Examining The Moderating Role of Financial Literacy Between Determinants of Individual Behaviour and Investment Decision-Making for Iraqi Investors

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Abstract
Behavioural finance argues that an investor's decision-making process for investments is influenced by a complex mixture of factors that have a role in an investor's decision-making process. The study of behavioural aspects in financial markets is somewhat of an emerging concept and the determinants are not considerably addressed. In the same context, it's argued that financial literacy has a substantial part in predicting investments. However, past studies neglect to examine the moderation effect of financial literacy on an individual's investment decision in the stock market. The primary objective of this study is to examine the relationship between determinants of investor behaviour and an individual's investment decisions considering the moderating effect of financial literacy in such relationships. The targeted population and key informants were drawn from the individual investors invested in companies listed on the Iraq stock exchange. An online survey-based method was used to collect data from individual investors in Iraq to help validate the hypothesised relationships. Variance-based SEM, known as the SmartPLS method, was applied in this study. The study found that firm image coincidence, accounting information, neutral information, advocate recommendations, and personal financial needs have a significant positive relationship with individual investment decision-making of Iraqi investors. Financial literacy was found to be a significant moderator in these relationships.
Keywords: Firm Image Coincidence, Accounting Information, Neutral Information, Advocate Recommendations, Individual Investment Decision-Making of Iraqi Investors

Introduction
Investment decision making is defined as "the process of purchasing financial assets "e.g., securities and tradeable instruments" out of available resources, with an aim to reaping greater future benefits" (Ahmad & Shah, 2022, p. 63). Every investor strives to choose the best investments (Ahmad & Shah, 2022). Advanced financial understanding is necessary for making optimal and reasonable investment selections (Xiao & Yue, 2018). Individual investors

need information with specialised content for the purchasing and selling procedure in stock markets (Naveed et al., 2020). Investment decision-making is still a fuzzy concept; despite extensive discussion of its many facets, no objective guidelines or theories have yet been developed (Sachdeva et al., 2022). The economy and stock market are positively correlated; a decline in the stock market will hinder the expansion of the economy, and vice versa. Therefore, judgments made by individual investors on stock exchanges are crucial in determining market development, which then controls the economy (Tooranloo et al., 2020).

Investment decision making is how investors analyse, predict, interpret, and evaluate decision-making procedures such as information collection, identification and comprehension, review, and analysis (Xiao & Yue, 2018). Choosing to invest in the stock market is a difficult task that requires reasoning and a clear perspective (Ahmad & Shah, 2022). Schools of contemporary thought in the context of behavioural finance focuses at an investor's market behaviour and how they make decisions about whether to buy, sell, or keep onto their shares. Past studies suggest that individual investment decisions may be influenced by a variety of variables, including investment prospects, other market players' patterns and behaviours, market changes, and benchmark performance (Filip et al., 2015). According to this argument, investors' decision-making process include factors resulting from market expectations in addition to quantitative and rational analyses (Khawaja & Alharbi, 2021). Consequently, an investor's decision-making is influenced by a complex interplay between market conditions, personal characteristics, and demography (Sachdeva et al., 2022). In this context, past studies have considered mostly the investment intention or investor sentiment (e.g., Adil et al., 2022b; Haritha & Uchil, 2020a, 2020b; Jain et al., 2022), and do not consider individual actual investment behaviour in financial markets. By considering individual's investment decision making, researchers can provide evidence of the determinants of investor behaviour on the actual investment behaviour. Furthermore, the development of a comprehensive model of determinants of investor behaviour that influence individuals' investment decisions can assist policymakers, regulators, and other interested parties in developing appropriate policies and creating successful programmes to secure the attraction of more individual investors. Moreover, helping regulators and policymakers make it more appealing, which in turn has a favourable effect on the quality of investments made on the stock market.

Traditional finance theories are defined individual investors as rational decisions maker; because they consider all available information in their investment decision process (Rahman & Gan, 2020). The "efficient market hypothesis" (EMH) of traditional finance theory asserts that it is impossible for any investor to outperform the stock market because share prices represent all available information and share prices in the stock market are trading at fair value (Khan, 2020). Thus, traditional finance makes the assumption that everyone is fully informed and always makes logical judgments, but in reality, some investors may only have limited information (Ameur et al., 2019). Traditional financial studies place more weight on economic theories that assume people make logical decisions (Rahman & Gan, 2020). On the other hand, behavioural finance looks at an investor's market behaviour and how they make judgments about whether to buy, sell, or hold onto their shares. Behavioural finance research indicates that decision-making is not a fully logical process under this situation, and decision-makers are prone to mistakes and biases that result in less-than-ideal decisions (Kimeu et al., 2016). It is suggested that an investor's decision-making process for investments is influenced by a complex mixture factors that include demographics (Maxfield et al., 2010; Ozmen & Sumer, 2011), personal characteristics (Chitra & Sreedevi, 2011; Young et al., 2012), and

market factors (Ferguson et al., 2011). This viewpoint contends that the process of decision-making by investors not only relies on quantitative and rational analysis, but also takes into account elements brought on by market expectations (Khawaja & Alharbi, 2021). Consequently, a complicated combination of factors include market conditions, personal traits, and demography have a role in an investor's decision-making process (Sachdeva et al., 2022).

Numerous factors have been identified in the literature as influencing factors for individual investors' investment decisions (Abdulridha & Hussin, 2023). For instance, accounting information, ownership structure, and company image Jain et al (2021), technical analysis, financial statements, economic indicators, and financial advisors Patil & Bagodi (2021), market information, neutral information, political, and psychosocial indicators Tooranloo et al (2020), neutral information, social interaction, and advocate recommendation (Haritha & Uchil, 2020a, 2020b), and accounting information, neutral information, political, and psychosocial indicators (Kishan & Alfan, 2019; Siyanbola & Fregene, 2019). Such factors aim to shed light on a number of different characteristics, giving a comprehensive picture of investor behaviour by integrating several domains.

Studying the direct relationship between behavioural factors and investor's decision-making process contributes to new insights to the behavioural finance theory. This is because investigating this relationship is essential to provide empirical evidence to support the theoretical underpinning of this theory that investor behaviour contribute positively and directly to individuals' investment decision making. This study does concentrate on the core principles of behavioural finance, and also provide some new ideas and hypotheses of behavioural finance, which could contribute to find ways to minimize the irrational decision-making by individual investors. Past studies have paid more attention on the influence of behavioural bias on investment decision making e.g., Adil et al (2022a); Ahmad & Shah (2022); Rahman & Gan (2020), however, the influence of determinants of investor behaviour on individual's investment decision has received less empirical attention in the existing literature. Thus, studying the direct relationship between determinants of investor behaviour and investor's decision-making contributes to new insights and provide new empirical evidence to such relationships. Further, this study contributes to the literature by provide a comprehensive framework that address a wider set of factors as determinants of individual's investment decision, which has a little attention in the current literature, which are highly needed in the current literature (Khawaja & Alharbi, 2021; Sachdeva et al., 2022).

In this context, studying direct relationship between determinants of investor behaviour and individual's investment decision making does not provide a whole picture of the determinants of individual's investment decision making (Abdulridha & Hussin, 2023; Ahmad & Shah, 2022). This is because, the moderating effects could alter the relationships between determinants of investor behaviour and investment decision-making of individuals' investors (Ahmad, 2022). In this context, it's argued that financial literacy has a statistically significant and favourable influence on investment decisions for both female and male investors. Financial literacy is "a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing" (Kishan & Alfan, 2019, p. 26). When it comes to influencing investing decisions, financial literacy is the most crucial aspect for both male and female investors (Adil et al., 2022a). Financial literacy improves investors' ability to identify their personal financial needs and make wise investment decisions to buy or sell stocks that are in line with their objectives to maximise returns and minimise risks (Ahmad & Shah, 2022). Financial literacy

also helps investors understand accounting information and follow up on other information in the media (Kishan & Alfan, 2019). Financial literacy can also assist investors in understanding the firm's position in the industry, becoming more knowledgeable about the firms' goods and services, and predicting the profitability of the firm (Siyanbola & Fregene, 2019). Additionally, financial literacy plays a significant role in the forecasting of investments (Adil et al., 2022b).

Exploring the moderating effect of financial literacy on the relationship between determinants of investor behaviour and individual investors' decision-making contributes to the financial theories. This can be accomplished by outlining the conditions in which the relationships between determinants of investor behaviour and individual investors' decisions could be maximised or minimised. This is significant because it offers the first empirical evidence of the moderating effect of financial literacy in the paradigm of financial decision-making. Additionally, it offers a more clear framework and comprehensive view of how determinants of investor behaviour affect an individual's investment decision. This is crucial to empirically demonstrating the behavioural financial theory's theoretical claims and to clarifying the relationship between determinants of investor behaviour and individual decision-making better.

Literature Review
Individual investment decision-making in Iraq
International reports indicate that since 2016 the individual direct investments for stock in Iraq have been negative. Iraq has the lowest individual investments of all its neighbours (UNCTAD, 2022). Alyousfi (2021) stated the individuals' investments in Iraq were negative in 2020 and accounted for (-0.05) of the world's individuals' investments. International reports also indicate that Iraq has had trouble attracting individuals' investments UNCTAD (2018); (2022); World Bank (2019), thus, economic reforms are still needed to assuage Iraqi investors' concerns regarding the uncertain business climate (World Bank, 2019). In the same context, the common individual investors in ISE are uncomfortable investing in the market due to the supremacy of big individual and institutional investors (Asad et al., 2018). For example, the total number of registered individual investors is almost 0.15 million, whereas there are almost 22.5 million fixed deposits in banks (ISX, 2022). This indicates that ISE is unsuccessful in attracting a major portion of the investor base. Table 1 shows that Iraq has the lowest individual investments of all its neighbours (UNCTAD, 2022). Furthermore, Alyousfi (2021) stated the individuals' investments in Iraq were negative in 2020 and accounted for (-0.05) of the world's individuals' investments. In this context, it is argued that some immature Iraq investors caused enormous losses in many stocks due to their emotional decisions (Rashid, 2018).

Table 1
Individual direct investments 2016-2022 in In Iraq and neighbour countries (Million USD)

Country	2016	2017	2018	2019	2020	2021
Iraq	-6 256	-5 032	-4 885	- 3 508	-2 859	-2 613
Saudi Arabia	7 453	1 419	4 247	4 563	5 399	19 286
Jordan	1 553	2 030	955	730	760	622
UAE	9 605	10 354	10 385	17 875	19 884	20 667
Syria	4 376b	5 570b	7 615b	9 939b	10 123b	10 743b
Iran	3 372	5 019	2 373	1 508	1 342	1 425b
Turkey	13 651	11 113	12 573	9 594	7 821	12 530

Source: UNCTAD, 2022, (b= Estimated)

Determinants of investor behaviour have been considered important influencing factors for individual investors' investment decisions (Jain et al., 2021). The essence of behavioural finance theory is that psychological and behavioural factors as key drivers for individuals' investment decisions (Khawaja & Alharbi, 2021). The determinants of investor behaviour lacks a unified definition, measurement and empirical grounding (Jain et al., 2022). It is argued that determinants of investor behaviour are mostly empirically identified ex-post" (Naveed et al., 2020, p. 268). Further, it is mentioned that the existence of determinants of investor behaviour is often assumed without specifying their exact components (Abdulridha & Hussin, 2023). There is no consensus regarding the nature of the determinants of investor behaviour that influence an individual's investment decision-making, despite the fact that there have been several attempts to conceptualise and operationalize those determinants of investor behaviour (Sachdeva et al., 2021; Sachdeva et al., 2022). Accordingly, it's argued that to understand the influence of determinants of investor behaviour on individual investment decisions, and to secure more rational investment decisions by individuals, determinants of investor behaviour must first be identified and recognised (Khawaja & Alharbi, 2021; Sachdeva et al., 2022).

Related Literature
Choosing to invest in the stock market is a difficult task that requires reasoning and a clear perspective (Ahmad & Shah, 2022). Schools of contemporary thought in the context of behavioural finance focuses at an investor's market behaviour and how they make decisions about whether to buy, sell, or keep onto their shares. The theory of behavioural finance provides the broadest, most organised understanding of the variables affecting individual investors' decision-making (Sachdeva et al., 2022). The theory suggests that individual investment decisions may be influenced by a variety of factors, including investment prospects, other market players' patterns and behaviours, market changes, and benchmark performance (Filip et al., 2015). Furthermore, the theory contends that a person's investment choices are also influenced by the economy, attitudes of businesses and families, a company's reputation, etc (Sachdeva et al., 2021; Sachdeva et al., 2022). According to this argument, investors' decision-making process include factors resulting from market expectations in addition to quantitative and rational analyses (Khawaja & Alharbi, 2021). Consequently, an investor's decision-making is influenced by a complex interplay between market conditions, personal characteristics, and demography (Sachdeva et al., 2022).

In general, the study of determinants of investor behaviour in financial markets is somewhat an emerging concept and the behavioural determinants are not considerably

addressed, there are few studies on the role of determinants of investor behaviour on individuals' investment decision-making, which need more academic research in this area necessary to establish the significance of the determinants of investor behaviour on individuals' investment decision-making (Ahmad & Shah, 2022; Sachdeva et al., 2022). More specifically, from one hand, previous studies have paid more attention on the impact of behavioural bias on investment decision-making , while the influence of other determinants of investor behaviour on individual's investment decisions has received less empirical attention in the literature (Khawaja & Alharbi, 2021; Sachdeva et al., 2022). On the other hand, prior research that consider determinants of investor behaviour primarily focused on their effect on investment intention or investor sentiment e.g., Adil et a (2022b); Haritha & Uchil (2020a); Jain et al (2021), and did not take into account their effect on actual individual investment behaviour in financial markets. It is critical for future research to examine the determinants of investor behaviour that affect the actual investment behaviour of the individuals (Adil et al., 2022a).

Past studies have mostly considered one or a few number of determinants of investor behaviour. This urged many scholars to call for more studies on this issue. For instance, Jain et al (2021) looked at the impact of some factors (i.e., accounting information, and the image of the company/board of directors), and they called for additional research that should consider more comprehensive factors like firm image coincidence, neutral information, personal financial needs, etc. as determinants of individuals' decision-making. In a similar vein, studies by Haritha and Uchil (2020b); Haritha and Uchil (2020a); Naveed et al (2020) looked at the impact of neutral information and advocate recommendations on investor sentiment and individual investors' investment decision-making. They call for additional studies to provide empirical evidence on the impact of other factors, such as firm-image, accounting information, and personal financial needs, on individual investors' investment decision-making (Khawaja & Alharbi, 2021; Sachdeva et al., 2022). In this context, the vast majority of studies in this area have relied on empirical research based on secondary data, which does not accurately reflect individual's actual behaviour. Therefore, using primary data-based empirical research, future studies should examine determinants of investor behaviour that influence investors' behaviour when making investment decisions (Ahmad, 2022).

Behavioural Finance Theory

A component of today's accounting and financial management concerns is behavioural finance, which takes a psychological approach to looking at how financial markets behave (Sachdeva et al., 2021). Academics, researchers, and financial specialists disagree on the behavioural component of the finance literature (Chauhan et al., 2020). An investor's decision-making process for investments is influenced by a complex mixture of demographics Maxfield et al (2010); Ozmen & Sumer (2011); personal characteristics Chitra & Ramya Sreedevi (2011); Young et al (2012); and market factors (Ferguson et al., 2011). In this study, the theory of behavioural finance is chosen as the main guiding theory. This is because, (i) this theory is the most comprehensive, structured, and pertinent to individuals investors' decision- making attitude on stocks (Sachdeva et al., 2022). (ii) Behavioural finance theory contends that people do not always make rational decisions and that their decisions are influenced by factors such as economic conditions, opinions of firms/families, the firm's reputation, etc., behavioural finance theory thus considers the psychology and social context of individuals' decision-making (Sachdeva et al., 2021; Sachdeva et al., 2022). (iii) The goal of behavioural finance theory is to shed light on the use of psychological decision-making

processes in the identification and forecasting of financial markets, not to disprove the validity of rational behaviour (Lee et al., 2008).

The behavioural finance theory contested with the traditional financial theories and proposed psychological and behavioural factors as key drivers for individuals' investment decisions. This is in contrast to conventional financial theories that have argued that investors are rational, their decisions are driven by the information available in the market, and these investors react rationally based on their own sets of information, regardless of how other investors act (Khawaja & Alharbi, 2021). The focus of investor decision-making research has recently switched from the conventional method to behavioural finance research (Adil et al., 2022a; Ahmad & Shah, 2022; Jain et al., 2021; Jain et al., 2022). Its argued that individual characteristics play a critical role in decision-making (Jain et al., 2022). Furthermore, both internal and external behavioural aspects have a significant impact on investors' financial decisions (Adil et al., 2022b; Patil & Bagodi, 2021); thus, studies on behavioural finance have been expanding quickly in recent years. The behavioural finance theory, therefore, constitutes the framework for the analysis conducted in this study.

Many contextual factors, such as stock brokers, financial consultants, and investment advisors, have been highlighted by contextual sources in previous studies as having the potential to affect individuals' investment decisions (Chandra & Kumar, 2012; Khawaja & Alharbi, 2021), Moreover, financial information about the entity, more recent, significant, and unbiased information referred to as neutral information, firm's reputation and track record, behavioural aspects of people and the extent to which their decisions are influenced by friends, family, and advisors, the relative importance they attach to the financial statements of the firm, recent changes in investment price, past performance of the investment, environmental and ethical concerns of the firm, etc. (Khawaja & Alharbi, 2021; Sachdeva et al., 2022). Such factors are contextual in nature, aim to shed light on a number of different characteristics, giving a thorough picture of investor behaviour by integrating several domains (Abdulridha & Hussin, 2023).

Hypothesis development
The Direct Relationships between Determinants of Investor Behaviour and Investment Decision Making

Firm image coincidence is "investors' concerns toward firm status in the industry, perceived ethics of firm, community involvement, feelings for products of firm, firm's reputation, product safety, and quality, and the firm's environmental activities" (Sachdeva et al., 2022, p. 5). Previous research have shown that a positive business image brings about financial advantages like enhanced financial performance and lower capital costs (Bi et al., 2017). According to previous research, the firm's reputation is important because investors believe they can find attractive investment possibilities from "good" organisations with a high reputational rating (Kishan & Alfan, 2019). Individual investors also value a firm's status in the industry (Alipour et al., 2019). The study of Sachdeva et al (2022) found that firm image coincidence is one of three top ranked factors elements influencing investment decisions. Similarly, Khawaja and Alharbi (2021) found that investor behaviour is significantly influenced by the firm-image coincidence. Jain et al (2021) also found that image of the company is influential criterion which affect the stock selection decisions of retail investors in the Indian stock market. Therefore, this study hypothesises that:

H1: Firm image has a positive significant influence on individual investment decision-making of Iraqi investors.

Accounting information is "all factors ranges from financial statements, marketability of stock, earnings and affordability of investment to expected corporate earnings, the volume of shares and market value of shares (Sachdeva et al., 2022, p. 4). According to previous studies, the accounting information elements seem to be the most significant and influencing aspects in investment decision-making (Jain et al., 2021; Sachdeva et al., 2022). For instance, stock marketability might demonstrate a company's financial performance (Patil & Bagodi, 2021). Thus, accounting information is essential to the stock selection process. In particular, among accounting information criteria, predicted corporate earnings emerged as the factor that had the greatest impact on the stock selection process, with the dividend payment ratio occupying the second position (Jain et al., 2021). Sachdeva et al (2022) found that accounting information is one of the top ranked factor influencing investment decisions. Similarly, Jain et al (2021) found that accounting information was one of the three most influential criteria which affect the stock selection decisions of retail investors in the Indian stock market. Patil and Bagodi (2021) found that past performance of firm's stock, expected corporate earnings and financial statements are the top ranked factor influence on individuals' decision making in India. Investor behaviour is also found that it significantly influenced by accounting information in the study by Khawaja and Alharbi (2021). Therefore, this study hypothesises that:

H2: Accounting information has a positive significant influence on individual investment decision-making of Iraqi investors.

Neutral information is "outside sources of information that is perceived to be unbiased such as recent price movements, changes in economic indicators, government holdings in investment, statements from government officials, information from the internet, coverage in press etc." (Khawaja & Alharbi, 2021; Sachdeva et al., 2022). Investors react to corporate event announcements when they make investment decisions (Sachdeva et al., 2021). It notes that the stock market-related emotions can be influenced by the media (Gupta et al., 2021). The research by Haritha and Uchil (2020b); Haritha and Uchil (2020a), which confirmed this note, indicated that the media had a strong positive influence on investor sentiment, which in turn has a significant correlation with individual investors' investment decisions. In a similar line, Tooranloo et al (2020) highlighted that economic indicators (i.e., neutral information) have the highest precedence over all other indicators when affecting the decision of individual investors to buy shares. Investors' perceptions of their success are significantly impacted by the timing and distribution of information concerning investment performance in this situation (Sachdeva et al., 2022). Tooranloo et al (2020) reveal that the economic indicators have significant influential on individual investors' decision to purchase shares of Tehran Stock Exchange. The studies of Haritha and Uchil (2020b); Haritha and Uchil (2020a) found that media has significant influence on investors sentiment, which in turn has a significance association with Individual investors' investment decision-making. Naveed et al (2020) also found that neutral information is positively influence an individual investor's investment decision. Therefore, this study hypothesises that:

H3: Neutral information has a positive significant influence on individual investment decision-making of Iraqi investors.

Advocates recommendations is "Advices or recommendations from financial advisors, stock holders, brokers, recommendations from family members and recommendations from friends or co-workers, which reduces the possibility of losses (Khawaja & Alharbi, 2021; Sachdeva et al., 2022). The majority of investors consult stockbrokers, investment professionals, friends, and family for guidance at some point throughout the investing period, and some of them believe that these recommendations from stock brokers and brokerage firms helped them achieve returns that were above average (Sachdeva et al., 2022). In order to lessen uncertainty, investors seek advice and knowledge from others and value social contact because certain information is hard to come by and not all investors have access to it (Adil et al., 2022a). Investment experts can assist investors in making wise choices (Patil & Bagodi, 2021). Sachdeva et al (2022) found that advocate recommendations have positive influence on investment decisions, meanwhile this influence was less important than the accounting information, firm image coincidence, and neutral information. Similarly, Patil and Bagodi (2021) found that financial advisors and analysts' recommendations influence on individuals' decision making in India, however this influence was less important than past performance of firm's stock, economic indicators, expected corporate earnings and financial statements. Khawaja and Alharbi (2021) found that investor behaviour is significantly influenced by advocate recommendation. Haritha and Uchil (2020a) found that advocate recommendation and social interaction significantly and positively influence the investor sentiment, which in turn have a positive impact on investment decision-making. Therefore, this study hypothesises that:

H4: advocate recommendation has a positive significant influence on individual investment decision-making of Iraqi investors.

Personal financial needs is the needs of individuals such as easy availability of the funds whenever needed, the need to diversify the funds, need to maximize the return and minimize the risk and loss, ease of obtaining borrowed funds, risk aversion, wealth maximization and financial expectation (Khawaja & Alharbi, 2021; Sultana & Pardhasaradhi, 2012). Easy of obtaining borrowed fund is a key factor in encouraging investment choices and enabling investors to profit from investment opportunities (Khawaja & Alharbi, 2021). Additionally, investors usually looking at past performance of the company, price movement, and price affordability to identify trading opportunities Jain et al (2021), such factors enhance the attractiveness of non-investment stock, which in turn can impact on investment decisions (Khawaja & Alharbi, 2021). Investors' high-risk tolerance is demonstrated by their decision to invest in high-risk areas in order to maximise rewards (Reddi & Vangaveti, 2021). Sachdeva et al (2022) found that personal financial needs have positive influence on investment decisions, meanwhile this influence was less important than the accounting information, firm image coincidence, and neutral information. Similarly, Khawaja and Alharbi (2021) found that investor behaviour is significantly influenced by the personal financial needs. Jain et al (2021) found that trading opportunities was one of the three most influential criteria which affect the stock selection decisions of retail investors in the Indian stock market. Conversely, Kishan and Alfan (2019) found that trading frequency attitude is negatively associated with

investment decision-making to buy or sell stocks in Malaysia. Therefore, this study hypothesises that:

H5: Personal financial needs have a positive significant influence on individual investment decision-making of Iraqi investors.

Financial Literacy as A Moderator

Financial literacy is "a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing" (Kishan & Alfan, 2019, p. 26). Investment behaviour is largely determined by individual's financial literacy (Adil et al., 2022b). This is due to the fact that financial literacy acts as a mechanism that can enable clearly understand how psychological variables influence decisions relating to investments (Ahmad, 2022). Rational financial decisions made by investors are strengthened by their level of financial literacy (Sabir et al., 2019). The lack of financial literacy reduce investor ability to read the available information and thus has a negative impact on investing decisions (Baker, 2019), rendering them irrational (Adil et al., 2022a). A high level of financial literacy then has a positive impact on strengthening economic behaviour (Ahmad & Shah, 2022). It is argued that, people that are financially literate are better able to avoid and reduce financial crises (Jain et al., 2022).

According to the findings of Adil et al (2022a) financial literacy is the most important factor influencing investment decisions for all investors at the time of making an investment, because financial literacy can strengthen investor knowledge and skills to understand financial statements, marketability of stock, expected corporate earnings, and market value of shares. It can also be said that highly financially literate investors reduce the behavioural bias effect while making an investment decision; thus, financial literacy considerably reduce the negative relationship between people's behavioural bias and investment decision (Ahmad, 2022). Financial literacy also strengthens investors ability to follow up other information in the media, recent price movements, changes in economic indicators, government holdings in investment, statements from government officials (Ahmad & Shah, 2022). Similarly, financial literacy strengthens investors ability to identify their personal financial needs and make sound investment decision-making to buy or sell stocks, which fit their goals in maximise returns and minimise risks (Kishan & Alfan, 2019). Additionally, financial literacy can strengthens investors understand the firm's status in the industry, be more knowledge about the firms' products and services, thus predict the firm's profitability (Siyanbola & Fregene, 2019). According to Bui et al (2020), high financial literacy investors will encourage to invest where there is trustworthy, timely, and accurate financial information from trusty sources such annual reports, accounting information, stock's past performance, and expected corporate earnings rather than social interaction information from friend, family etc., in such way investors avoid engaging in harmful externalities and strengthens their ability to make informed investment decisions (Haritha & Uchil, 2020b).

A number of previous studies indicate that financial literacy moderates the bivariate relationship. For example, Adil et al (2022b) found that the relationship between attitude, perceived behavioural control, and investment intentions is moderated by financial literacy. Similarly, Adil et al (2022a) found that financial literacy reduce the relationship between overconfidence, risk- aversion, disposition and herding amongst female investors. Similarly, Ahmad and Shah (2022) found that financial literacy reduce the relationship between behavioural bias and individuals' investment decisions. According to a study by Ullah (2015),

financial literacy moderates the association between self-attribute bias and investment decision of individuals. He also claims that financial literacy has a negative moderating effect by reduce the association between illusion of control bias and individual investing decisions. Financial literacy, according to Aren and Aydemir (2015), also strengthens the association between individual variables and the intention to make risky investments. Therefore, this study hypothesises that

H6: Financial literacy positively moderates the relationship between firm image and individual investment decision-making of Iraqi investors.
H7: Financial literacy positively moderates the relationship between accounting information and individual investment decision-making of Iraqi investors.
H8: Financial literacy positively moderates the relationship between neutral information and individual investment decision-making of Iraqi investors.
H9: Financial literacy positively moderates the relationship between advocate recommendations and individual investment decision-making of Iraqi investors.
H10: Financial literacy positively moderates the relationship between personal financial needs and individual investment decision-making of Iraqi investors.

Data Collection Procedures

The targeted population and key informants were drawn from the individual investors invested in companies listed on the Iraq stock exchange. The Iraq stock exchange includes full information for all listed firms, it includes the address, e-mail, chairman, contact numbers etc. Further, the Iraq stock exchange includes full information for the investing agents such as name, e-mail, contact numbers etc. Although the market statistics newsletter released on the Iraq Stock Exchange website identified that there are 19,712 individual investors in the Iraqi Stock Exchange, the website does not include a list of individual investors in the listed firms. Thus, there is no formal published list of individual investors invested in the Iraq stock exchange. The recommendations of Roscoe's (1975) sample size tables indicate that 379 is a suitable sample size for a population of between 20000 to 25000.

This study's measurement items are drawn from previous studies in the existing literature, which are more relevant to the study's context. Multiple-item scales were utilised to assess all constructs in this study. Respondents were asked to evaluate the extent to which they strongly disagree (1) and strongly agree (5) on the Likert scale.

Non-probability sampling through using convenience sampling technique was used in this study. With this technique, The researcher got permission to participate in the study from the higher management at the Iraq stock exchange. The researcher sought to achieve personal contact with investing agents listed in ISE based on the management recommendation and they were requested to contact and distribute the questionnaire among individual investors. A total of 358 replies were obtained, and they were utilized in the analysis.

Data Analysis and Results

A combination of descriptive and inferential statistics methods was employed in this study to maximise the efficiency of data analysis. This study used a variety of statistical tools, including the Social Sciences Statistical Package SPSS version 25 and the Partial Least Squares (PLS-SEM) software SmartPLS 4.

Assessing the Measurement Models in PLS-SEM

The internal consistency of the measurement model served as the first assessment and validation standard. The complete scale's internal consistency has been assessed using Cronbach's Alpha, which measures and compares items/observed variables with one another. The underlying latent variable explains item variance, which indicates item dependability (Gotz et al., 2010). (The widely accepted value for Cronbach's Alpha is 0.70. (Henseler et al., 2015). Table 2, demonstrates that the Cronbach's Alpha varied from 0.809 to 0.962 for all items, above the lowest threshold criterion of (Hair et al., 2010; Henseler et al., 2015). Bagozzi and Baumgartner (1994) state that individual item level reliability is adequate, while construct reliability evaluation is advised by scholars to track the reliability of a group of items that are related to a certain construct. Construct-level reliability indicates that there should be a greater correlation between items that pertain to the same variable. Composite reliability, which measures how well all assigned items consistently represented the same latent construct, was used in this study along with Cronbach's alpha to assess construct-level reliability (Gotz et al., 2010). According to Table 2, the composite reliability was more than the cut-off value of 0.70 (Cronbach, 1951; Hair et al., 2010), (ranging from 0.812 to 0.965. This study employed the "Average Variance Extracted" (AVE) technique to evaluate convergent validity, following the recommendations of Hair et al. (2017) and Henseler et al. (2015). The AVE stands for average variance, which is frequently obtained from the observed items of a variable (Hair et al., 2013). Table 2 shows that, on average, each variable's AVE could explain more than half of the variation in its measuring items, with values above the recommended standard of 0.5 (50%) (Fornell & Larcker, 1981).

Table 2
Internal consistency and convergence validity results

Constructs	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)	
Accounting Information	0.870	0.902	0.608	
Advocate Recommendations	0.809	0.874	0.635	
Financial Literacy	0.962	0.965	0.799	
Individual Investment decision-making	0.935	0.946	0.661	
Firm-Image Coincidence	0.907	0.925	0.607	
Neutral Information	0.882	0.909	0.587	
Personal Financial Needs	0.862	0.896	0.591	

HTMT was the second criteria this study employed to assess the discriminant validity. Henseler et al (2015) state that the heterotrait-monotrait ratio (HTMT) evaluates the discriminant validity of the associations. Specifically, the comparison is made between the correlation between indicators within the same concept and those across constructs using the geometric-mean method. According to Henseler et al (2015), the HTMT values must be lower than 0.90. Table 3 indicates that the upper limit of HTMT values was less than 0.90. Because the measuring model satisfies the HTMT criteria, the examination of discriminant validity also reveals that it is appropriate.

Table 3
Heterotrait-Monotrait Ratio (HTMT)

Constructs	AI	AR	FinLit	IIDM	NI	PFN	SFI
AI							
AR	0.435						
FinLit	0.110	0.080					
IIDM	0.589	0.609	0.047				
NI	0.572	0.653	0.053	0.700			
PFN	0.386	0.183	0.052	0.417	0.319		
SFI	0.384	0.616	0.172	0.577	0.634	0.125	

Assessment of the Structural Model

R square represents the variance in the endogenous variable(s) or construct(s) that is(are) explained by the exogenous variable(s) or construct(s). It is a measure of the amount of variation in the construct (individual investment decision-making) that is explained by the model (Hair et al., 2017; Henseler et al., 2015). The coefficient of determination (R^2) is the main measure used to evaluate the value of structural models (Cohen & Manion, 1989). The R^2 value for each endogenous variable is evaluated using three criteria, according to Cohen (1988): considerable level (0.26 and above), moderate level (from 0.13 to 0.25), and weak level (from 0.02 to 0.12). The R^2 value for individual investment decision-making is 0.767, Table 4. The R^2 value exhibits a high prediction level as advised by Cohen (1988) since it is above 25%, which is at a significant level.

Table 4
R-square result

Endogenous Variables	R Square	R Square Adjusted
IIDM	0.767	0.762

Substantial > 0.25; Moderate > 0.12, Weak > 0.02 (Cohen & Manion 1989)

Effect size is used to quantify the change in R^2 value that occurs when a certain predictor component is eliminated from the model (Sarstedt et al., 2017). Specifically, it assesses how well a given exogenous construct explains a given endogenous construct by looking at how the R^2 value changes (Sarstedt et al., 2017). Table 5 shows that six relationships showed a medium effect. neutral information has a medium effect on individual investment decision-making (f^2 = 0.184), followed by financial literacy has a medium effect on individual investment decision-making (f^2 = 0.171), followed by the firm image coincidence also has a medium effect on individual investment decision-making (f^2 = 0.074), followed by personal financial needs has a medium effect on individual investment decision-making (f^2 = 0.074), followed by advocate recommendations has a medium effect on individual investment decision-making (f^2 = 0.038), followed by accounting information has a medium effect on individual investment decision-making (f^2= 0.030).

Table 5
F-square result

Exogenous Variables	*Individual Investment Decision-Making*
Accounting Information	0.030
Advocate Recommendations	0.038
Neutral Information	0.184
Personal Financial Needs	0.047
Firm-Image Coincidence	0.074
Financial Literacy	0.171

Large: f2 effect size > 0.34; Medium effect > 0.14; Small: 0.0 > 0.01 (Cohen, 1988)

Predictive relevance (Q^2 value) has been used to assess the prediction accuracy of the structural model (Sarstedt et al., 2017). The purpose of the Q^2 value evaluation was to assess the predictive potential of the endogenous variable items in accordance with the suggestions made by Stone (1974) and Geisser (1974). Q^2 was ascertained using the blindfolding procedure, which is available in most PLS software packages. In general, the route model's predictive accuracy is appropriate for this particular construct if the Q^2 value for a given endogenous variable is larger than zero (Byrne, 2016). This indicates that the model has predictive importance. Table 6 illustrates the excellent predictive significance of the structural model utilized in this study, since all endogenous variables had Q^2 values larger than zero.

Table 6
Result of predictive relevance

Endogenous Variables	CCR Q^2 (=1-SSE/SSO)	CCC Q^2 (=1-SSE/SSO)
Individual Investment Decision-Making	0.434	0.571

CCC=Construct Cross-validated Communality, CCR=Construct Cross-validated Redundancy

Table 7 shows the path coefficient assessment results for the proposed direct relationships in the structural model. Table 7 shows that five out of five direct relationship hypotheses were significant. Four supported hypotheses were significant at level p< 0.01 (exceeding the standardised value of 2.58), and one hypothesis was significant at level p< 0.05 (exceeding the standardised value of 1.96). The path coefficient value (β) for the five hypotheses was between 0.124 to 0.375. The highest significant path (p=0.000) was found between accounting information and individual investment decision-making (β=0.375 or 38% and t= 6.576). The hypothesis was significant at level p< 0.01 (exceeding the standardised value of 2.58). The second significant path (p=0.000) was between personal financial needs and individual investment decision-making (β=0.137 or 14% and t= 3.674). The hypothesis was significant at level p< 0.01 (exceeding the standardised value of 2.58). The third significant path (p=0.000) was found between neutral information and individual investment decision-making (β=-0.124 or 12% and t= 3.506). The hypothesis was significant at level p< 0.01 (exceeding the standardised value of 2.58). The fourth significant path (p=0.004) was between firm image coincidence and individual investment decision-making (β=-0.229 or 23% and t= 2.874). The hypothesis was significant at level p< 0.01 (exceeding the standardised value of 2.58). The fifth significant path (p=0.032) was between advocate recommendations and

individual investment decision-making (β=0.144 or 14% and t= 2.157). The hypothesis was significant at level p< 0.05 (exceeding the standardised value of 1.96).

Table 7
Path coefficient result (Direct effect)

Hypotheses	OS/Beta	SM	SD	LL	UL	T	P	Decision
H1: FIC -> IIDM	0.229	0.226	0.080	0.063	0.362	2.874**	0.004	Significant
H2: AI -> IIDM	0.375	0.386	0.057	0.255	0.475	6.576**	0.000	Significant
H3: NI -> IIDM	0.124	0.130	0.035	0.058	0.190	3.506**	0.000	Significant
H4: AR -> IIDM	0.144	0.140	0.067	0.028	0.284	2.157*	0.032	Significant
H5: PFN -> IIDM	0.137	0.144	0.037	0.060	0.207	3.674**	0.000	Significant

Significant: **p < 0.01, *p < 0.05

Table 5.19 shows that five out of the five relationships related to the moderating role of financial literacy were supported. Four supported hypotheses were significant at level p< 0.01 (exceeding the standardised value of 2.58) in positive sign directions, one supported hypothesis was significant at level p< 0.05 (exceeding the standardised value of 1.96) in positive sign directions. The highest significant moderation path (p=0.000) was found between financial literacy x advocate recommendations -> individual investment decision-making. This moderating relationship was statistically significant as the t-value was 3.756, which is higher than the standardised value of 2.58, in positive sign directions, the p<0.000 which is less than 0.01, and the corresponding regression weight was β=0.194 or 19%. Accordingly, the moderation effect for financial literacy between advocate recommendations and individual investment decision-making is significant, and hypothesis H9 was supported. The second significant moderation path (p=0.002) was found between financial literacy x personal financial needs -> individual investment decision-making. This moderating relationship was statistically significant as the t-value was 3.056, which is higher than the standardised value of 2.58, in positive sign directions, the p<0.002 which is less than 0.01, and the corresponding regression weight was β=0.135 or 14%. Accordingly, the moderation effect for financial literacy between personal financial needs and individual investment decision-making is significant, and hypothesis H10 was supported.

The third significant moderation path (p=0.007) was found between financial literacy x firm image coincidence -> individual investment decision-making. This moderating relationship was statistically significant as the t-value was 2.705, which is higher than the standardised value of 2.58, in positive sign directions, the p<0.007 which is less than 0.01, and the corresponding regression weight was β=0.250 or 52%. Accordingly, the moderation effect for financial literacy between firm image coincidence and individual investment decision-making is significant, and hypothesis H6 was supported. The fourth significant moderation path (p=0.007) was found between financial literacy x neutral information -> individual investment decision-making. This moderating relationship was statistically significant as the t-value was 2.704, which is higher than the standardised value of 2.58, in positive sign directions, the p<0.007 which is less than 0.01, and the corresponding regression weight was β=0.110 or 11%. Accordingly, the moderation effect for financial literacy between neutral information and individual investment decision-making is significant, and hypothesis H8 was supported. The fifth significant moderation path (p=0.032) was found between financial literacy x accounting information -> individual investment decision-making. This moderating relationship was statistically significant as the t-value was 2.165, which is higher than the

standardised value of 1.96, in positive sign directions, the p<0.032 which is less than 0.05, and the corresponding regression weight was β=0.116 or 12%. Accordingly, the moderation effect for financial literacy between accounting information and individual investment decision-making is significant, and hypothesis H7 was supported.

Table 8
Path coefficient result (Moderating effect- Financial Literacy)

Hypotheses	OS/Beta	SM	SD	Confidence Interval 95% Corrected		Bias	T	P	Decision
				LL	UL				
H6: FinLit x FIC -> IIDM	0.250	0.238	0.092	0.410	0.017		2.705**	0.007	Significant
H7: FinLit x AI -> IIDM	0.116	0.110	0.054	0.005	0.211		2.156*	0.032	Significant
H8: FinLit x NI -> IIDM	0.110	0.105	0.041	0.04	0.193		2.704**	0.007	Significant
H9: FinLit x AR -> IIDM	0.194	0.189	0.052	0.296	0.092		3.756**	0.000	Significant
H10: FinLit x PFN -> IIDM	0.135	0.133	0.044	0.221	0.049		3.056**	0.002	Significant

Significant: **p < 0.01, *p < 0.05

Discussion

This research mainly contributes to the body of knowledge in behavioural finance, especially to the detailed understanding in the literature of determinants of individual investment decision-making for Iraqi investors, by proposing and empirically testing a conceptual model developed to examine the direct relationship between determinants of investor behaviour and individual investment decision-making of Iraqi investors, the moderating role of financial literacy in the relationship between determinants of investor behaviour and individual investment decision-making of Iraqi investors. The study examined the direct relationships between the determinants of investor behaviour (i.e., firm image coincidence, accounting information, neutral information, advocate recommendations, and personal financial needs) and individual investment decision-making of Iraqi investors. The findings confirmed positive significant relationships between firm image coincidence, accounting information, neutral information, advocate recommendations, personal financial needs, and individual investment decision-making of Iraqi investors as described in the research framework. The result strongly supports the findings of Sachdeva et al. (2022), who found that firm image coincidence, accounting information, neutral information, advocate recommendations, and personal financial needs influence investment decisions. Similarly, the result of this hypothesis also strongly supports the empirical results of Khawaja and Alharbi (2021) who found that the firm image coincidence, accounting information, neutral information, advocate recommendations, and personal financial needs significantly influence investor behaviour. The result is endorsed by the past empirical study by Naveed et al (2020), who found that corporate reputation, accounting information, and neutral information directly and positively influence an individual investor's investment decision.

The study also examined the moderating role of financial literacy between the determinants of investor behaviour (i.e., firm image coincidence, accounting information, neutral information, advocate recommendations, and personal financial needs) and individual investment decision-making of Iraqi investors. The findings confirmed that financial literacy was found to moderate significantly and positively the relationship between firm

image coincidence, accounting information, neutral information, advocate recommendations, personal financial needs and individual investment decision-making of Iraqi investors. The result strongly supports the arguments of Adil et al. (2022a) that financial literacy can strengthen investor knowledge and skills to understand financial statements, marketability of stock, expected corporate earnings, and market value of shares. The result of this hypothesis also strongly supports the argument of Ahmad and Shah (2022) that financial literacy strengthens investors ability to follow up other information in the media, recent price movements, changes in economic indicators, government holdings in investment, statements from government officials. Similarly, it support the argument that financial literacy strengthens investors ability to identify their personal financial needs and make sound investment decision-making to buy or sell stocks, which fit their goals in maximise returns and minimise risks (Kishan & Alfan, 2019). According to Bui et al (2020), high financial literacy investors will encourage to invest where there is trustworthy, timely, and accurate financial information from trusty sources such annual reports, accounting information, stock's past performance, and expected corporate earnings rather than social interaction information from friend, family etc., in such way investors avoid engaging in harmful externalities and strengthens their ability to make informed investment decisions.. These argument have been endorsed by the findings of this study.

Implications

Theoretically, the study contributed to the body of knowledge on the importance of firm image coincidence, accounting information, neutral information, advocate recommendations, and personal financial needs as predictors of individual investment decision-making of Iraqi investors. Additionally, empirical evidence is provided to support the financial behavioural theory, namely that firm image coincidence, accounting information, neutral information, advocate recommendations, and personal financial needs have a horizontal relationship with individual investment decision-making of Iraqi investors. It was concluded that firm image coincidence, accounting information, neutral information, advocate recommendations, and personal financial needs should be translated to informed decision-making by Iraqi investors, and not to only emphasise the process of decision-making alone. The results suggest Iraqi investors consider a broad range of information, including a firm's image alignment with their own values (firm image coincidence), financial health (accounting information), general market news (neutral information), trusted endorsements (advocate recommendations), and personal financial goals (personal financial needs). This reinforces the financial behavioural theory that depicts investor decisions as a complex interplay of various influences, not solely focused on risk-return analysis. The positive association with advocate recommendations and neutral information suggests that Iraqi investors might be transitioning from a reliance on personal networks towards a more information-driven approach. This aligns with the theoretical proposition of the financial behavioural theory that as a market develops, investors become more sophisticated in their information gathering and analysis. Moreover, the positive link between personal financial needs and investment decisions highlights the practical considerations of Iraqi investors. They might be using investments to achieve specific financial goals, requiring a balance between risk tolerance and potential returns. It was also found that the interplay of various influences of firm image coincidence, accounting information, neutral information, advocate recommendations, and personal financial needs are more likely to enhance the Iraqi investors' ability to make informed investment decision-making.

Past studies neglect to examine the moderation effect of financial literacy in the relationship between determinants of investor behaviour and an individual's investment decision in the stock market (Adil et al., 2022b). Little research has been done on the moderating effect of financial literacy between determinants of investor behaviour and individual's investment decision-making (Ahmad, 2022). Examining financial literacy as moderator addressed this research gap. The findings confirmed that financial literacy was found to moderate significantly and positively the relationship between firm image coincidence, accounting information, neutral information, advocate recommendations, personal financial needs and individual investment decision-making of Iraqi investors. By highlighting the moderating role of financial literacy, this study offers a significant theoretical contribution. It emphasizes the importance of financial education for fostering informed decision-making by Iraqi investors, ultimately leading to a more developed and stable financial market. This study sheds light on the crucial role of financial literacy in enhancing investment decisions by Iraqi investors. The positive and significant moderation effect of financial literacy suggests it acts as a filter through which other factors influencing investment decisions are processed. Investors with higher financial literacy might be better equipped to evaluate firm image coincidence, analyse accounting information, assess the value of neutral information, weigh advocate recommendations, and align personal financial needs with appropriate investment choices. The findings support the theoretical notion of the financial behavioural theory that financially literate investors make more informed decisions. They can critically analyse the various factors at play, reducing reliance on potentially biased information (like advocate recommendations) or emotional responses (like the firm image). This aligns with theories emphasizing the importance of financial knowledge for sound investment choices

Practically, the positive relationship with multiple information sources suggests that Iraqi investors should consider a multifaceted approach. Analyse company image alignment with values (firm image coincidence), study financial statements (accounting information), stay updated with market news (neutral information), and seek recommendations from trusted sources (advocate recommendations). By understanding financial concepts and investment options, investors can make more informed decisions based on the various factors influencing their choices. Iraqi investors must align Investments with their financial needs by understanding personal financial goals (needs), which is crucial. In contrast, understanding the importance of personal financial needs suggests tailoring investment products by financial institutions to cater to different risk-return profiles and long-term investment goals of Iraqi investors. Financial institutions also can leverage the importance of firm image and advocate recommendations by emphasizing their ethical practices and strong track records. Develop marketing materials that resonate with Iraqi investors' values and goals. In the same vein, providing clear and accessible financial information (accounting data, market analysis) can build trust and attract investors. Financial advisors can offer educational workshops and resources to enhance financial literacy among Iraqi investors. Government and regulatory bodies can play a role in promoting financial literacy initiatives. Educational programs can empower Iraqi investors to make informed decisions and navigate the financial markets more confidently. Furthermore, ensuring transparency in financial reporting and market activities can build trust and encourage Iraqi investors to participate in the market. Regulations promoting ethical practices can address concerns about potential biases in advocate recommendations.

Future Research

Future studies should extend the study framework to include variables from other financial behavioural theories to measure individual investment decision-making in Iraq. other factors may also have a strong impact on individual investment decision-making in Iraq. Managers at the Iraq Stock Exchange and investment agents' perspectives should be considered in future research. Managers and investment agents may have their own views and opinions on determinants that enhance individual investment decision-making of Iraqi investors. This could offer a more accurate assessment and reliable findings on individual investment decision-making in Iraq. Investigating how financial literacy varies across different investor segments in Iraq (e.g., age, income level) could provide insights into tailored financial education programs. Furthermore, examining how financial literacy moderates investment decisions for different asset classes (stocks, bonds, real estate) would offer a more comprehensive understanding of its influence.

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