham and Schauman, 1991; Goetzmann, 1993; Goetzmann and Spiegei, 1995; Calhoun, 1996) that were conducted to analyse patterns in house pricing over time, found that scaling did not correspond with variance, thus, going against the theory that RE pricing follows RWD dynamics. Hence, despite wide acceptance of this assumption among the RE industry, literature provides consistent hints of RE prices and those of other illiquid assets deviating from RWD. Unfortunately, such findings have been dismissed due to missing variables or inconsistent anomalies (Sagi, 2020).

These anomalies among findings were attributed to potential missing information or mistakes in measurement of price. Nevertheless, a more recent study conducted by Sagi (2020) robustly confirms CRE prices' inconsistency with RWD dynamics, thus demonstrating RWD' link to RE pricing to be only an assumption. The study accounted for all cash flow events and employed detailed property-level data from the National Council of Real Estate Investment Fiduciaries (NCREIF) including capital expenditures ensuring avoidance of missing variables to which the same results had been attributed to in past academic research (Sagi, 2020). Nevertheless, attributing data findings on CRE to the performance of RRE and consequently to real estate as a whole is both inadequate and biased (Chambers et. al., 2021).

Among REIs, the existing gap between market prices and valuations has contributed to record-low investment volumes and the "risk-adjusted return prospects in a higher for longer interest rate environment is raising questions about real estate's status as a favoured asset class" (ULI, 2024). Especially prior to the 20th Century, limitations of data availability and methodological difficulties have fraught existing data of historical REIs performance, thus making it unreliable (Chambers et. al., 2021). For instance, commonly available price data does not allow for variation adjustments based on

individual property features (Kummerow, 2011). In fact, when average price estimates increase, it does not automatically mean that properties have increased in value, as it may be correlated to an increase in property quality of recently sold estates instead (Adetiloye, 2013). Consequently, RE investors might believe their investments have higher value and expected profits than they actually have. Moreover, it is challenging to obtain data of cashflows linked to historical REIs: if income data exists, it generally includes contractual instead of realized income (Kummerow, 2011). These data sets are also drawn from different properties than the ones from which prices are being observed, hence increasing irregularities in collecting RE property valuations. In conclusion, as best affirmed by Tajudeen and Aluko (2007) “previous research into valuation process increasingly leads to the conclusion that valuation is a very imprecise activity, much less precise than valuers would have the users of valuations to believe”.

Chapter 2

Analysis of Cognitive Biases in Real Estate Investment Decisions

2.1 Selection and impact of CB on Real Estate Investment Strategies

Given the extensive number and variety of cognitive biases in existence; which as previously discussed is estimated to be around 180; this dissertation has selected a total of six biases to investigate with higher depth and focus. To select these biases, multiple studies and journals were reviewed as a means to identify the cognitive biases most strongly and often associated with REIs. As such, Loss Aversion, Anchoring Bias and Herding Behaviour were recorded as the biases with the highest recurrence and thus consistently received attention among academia and research. Consequently, this chapter explores these three CBs by identifying, comparing and contrasting all existing research and knowledge to offer an objective and realistic representation of their role in influencing investment decisions in RE. Moreover, by analyzing these biases this paper aims to equip investors with insights into how common psychological fallacies can be identified, thus promoting more rational investment strategies.

2.2 Anchoring Bias

Among the numerous CBs present in RE, 'Anchoring' exists when investors hold onto a specific reference point and act biased as a result of it (Yan and Bao, 2018). As such, the reference point, which is generally exhibited as information about an investment, is referred to as the 'anchor' (Bao et al., 2021). Factors such as age, gender, annual income and accessibility of information also play a role in relation to anchoring bias in real estate investments. For instance, demographic categories such as that of younger individuals, lower income earning groups and women, have all been proven to be more susceptible to anchoring bias (Hjalmarsson and Osterholm, 2021). Moreover, RE buyers may have a tendency to form anchors based on their access to information on property valuations such as reference points. Consequently, sellers may employ this knowledge to influence buyers into making investment decisions in their favour, solely

based on knowledge of anchor tendencies by specific demographic groups (Singh et. al., 2024).

2.2.1 Anchoring Bias on property valuations

The impact of Anchoring Bias on RE property valuations has been extensively researched, however, findings are somewhat contrasting. The studies conducted by Klamer et al. (2017) and Ali et al. (2020) have indicated anchoring bias is intrinsic to RE property evaluators, who generally create their anchor based on the prices that were already transacted in the past. In fact, it may be noted that “Sellers often consider local fundamentals during the first sale and anchor the initial price in accordance to it” (Singh et. al., 2024). Klamer et al. (2017) and Ali et al. (2020) also looked at the influence of government initiatives and regulations on the timeframe requirements needed to accept valuation offers and observed that if both sellers and buyers utilize valuation anchors, there is a reduction in the timeframe to finalize RE deals. Despite these findings, the study conducted by Diaz and Hansz (2001) claims that if property evaluators, buyers or sellers are operating in a field they are accustomed to work in, then anchors (such as anonymous expert value) do not influence RE valuations. Nevertheless, Diaz and Hansz (2001) also claim that if valuers are appraising the property in an unknown and unusual geographical area or sector, then anchors such as ‘anonymous expert opinion’ does in fact influence valuations. A further anchor that is often considered to be impactful on RE property valuations is the ‘customer influence’. This can be seen in the instances in which evaluators form an anchor around price based on the expected asking price by clients by undervaluing or overvaluing, as they feel pressured to meet customer expectations in order to ensure sale of property (Lee et al., 2022; Nwuba et al., 2015).

2.2.2 Listing Prices Anchor

As stated by Singh et al. (2024), “investors with price uncertainty are more likely to fall prey to anchoring bias”. When investors make judgments on a property’s value based on the asking price initial quotes, opening listing prices consequently become an important anchor among the initial investment phase (Silva et al., 2019). In fact, Anchoring Bias in initial listing price valuations affects not only inexperienced investors

but also professionals (Northcraft and Neale, 1987) as well as managers of property funds (Lowies et al., 2016), highlighting the importance in recognition and study of this particular bias. These asking prices are employed by investors as a benchmark to evaluate a property's worth and attribute fair pricing. However, anchoring bias hinders buyers from fair judgment and being able to reach reasonable and objective valuations (Bokhari and Geltner, 2011). Hence, it may be argued that anchors, such as those in price listings, influence and impact decision-making of real estate investors as well as the negotiations needed to reach final transactions (Hoxha and Hasani, 2022; Black and Diaz, 1996). For instance, this may be observed in the way in which buyers in negotiations have been proven to form an anchor on round numbers (prices ending with multiple zeroes) and often disregard competitive offers as a result (Pope et al., 2015). As such, Leung and Tsang (2013), demonstrated the effect to be consistent with buyers considering properties whilst considering previous purchase prices as their anchor.

2.2.3 Property Location Anchor

Among existing literature and research, property location has emerged as a further element of anchoring bias in RE investments. Thus, research suggests that, the distance between the property available for investment and the investor's location, may control the price that the investor is willing to pay for the property, hence location becomes an anchor (Clauret and Thistle, 2007). Foreign or geographically distant investors may have to rely on secondary sources (such as the internet) to appraise a property without being able to visit in person, thus increasing the amount of time allocated to due diligence (Singh et al., 2024). Excessive use of internet research may lead investors to form anchors around data found online, even though these may be unreliable, thus confirming investors' tendency to rely on easily available information (Beracha and Wintoki, 2013). However, RE property sales and negotiations often come with time constraints due to government laws and regulations. consequently, 'distant' investors are often pressured into conducting minor due diligence under timed conditions relying on available information (anchor), resulting in paying higher prices in comparison to local buyers (Lambson et al., 2004). The comprehensive study conducted by Ling et al. (2018) and sampling 114,588 sale transactions in RE investments further strengthens this evidence.

By comparing the experienced advantages between local and distant investors, the

study revealed that nearby market options and easier access to investment information did in fact favour local buyers over distant ones. Additionally, they outlined that RE investors from high-priced property areas are more inclined to negotiate around reference price points, resulting in paying more than investors from lower-priced areas. Hence, these findings corroborate the notion that location acts as an anchor which influences investors to pay higher or lower prices according to their geographical distance (near or far) from the target RE investment property (Ling et al., 2018).

2.3 Herding Behaviour Bias

An individual's beliefs, feelings and decisions towards an investment can be altered or molded when observing or coming in contact with other investors (Blasi, 2018). When investors' preferences are aligned beliefs, feelings and decisions may converge or 'herd'. The opposite is also true when these do not align, hence diverging or dispersing. Herd behaviour is a cognitive bias that occurs when investors emulate or follow other investors, thus aligning or 'herding' with their beliefs, feelings and decision making.

2.3.1 Irrational and Rational Herding

Multiple studies such as those by Devenow and Welch (1996) and Chang, Cheng and Khorana (2000) suggest Herding can be thought of as either rational or irrational. Herding is considered 'rational' when an investor chooses to align his viewpoint with other investors' consensus because he is concerned that not doing so will damage his success rate and reputation (Scharfstein and Stein, 1990; Rajan, 1994). Conversely, herding is considered 'irrational' when investors follow other investor's consensus blindly, ignoring prior beliefs and incapable to draw logical reasoning from market information (Blasi, 2018). Hirshleifer and Hong Teoh (2003) believe that when rational learning is involved, observational influence can be beneficial to investors. They imply that by observing one another, investors can learn how to operate in a specific sector such as that of RE and exchange information to ease success of investments or mitigate unfavourable outcomes resulting from poor decision making (Hirshleifer and Hong Teoh, 2003).

Negative sentiment, social and normative influences prompt homebuyers to herd (Singh et. al., 2024). In Real Estate, investors herd when they invest in what the majority of other RE investors do, which could range from core office buildings to holiday homes or long-term rental. Thus, it has been observed that investors who are afflicted by this cognitive bias often consult co-workers, investors, brokers and friends prior to taking any significant investment decision (Singh et. al., 2024). Herding has been extensively studied across various categories of investors but is not limited to individuals, as institutional investors (companies investing in securities such as RE) have also shown herding behaviour in regards to property valuations. Nevertheless, it may be noted that herding bias does not necessarily follow organisation levels as much as it follows property types (Tan, 2022). Among RE evaluators, research has demonstrated evaluators may trust and condone property valuations executed by other valuers relied upon by peers in the RE sectors (Ali et al., 2020). Fund managers deviate from this tendency to herd in REIs, because the increasingly volatile and performance-led market they operate in compels them to adhere to highly orthodox decision making which cannot rely on herding (Loweies, et al., 2016). In their studies, Tan (2022) and Talpsepp et al. (2021) further highlighted the significance of understanding how cognitive bias such as herding behaviour affects housing investments and RRE. Although no correlation was found between gender and herding, younger demographics as well as the elderly were found to have lower levels of herding bias (Tan, 2022). Similarly, individuals with backgrounds in commerce also demonstrated lower herding behaviours (Talpsepp et al., 2021).

2.3.3 Effects on market conditions and REITs

Researchers have looked into Herding as a cognitive bias to study its effects in various market conditions. Hence, Philippas et al. (2013) conducted a study employing REIT and concluded that a turbulent and declining market favours herding behaviour among RE investors. Interestingly, it was observed that herding could result in either positive or negative outcomes according to the specific negative RE market condition. In the case of a volatile and unstable market, herding behaviour proved to be disastrous for investment decisions. On the other hand, in the case of a market crash regime, investor decisions moved by herding bias proved to be more strategically successful (Philippas et al., 2013). These findings were confirmed by Akinsomi et al. (2018), who looked into

three market regimes and found that herding behaviour increased in times of stability (market crash or sustained positive market) and decreased during high volatility instead (unreliable market). Thus, it may be inferred that RE investors are aware of the negative impact that herding behaviour may pose during a volatile unstable market and hence do their best to avoid it when these market conditions occur. Nevertheless, Lin et al. (2018) offers a contradictory viewpoint to the previous research works and suggest that herding behaviour is mostly found in a rising stable market, as opposed to a market crash.

As a widespread phenomenon among the RE sector, Herding behaviour may be causing investors to make poor investment decisions, thus causing market instability (Kinatta et al., 2022). This cognitive bias has in fact been linked as a potential cause to house pricing fluctuations and unreliability of RE valuations across seven OECD (Organisation for Economic Co-operation and Development) countries (Cascao et al., 2023). Moreover, Ngene and Gupta (2022) observed that when government-led investors are involved, herding behaviour in REIs diminishes. As a result, authors suggest governments should intervene by implementing legislation to scale down herding behaviour and favour market stability over volatility.

2.4 Loss Aversion Bias

Three behavioural biases exist as a result of individuals perceiving profits and losses in different ways: disposition effect, loss aversion and regret aversion. When applied to Real Estate investments, disposition effect, loss aversion and regret aversion have a tendency to align and be combined and may not allow investors to reach full potential opportunities of their investments, thus hindering potential capital gains (Sing et al., 2024).

‘Disposition effect’ exists when, given the opportunity to keep or sell an investment, investors prefer to dispose of profitable securities prematurely and hold onto losing investments overtime (Basana and Tarigan, 2022). When looking at finance and the stock market, Shefrin and Statman (1985) believe that retaining losing stocks and selling successfully performing ones to be the most rewarding investment strategy. It may be argued that this may also be a profitable strategy applied to Real Estate, however it must be noted that it still categorises as Disposition Effect and hence classifies as a cognitive bias.

In 2000, Benartzi and Thaler coined the term Loss Aversion as a new CB to emphasise the difference in how people react to assured gains and assured losses. Their work highlights a preference among investors to value loss certainty over loss uncertainty (Benartzi and Thaler, 2000). This is explained by investor's more than willingness to take risks when there is a chance of loss, which in contrast corresponds to their unwillingness to take risks when an investment guarantees profits. Consequently, investors may sometimes feel encouraged or discouraged to make risky investment decisions.

Regret Aversion manifests when investors choose to avoid or undertake more risks based on wishing to avoid or 'avert' regret over an investment decision (M.J. Seiler et al., 2008). In fact, following the concept of Regret Aversion, when an individual regrets a choice they have made, this regret impacts all future subsequent decisions.

2.4.1 Loss Aversion's influence on investors with loss experience

As previously inferred, loss aversion occurs when individuals retain different perceptions of profit and loss in business transactions (Mayer, 2011; Bao et al., 2021). More specifically within Residential Real Estate, Genesove and Mayer (2001) argue that homeowners and landlords are cautious over potential nominal loss and consequently handle gains and losses in varying ways. They have in fact shown tendency to avoid anticipated or previously experienced nominal loss by delaying activity to ensure finding a high-paying customer (Waweru et al., 2014). Research further demonstrated that landlords anticipating loss have a tendency to set higher listing prices for their properties and that these assets previously expected to sell at loss eventually sold at increased prices (Anenberg, 2016; Greenaway, McGrevy and Haworth, 2020). Nonetheless, transaction prices were impacted when and if sellers had previous experiences of loss (Anenberg, 2016).

These effects of loss aversion were recorded across all branches of RE but showed increased cases among Commercial Real Estate and more seasoned and experienced investors. Higher Loss Aversion levels were attributed to CRE due to the generous amounts of transactions in this branch in comparison to RRE, thus allowing investors and sellers to have more reference points needed for price comparison (Bao et al., 2021). Similarly, increasingly qualified and experienced investors demonstrated higher rates of Loss Aversion due to their longer involvement with transactions. Thus, having become

more averse to potential losses may benefit experienced investors to be better equipped in managing risks, especially at a moment of expected loss (Bokhari et al., 2011).

2.4.2 Loss Aversion on Price listings and property valuations

Loss Aversion as a Cognitive Bias has further acted as a precursor in housing mobility, in which individuals choose to relocate as a means to avoid nominal loss (Steggmans and Hassink, 2018). The significance of Loss Aversion is underscored by an asymmetric sensitivity that investors show over taking risks in matters of loss and gains, this factor assists in predicting housing prices and carrying out property valuations (Anenberg, 2016). Moreover, research has also found that loan borrowers in both RRE and CRE are also impacted by loss aversion and may sometimes willingly engage in payment evasion (Bao et al., 2021). Despite all concluding evidence clearly demonstrating investors' role in being influenced in their decision making by Loss Aversion, it must be noted that a study by Pandey and Jessica (2018) presented contradicting information and suggested this bias does not impact real estate investors. As a way to further delve into the intricacies of Loss Aversion, some studies looked into factors which may influence this CB, such as time dependency, investor experience, race of landlords and usage of agents. Although race of landlords and usage of agents proved to have no existing correlation to risk taking and asking prices, it was proven that past experiences of loss retained significant impact on real estate investments (Hayunga and Pace, 2017). Moreover, time horizon also featured as a principal influence on defining the degree of loss aversion in RE investments. In fact, Buisson (2016) stated investors are more risk-averse with short time horizons and thus keener to accept lower prices as a way to mitigate potential perceived loss. Thus, investors are more prone to either exit the market or delay selling for higher prices when experiencing longer time horizon, hence showcasing less loss aversion in their practice (Buisson, 2016).

Chapter 3

Exploring Understudied Cognitive Biases in Real Estate Investments

3.1 Analyzing Existing Research on CB in RE Investment

The effect of cognitive biases on the financial market (stocks, mutual funds etc. ;) retains increased attention in both academia and corporate research and has been studied extensively over decades. However, the same cannot be said among the real estate market. Existing research focused on the RE market does analyse various cognitive biases, however only one study has actually analysed all academia, providing concise documentation of existing research. Hence, the study published by Singh et. al. (2024) is fundamental to draw conclusions from all existing findings in regard to CBs in REIs.

Data from Singh et. al.'s study was sourced from articles published between 1980 and 2022, found primarily in two globally recognised databases: Scopus and Web of Science. Employing the PRISMA (an evidence-based model reporting systematic reviews) as the main research model, 86 articles were chosen and analysed. This study thus uncovered a gap within existing research of cognitive biases in REIs, as certain CBs were favoured in research in comparison to others. In fact, it may be observed how anchoring bias, loss aversion and herding bias were studied extensively in the context of RE investments. On the other hand, other CBs such as familiarity, confirmation bias and endowment received little to no attention by researchers.

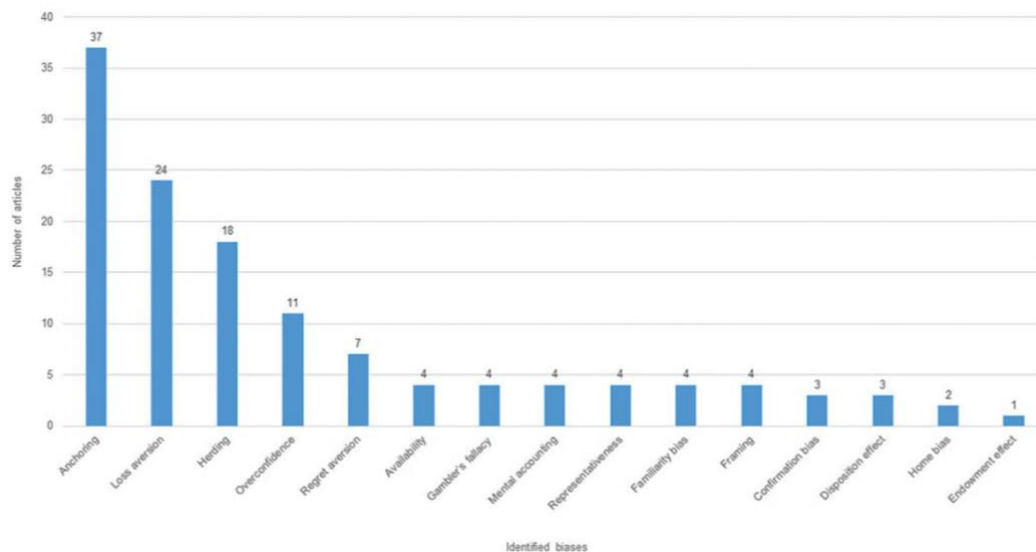


Figure 3.1: (Sing, et., al., 2024) Identified biases vs number of articles

As revealed by the study’s findings, Figure 3.1 shows the number of identified articles mentioning or researching each particular cognitive bias (See Figure 3.1). The data indicates that a majority of 37 papers were available on Anchoring, 24 on Loss Aversion and 18 on Herding. Thus, confirming these to be the cognitive biases most often associated with studies in Real Estate Investment. Conversely, it may be noted how Endowment Effect only featured in one article out of the 86 papers that were examined within Sing et. al. (2024)’s research, thus prompting this paper’s interest into exploring less studied cognitive biases in the future.

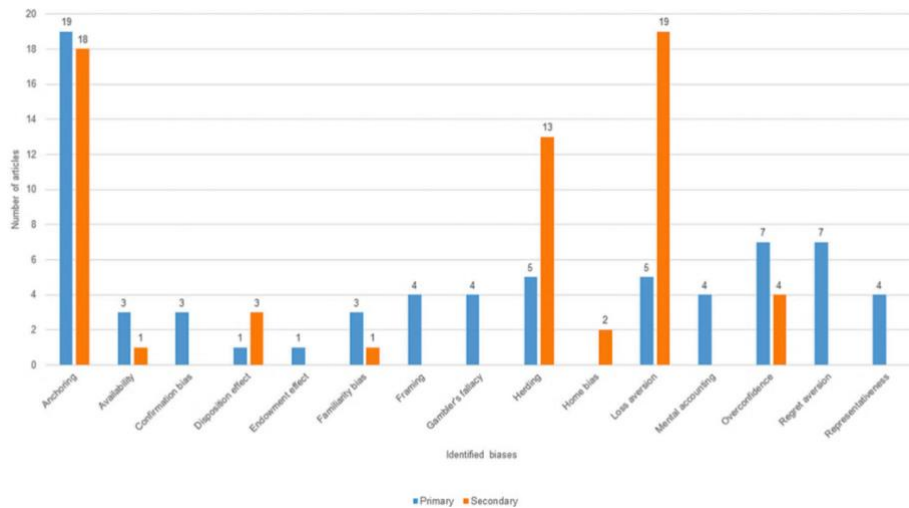


Figure 3.2: (Sing, et., al., 2024)) Articles Distribution by type of data

Additionally, as can be seen in Figure 3.2, the graph visually explores the distribution of articles based on the type of data used for each bias, whether it may be primary or secondary data (See Figure 3.2). Primary research and data retain increased significance due to the importance of taking real opinions of the target population into consideration. Primary Research thus confers studies a closer input into real-life society understanding and beliefs. While secondary research is implicit to testing models and hypotheses on large sample sizes as a way to confirm trends and beliefs emerging from primary research findings. It must be noted that out of the 86 articles examined, certain papers employed both primary and secondary research methods. Moreover, whilst Anchoring bias has an almost equal distribution between primary and secondary data, all other biases have unbalanced distribution (See Figure 3.2). This disparity can be observed

as 7 out of 15 of the analysed cognitive biases only employed primary research, Home Bias only employed Secondary and Herding and Loss Aversion have disproportions with higher use of secondary research. Nevertheless, it is further important to note that Anchoring, Herding and Loss Aversion are the most researched biases and as such, they allow for a better understanding of the way in which methodical research on cognitive biases in real estate investments is conducted. Consequently, one may observe that both Herding and Loss Aversion have large number of secondary-based articles and much lower numbers of primary-based studies.

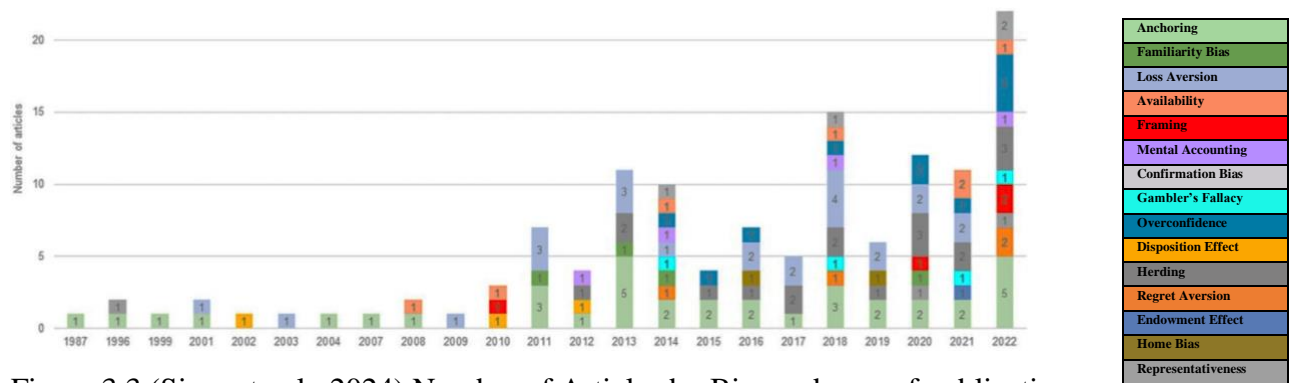


Figure 3.3 (Sing, et., al., 2024) Number of Articles by Bias and year of publication

Figure 3.3 displays the distribution of studies year-wise according to biases. As can be observed through the graph, Anchoring has been consistently studied almost every year since 1987. It may further be observed that as opposed to other biases, Anchoring, Loss Aversion and Herding feature in the first decade, while Familiarity, Confirmation and Endowment only feature after 2010. This demonstrates the disparity of research available on specific cognitive biases and the increased research momentum that is being experienced over the past two decades as the industry becomes more interested in diverse cognitive biases in RE.

As a result of the study conducted by Singh et. al. (2024) and the findings that have now been analysed and discussed; this chapter will follow by delving deeper into three cognitive biases that were least researched in the past. Consequently, the following sections will be exploring Confirmation Bias, Familiarity Bias and Endowment Effect by offering a concise yet comprehensive analysis into how these less explored biases affect Real Estate Investments.

3.2 Confirmation Bias

Real Estate investors regularly seek external evidence to support or confirm their investment decisions and beliefs. This tendency is often indulged in by looking for assurance among friends and colleagues and gives rise to confirmation bias (Gallimore, 1996). Confirmation Bias (also referred to as ‘myside bias’) refers to the propensity of investors to interpret information in a way that will automatically confirm the investor’s pre-existing beliefs (Plous, 1993). Thus, the individual associates less importance and consideration to information which may differ from his/her existing opinions. Confirmation Bias habitually complements other cognitive biases such as that of anchoring, as investors may display this bias by forming anchors around beliefs that have been instituted by other trusted investors, colleagues or friends (Blasi, 2018). Thus, it may be observed that confirmation bias can facilitate the establishment and proliferation of other cognitive biases.

Although due diligence and professional experience can prepare real estate investors to gain a good idea of what their investment results may be, situation and event outcomes are undoubtedly governed by chance. In this case, confirmation bias may induce investors to overestimate their estimation abilities and believe being in full control of any outcomes due to heavily relying on biased information (Langer, 1975). In a study conducted in the U.K., confirmation bias was deemed not worthy of consideration when attributing it to professional property surveyors (Plous, 1993). However, in his study, Gallimore (1996) retrieved evidence proving that RICS valuers were afflicted by confirmation bias when attempting property valuations. Such findings imply valuers are “failing to process efficiently available information and are therefore less likely to arrive at valid representations of market decisions” (Gallimore, 1996, p.270). As confirmation bias complements anchoring bias, a similarity may be noticed in the manner in which these two cognitive biases affect property valuations in real estate investments. In fact, valuers may strongly consider transaction prices that confirm their previous beliefs thus limiting further research of contrasting and comparable valuation opinions which may differ from these.

3.3 Familiarity and Home Bias

Ambrose and Shen (2023), refer to familiarity bias as a cognitive bias that occurs when investors demonstrate favouritism towards assets that they already have previous knowledge of, whilst ignoring the ones that are unknown to them. In context to real estate, investors further display familiarity bias when investing in properties or geographical areas they have made previous investments in, thus avoiding venturing into new unidentified investments.

The RE market undergoes limitations which result in increased challenges when aiming to achieve market diversification. Consequently, these challenges often become the cause of rising prices in properties by area (Henneberry and Mouzakis, 2014). In this fragment, property owners of assets with decreased value in comparison to past purchase prices are hindered by familiarity bias. Hence, these same investors no longer wish to list these properties for sale at lower prices, because of their belief that they are more ‘familiar’ with the specific market at hand (Lane et al., 2011). Moreover, similarly to the irregularity within framing bias; in which information perception is based on the way in which the information is presented; Familiarity bias increases if the investor is more familiar to the market (Levy et al., 2020).

As previously discussed, several biases have shown tendency to ‘overlap’ across RE, as they may induce investors to endure in similar cognitive and behavioural patterns. As such, familiarity bias may sometime diffuse into what is referred to as ‘home bias’ when investors predominantly select local markets for their choice of RE investments. As demonstrated in the research paper conducted by Giblaro and Mattarocci (2016), home bias has shown higher occurrence among African and Asian countries given the less diversified portfolio offering of this market. Nevertheless, research is consistent in proving that more experienced investors are less likely influenced by both familiarity and home bias, as they may recognise that even though ‘unknown’, global markets may perform better than local markets (Wright and Yanotti, 2019; Forlentsen et al., 2020; Singh et. al., 2024).

3.4 Endowment Effect

Kahneman et al. (1990) first coined the term Endowment Effect in a study focused on understanding the Familiarity bias and how investors demonstrate a tendency to favor

what they are familiar to while rejecting beliefs they are unacquainted with. In their research, Kanheman et al. (1990) identified a gap within RE behaviour, in which individuals are less willing to modify their pre-existing beliefs and may disregard potentially more lucrative investment prospects as a result of it. In Real Estate, Endowment Effect is found when investors attribute higher value to properties on their portfolio, demanding increased prices than they are willing to pay for when they make the decision to later sell these properties (Kahneman, Knetsch and Thaler, 1991).

Endowment Effect can be thought of as a cognitive bias which is associated to the ‘closing the transaction’ of a property negotiation within REIs (Blasi, 2018). As such, after three weeks within the deal negotiations, RE investors have attained enough information needed to effectively evaluate an asset. Once this happens, the investor team promptly unites their valuation estimates with their risk assessment analysis to determine these may impact the offering price they are willing to pay for the selected property (Add Reference). The appraised value will consequently be employed as a reference point to renegotiate price listings with the property seller. As explained in previous chapters, property valuation is highly subjective and can be influenced by multiple CBs, as two different investors would never establish the same appraisal even when evaluating the same exact asset.

This may happen even if both investors were to consider the same factors and follow the same value definition established by the RICS Red Book to which all valuers must adhere to (Blasi, 2018). One of these RICS requirements is for valuers to meet their clients prior to the authentication of their valuation reports, to discuss appraisal value. This aspect is intrinsic to the valuation process because the client may not agree with the report appraisal and subsequent validation. For instance, investors (or buyer) might wish for the valuation to be low in order to negotiate a lower price, while the seller (or property owner) might wish the valuation to be higher in order to gain higher profits from the sale in question (Add Reference).

This thorough analysis, that precedes actual sale negotiations, challenges the role of valuers who may be on the receiving end of client discontent if the valuation resulted too low or too high. Thus, moved by endowment Effect, both investors and clients with an inherent belief that their properties retain more value than others are likely to fall into this discontent and attempt to influence valuers and valuations. In fact, research has

proven valuations to be challenged very frequently, and for property negotiations in REIs to follow subjective and inconsistent patterns (Seiler et al., 2013). This concept is further reiterated in the study conducted by Blasi (2018), as can be observed in the response given by a valuer within the primary research interview:

“People are always trying to influence a valuation. I mean, it, it, you know, it’s, it’s human nature. Um, if, if [laughs] you know [laughs], most people, uh, well, everybody loves their kids more than they [laughs], more than, more than other people’s kids. And you know, people tend to love their own assets more than other people’s assets. [29:35] Um, and therefore they, there, there’s a natural tendency to think their assets are worth more.[29:40] Um, you know, we are very used to that. We’re very hardened to that.” Q.2073 - Valuer, Male (Blasi, 2018)

In fact, this direct quote demonstrates the ordinariness and habitual nature of Endowment’s Effect presence as a cognitive bias and influence on RE valuations and sale negotiations.

Endowment Effect can exist on both sides of RE sale negotiations, for buyers and sellers. The first (buyer and investor) wishing to avoid time loss during the bidding process leading to eventually buy the property asset at a higher price than needed. The latter (seller and property owner) being predominantly interested in attaining the highest price for his property. These two different priorities interlace, as both buyers and sellers wish to obtain higher valuations on one side and higher profits on the other.

Under all circumstances, pressure uphold by investors onto valuers due to disagreement on valuations, creates a situation of instability and uneasiness within negotiations. Valuers receive compensation from clients under the RICS requirements to provide an ‘independent opinion of value’, hence are less likely to endure a change of opinion affected by outer forces. By avoiding bias in their evaluations and being secure and immovable in their opinions, valuers reduce any eventuality for endowment effect to exist. Hence, it may be argued that by remaining firm in their decision making, valuers have the power to strongly influence whether a valuation may be biased or not by both their client’s and the investor’s individual interests (Wright and Yanotti, 2019).

Tan (2022) further explains Endowment Effect as the phenomenon in which higher value is assigned to an asset by the same individual who owns it, solely based on the fact he owns it. In context to RE, when sellers or buyers act on behalf of their

emotional and personal attachment to an asset or RE property. In such regards, factors such as investing in a residential property with the aim of personal use or selling a property in which the seller has personally lived may influence decisions due to psychological closeness (Tan, 2022). Nonetheless, mental accounting was proven to be a significant negative influence on decision-making in investments (Kinatta et al., 2022). In such regards, the two less of endowment effect and familiarity were attributed to both a physiological and emotional closeness of RE investors to properties. It may be argued that these findings can be attributed to individuals being more familiar to assets they are more involved with on a regular basis on a physical proximity and emotional level. This being said, the limited availability of studies on endowment effect demonstrates a further gap in research allowing investors to gain thorough understanding of how this process begins and evolves (Seiler et al., 2013).

Conclusion and Limitations

The aim of this dissertation was to investigate the influence of cognitive biases on real estate investments, methodically exploring the real estate market and evaluating existing research on cognitive biases. The key objective included delving into a more refined search for the truth, as this dissertation selected a total of 6 cognitive biases and looked into the ones that have received both most and least attention across the study of Real Estate investments to assess their impact on investor decisions.

Market analysis revealed constant variations in market value due to economic instabilities resulting from the Pandemic, recession and socio-political conflicts. Nevertheless, research also highlighted that despite a variable business sentiment, profitability in the real estate segment remained equal or increased globally. Further investigations into the mechanics of Residential and Commercial Real Estate as well as an in-depth analysis of Valuations were conducted as a means to offer a comprehensive understanding of Real Estate as a whole.

Secondary Research observed Anchoring Bias, Herding Bias and Loss Aversion to feature extensively among Real Estate Investor's decision making. These highly influential cognitive biases were demonstrated to lead to biased investment choices by inducing market inefficiencies and price distortions. For example, Anchoring bias affected initial price listings by preventing objective property valuations. Similarly, Herding bias was proven to be contingent to mass-lead decision-making thus influencing market volatility and creating 'investment bubbles'. Loss Aversion was instead linked to investors' loss of risk-taking, leading to decreased potential returns.

As the study conducted by Singh, et., al. (2024) revealed a gap within existing knowledge regarding the research of less predominant cognitive biases, this dissertation further delved into studying the impact of Confirmation bias, Familiarity bias and Endowment effect on Real Estate Investment decisions. The investigation revealed unique findings, as all three CBs confirmed that emotional attachment and pre-existing beliefs pertain increased influence on investment decisions and property valuations. As such, Confirmation and Familiarity bias demonstrated how formerly established beliefs can hinder profitability of investments and skew the decision-making process. Furthermore, Endowment Effect was proven to afflict both sellers and buyers as

individual investors may attribute higher value to properties they are emotionally or geographically attached to.

Moreover, key findings showed property Valuations, in both residential and commercial Real Estate, to be a substantial component to all investment decisions. Hence, since all the investigated Cognitive Biases were proven to significantly impact property valuations and investor’s decision making, this study came to the conclusion that Cognitive Biases do retain noteworthy influence on Real Estate Investment decisions.

A thorough understanding of cognitive biases is implicitly crucial to Real Estate investors, as it may allow for improved investment outcomes and decision making. Furthermore, this study’s insights may also benefit industry professionals such as valuers and policymakers to develop innovative strategies to mitigate the negative effects of these cognitive biases and fostering the Real Estate market stability and investment potential.

This study’s limitations included factors such as the availability to data and the scope of CBs analysed and were further looked into more depth, alongside the mitigation strategies and recommendations for future research (See Table 4.1).

Study Limitations	Explanation of Limitations	Mitigation Strategies	Recommendations for Future Scope
Limited Sample Size	The study selected a total of 6 out of the 180 estimated existing Cognitive Biases to research their influence on Real Estate Investment Decisions.	To mitigate this limitation and delineate a focus, this study selected the 3 most researched cognitive biases as well the 3 least researched ones. Sample size was hence diversified to offer a more thorough and comprehensive understanding of how cognitive biases influence RE investment decisions.	Future studies may select a larger sample size by focusing on an increased number of cognitive biases in their study. Moreover, selecting more cognitive biases that have received less interest may help increase knowledge over less-researched cognitive biases in context to RE investment decisions.
Limited Data Availability	As discussed, influence of Cognitive Bias in Real Estate retains limited research, decreasing data availability.	Among many others, the study by Singh, et. al. 2024 was employed to retain information on all available data existing in regards to	Soliciting RE companies to publicly publish their valuations and investment decision data may facilitate future study’s availability to data.

		Cognitive Biases in Real Estate.	Possibly specialising research in a specific geographical location may result in increased data availability and research focus.
Absence of Primary Research	Given the nature of this Undergraduate “descriptive” dissertation, no primary research was employed, hence no new data was gathered.	Secondary Research was employed by thoroughly investigating a wide variety of sources ranging from Academia, printed literature, Annual reports and Journal publications. Thus, existing data sets and findings were examined exhaustively.	Triangulating data by employing both secondary and primary research may allow future research to obtain new key findings in relation to cognitive biases and their influence on RE investment decisions. This may be done by collecting interviews with industry experts, valuers and RE investors.
Time Constraints	Undergraduate Dissertations entail time constraints, as the student follows a strict deadline for the completion of the dissertation.	Under the time constraints, focusing on secondary research proved to be the best mitigation practice to avoid time loss needed for the collection of raw data in primary research.	It is advised for future research to collect longitudinal data in order to observe fluctuations in the influence of cognitive biases on RE investment decisions over time.

Table 4.1 (Fradusco, 2024) Study Limitations, Mitigation Strategy and Recommendations for Future Study

Given the existing research gap highlighted within this dissertation, future scope may put more emphasis on less explored cognitive biases and triangulate research methods (primary and secondary research) to gather new data. This study further suggests future research to explore the relationship between various cognitive biases to see how they collectively impact investment decisions in Real Estate.

In conclusion, by placing focus on the effects of both well and lesser-known biases on real estate investments, this dissertation contributes to the existing body of knowledge by also filling a research gap. Lastly, this study hopes to have underscored the need for increased awareness on the intricacies of cognitive biases to promote more rational investment decisions in the Real Estate Market.

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