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Investment Decision Quality Improvement Model in the Context of Behavioural Finance

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Abstract

This study aims to identify themes, trends, and networks in the mechanisms that shape the quality of investment decisions in the context of behavioural finance using bibliometric. The results show that good financial literacy can reduce the negative influence of cognitive biases such as heuristics, framing effects, and herd mentality in investment decision-making. In addition, improved financial literacy also plays a role in moderating the effects of behavioural biases on investment decisions, resulting in more rational and profitable decisions. Therefore, financial literacy is an effective strategy to improve the quality of investment decisions by reducing the impact of cognitive biases.

Keywords

Investment Decision; Behavioural Finance; Cognitive Bias; Financial Literacy; Bibliometric Analysis

INTRODUCTION

Along with economic growth in the era of rapid globalisation, financial management must be done carefully. This can provide decisions regarding the funds used, so it is necessary to understand the knowledge of financial management. Someone who has financial knowledge and understanding can improve their quality of life, one of which is by investing. (Safryani Ulfy et al., 2020).. Investment is an important activity for the economy for individuals and organisations, where the hope is to get benefits in the future. So that investors or investors use investment as a means to guarantee a better level of life in the future. This can be seen in the Indonesian capital market which has increased the number of investors every year. From the statistical data of the Indonesian Central Securities Depository (KSEI), Indonesian capital market investors increased by 18.01%, namely 12.16 million in December 2023 from 10.31 million in December 2022. With the increase in the number of investors, more investment decisions will be made, because investors are faced with many reviews that can influence their actions in making investment decisions. (Tasia et al., 2024).. These actions are in the form of *rational* actions and irrational actions (Pradhana, 2018). (Pradhana, 2018). However, not all investors equip themselves with the right investment knowledge and techniques to meet their needs, and invest only because of FOMO (*Fear of Missing Out*). From a lot of information that is not necessarily true, this will have an impact on their investment decisions. (Indraswari, 2022)

OJK noted that illegal investments in Indonesia resulted in public losses of Rp 139.67 trillion, this loss occurred from 2017 to 2023. Hudiyanto as Head of the Secretariat of the Illegal Financial Activities Eradication Task Force stated that OJK receives complaints from people trapped in illegal investments every day. The complaints are processed by OJK together with 15 other institutions, including the police. As of early 2024, 1,218 fraudulent investment entities have been blocked. (Pessy Pessy, 2024). This is driven by the fact that the level of public financial

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Figure 1. Number of Indonesian Capital Market Investors in 2022 - 2023

Source: Processed databoks.katadata.co.id

literacy is still quite low, while financial literacy is the knowledge, skills and beliefs that greatly influence a person's attitudes and behaviour regarding finance, thus helping them to make better decisions and manage their finances.

The Financial Services Authority (OJK) has conducted a direct survey on 14,634 respondents from 34 provinces in 2022. The results of SNLIK (National Survey on Financial Literacy and Inclusion) in 2022 showed that the financial literacy index of the Indonesian people was 49.68 per cent, up from 38.03 per cent in 2019. Despite an increase of 11.65 per cent, the 49.68 per cent figure shows that there are still around half of the population or 50.68 per cent who do not have an adequate understanding of finance.

Lack of understanding of finance will result in behavioural bias so that investment decisions taken will tend to be poor and illogical. Therefore, financial literacy has an important role in a person's decision to invest to avoid illogical or *irrational* decisions. (Weixiang et al., 2022).. This is in line with research Sartika & Humairo (2021) the higher the investor's literacy towards finance, the less likely the emergence of behavioural biases in investment decision making. Cognitive bias is one type of behavioural bias in financial behaviour. This cognitive bias is the result of thinking without good reason or basis in rational analysis. This increases the likelihood of incorrect or unreasonable interpretations and deviations in perception and judgement. (Asri Marwan, 2013).

The urgency of this research lies in the investment decision, which is the most important aspect in all investment activities. This decision is very crucial because if investors make the wrong decision, the impact is not only limited to the lack of maximisation of the benefits obtained, but also to the loss of various opportunities to get the expected return from the investment (Afriani, Dila. & Halmawati, 2019). investors make the wrong decision, the impact is not only limited to the lack of maximisation of the benefits obtained, but also to the loss of various opportunities to get the expected return from the investment (Afriani, Dila. & Halmawati, 2019).

Investment decisions made by both investors and financial practitioners are also often based on irrational behaviour caused by deviations in perception, *judgement*, and irrational understanding or often referred to as cognitive bias. There are 3 groups in cognitive bias. The first group is *heuristic bias* which consists of *availability, hindsight,* and

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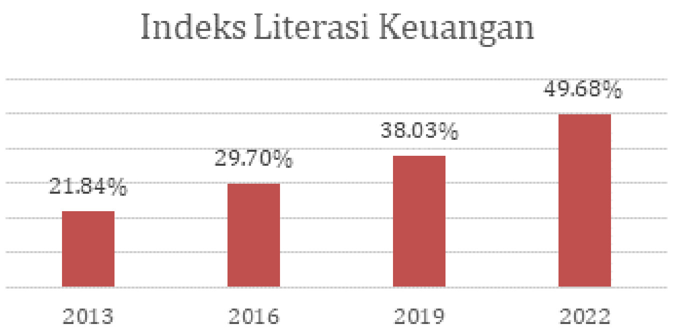

Figure*2*. Indonesian Financial Literation Index

Source: Financial Service Authority

representativeness. The second group is a reaction bias to information consisting of *overreaction*, *conservatism, anchoring and adjustment, and confirmation bias*. The third group contains information understanding bias and self-adjustment consisting of *excessive optimism, overconfidence, framing effect, disposition effect,* and *mental* accounting. (Asri Marwan, 2013). The impact of this bias then makes the selected investment not optimal (Basumatary et al., 2013). (Basumatary et al., 2023).

In addition, investment is also influenced by financial literacy factors. It is important for investors to have an understanding and knowledge of the various financial instruments to be able to make maximum financial decisions and avoid unexpected financial risks. With a good understanding and knowledge of financial literacy from an investor, investment decisions can be more logical and avoid behavioural bias. (Natalia & Wiyanto, 2021). In line with the statement by Cipto Pramono Siregar et al., (2022) which states that the higher the level of financial literacy, the more logical investment decisions can be made. which states that the higher the level of financial literacy, the lower the cognitive bias and the higher the quality of investment decisions made by investors.

Based on several existing research phenomena, this study aims to develop a model for improving the quality of investment decisions from the perspective of cognitive bias and financial literacy. Investors often make reasonable or unreasonable decisions based on their knowledge (Weixiang et al., 2022). (Weixiang et al., 2022).. Traditional finance theory suggests investors act rationally and make good investment decisions to maximise their returns (Kumar & Goyal, 2015). (Kumar & Goyal, 2015).

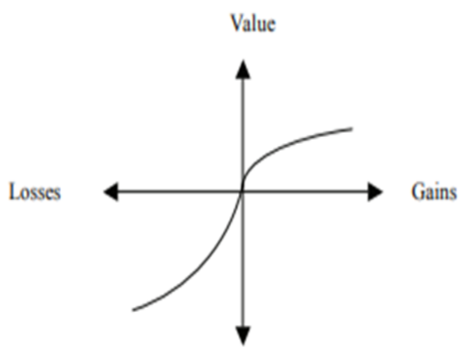

Figure 3. Prospect Theory Value Function

Source: Kahneman and Tversky, 1979

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Figure 4. Bibliometric Analysis Procedure

Source: Donthu et al, (2021)

Weixiang et al. (2022) explain that the level of financial literacy possessed by individuals explained that the level of financial literacy possessed by individuals greatly influences the actions of investors. People who have good financial literacy tend to be able to avoid unreasonable behaviour. (Li & Qamruzzaman, 2022; Mehta et al., 2022).. Investors' actions and judgements on their investments will be less precise if they do not have a strong knowledge base. On the contrary, having a good understanding of financial basics can help investors take control of their financial situation and make wise decisions. To make a good investment decision, one should consider all relevant information according to the efficient market hypothesis.

However, although a lot of available information can support the level of financial literacy, in making investment decisions there are often various biases in investor behaviour when starting to invest in real terms. (Hayati et al., 2022).. According to Simon (1979)a person's ability to understand all information and make the right decision has a limit or known as "bounded rationality". As a result, illogical thinking can affect financial decisions. According to Barberis et al. (2002), illogical thinking can affect financial decisions., Chaffai & Medhioub (2014) and Endler & Magnusson (1976) on research Ahmad (2020)highlighted that investment behaviour can also be influenced by the psychological characteristics of individuals or investors themselves. These psychological factors can lead individuals to make investment decisions that are not always rational, especially in situations of risk and uncertainty due to cognitive bias (Kahneman & Tversky, 1979).

Cognitive bias is a systematic thinking and decision-making error, which has a significant impact on investors' financial choices. (Okai et al., 2015). Investors often use simplified decision-making strategies (*heuristics*), leading to predictable cognitive biases and errors in judgement. (Fiske & Taylor, 2020). These biases can affect decision-making ability, problem-solving skills,

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Table 1. Publication Development by Journal

Journal Name	Total
Journal of Financial Economics	20
Journal of Personality and Social Psychology	15
The Lancet	14
Journal of Pension Economics and Finance	12
Psychological Bulletin	12

Source: Data Processed by Authors (2024)

memory reliability, crisis response and overall emotional well-being. Investors are expected to make logical judgements based on existing literacy, yet their cognitive capacity limits this ability. Cognitive capacity includes values, routines, knowledge, and beliefs. These factors influence and hinder the decision-making process (M. Ahmad & Wu, 2022; Sachdeva et al., 2023).

In contrast to previous research that only focuses on cognitive bias and investment decisions, and still shows inconsistent results. *The state of the art of* this research is to identify the mechanism or process of forming the quality of investment decisions in the context of behavioural finance based on bibliometric analysis.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Prospect Theory

Prospect theory proposed by Kahneman & Tversky (1979) integrates psychology and economics to describe various behavioural conditions that can affect the investment decision-making process. According to this theory, human behaviour in the decision-making process is considered strange, contradictory and also *irrational* so that it tends to be influenced by various behavioural biases. In the development of prospect theory, it is explained that investor decision-making in accordance with the S curve explains that investor decision-making is based on potential gains and losses rather than the final outcome. On the curve losses are generally steeper than gains, which is a tendency towards loss aversion.

Investors may end up making inappropriate decisions, such as selling well-performing assets too soon in order to secure profits or holding on to underperforming assets for too long to avoid losses (Arkes, 2010; Tversky & Kahneman, 1992). (Arkes et al., 2010; Tversky & Kahneman, 1992).. Prospect theory thus provides a useful framework for understanding investment decisions by accounting for the irrational behaviour that often characterises such decisions.

Cognitive Bias

Cognitive bias is irrational assumptions or ways of thinking that are not based on logical aspects and strong justification. (Asri Marwan, 2013). Cognitive bias can lead to investors' lack of confidence in their own abilities, resulting in errors in making investment decisions (Hilary et al., n.d.). (Hilary et al., n.d.).. Variables that cause this bias include heuristic bias or behaviour that simplifies the decision-making process, reaction bias to information, and bias in understanding information. (Asri Marwan, 2013).

Cognitive biases stem from the lack of reliability of judgements, so these biases are defined as systematic deviations in the decision-making process. (Kahneman & Tversky, 1979).. Cognitive bias can affect the decision-making process, this is because

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Figure 5: Development of Scientific Publications

Source: Data Processed by Authors (2024)

humans tend to change their decisions based on statistical optimisation of their judgements and ultimately show inconsistent and irrational preferences. (Summerfield & Tsetsos, 2015).. Among the cognitive biases evidenced in the development of theories related to the decision-making process, there are three biases that influence the financial and managerial decision-making process, as well as due to their presence in individual decision-making behaviour in financial matters, related to financial markets and in everyday life. (Costa et al., 2017). The three cognitive biases (1) *heuristic* consists of: *availability, hindsight, and representativeness.* (2) bias reaction to information overreaction, *conservatism, anchoring and adjustment, and confirmation bias*. (3) and information understanding bias and self-adjustment consist of *excessive optimism, overconfidence, framing effect, disposition effect* and *mental accounting.* (Asri Marwan, 2013).

Investment Decision

Investment decision is a policy to invest capital in one or several assets in order to obtain future profits or benefits. (Sukandani et al., 2019). Basumatary et al. (2023) argues that investors are often irrational in making investment decisions. argues that investors are often irrational in making investment decisions. This is because investors are influenced by various behavioural biases, causing the selected investment to not be optimal. Investment decision making is also one of the important problems that investors must face because it involves analysing various individual, expertise, and situational factors. For this reason, psychological aspects are needed to help the effective decision-making process (Afriani, Dila. & Halmawati, 2019).

Financial Literacy

Siregar et al., (2022) argues that *knowledge* and *skills* in managing one's finances are important for daily life, because an understanding of financial literacy is closely related to one's success. According to the Financial Services Authority, financial literacy is a process to improve people's *knowledge*, *skills*, and *confidence* in making good decisions so that they can manage their finances better.

Financial literacy plays an important role in reducing cognitive biases and influencing investment decisions. Research shows that good financial literacy can reduce the negative influence of cognitive biases such as heuristics, framing effects, cognitive illusions, and herd mentality in the investment decision-making process. (Suresh G, 2021). Financial literacy also mediates the effects of behavioural biases on investment decisions. Research in the Pakistani market shows that financial literacy has a negative role in moderating herding bias, but has a positive role in moderating the disposition effect and mental accounting bias. (Khan, 2020). These findings suggest that individuals with better

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Table 2. Development of Publications by Author

Author	Documents
A.Lusardi	12
J. J. Xiao	4
A.Grohman	3
L. Klapper	3
M. van Rooij	2
S. J. Huston	2
T. Jappelli	2
K. Yafe	2
T. Bucher-Koenen	2
J. Almenberg	2

Source: data processed by the author

financial literacy are more likely to avoid investment decisions influenced by cognitive biases and are more likely to make rational decisions.

Good financial literacy helps investors to better understand risks and returns, thereby reducing the likelihood of decisions driven by cognitive biases. Thus, improving financial literacy can be an effective strategy to reduce the influence of cognitive biases and improve the quality of investment decisions. (Ashfaq et al., 2024; Iqbal et al., 2022)..

METHODS

This research uses bibliometric analysis to identify themes, trends and networks in the mechanisms that shape the quality of investment decisions in the context of behavioural finance.

Bibliometric Analysis

Bibliometric analysis is a method used to explore and analyse large-scale datasets of scientific studies. (Donthu et al., 2021).. This analysis is often used by researchers to understand the trends and direction of research in a particular field. (Alsharif et al., 2020).. Bibliometrics can also show the relationship between one research topic and another. With knowledge of these directions and linkages, researchers can conduct mapping to develop strategies and models for improvement in certain fields of study. According to Gao et al. (2021) This type of mapping is used to examine how various fields, disciplines, articles, and authors are connected to each other. This will result in a spatial representation in the form of a map. (Gao et al., 2021). According to Börner et al. (2003) This map will show the relationship between the development process and the structure of scientific knowledge, focus on the evolutionary process of a particular field of knowledge, and help researchers understand the limitations and trends of research in a particular field. Based on the definition and function of bibliometric analysis, the selection of this analysis technique is in accordance with the objectives of this study, namely to develop a model for improving the quality of investment decisions in the perspective of cognitive bias and financial literacy.

Data Collection

To present the breadth of coverage of the literature review of investment decision quality in the perspective of cognitive bias and financial literacy, it is necessary to collect relevant articles first. This article collection was carried out using the Scopus database source by utilising the Publish or Perish software.

Financial literacy describes the level of knowledge and ability of investors in terms of optimal financial management and utilisation. Financial literacy in this study is assessed based on a dataset of articles collected using the search *keywords* "financial literacy". Cognitive bias can be professionally defined as a form of error in the thinking process that can affect the judgement of something so that it will also affect the quality of decisions made

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(Cherry, 2016). Cognitive bias in this study is analysed based on articles that discuss this topic using search *keywords* such as "cognitive bias" OR "cognitive biases" . Investment decisions are financial decisions taken in order to allocate funds owned to get the expected profit or return. In this study, search *keywords* are used in the form of " investment decision" .

Costa et al. (2017) suggested that one of the procedures in conducting *bibliometric analysis* is to *filter* the articles that will be used as research samples. According to Costa et al. (2017)(2017), these limitations include the form of publication, publication time, scientific field, and language used in the publication article. The form of publication that will be studied in this study is limited to articles. So, publications in the form of books, *reports*, etc. are not included in the scope of the study. This was chosen based on the purpose of this study, which is to determine the direction and trend of research. The publication time is not limited in order to cover as many articles as possible. This is also so that the first publication in the chosen field of study can be known. The scientific field studied is the influence of cognitive bias on investment decisions. This is because there is investor behaviour that overrides rational reasons and uses irrational reasons (*cognitive bias*) in investment selection. (Asri Marwan, 2013). Language is limited to articles that use Indonesian and English. This was chosen to simplify the article search process. However, if an article is found in a language other than Indonesian and English, but uses the language in the title and abstract, it will still be included in the sample. The data obtained from the database was then *cleansed* using Ms Excel software. The cleaned articles were then saved in CSV format for further analysis using VOSviewer software.

Data Analysis

According to Tseng et al.VOSviewer software can be used to categorise documents that are related to each other into the same *cluster*. The results displayed can focus on the evolution or development of the research topic being studied. This can help researchers understand the development of a particular field of study. Common methods used in conducting bibliometric analysis include *statistical analysis, citation analysis, sharing analysis,* and so on. (Luo et al., 2022).. According to Donthu et al., (2021) bibliometric analysis techniques can be grouped into two main categories, namely: (1) *performance analysis* and (2) *science mapping. Performance analysis* displays the contribution of research constituents, which includes the number of publications and citations per year, while *science mapping* displays relationships between research constituents that include *citation analysis, co-citation analysis, bibliographic coupling, co-authorship analysis*, and *co-word analysis*. According to Donthu et al, (2021), this analysis process needs to be carried out by referring to the following procedure.

RESULTS AND DISCUSSION

Development of Scientific Publications

The process of searching the Scopus database using the Publish or Perish *software* resulted in a dataset of 600 articles. The first step in the process involved collecting raw data from Scopus based on relevant keywords, which were then filtered to ensure the quality and relevance of the selected articles. After the initial data collection, a data cleansing process was carried out, resulting in a final dataset of 582 articles ready for further analysis.

Scientific publications within the scope of the topic of improving the quality of investment decisions from the perspective of cognitive bias and financial literacy have been around since 1976. The first publication recorded in the database was B. Staw's "Knee-deep in the big muddy: a study of escalating commitment to a chosen course of action". This article was published in the journal "Organizational Behaviour and Human Performance" and has gained 1258 citations since its publication, showing significant influence in this field of research.

Broadly speaking, the development of scientific publications on the topic of improving

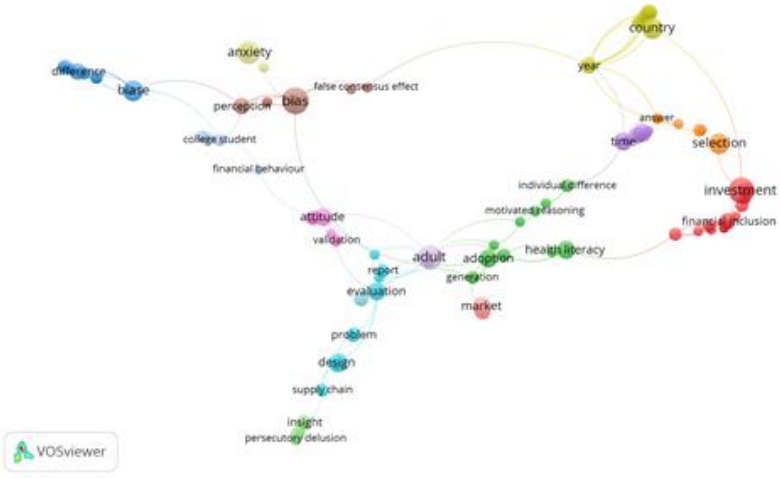

Figure 6. Network Visualisation

Source: Vosviewer

the quality of investment decisions in the perspective of cognitive bias and financial literacy recorded in the Scopus database has experienced a significant increase over time. The peak of the increase in the number of publications occurred in 2016, where 36 publications were recorded in one year. However, this trend did not continue, because from 2018 to 2023, there was a significant decrease in the number of publications produced. From the graph analysed, in 2018 the number of publications reached 22 articles, but in 2019 this number decreased dramatically to only 7 publications. This downward trend continued until 2023, where only 1 publication was recorded.

This decline in the number of publications may reflect a variety of factors, including a change in research focus, topic saturation, or perhaps challenges in developing innovative new research in this area. This data is important for researchers and policymakers to consider in understanding the dynamics and development of research on investment decision quality, cognitive biases and financial literacy. It also points to the need for continued efforts to promote research in this area, to ensure that the knowledge and strategies developed can continue to help individuals and organisations make better and more informed investment decisions.

Journal Source Mapping

Of the 582 research articles on improving the quality of investment decisions in the perspective of cognitive bias and financial literacy obtained through the Scopus database, the articles were published in 50 journal titles. Of these 50 journals, there are top 5 core journals in the publication of investment decision quality and cognitive bias in Scopus which shows that these journals have the most significant contribution and great influence in research. Among them are Journal of Financial Economics, Journal of Personality and Social Psychology, The Lancet, Journal of Pension Economics and Finance, Psychological Bulletin.

Source: data processed by the author

The Journal of Financial Economics is one of the most influential journals in the field of financial economics. Published by Elsevier, it focuses on empirical and theoretical research on various aspects of financial economics. Key topics covered include market behaviour, financial theory, and risk management. In the context of research focused on improving the quality of investment decisions from the perspective of cognitive biases and financial literacy, it was found that there were 20 articles published by this journal, demonstrating the journal's significant contribution to this area of research.

In addition, the Journal of Personality and Social Psychology, published by the American Psychological Association, is a journal that covers research on personality and social psychology. It examines various aspects of human behaviour, including interpersonal dynamics, social cognitive processes, and personal identity formation. In the context of the same research topic, there were 15 articles published by this journal, highlighting the relevance of social and personality psychology in understanding cognitive biases and financial literacy. The Lancet, a journal also published by Elsevier, covers high-quality medical research and various health disciplines, including public health and medical innovation. Although The Lancet's main focus is on the medical field, it published 14 articles related to the topic of improving the quality of investment decisions from the perspective of cognitive biases and financial literacy. This demonstrates the link between financial health and overall health.

Furthermore, the Journal of Pension Economics and Finance, published by Cambridge University Press, also contributed to research in this area by publishing 12 articles. Psychological Bulletin, published by the American Psychological Association, is a journal that reviews comprehensive literature in the field of psychology. On the same topic, it also published 12 articles. Thus, these five journals-Journal of Financial Economics, Journal of Personality and Social Psychology, The Lancet, Journal of Pension Economics and Finance, and Psychological Bulletin-collectively made significant contributions to research focused on improving the quality of investment decisions from the perspective of cognitive biases and financial literacy.

Authorship Mapping

There are 543 authors involved in writing articles on this topic. The majority of these authors only published one article, while only 25 authors published more than 2 articles. A. Lusardi is the most prolific author, having published 12 articles on this topic. The most popular article by A. Lusardi is entitled "The economic importance of financial literacy: Theory and evidence" in 2014 which has obtained as many as 1854 citations. This is followed by J. J. Xiao with 4 articles, A. Grohmann and L. Klapper with 3 articles.

Co-occurrence Network Analysis

The network visualisation shows the relationship between the various research

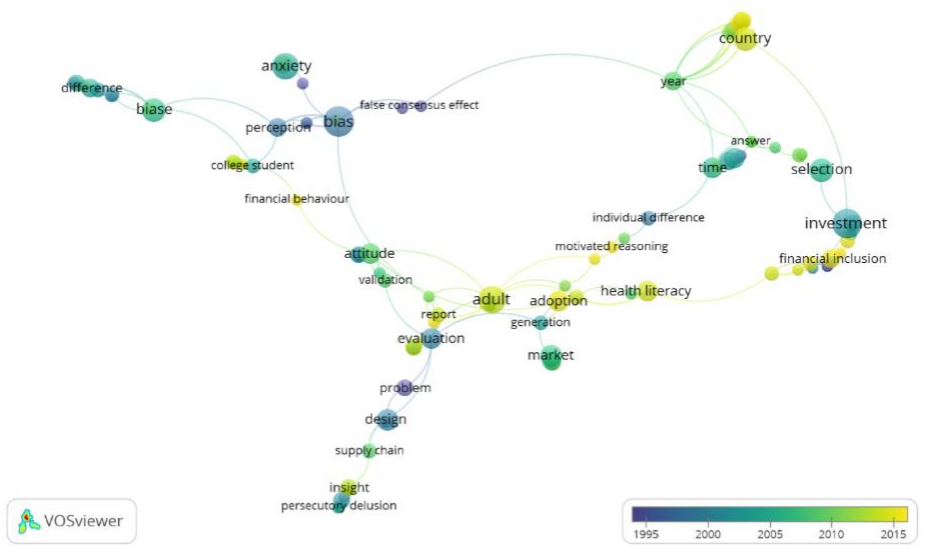

Figure 7. Overlay Visualisation

Source: Vosviewer

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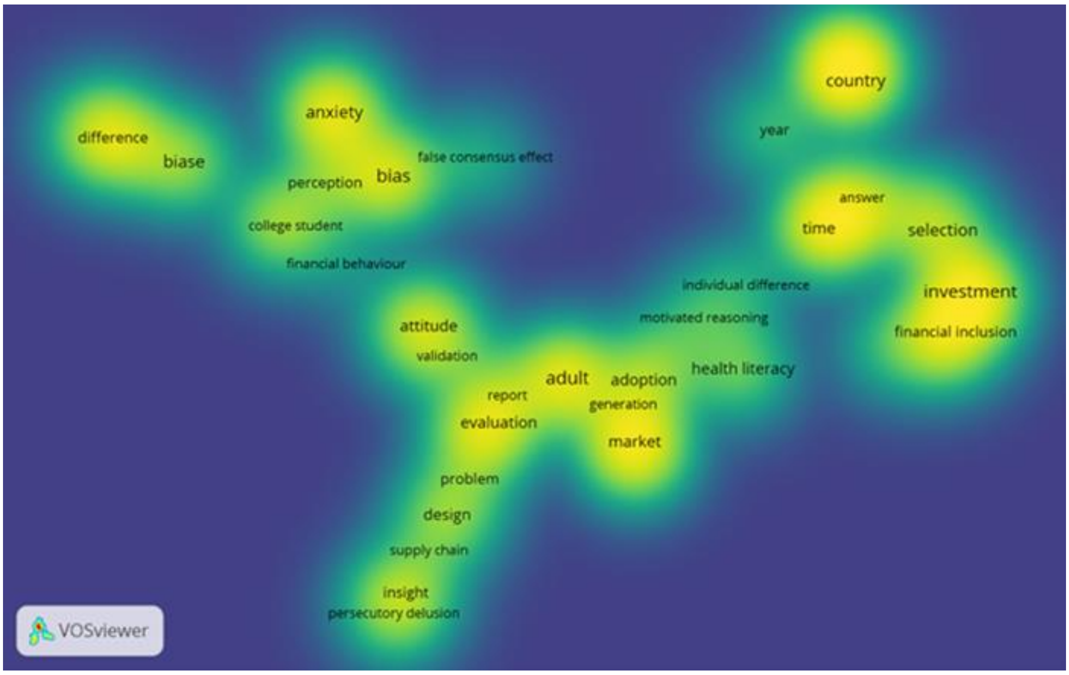

Figure 8. Density Visualisation

Source: Vosviewer

topics in this field of study. Circle elements represent research topics. The larger the circle, the more important the topic is in the network. The thickness of the line connecting the related circles indicates that the thicker the line, the stronger the relationship between the topics. Colours indicate different categories or *clusters of* research topics.

On the left, topics such as "bias", "perception", "anxiety", and "false consensus effect". This shows that these topics are of major concern in the context of cognitive biases such as anxiety and false perceptions affecting investment decisions. The topics "college student" and "financial behaviour" also indicate that this research also involves the college student population and their financial behaviour, which is relevant to the study of cognitive biases. This indicates that college students are often the subject of research in understanding how financial literacy and cognitive biases affect financial literacy and cognitive biases affect their financial behaviour. In the middle section, there are topics of "adult", "attitude", "evaluation", "adoption", and "market". This indicates a focus on attitude, evaluation and adoption of investment strategies within the market as it relates to investment decisions. The topics "report", "generation" and "validation" also show the process of evaluation and validation in the context of investment decision-making during this period. Topics such as "investment" are on the right of the figure and show that these topics are related to "financial inclusion", "health literacy", "selection", "year", and "country" indicating increased attention to financial literacy and how a better understanding of financial aspects improves the quality of investment decisions. On the right, the topics "individual differences" and "motivated reasoning" show a growing interest in how psychological and behavioural factors influence investment decisions.

Co-occurrence Overlay Analysis

The colour change in the *overlay visualisation* from blue to green and then to yellow shows that the research trend from 1995 to 2015 reveals how topics such as cognitive biases and financial literacy have evolved and intertwined in research on improving the quality of investment decisions. In the beginning, research was mostly about cognitive biases and their influence on investment decisions. However, over time, the research focus shifted to financial literacy and financial inclusion to help investors that are important in understanding and financial knowledge to make better investment decisions.

This figure provides a clear picture of how research in this area has evolved over two decades, showing a shift in focus from understanding cognitive biases towards improving financial literacy and financial inclusion to optimise investment decisions. By understanding these evolutions and trends, researchers can better design future studies that can continue to contribute to improving the quality of investment decisions.

Co-occurrence Density Analysis

Density visualisation shows the saturation or density of research topics, which can be seen from the colour symbols. The results of the analysis through this density visualisation are shown by the larger the circle node on the item and the more intense the yellow colour that appears on the circle node, indicating a higher level of saturation or higher research density. Vice versa, if the size of the circle and the yellow colour of the node.

The fainter the colour, the lower the research density. Based on the density visualisation results in the figure above, it is identified that there are several nodes that have a large circle size and solid yellow colour, namely *difference, anxiety, bias, attitude, evaluation, adult, market, country, time, investment* and *financial inclusion*, indicating a high research density in research on improving the quality of investment decisions in the perspective of cognitive bias and financial literacy. This indicates that many researchers are interested and have studied these topics in depth. On the other hand, the size of the circles and the fading yellow colour in the *perception, false consensus effect, financial behaviour, health literacy, motivated reasoning* and *individual difference* nodes indicate that there are still few researchers conducting research on these topics or that the existing research has not reached a high density level.

CONCLUSION

Based on the results, it was found that bibliometric analysis can be used to assess the literature on investment decision quality from the perspective of cognitive bias and financial literacy. This method allows researchers to systematically evaluate and understand the evolution of literature in the field, as well as provide comprehensive insights into trends, key themes, and existing research gaps. In this study, data was collected from the Scopus database with the help of Publish or Perish software, using keywords such as "financial literacy", "cognitive bias", and "investment decision". The data collection process was meticulous, involving screening and selection of articles to ensure the relevance and quality of the information obtained. After a rigorous screening process, 582 articles were obtained and analysed using VOSviewer software. This analysis aimed to identify key themes, developmental trends, as well as gaps in the literature related to this research topic.

The results show that publications on the topic of investment decision quality in the context of cognitive bias and financial literacy have existed since 1976. These publications show a significant increasing trend especially in 2016, but declined from 2018 to 2023. This finding suggests that while interest in this topic was once on the rise, it is possible that the recent decline in publications indicates saturation or a shift in research interest to other topics. The Journal of Financial Economics was identified as the most influential journal in this field, signalling that it is a frequently referenced primary source and has significantly contributed to the development of related literature. In addition, the author analysis shows that A. Lusardi is the most prolific author, meaning that this author has a high number of publications and significant influence in research on financial literacy and cognitive biases in investment decisions.

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The network visualisation using VOSviewer also revealed that topics such as cognitive bias and financial inclusion are the main focus of recent research. These visualisations help in understanding how various themes and concepts are interconnected and show the topics that are being widely discussed in the current literature. Thus, bibliometric analysis provides deep insights into the trends and evolution of research in the areas of investment decisions, cognitive biases and financial literacy. In addition, this method also helps researchers understand the limitations of existing research as well as identify future research directions that need attention. Using bibliometric analysis as a basis, researchers can develop better strategies and models to improve the quality of investment decisions, reduce cognitive biases, and increase financial literacy, which in turn can help individuals and institutions make better and informed investment decisions.

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