Arab American University
Faculty of Graduate Studies
Department of Administrative and Financial Science
Ph.D. Program in Finance and Accounting

The Effect of Behavioral Biases on Banking Credit Decision

Asmaa Hasan Saleem Selmi

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Dissertation Committee:

Dr. Mohammad Saleh

Dr. Naser Abedlkarim

Dr. Suneel Meheshwari

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Dissertation Approval
The Effect of Behavioral Biases on Banking Credit Decision

Asmaa Hasan Saleem Selmi

202216556

This dissertation was defended successfully on 25.4.2026 and approved by:

Dissertation Committee Members:

	Name	Title	Signature
1.	Dr. Mohammad Saleh	Main Supervisor	
2.	Dr. Naser Abedlkarim	Member of Dissertation Committee	
3.	Dr. Suneel Maheshwari	Member of Dissertation Committee	

Palestine, April /2026

Declaration

I declare that, except where explicit reference is made to the contribution of others, this dissertation is substantially my own work and has not been submitted for any other degree at the Arab American University or any other institution.

Student Name: Asmaa Hasan Saleem Selmi

Student ID: 202216556

Signature:

Date of Submitting the Final Version of the Dissertation: 17.5.2026

Dedication

In the Name of Allah

To my mother: Iqbal Mohammad Selmi
To my Family- my sisters, brothers, and their families
To the great martyrs and prisoners, living examples of sacrifice.
And to all souls whose lives were tragically lived, who endured great hardships and were never given the chance to complete their education or pursue their dreams.

I humbly dedicate this dissertation.

Asmaa Hasan Saleem Selmi

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Abstract

This study investigates the effect of behavioral biases on banking credit decisions, focusing on both cognitive and emotional biases. The cognitive biases examined include overconfidence, representativeness, anchoring and adjustment, cognitive dissonance, availability, self-attribution, illusion of control, conservatism, ambiguity aversion, mental accounting, confirmation, hindsight, recency, and framing biases, while the emotional biases include endowment, self-control, optimism, loss aversion, regret aversion, and status quo biases. This study uses a quantitative approach; relies on secondary data from academic literature and primary data collected through a survey questionnaire administered to credit officers, credit analysts, credit managers, and branch managers across the Palestinian commercial banks, through simple random sampling. The results show that banking credit decisions are significantly influenced by overconfidence and self-attribution, anchoring, illusion of control, availability, conservatism, and the overall behavioral bias index, as their significance levels were below 0.05. Hindsight bias was the only cognitive bias found to have no effect, while representativeness, endowment effect, optimism, status quo, self-control, mental accounting, regret aversion, loss aversion, and ambiguity aversion biases also showed no significant impact, with significance levels above 0.05.

Key words: Palestine, credit, cognitive, emotional, bias

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Chapter 1: Introduction

Globally, banks and financial institutions play a fundamental intermediary role as they transfer money from deposits to issue credit and lend to other parties needing financing to carry out their projects and works. The credit activity represents the central profit creation that poses dangers for both lenders and borrowers. Borrowers may not fulfill credit commitments on time; moreover, banks with significant credit risk may face a high possibility of bankruptcy that threatens the depositors.

The credit function contributes to the development of the economy and the financial sector as well. Banks' credit is a crucial issue for their success; however, credit assessment carries significant risks that impact the banking industry. Credit risk is a main source of worry for bank regulators. It can simply and quickly lead to bank failure. Dilemmas such as the nonperforming loan rate can potentially lead to the collapse of banks and affect the country's financial system.

Regionally, credit rates are experiencing rapid development and growth. For instance, Arab countries are seeing an increase in the total volume of loans and credit facilities from $2,633,482.6 in 2021 to $2,869,771.7in 2022 (amf.org). Locally, banks operating in Palestine granted a credit of about $11,982.9billion by the end of 2023, compared to $11,045.0billion in 2022.The expansion in the credit portfolio led to a 68.1% increase in the loan-to-deposit ratio (pma.ps). Meanwhile, both Palestine and the Arab countries are facing an increase in non-performing loans as well.

Following the vital role of credit function in the banking system and its rapid growth, credit assessment is a matter of concern, as numerous studies emphasize that financial crises are sometimes due to incorrect credit evaluations. While there are other causes of financial catastrophe exist, the loan officer's role remains crucial in all stages of the credit process, as their decision is the final product of the credit assessment process. Hence, this raises questions regarding credit decision-making and the nature of the function of human factors and behavioral biases in the credit process.

Imperfections in human decisions lead to imperfect results, as individuals who make choices throughout their lives do not possess full rationality, wisdom, and impartiality, and are

also vulnerable to human thinking and processing errors. People are not ideal decision-makers. Indeed, they are prone to mistakes and often rely on personal judgment rather than going through a purely systematic process. Consequently, errors, crises, pandemics, and problems are likely to occur. Humans make many mistakes in their behaviors and reactions to problems and situations, believing that this is the best way to solve an issue or to respond to a situation. These mistakes and biases exist in several aspects of life; notably finance and banking are not exceptions to this phenomenon.

People in general, including investors, bankers, and customers, make numerous financial choices that often lack full of rationality and reasonableness. This irrationality is explained and illustrated by behavioral finance, which emerged and developed over time to clarify the nature and reasons for human prejudices and biases in the finance field and investigate the role of those biases on the financial decisions and their consequential outcomes that may influence various aspects of the financial system.

Behavioral finance concerns how people perceive, recognize, and process information and formulate financial decisions, both individually and collectively. It aims to clarify the actual behavior and activities of investors and markets in contrast to theoretical investor behavior, which assumes how investors and markets are supposed to act (Pompian, 2012).

Credit is a banking area that requires making several judgments and decisions throughout the entire credit assessment process. Certainly, there are human biases that affect the quality and the final credit decision of whether to accept or reject a credit request. Accordingly, it is vital to study these behavioral biases and their impact on credit choices, as well as their foundations, to correct, overcome, if possible, avoid them in order to achieve a more favorable credit decision and improved financial performance.

Even though insufficient research and investigation have been conducted to examine the influence of behavioral biases in banking credit decisions, this study attempts to explore more broadly the behavioral biases that affect the banking credit decisions for the Palestinian credit workers in commercial Palestinian banks.

1.1 Study significance

The importance of this study arises from the value of credit decisions and the determinants shaping their practice along with their influence on banks' future financial performance and market potential, as they are the key players. While few studies have been conducted in the behavioral biases domain in general within Palestine, particularly regarding banking credit decisions worldwide, this research holds valuable implications for explaining the significance of behavioral prejudices and their relationship with credit decision-making from a Palestinian perspective. Additionally, it contributes to the development of the banking credit decisions evaluation process, thus improving credit decisions. The findings will assist bankers and financial regulators in making better credit decisions, thereby avoiding financial pitfalls and positive financial results.

By addressing the gap of lacking a comprehensive and inclusive investigation and measurement in the literature on the impact of behavioral biases on credit decisions and their processing methods, this study enlightens its extent and scope. The research focuses on the critical need for a comprehensive, broad, and thorough identification and measurement that enhances the recognition of the behavioral biases' function in banking credit decisions. The practical findings of the research can benefit the banking industry and policymakers in various ways. By understanding which types of cognitive and emotional biases can diminish their impact, training programs can be developed, and new policies can be established. Various strengths points of the bankers' characteristics could be revealed and addressed to enhance performance. Suitable incentive programs may be modified to fit the personalities of the employees to improve their effectiveness. Moreover, policymakers in the banking industry can utilize the study's recommendations to implement appropriate credit-granting solutions.

The research anticipates indicating how behavioral biases significantly impact banking credit decisions, as the psychological characteristics of individuals have substantial implications for financial catastrophes. Previous studies have confirmed that the lack of valid credit assessments was one of the major reasons for financial crises, such as the Swedish crisis in the 90s. Therefore, this study also contributes to the existing literature, by enhancing its capability and enriching it with thorough information to identify the influencing behavioral biases, avoid

financial risks and crises, reduce the magnitude of defaulted loans, and make more efficient credit decisions.

1.2 Study Problem

Financial crises are serious incidents that affect the financial systems widely. While some reasons were warned about before crises occurred, other reasons were not obvious. Therefore, overlooked and attracting less attention from researchers. The roots of a financial crisis, such as high non-performing loans are claimed to occur in some cases due to the invalid credit assessments conducted by credit officers. These mistaken credit assessments sometimes arise as a consequence of behavioral biases, as shown by previous research. Behavioral biases influence bankers' decisions to accept or refuse a loan request (Mustilli et al., 2018, as cited in Kádár, et al. (2023). Skoglund, et al, (2022) indicated that loan officials' evaluations of a candidate's creditworthiness can be perceived as subjective, even with uniform credit policies.

Several studies confirmed the role of psychological hazards in financial crises such as the crisis of 2008 (Miller & Rosenfeld, 2010; Shefrin, 2015. Confirmed biases include overconfidence, excessive optimism, categorization, and reference point–induced risk-seeking, (Shefrin, (2015).Miller& Rosenfeld, (2010) suggested that intellectual hazards might play a significant role in every financial crisis. This, in turn, demands greater effort to investigate the responsibility of behavioral biases on credit decisions. In light of these challenges and facts, this study seeks to discover and explore the effect of behavioral biases on the banking credit decision.

The analysis has prospective implications for efforts to avoid potential crises and protect the banks from risks associated with high non-performing loans. Recognizing human decision-making biases facilitates the reduction of cognitive mistakes, the establishment of a well-organized and trustworthy credit practice, and enhance of credit quality and bank profitability (Kádár et al ., 2023). If the role of human factors and the effect of behavioral biases on credit decisions remain to be ignored by banks and financial institutions, the likelihood of invalid credit assessments may increase non-performing loans, and therefore, increase the possibilities of financial catastrophes. The study problem is represented by the question of what is the effect behavioral biases have on the banking credit decision.

The growing dominance of banking credit in the world creates a necessity to comprehend and acknowledge it as thoroughly as possible. Despite the existing knowledge of behavioral biases and their consequences on decisions, there is considerable ambiguity in the area of credit decisions. There is a demand for further significant understanding and insightful analysis of this field of study.

In a rapidly changing world with substantial changes in the economy and even geopolitical shifts, banks, as a significant component of the financial systems in several countries, need to adapt and develop strategies to keep pace with these changes, thereby fulfilling their responsibilities to society during both stable and crisis times. The increase in non-performing loans in Arab countries may weaken banks' flexibility and prevent them from expanding their lending operations, decreasing their profitability, and affecting the economy. In Egypt, non-performing loan ratios negatively impact the unemployment rate and the ratio of domestic credit to the private sector (% of GDP), while the negative impact of unemployment rates on the local credit ratio and vice versa. In Lebanon, non-performing loans negatively impact the banks' profitability (the rate of return on capital) (Lotfi, 2017).

Palestine, with its exceptional characteristics, requires additional caution for its financial system and its operating bodies, particularly banks. Palestine has experienced an increase in the ratio of non-performing loans to total loans over the last few years. By the end of Q4 2023, this figure reached $537.7 million and continued to rise in Q1 2024, reaching 4.67% of total loans or $548.2 million. This trend was anticipated to continue in 2024 as well due to the terrible economic and humanitarian situations impacting banks' performance (mas.ps). Any uncontrollable and intolerable increase in nonperforming loans could cause troubles to the financial system. This study seeks to clarify the role of human factors in the credit assessment process to recognize which factors may affect the credit process, thereby influencing the nonperforming loans and eventually the banking system, and to establish a more efficient, sustainable financial system.

This study concentrates on the issue of a shortage of knowledge and research and seeks to identify the effect of behavioral biases on banking credit decisions. In addition to the lack of a comprehensive measurement of the effect of behavioral biases on the banking credit decision,

which can be used to appraise those factors in other studies and research, and help other banks to lessen the impact of human prejudices in the credit process.

1.3 Study Objectives

Accordingly, this study intends to assess the influence of the behavioral biases on banking credit decisions through a surveyquestionnaire distributed to Palestinian credit officers, credit analysts, and managers, due to the magnitude and significance of the banking industry and credit decisions for the economy. Furthermore, it plans to conduct data collection and interpretation within the designated period to analyze the association between behavioral biases and banking credit decisions.2.

This study attempts to achieve the following objectives:

1. Primarily, this study seeks to identify and analyze the dynamics that influence banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks, to manage and overcome them, and to mitigate their effects to accomplish improved, better, and more effective banking credit decisions.
2. To measure the association between cognitive biases and banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks.
3. To appraise the association between emotional biases and banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks.
4. To evaluate the relevance of behavioral biases in the banking credit decision-making process from the perspective of Palestinian credit officers in Palestinian banks.
5. To investigate whether the demographic characteristics (gender, age, qualifications, experience, and occupation) relate to the behavioral biases.

1.4 Study Questions

This study seeks to recognize the influence of behavioral biases on banking credit decisions in the context of both cognitive biases: (representativeness, overconfidence, anchoring and adjusting bias, availability bias, cognitive dissonance bias, self-attribution bias, illusion of

control bias, conservatism bias, ambiguity aversion bias, mental accounting bias, hindsight bias, confirmation bias, recency bias, framing biases) and emotional biases: (endowment bias, self-control bias, optimism bias, loss aversion bias, regret aversion bias, and status quo bias).

Accordingly, this current study intends to answer several questions to address the gap in the literature regarding the influence of behavioral biases on banking credit decisions. The main question is:

Is there a positive significant influence at ($\alpha \leq 0.05$) of behavioral biases on banking credit decisions from the perspective of Palestinian credit officers/analysts/mangers/branch managers in Palestinian banks?

The first sub- study Question is:

What are the perspectives of Palestinian credit officers in Palestinian banks on the behavioral biases?

The second study sub- Question is:

What are the perspectives of Palestinian credit officers in Palestinian banks on the banking credit decision?

Additionally, in response to this fundamental inquiry, this paper attempts to address the following questions:

1- Do cognitive biases have a significant positive influence on banking credit decision-making from the perspective of Palestinian credit officers in Palestinian banks?
2- Do emotional biases have a considerable positive influence on banking credit decision-making from the perspective of Palestinian credit officers in Palestinian banks?
3- What is the degree of relevance of behavioral biases in the banking credit decision-making process from the perspective of Palestinian credit officers in Palestinian banks?
4- How do demographic characteristics (gender, age, qualifications, experience, and occupation) relate to the behavioral biases?

1.5 Hypotheses of the Study

In research, hypotheses are essential components. According to Kerlinger (1986, p. 19): "they direct investigation." As cited in Lund, T. (2022). In the field of behavioral finance, several previous studies have demonstrated that many behavioral biases influence banking credit decisions. This study's main aim is to investigate whether there is an effect of behavioral biases on banking credit decisions. Thus, based on reviewing previous literature, the following key hypothesis is developed:

The First key study hypotheses:

H1: There is a significant positive relationship at ($\alpha \leq 0.05$) between behavioral biases and banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks.

The sub-hypotheses are:

H2: There is a significant positive relationship between cognitive biases and banking credit decision.

H3: There is a significant positive relationship between emotional biases and banking credit decision.

The Second study hypotheses

H4" There are significant differences at ($\alpha \leq 0.05$) in the perspectives of Palestinian credit officers in Palestinian banks on the behavioral biases due to(gender, age, educational level, job title, and years of experience.

The Third study hypotheses

H5: There are significant differences at ($\alpha \leq 0.05$) in the perspectives of Palestinian credit officers in Palestinian banks on the bank credit decisions due to (gender, age, educational level, job title, and years of experience.

1.6 Study limits

As with many other studies, this research faces several limitations and shortcomings that prevent the generalization of the results. First, the time during which the study was conducted was challenging and unstable (economically and politically) in Palestine. Additionally, behavioral biases vary significantly among individuals within the same country, making it difficult to generalize results to other countries. Therefore, more future studies should be conducted in different countries to gain further insights into behavioral biases in the context of credit decisions and during stable financial periods.

Additional limitations of this study include: First, this study will take place in Palestine, particularly through a survey questionnaire distributed to the population of human subjects, including credit officers, credit managers, and credit analysts in Palestinian commercial banks. Second, the timeframe for completing the research spans late 2024 and the year 2025. Third, this study is committed to ethical standards, as the data collected and used in this study will be kept confidential and secure and will be used for research purposes only.

1.7 Terms Definition

Cognitive bias: Cognitive biases are predictable, systematic mistakes in judgment and the decision-making process. They are an organized choice in information processing that results in preferring one data over another (MacLeod & Mathews, 2012).

Emotion biases: An emotional bias is a mental state that results from intuitive judgments rather than reasonable decisions (Akinkoye& Bankole, 2020). Examples of emotional prejudices include regret aversion, loss aversion, and self-control prejudices.

Overconfidence Bias: A cognitive bias illustrates that people overrate their own predictive skills and the accuracy of the data they know.

Representativeness Bias: A cognitive bias that expresses people's tendency to make judgments depending on stereotypes.It is also described as a mental shortcut and is defined as the tendency

to illogically assign one feature to imply another (Tversky and Kahneman, (1974) as cited in Irshad, et al (2016).

Anchoring and Adjustment Bias: A cognitive bias reflects a mental propensity that emerges as a person's extreme dependence on a particular preliminary point and inadequate modification to new information.

Cognitive dissonance: A psychological event and mental discomfort that people often experience in situations where newly obtained information inconsistencies with preexisting conceptions and thoughts.

Availability bias: A cognitive bias which is a rule of thumb, that lets people approximate the chance of an outcomedepending on how familiar that result comes out in their lives.

Self-Attribution Bias: A cognitive bias that describes the inclination of people to attribute their gains to innate characteristics, like talent, whereas they attribute failures to outside effects, like poor luck.

Illusion of Control Bias: A cognitive bias that explains the tendency of people to believe that they can control or have power over results while, in fact, they cannot.

Conservatism Bias: A cognitive psychological process in which individuals hold on to their previous views or anticipations at the expense of recognizing new information.

Ambiguity Aversion Bias: A cognitive that happens when people dislike to gamble if probability distributions appear mysterious. Usually, it refers to individuals' hesitation in conditions of uncertainty.

Endowment Bias: An emotional prejudice that occurs when people give a higher value to an asset they have than when they do not own it.

Self-Control Bias: A human behavioral tendency that makes people consume today instead of saving for the future.

Optimism Bias: An emotional bias describes the tendency to overrate the probability of positive potential outcomes and underrate the possibility of unfavorable future results.

Mental Accounting Bias: A cognitive bias that expresses people's propensity to code, classify, and estimate economic outcomes by categorizing their assets into several interchangeablemental accounts.

Confirmation Bias: A cognitive bias that leads to a form of selective perception, highlighting thoughts that confirm people's beliefs, while undervaluing whatever disagrees with those beliefs.

Hindsight Bias: A cognitive bias that takes place when people think that they "knew it all along," Roese&Vohs, (2012). Reflecting the faith that an event is more predictable after it becomes known.

Loss Aversion Bias: An emotional bias that occurs when people typically experience a stronger desire to evade losses than to obtaingains.

Recency Bias: A Cognitive bias that makes individuals remember and emphasize recent events more significantly than occurrences that took place in the near or far past.

Regret Aversion Bias: An emotional prejudice that demonstrates that individuals evade taking important actions because they panic that, in hindsight, whatever choice they decide on will confirm less than most favorable. This prejudice calls for preventing the hurt of regret connected with weak decisions.

Framing Bias: A cognitive bias that demonstrates the propensity of decision-makers to respond to conditions differently depending on the situation in which an option is shaped.

Status Quo Bias: An emotional prejudice that occurs when people experience a group of choice options to elect whatever option ratifies or expands the present state instead of alternative options that might bring about modification. It affects people who favor for things to remain relatively unchanged.

Chapter 2: Literature Review:

2.1 Traditional finance

Before the development of behavioral finance, traditional finance presented an idealized view of rational investors operating in efficient markets. In this framework, individuals are assumed to deliberately seek out information and make decisions that align with their initial choices (Bachmann & Hens, 2018). In traditional finance, markets are believed to remain efficient because rational investors are expected to identify and exploit mispricings caused by irrational behavior. These mispricings are corrected through limitless arbitrage opportunities (Bachmann et al. 2018).

Traditional finance assumes that investors are rational decision-makers who are unbiased in their estimations of future stock returns and who carefully consider all available information before making decisions. Errors made by market participants are assumed to be uncorrelated and therefore lack a significant influence on market prices. This perspective is consistent with one of the key theories of traditional finance: The Efficient Market Hypothesis (EMH).

Another essential concept in traditional finance is the association between expected risk and return, where rational, risk-averse investors demand higher expected returns as compensation for taking on higher risk. The Capital Asset Pricing Model (CAPM) is one of the primary asset pricing models developed to describe and measure this risk-return relationship (Baker &Nofsinger, 2010).

2.1.1 The Efficient Market Hypothesis (EMH).

In 1970, Eugene Fama introduced the efficient market hypothesis, which characterizes an efficient market as one composed of numerous rational, profit-maximizing participants who actively compete and forecast future securities values. This takes place in an environment where information is readily available and nearly free to all investors (Ţiţan, 2015).

According to the EMH, market efficiency can be classified into three forms: weak, semi-strong, and strong.

Weak form: The weak form of EMH asserts that current stock prices fully reflect the historical price information. Therefore, it is impossible to identify mispriced securities or outperform the market by analyzing historical prices alone. Accordingly, they can't earn abnormal profits using technical analysis, which relies on historical price movements and trading volume.

Semi-Strong Form: The semi-strong form of EMH suggests that stock prices reflect all publicly available information (Ţiţan, 2015). Not just historical data but also financial statements, earnings reports, dividend announcements, merger plans, and broader financial and macroeconomic environment (Clarke et al., 2001). This implies that the semi-strong form encompasses the weak form of EMH, as well (Ţiţan, 2015).

Strong Form: The strong form of EMH posits that securities prices incorporate all existing information, both public and private (i.e., inside information) (Clarke et al., 2001). This includes historical data (weak form), publicly available information (semi-strong form), and private or insider information (Ţiţan, 2015).

2.1.2 The Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) is a financial model developed by William Sharpe (1964) and John Lintner (1965), based on the earlier work of Harry Markowitz (1959), who introduced the "mean-variance model" or the model of portfolio choice. Sharpe's contribution earned him the Nobel Prize in Economics in 1990 (Elbannan, 2015).

The CAPM is commonly used to estimate a business's cost of capital, evaluate a portfolio's performance, and determine investors' return expectations when considering investments in a company (Rossi, 2016). The model predicts that anticipated returns are a positive linear function of their market betas (ß) and that beta alone is sufficient to explain the cross-section of expected returns. According to the CAPM, expected returns are determined by an asset's level of systematic risk, represented by beta (Ansari, 2000).

The CAPM describes the trade-off between risk and return by evaluating an asset's risk based on the covariance of its returns with overall market returns. It asserts that the expected return on two assets is linearly connected to the covariance of their returns with the return of the market portfolio (Rossi, 2016).

Assets involve two kinds of risks: diversifiable (unsystematic) risk and non-diversifiable (systematic) risk. Unsystematic risk (unique) is specific to individual securities and can be minimized through diversification. In contrast, systematic (market) risk is associated with the overall market movements and cannot be eliminated through diversification (Galagedera, 2007).

2.2 Behavioral Finance

Behavioral finance is a division of finance that examines the way individuals in the financial market behave and how psychological dynamics influence their decisions to buy or sell in the market, thereby affecting market prices. Behavioral finance seeks to clarify why it is logical to judge the inefficiency of markets (Subash, 2012). Behavioral finance is the implementation of psychology in finance (Pompian, 2006). Behavioral prejudices are described as systematic mistakes in judgment, involving cognitive and emotional biases (Bagade, 2019).

Behavioral finance seeks to recognize the influence of emotions, psychology, and the common person's behavior on investment actions and financial choices. It has attracted attention since its beginning in the 1970s (Boudaoui, 2011). By integrating insights from psychology with finance, behavioral finance clarifies investors' attitudes and asset pricing, filling the gap between theory and reality (Bachmann et al., 2018). The people's choices are often flawed and influenced by emotions and heuristics- rules of thumb used to process information and make judgments.

Behavioral finance investigates investor behavior to shed light on persistent market anomalies that challenge traditional financial theory (Muhammad &Maheran, 2009). It encompasses research that diverges from the expected utility maximization assumptions of efficient markets, which presume fully rational investors. It includes core components, which are cognitive psychology and the limits to arbitrage (Ritter, 2003).

Behavioral finance seeks to address contradictions by offering explanations rooted in human behavior, at both the individual and collective levels. It seeks to clarify the causes and mechanisms behind market inefficiencies (Baker &Nofsinger, 2010). A fundamental assumption of behavioral finance relates to Herbert Simon's (1947, 1983) concept of 'bounded rationality, which highlights individuals' cognitive limitations in the decision-making process. Consequently, people's attitudes and choices are often based on simplified heuristics (Muhammad &Maheran, 2009).

The foundational works of psychologists Daniel Kahneman and Amos Tversky – considered the fathers of behavioral finance- along with Slovic's (1972) examination of stock brokers and investors, presented several significant challenges to the rationality hypothesis. These critiques led to the foundation of modern financial theories and the development of research that questioned the assumptions of expected utility and the efficient market hypothesis (Baker &Nofsinger, 2010).

Tversky and Kahneman (1974) identified several key heuristics used in decision-making under uncertainty: representativeness, availability, and anchoring and adjustment. In 1979, they introduced the notion of Loss aversion, central to prospect theory. This concept is often summarized as "losses loom larger than gains". The Psychological pain of losing is about double as influential as the happiness of gaining. As a result, individuals are more likely to take risks to avoid losses (Bhoj, 2019).

Their efforts on prospect theory (Kahneman and Tversky, 1979) eventually earned Daniel Kahneman the Nobel Prize in Economics in 2002. The Prospect Theory was improved in 1979 as a substitute model for the conventional finance model known as the expected utility theory (Boudaoui, 2011). In 1980, Thaler also discussed the "mental accounting theory". In 1981, Tversky and Kahneman introduced the concept of "framing".

In 1985, DeBondt and Thaler, influential figures in the development of behavioral finance, published a study on investors' overreaction to news. In 1985, in the article "Does the stock market overreact?", De Bondt and Thaler addressed individuals' tendency to exaggerate unanticipated information organizationally. That same year, Shefrin and

Statman introduced the disposition effect- the tendency of investors to sell winning securities too quickly and hold onto losing ones too long (Bhoj, 2019).

In the early 90s, the prejudices of “loss aversion”, “endowment effect”, and “the status quo prejudice” appeared in Kahneman, Knetsch, and Thaler's studies. The “conservatism” scheme was investigated by Basu in the late 90s.

Subsequent studies by Odean (1998, 1999) confirmed the disposition effect. Later, Barber and Odean (2000) further provided evidence that investors are loss-averse, display the disposition effect, and tend to trade excessively (Baker &Nofsinger, 2010). In 2002, Holt and Laury demonstrated variations in attitude toward risk aversion when comparing hypothetical and real-life incentives (Bhoj, 2019).

Professionals and analysts have also demonstrated behavior consistent with psychologists’ theories of human attitude (DeBondt and Thaler, 1990; Easterwood and Nutt, 1999; Hilary and Menzly, 2006). Other researchers have shown that the psychological and cognitive biases influence financial decisions, including pension fund selections (Madrian& Shea, 2001), asset allocation (Benartzi, 2001; Benartzi and Thaler, 2001), and trading behavior (Choi et al., 2002; Baker &Nofsinger, 2010).

Behavioral finance has influenced how financial organizations perceive and respond to client behavior, mainly within banking. It acknowledges that people frequently make decisions affected by emotional and cognitive biases rather than pure logic, disputing traditional banking models rooted in rational decision-making and market efficiency. As banks focus on understanding clients’ psychological profiles and preferences to offer individualized services and products (Tversky & Kahneman, 1992, as cited in Ranjan, 2025).

Behavioral insights are used to design booming marketing campaigns, offering options that mitigate biases such as loss aversion or anchoring. With the growth of digital banking, organizations have used data analytics to predict consumer behavior and improve client experiences. In risk management, banks are applying more comprehensive and customized financial counsel along with risk assessment models to identify the likelihood that clients might overestimate their ability to control financial risks or underprepare for

unexpected conditions (Ranjan, 2025). In order to develop more trustworthy structures for identifying and managing risks in volatile markets, promising schemes contain additional psychological features with risk models. Therefore, Banks can more correctly predict marketplace behavior and lessen the possibility of illogical decision-driven catastrophes through understanding how individuals perceive and react to risk (Plous, 1993, as cited in Ranjan, 2025).

2.2.1 Prospect Theory

Kahneman and Tversky's prospect theory (1979) is a notable alternative to expected utility Theory for decision-making under risk (Levy, 1992). They critiqued and built upon the classic formulation of Expected Utility Theory proposed by Bernoulli in 1738 (Baker &Nofsinger, 2010). Prospect Theory suggests that the assessment of decision outcomes is reference-dependent, meaning it depends on the individual's existing state of wealth. This principle contrasts with the framework of Expected Utility and modern portfolio theory. Expected utility (EU) theory is reference-independent; the decision maker's initial wealth level is not explicitly considered during the decision process. What matters in the EU is the impact of a decision's outcome on the investor's final wealth position (Baker &Nofsinger, 2010).

Prospect Theory fundamentally assumes that people are more sensitive to losses than to equivalent gains (Abdellaoui et al., 2013). It emphasizes the significance of how choices are framed relative to a reference point. People evaluate outcomes based on deviations from this reference point rather than overall asset levels. The definition of this reference point is vital; individuals tend to assign more value to losses than to equally sized gains. As a result, they typically exhibit risk-averse behavior when facing prospective gains and risk-seeking behavior when confronted with potential losses (Levy, 1992).

2.3 Behavioral bias

In the early 1970s, Tversky and Kahneman, through their heuristics -biases program, conducted a series of experiments illustrating 15 biases (Ellis, 2018). Since then, the literature has identified over 100 cognitive, decision-making, and memory-related prejudices, with ongoing research continuing to uncover new ones (Ehrlinger, Readinger, & Kim, 2016). Carter, Kaufmann, & Michel (2007), in their study "Behavioral supply management: A Taxonomy of judgment and Decision-Making Biases, developed a detailed taxonomy of decision biases observed among supply managers. These biases were categorized into nine groups: Availability cognition, Base rate, Presentation, Control illusion, Output evaluation, Commitment, Confirmatory, Persistence, and Reference point. Peón, Antelo, and Calvo-Silvosa (2017), in their study "An Inclusive Taxonomy of Behavioral Biases, classified behavioral biases into three broad groups:

1- Heuristics, judgmental, and biases (such as representativeness, overconfidence).
2- Choices, values, and frames (such as loss aversion, framing).
3- Social factors (such as herding, Social contagion)

Arnott (**1998**), in his work "A Taxonomy of Decision Biases", identified 37 decision-making biases and organized them into six categories:

1- **Memory Biases** (e.g., hindsight, imaginability, recall, search, similarity, testimony).
2- **Statistical Biases** (e.g., Base Rate, Chance Conjunction Correlation Disjunction Sample Subset).
3- **Confidence Biases** (e.g., Completeness Control, Confirmation Desire, Overconfidence, Redundancy Selectivity Success Test).
4- **Adjustment Biases** (e.g., Anchoring & Adjustment, Conservatism, Reference, Regression.
5- **Presentation Biases** (e.g., Framing, Linear, Mode, Order, Scale).
6- **Situation Biases** (e.g., Attenuation, Complexity, Escalation, Habit, Inconsistency, Rule).

Amgain (2024) proposed a model that categorizes behavioral biases affecting investment decisions into three types: emotional, cognitive, and financial/ macroeconomic. Similarly,

Pompian (2011) classified behavioral biases into two broad categories: cognitive biases and **Emotional biases.** He further divided cognitive biases into two subcategories.

1- Belief perseverance biases, including cognitive dissonance, conservatism, confirmation, representativeness, illusion of control, and hindsight.
2- Information Processing Biases, including anchoring and adjustment, mental accounting, framing, availability, self-attribution bias, outcome bias, and recency bias.

The Emotional biases identified include loss aversion, overconfidence, self-control, status quo, endowment, and regret aversion.

2.3.1 Cognitive Biases and Heuristics

People are constantly making choices- such as buying homes, depositing money in banks, often without fully understanding the outcomes. Conscious judgments made under uncertainty involve evaluating attributes of potential outcomes: their (un)desirability and likelihood. The rational decision-making approach assumes that individuals analyze all aspects of a decision, including information, possible alternatives, cost, and benefits, to arrive at the ideal decision (Homans, 1961; Scott, 2000, as cited in Korteling&Toet, 2020).

However, contrary to the assumptions of standard decision-making models, people behave as instinctive decision makers. They frequently do not adhere to logical standards, probability analysis, cost-benefit analysis, or careful deliberation (Gigerenzer and Gaissmaier, 2011; Kahneman, 2011; Kahneman et al., 1982; Shafir and LeBoeuf, 2002; Tversky and Kahneman, 1974, as cited in Korteling&Toet, 2020).

People rely on heuristics - mental shortcuts or rules of thumb- as a way to respond to complex troubles. Heuristics do not guarantee the best solution, but provide proficient strategies for dealing with multifaceted, vague, or time-sensitive decision conditions. Their use is unavoidable, especially where the optimal solution is unclear or when the complexity of the trouble makes exhaustive analysis impractical (Hjeij&Vilks, 2023).

A heuristic is an easy process that helps individuals arrive at adequate- though not necessarily optimal- answers to hard questions. In situations where individuals are left to

speculate, they often rely on simplified and imperfect responses to reduce cognitive load (Hjeij&Vilks, 2023). Conventionally, heuristics have been seen as essential and competent but suboptimal decision-making tools. However, recent psychological research suggests that under conditions of limited knowledge and uncertainty, heuristics can outperform multifaceted strategies (Hertwig&Pachur, 2015).

The term “heuristic” originates from the Ancient Greek verb heuriskein, indicating ‘to find out’ or ‘to discover. It refers to methods to decrease decision difficulty by overlooking some elements of the existing information or by searching merely a subset of all potential resolutions (Hertwig&Pachur, 2015). Heuristics are frugal; they do not seek to process all information or to optimize outcomes. Instead, they fairly satisfice – that is, to find a solution that is good enough rather than perfect (Gigerenzer, 2008). Heuristics might be faster or more proficient than complex alternatives (Hjeij&Vilks, 2023).

Using heuristics as intuitive strategies can save time, energy, and financial resources (Leković, 2020). As easy mental strategies, heuristics can considerably reduce the difficulty of the decision-making process. In financial decision-making, for example, investors frequently rely on the heuristic that past performance is the best predictor of future performance, which leads them to invest in past “winners” (Leković, 2020). Cognitive bias is an organized prejudice in the decision outcomes, often resulting from the implementation of one or more heuristics (Lockton, 2012). These biases represent systematic and commonly recurring tendencies, dispositions that distort information processing and lead to wrong or suboptimal conclusions (Lichtenstein &Slovic, 1971; Tversky and Kahneman, 1981; Lockton, 2012). Cognitive biases help explain the inconsistencies in human decision-making (Tversky and Kahneman, 1974; Lockton, 2012).

Cognitive biases are predictable, systematic mistakes in judgment and decision-making processes. They represent an organized choice in information processing that results in preferring one piece of data over another (MacLeod & Mathews, 2012). Cognitive factors play a crucial role in the practice of making investment decisions, which includes understanding, analyzing, and interpreting information or data (Soraya et al., 2023).

2.3.1.1 Overconfidence bias

Overconfidence is one of the most common behavioral biases in research. It was first introduced in psychological studies in the 1960s and initially published by Albert and Raffia in 1969. Overconfidence reflects people's propensity to inflate both their skills and the accuracy of their information. It manifests in two key ways: first, as people's inclination to have extreme faith in their abilities (Cesarini et al., 2006). Second, as the overvaluation of the accuracy of their knowledge, which often leads managers to be overly optimistic about positive outcomes (Hilton, Regner, Cabantous, Charalambides, &Vautier, 2011; as cited in Paluch, 2011).

Overconfidence can be analyzed in three distinct forms:

- **Overestimation**: believing that you are superior to what you truly are.
- **Overplacement**: thinking that you are superior to others while you are not.
- **Overprecision**: having unwarranted certainty in the accuracy of your belief.

The overestimation and overplacement are closely interrelated (Van Zant& Moore, 2013).

Due to the integration of psychological findings into economic theories, economists in fields of commercial banking and financial markets have studied overconfidence and its consequences for several decades (Grežo, 2020, as cited in**Mbuyisa,** 2024). The overconfidence is frequently tangled with and misinterpreted as other notions and concepts, such as optimism and a sense of control (Costa et al., 2017, as cited in**Mbuyisa,** 2024).

It is a cognitive bias that illustrates that people overrate their personal predictive skills and the accuracy of the data they have. The self-assured bank directors overrate their talents in reducing risk. They rely on these abilities and their investment in running the bank's credit portfolio. Executive choices are influenced by overconfidence, which motivates the bank's managers to employ subjective techniques in measuring credit risk (Azouzi& Bacha, 2023). Excessively confident loan officials concentrate on their feelings

and abilities when making decisions and anticipating risks, according to Bacha and Azouzi (2019), as cited in Azouzi& Bacha (2023).

Mutual fund investment managers exhibit overconfidence by putting clients' money in low-priced small-cap stocks and engaging in short-term trading (Ady et al. 2021).

Overconfidence directly leads to inaccuracies in investment allocation. For example, despite the benefits of using index funds-including risk diversification- many investors actively manage their portfolios by trading frequently, trusting their cleverness to beat the market. Terrance Odean confirmed that many investors trade excessively, spend significant time and energy researching investments, and ultimately, perform worse than anticipated in the market (Van Zant& Moore, 2013). In organizations, directors often place too much confidence in their intuitive decisions. Overconfidence plays a significant role; decision-makers tend to overestimate their talents compared to peers in other organizations, and believe they can successfully manage other companies as well (Van Zant& Moore, 2013).

Overconfident CEOs, particularly those who have outperformed competitors and generated strong returns, are more likely to pursue mergers than more cautious CEOs. Consequently, many mergers led by overconfident executives reduce value for both shareholders and CEOs themselves (Malmendier& Tate, as cited in Van Zant& Moore, 2013). Through economic bright and booming periods, bankers might be overconfident and underestimate the dangers of lending (Ranjan, 2025).

In psychology, Overconfidence is strongly connected to the calibration and probability judgment research and is often associated with forms of miscalibration. The most significant expansions used by economists stem from the framework of positive illusions, including the better-than-average effect, illusion of control, and unrealistic optimism (Skala, 2008). Miscalibration represents the discrepancy between the accuracy rate and the given likelihood (that a specified answer is correct). Overconfidence is described as a form of miscalibration, where the allocated probability that the answers

given are accurate exceeds the exact correctness of the answers. Simply put, an excess of confidence over accuracy (Oskamp,1965, as cited in Skala, 2008).

Fischhoff et al. (1977) identified overconfidence through what they termed the "hard-easy effect", where individuals tend to show more overconfidence on hard missions and unconfidenceon simpler ones, where the number of accurate answers exceeds the probability judgment (Skala, 2008). In the 1990s, economists began investigating overconfidence more deeply, incorporating it into economic models that clarify human behavior in financial markets and corporate finance (Skala, 2008).

Today, overconfidence is regarded as a form of extreme self-confidence or inflated managerial self-assessment, resulting in overly optimistic faith in forecasts and decisions-impacting a wide range of financial choices (e.g., Hayward and Hambrick, 1997; Hiller and Hambrick, 2005; Tang et al., 2015). Studies indicate that overconfidence results in excessive trading, negatively impacting overconfident investors' performance compared to rational investors and leading to a lower expected utility (Odean, 1998; Grežo, 2021). Overconfident investors tend to rely on private signals and underreact to public information (Daniel et al., 1998, as cited in Grežo, 2021). This behavior leads them to overestimate the accuracy of their predictions or expectations and underestimate risk, which results in higher trading volume (Odean, 1998; Graham et al., 2009, as cited in Grežo, 2021).

To achieve their goals, financialmanagers make decisions within Organizations across three central areas: financing, investment, and dividend payout. Overconfidence significantly influences these decisions. Overconfident managers tend to overinvest, thereby increasing organizational risk (Glaser et al., 2008; Malmendier and Tate, 2005a; 2005b; 2008, as cited in Grežo, 2021). According to Grežo (2021), overconfident managers overvalue their ventures and believe the market underestimates their companies. As a result, they perceive external financing as expensive and overrate their firm's profitability (Russo and Schoemaker, 1992), expect high returns (Malmendier and Tate, 2005), feel confident in defeating competitors (Camerer and Lovallo, 1999), and may adopt risky corporate policies, such as increasing debt financing (Ben-David et al., 2007; Ben-David

and Graham, 2013). Studies have shown that overconfident executives, when raising external finance, prefer debt over equity, resulting in long-term increases in leverage (Malmendier et al., 2007). According to Gervais et al. (2010, as cited in Azouzi, 2012), overconfident executives overvalue their ability to decrease business risk, causing them to invest more aggressively than rational managers.

Ho and Chang (2009, as cited in Azouzi, 2012) found a positive association between CEO overconfidence and financial distress. Overconfidence plays a critical role in risk management. Karki et al. (2024) suggested safeguards such as advisory or investment boards to scrutinize important decisions, ensuring that CEO-driven investments are balanced by proper risk and reward evaluations. These measures can help leverage the strength of chief executive overconfidence while mitigating its weaknesses, promoting sound, unbiased corporate governance and decision making. Overconfident CEOs may overestimate their proficiencies, leading to bad performance or unnecessary risk-taking (Ranjan, 2025).

Behavioral biases among bank CEOs can influence both bank performance and the stability of the financial system (Suntheim &Sironi, 2012). Their study found that banks led by overconfident CEOs did not necessarily perform poorly during the financial catastrophe but exhibited higher risk over the study period (2000 - 2008). However, active boards (those that assemble frequently) can lessen the impact of overconfidence on bank risk. Additionally, a higher proportion of female board members decreases the likelihood of employing an overconfident CEO. During the 2008-2009 financial crisis, many banks engaged in high-risk activities. Overconfident CEOs developed increasingly biased beliefs about investment returns, leading managers to accept risky, potentially value-destroying projects (Suntheim&Sironi, 2012). The Conclusion was clear: risks had not been properly evaluated, and adequately capitalized financial institutions that appeared stable before 2007 were deeply exposed to dangerous securities, ultimately requiring government support (Suntheim &Sironi, 2012).

(Antony, S. R.), highlighted that overconfidence bias significantly affects investment decisions made by banking professionals in Kerala, India. Risk perception

mediates this association. Interestingly, overconfidence does not directly influence risk perception, suggesting that financially well-educated banking professionals may not fully recognize the growing risks associated with overly self-confident investment behavior. After the 2007–2008 financial disaster, there was increased consideration and attention to systemic risk in banking and the likelihood of future systemic shocks.

Liu& Thompson (2022) found that banks with overconfident CEOs exhibit greater systemic risk than those with non-overconfident CEOs. Correspondingly, these overconfident CEOs of Banks had greater leverage and larger holdings of private mortgage-backed securities. Such banks were more vulnerable to systemic risk during the 2007–2008 financial catastrophe. Stepanova &Suraeva (2019) also confirmed the positive association between CEO overconfidence and bank risks. Self-assured CEOs in banks tend to overrate future cash flows and underrate risks, leading to risky investments and capital decisions. They emphasized the importance of having an independent and active board composed of financial experts to curb the influence of overconfident CEOs on risk.

Overconfident investors often miscalculate their skill to appraise companies as a probable venture. As a result, they may become blind to harmful information that generally points out a caution when purchasing and selling securities. Believing they have extraordinary information and insights that others lack, overconfident investors tend to trade excessively- a behavior shown to lead to bad returns over time. They typically ignore historical statistics, underrate downside risks, and may unpredictably experience weak portfolio performance. Frequently, overconfident investors unknowingly take more risk than they can endure (Pompian, 2006).

According to Baker et al., (2019), Overconfidence and self-attribution bias were combined into a single variable in their study questionnaire for the following reasons: Overconfident investors exhibit unjustified belief in their intuition, analytical skills, and judgment (Pompian, 2006). Since self-attribution bias can lead to overconfidence, these two biases are robustly connected (Mishra and Metilda, 2015). Barber and Odean (2000) found that overconfident investors tend to trade excessively, resulting in bad performance.

Hoffmann and Post (2014) confirmed the existence of self-attribution bias, with investors attributing high returns to their own investment abilities (Baker et al, 2019).

2.3.1.2 Representativeness bias

Representativeness bias is a cognitive bias- a mental shortcut that reflects an overreliance on stereotypes (Shefrin, 2005, as cited in Chen et al., 2007). It is also described as a mental shortcut and is defined as the tendency to illogically attribute one feature to imply another (Tversky and Kahneman, 1974, as cited in Irshad et al., 2016). For instance, when purchasing an old car, we tend to assume that a spotless car signifies that it is in good condition and has been well cared for, overlooking that cleanliness is only a surface quality (Chang et al ., 2009). It involves the assessment of conditional probabilities. Using this heuristic method, individuals estimate the chance that an object or event A belongs to a category or process B. Representativeness is typically used when making decisions under uncertainty, when people are requested to evaluate the likelihood that A belongs to B (Tversky and Kahneman, 1983). If A and B are expressed in similar terms, representativeness may be decreased to 'similarity' (Tversky and Kahneman, 1981: in O'Hagan et al, 2006, as cited in Subash, 2012).

Pompian (2006) identified two major interpretations of representativeness bias that are particularly relevant to investors:

Base-Rate Neglect. Investors assess the prospective success of an investment in firm A by placing it into a familiar, easy-to-understand category. For example, an investor might label firm A as a "value stock" and infer the associated risks and rewards based on that arrangement. However, this type of reasoning disregards other unrelated variables that could considerably affect the venture outcome. Investors often follow this mistaken path because it seems like an easier substitute to the thorough research needed for investment appraising. In summary, many investors rely on stereotypes when making investment choices.

Sample-Size Neglect. Investors evaluating the probability of a certain investment outcome frequently fail to precisely account for the sample size of the data they use. They mistakenly assume that small sample sizes are representative of larger populations- a bias referred to as the "law of small numbers." When encountering unfamiliar data patterns, individuals may rapidly form a hypothesis based on just a few data points. Those prone to sample-size neglect tend to believe that characteristics observed in small samples apply broadly to the entire dataset. However, these small samples that the individual has tested may not accurately represent the larger data pool.

Investors may also misattribute good quality features of a company –such as quality products, proficient directors, or strong projected growth-as indicators of an excellent venture. However, they could be frequently unfortunate investments, as confirmed by the work of Lakonishok, Shleifer, and Vishny (1994, as cited in Chen et al., 2007). Dias et al. (2019) confirmed that business managers and entrepreneurs exhibit overconfidence and representativeness in their decision-making practices.

In the context of bank lending, representativeness bias appears when a bank staff member, influenced by positive practices with a specific business or by a client meeting, places too much weight on good-quality information while undervaluing dangers in investigating the client's financial condition and creditworthiness (Peón–Calvo, 2013, as cited in Kádár et al., 2023).

Investors can also make major financial mistakes when inspecting a fund manager's performance. They examine the history, a few quarters or even a few years of data, and judge, based on insufficient numerical information, that the manager's performance is due to skillful allocation and/or security selection (Pompian, 2006).

2.3.1.3 Anchoring and Adjustment Bias

Anchoring and adjustment bias is a cognitive bias- a psychological heuristic- that affects how individuals interpret probabilities and make decisions (Pompian, 2006).

A cognitive bias and a mental inclination arise from a person's extreme dependence on a particular initial point and their insufficient modification to new information. Individuals make adjustments using a beginning point to reach a concluding response. However, the adjustments are generally not enough; that is, different initial values result in biased estimates (Verzobio et al. 2022). Judgmental prejudices occur when a person is reluctant to modify their initial opinion because of anchoring, even if new information is gained (Kang & Park, 2019).

In investing, this bias leads people to rely heavily on arbitrary reference points or anchors, such as specific price levels or market indexes, when evaluating whether to buy or sell securities or when determining whether the market is overvalued or undervalued. Rational investors process new information impartially and do not allow it to influence purchase prices or target prices when settling on how to behave. However, anchoring and adjustment heuristic indicate that investors interpret new information through a fundamentally distorted lens. They place excessive emphasis on statistically arbitrary, psychologically specific anchor points. As a result, their decisions depart from rational" behavior (Pompian, 2006).

Slovic (1967) was the first to introduce the concept of anchoring in the field of decision-making. Later, the anchoring and adjustment heuristic was proposed by Tversky and Kahneman (1974). According to research, anchoring bias refers to the disproportionate influence on decision-makers to make judgments biased toward an initially presented value (Furnham & Boo, 2011).

A common justification for anchoring bias is that the anchor value creates, at least temporarily, the chance that the amount to be valued should be close to the anchor value itself (Green et al. 1998, as cited in Costa et al 2017). Furnham and Boo (2011) conducted

a thorough literature review, which identified three distinct perspectives clarifying the anchoring effect: anchoring and adjustment, selective accessibility, and attitude changing.

Anchoring and adjustment: This perspective suggests that the anchoring effect results from an effortful, but insufficient, adjustment process based on an initially presented value. The anchor values serve as a reference point from which people adjust the boundary of the range of plausible values for the question, presuming that the given anchor is more extreme than the boundary value for the range of plausible answers. This view is supported by studies of Tversky and Kahneman (1974), as well as Epley and Gilovich(2001,2005).

Selective accessibility: according to research by Chapman and Johnson (1999), Mussweiler and Strack (1999, 2001b), and Strack and Mussweiler (1997), this perception is based on confirmatory hypothesis testing; individuals test the hypothesis that the anchor value is the correct answer. In doing so, judges seek ways that the answer is similar to the anchor value and consequently activate aspects of the target that are consistent with the anchor to become accessible.

Attitude changing: As discussed by Blankenship et al. (2008), Wegener et al (2001,2010), anchors can directly serve as a cue, or indirectly influence the information-processing that biases judgments toward the anchors. In low-elaboration contexts, anchoring occurs through non-thoughtful processes, where individuals treat anchors as a hint toward a reasonable answer. In a High-elaboration context, anchoring involves thorough thinking that engages judges in more effortful information processing with prior knowledge, which activates anchor-consistent information, thus biasing the judgment process.

According to Cen, Hillary, and Wei (2013, as cited in Owusu, 2020), sell-side analysts may be influenced by anchoring biases when assessing the business prospect's profitability. Analysts use the industry median forecasted earnings per share as an anchor, which affects their own forecasts. Anchoring can direct lenders to overlook the new, relevant facts in favor of previous experiences or initial expectations (Ranjan, 2025).

Another basis of anchoring was introduced by Campbell and Sharpe (2007), who confirmed that forecasters rely on past values as anchors when making forecasts (Owusu, 2020).

Anchoring can occur through two distinct methods:

System 1: anchoring in System 1 is an automatic expression that is triggered by a priming effect.

System 2: anchoring in System 2instead occurs in a conscious activity of adjustment. However, in most cases, there is no corresponding subjective experience in anchoring. Making the effect consequently often apparent to people as unbelievable (Kahneman, 2011, as cited in Andersson & Johansson, 2014).

To minimize or remove the anchoring effect, it is very important to activate System 2 by investigating the memory for arguments that contradict the anchor (Galinsky &Mussweiler, 2001, as cited in Andersson & Johansson, 2014). A strategy known as "thinking the opposite" can help to protect oneself against anchoring effects (Kahneman, 2011). System 2 is believed to work using information retrieved from memory, where an anchor simplifies the retrieval of certain data (Kahneman, 2011). As a result, even when System 2 is activated, it remains hard to decrease or eliminate the anchoring effect (Andersson & Johansson, 2014).

In practice, Investors often make broad market predictions that are too close to existing levels. Their estimations are narrower than what would be suggested by historical variation. Investors may cling too strongly to their original estimations when new information about the company becomes available. They base forecasts of the potential that a specific asset class may increase or decrease based on the existing return level. They may also become attached to the economic conditions of specific countries or firms (Pompian, 2006).

2.3.1.4 Cognitive Dissonance Bias

In 1957, cognitive dissonance was first presented by Leon Festinger. Festinger declared that when someone has two conflicting cognitions regarding themselves, their surroundings, beliefs, attitudes, and previous actions, they will feel conflicted and will attempt to resolve it by either eliminating dissonant cognitions, adding new consonant cognitions, or decreasing the significance of dissonant cognitions (Bolia et al. 2016). It is a psychological event and mental discomfort that people often experience in situations where newly obtained information is inconsistent with preexisting conceptions and thoughts. Ady et al. (2021) verified a substantial amount of cognitive dissonance in investment managers and CEOs in their research.

Cognitive dissonance is a psychological prejudice that influences individuals' attitudes, not their behavior. It is described as a mental construct related to how individuals evaluate something (Azouzi& Bacha, 2023). Cognitive dissonance refers to the psychological distress that arises when a person is unable to rationalize two contradictory visions or actions (Ahrens & Bosch-Rosa, 2023).

When new information conflicts with preexisting beliefs, people frequently experience mental discomfort—this phenomenon is known as cognitive dissonance. In psychological terms, Cognitions stand for attitudes, emotions, beliefs, or values. Cognitive dissonance represents a condition of imbalance that happens when conflicting cognitions intersect. Cognitive dissonance includes the reaction that occurs as people attempt to harmonize cognitions and so reduce their mental distress (Pompian, 2006).

A classic example of cognitive dissonance is smoking while believing that smoking is not particularly destructive (McMaster and Lee, 1991, as cited in Ahrens & Bosch-Rosa, 2023). Another example is a customer buying a specific brand of lawn mower, initially thinking it to be the top lawn mower available. Though when presented with new information suggesting that an alternate lawn mower is superior, the consumer experiences cognitive dissonance. Cognitive dissonance occurs to lessen the discomfort with the notion that maybe the buyer did not buy the correct lawnmower. Psychologists have shown that

individuals habitually engage in extensive rationalizations to harmonize their cognitions and preserve psychological stability (Pompian, 2006).

Pompian (2006) identifies two characteristics of cognitive dissonance that affect decision-making.

1. Selective perception. Individuals experiencing selective perception register only the information that confirms and supports a selected course, which results in producing an incomplete and mistaken view of reality. In their incapacity to objectively recognize existing evidence, people are increasingly prone to follow miscalculations.

2. Selective decision-making. Selective decision-making typically happens when the obligation and commitment to the original decision course are high. Selective decision-making rationalizes actions that allow a person to stick to that course, even at considerable economic cost. For example, someone may keep investing in a project with unpleasant prospects to avoid "wasting" the balance of earlier sunk funds. Research reveals that people are often biased in favor of decisions they have previously made.

According to Bellando and Tran Dieu (2008, as cited in Azouzi& Bacha, 2023), the cognitive cost associated with the inconsistency between two mental states (cognitive dissonance) motivates the decision-maker to depend on objective and precise methods, such as quantitative criteria. For instance, a bank director might subsequently decide on objective evaluation methods based on analytics and metrics to avoid cognitive dissonance. Beck (2009, as cited in Azouzi& Bacha, 2023) noted that a major source of cognitive dissonance is uncertainty about an occurrence, choice, or, in the financial context, such as managing credit risk.

In investing, cognitive dissonance makes individuals cling to losing securities positions that they would not sell to avoid the psychological hurt connected with confessing that they made a poor decision. Investors influenced by this bias may continue to invest in a declining security that they already possess to validate their prior decision to invest in that security without evaluating the new venture's rationality. Additionally, cognitive dissonance makes investors over-involved in herds of behavior; people often

evade information that contradicts a past choice, hoping that a large amount of contradicting information will be out, and investors group jointly and make large-scale shifts in behavior to that choice (Pompian, 2006).

A manager may end up keeping the losing investments due to cognitive dissonance, to avoid the pain of admitting a poor decision (According to Ford, 2019; as cited in Ady et al., 2021).

2.3.1.5 Availability Bias

Availability is a cognitive bias, a rule of thumb that allows people to estimate the likelihood of an outcome based on how familiar or frequently that outcome appears in their own lives. For example, if two planes have recently collided, an individual may choose to transfer by train, even though it is pointless, as the overall danger remains unchanged. This reaction is merely a result of availability bias (Kahneman, 2011; Salas-Velasco, 2024).

Individuals affected by availability bias tend to recognize easily recalled events as more probable than events that are harder to imagine or understand (Pompian, 2006). The availability heuristic refers to the ease with which examples of an event can be brought to mind and how this influences judgments about the frequency or probability of the event (Kahneman & Tversky, 1982, as cited in Andersson & Johansson, 2014).

For example, many people believe that shark attacks are a more common cause of death than airplane parts falling from the sky. In reality, death from falling airplane parts from the sky is 30 times more likely to happen. However, Shark attacks are perceived as more common due to the intense fear they evoke and the disproportionate media attention shark attacks receive. As a result, death by shark attack is easier to imagine than death by falling airplane parts (Pompian, 2006). The availability bias involves both System 1 and System 2 thinking, indicating that it encompasses both automatic operation and a deliberate problem-solving strategy (Andersson & Johansson, 2014).

According to Pompian (2006), availability bias can be divided into four types that are particularly relevant to investors:

Retrievability: Ideas that are most easily retrieved are often perceived as most credible, regardless of their actual reliability. Investors may select investments based on readily available information (e.g., advertisements or suggestions) instead of conducting thorough research to choose a good investment.

Categorization: People tend to classify or call for information in ways that align with specific reference points. The brain first generates a set of search terms, relevant to the mission at hand, which help individuals to proficiently navigate the way their brain's arrangement structure and set the data they seek. Investors often choose investments based on categories stored in the memory, overlooking other categories that are not easily recognizable.

Narrow range of experience: When individuals rely on a limited frame of reference to make an objective judgment, then a narrow range of experience bias frequently occurs. Investors may favor investments that fit a narrow range of their life experiences - such as those related to their profession, region, and social circle.

Resonance. Judgment can be affected by how closely a certain situation resonates with an individual's personal circumstances. Investors select ventures that align with their personality traits or their behavioral tendencies.

Thakor (2015) noted that financial crises may be anticipated during periods of prolonged lending growth and high banking profits when decision makers are influenced by availability bias. In such cases, sustained profitability can lead to an availability cascade, where risk-management capabilities of bankers are overestimated, and the role of chance in positive outcomes is underestimated. As a result, agents become more risk-tolerant and engage in increasingly risky investments.

2.3.1.6 Self-Attribution Bias

Self-Attribution bias, also known as self-serving attributional bias, is a cognitive bias that refers to the inclination of people to attribute their successes to internal factors- such as talent or foresight- while blaming failures on external circumstances, such as bad luck. For example, students who perform well on an exam may attribute it to their intelligence, while those who perform poorly might blame an unfair assessment (Pompian, 2006).

This bias describes the inclination of people to attribute their gains to intrinsic characteristics, such as skill, while attributing failures to external causes, such as misfortune. For instance, a father affected by self-attribution bias may feel conceited and satisfied if his child achieves excellent grades, but if the grades are poor, the father may become annoyed with the teachers (Bachmann et al. 2018, 40).

In essence, self-attribution bias describes the tendency to assign achievements to personal talents such as natural intelligence and thinking capacities, while attributing setbacks to variables unmanageable dynamics and beyond one's control, like luck. This pattern of thinking can lead individuals to be overconfident (KazemiSaraskanrood &Ghafouri, 2022).

According to Pompian (2006), self-serving bias can be broken down into two fundamental inclinations or secondary biases.

1. **Self-enhancing bias**: the propensity of people to claim an illogical degree of praise for their successes.

2.**Self-protecting bias**: the consequence, outcome effect—the unreasonable denial of responsibility for failure.

While successful people may become overconfident in their decision-making, they are still subject to unforeseen loss and gain in a venture. If an investment performs well, overconfident investors may be encouraged to take even riskier investments

(KazemiSaraskanrood &Ghafouri, 2022). Executives influenced by overconfidence strengthened by self-attribution bias may exhibit stronger investment–cash flow sensitivity, potentially contributing to inefficient or distorted corporate investment decisions (Koo & Yang, 2018). Dawson (2020) also found that self-attribution was a significant predictor of an individual's willingness to take risks.

Investors infected by self-attribution bias often interpret successful investing outcomes as proof of their own insight, rather than acknowledging the role of external uncontrollable conditions. This increases risk exposure, as the investors may become too certain in their judgments. They may trade excessively beyond what is sensible. Self-attribution bias makes investors "hear what they desire to hear. They fail to diversify their portfolios adequately. When a firm's performance is very well, these investors might attribute the success to their involvement (Pompian, 2006). Because self-attribution bias reinforces overconfidence, Doukas &Petmezas (2007) observed that executives influenced by this bias expected to be more overconfident in their decisions and to overestimate potential good benefits and underestimate potential bad outcomes, particularly in the context of mergers. This behavior can lead to value-destroying merger decisions.

2.3.1.7 Illusion of Control Bias

The illusion of control bias is a cognitive bias that reflects the inclination of people to believe they can control or at least affect results, even when, in reality, they cannot. It involves the anticipation of a person's likelihood of success incorrectly greater than what is objectively warranted (Pompian, 2006). For example, people who successfully predict a sequence of coin tosses may begin to think they are "better guessers, and some may claim that distractions may lessen their performance at this statistically random task. This bias explains the propensity of people to think they can manage or control outcomes, while, in fact, they do not. The illusion of control stems from mistaken overgeneralization of the human skill to forecast their environments- a skill that has contributed significantly to Homo sapiens, one of Earth's most successful species (Bracha& Weber, 2012).

In psychology, self-control is associated with numerous related concepts, such as self-regulation, delayed gratification, impulsivity, and willpower (Liu et al, 2019). Studies on self-control in a financial context propose that self-control or self-regulation helps people resist consumption-driven impulses (Baumeister, 2002; Wärneryd, 1999, as cited in Liu et al., 2019). Baumeister (2002, as cited in Liu et al, 2019) defines "self-control" or "self-regulation" as the self's power to alter its own personal responses when confronted with temptations,

(Shefrin, 2007) described the Illusion of control as "the belief of people in controlling and impacting the results, when, in fact, it does not happen in the way people believe and do not control at all" (Riaz & Iqbal, 2015). Similarly, Ellen Langer, as cited in (Riaz & Iqbal, 2015), explained that the illusion of control bias refers to personal achievement, which is improperly higher than the objective probability it guarantees.

The illusion of control is reinforced by confidence in one's abilities, even when results are simply determined by chance. Individuals are willing to spend more to gamble on their own judgment; if they think they are well-informed (according to Heath and Tversky, 1991; as cited in Fellner, 2009). A false estimation of risks is led by an illusion of control; the greater the feeling of control, the more likely one is to underestimate hazards. As noted by Durand (2003), a manager's positive yet mistaken belief in the ability to control outcomes may lead to overestimating the likelihood of the task's success rate.

To avoid the negative financial consequences of the illusion of control bias, investors should recognize that winning investing is inherently a probabilistic action in nature. They should be mindful of situations that may trigger this bias, search for contrary viewpoints, and avoid overtrading. Investors mistakenly think they can control investment outcomes more than they in fact do. As a result, they tend to maintain under-diversified portfolios, concentrating on companies where they suppose they have some level of influence. Ultimately, the Illusion of control bias contributes to investors' overconfidence (Pompian, 2006).

2.3.1.8 Conservatism Bias

Conservative bias was initially introduced by Edwards (1982). It indicates that individuals tend to cling to their own beliefs and estimates, showing reluctance to accept new information- even when that information could be valuable for decision-making (Zahera & Bansal, 2018). Barberis, Shleifer, and Vishny (1998) illustrated that conservative bias in investors leads to systematic error in investment decisions, driven by their sluggishness in updating beliefs. Consequently, they may react insufficiently to new information.

Conservative bias is a Cognitive bias -a mental process -that causes people to adhere to their previous views or predictions, often at the expense of accepting updated information. For example, an investor may receive bad earnings news about a company that contradicts negatively with their earlier estimates. Due to conservatism bias, investors might underreact to new facts and continue to rely on previous estimates, rather than adjusting their view in light of the updated information.

Conservative bias is a cognitive psychological inclination in which individuals cling tightly to their previous visions or expectations at the expense of recognizing new information. This bias leads people to overestimate base rates and undervalue the sample evidence, preventing them from reacting appropriately, as a typical individual would when new information is presented (Pompian, 2012). Conservatism also asserts that valuable items-such as practices and customs- deserve preservation, loyalty, and conservation rather than expansion or increased production. These responses should be regarded as distinctive units, not merely as carriers of value (Nebel, 2015). Luo (2012) further explained that conservatism bias could result in either overreaction or underreaction of asset prices in response to new facts.

This bias causes individuals to overweight base rates and underreact to sample confirmation. As a result, they may fail to respond objectively to new evidence (Pompian, 2006). It stands in contrast with representativeness bias, where individuals tend to overreact to new information.

Conservative bias signifies that individuals are not immediately ready to accept modifications and require more time to adjust. As a result, investors take longer to revise their viewpoints when new information or rumors about a company emerge. In such cases, they may initially underreact (Giri& Adhikari, 2023). This bias also implies that people rely on traditional investment decision-making techniques and often neglect current market research and updated investing knowledge (Evbayiro-Osagie &Chijuka, 2021).

Investors affected by conservatism bias tend to adhere to observations or a prediction, often resisting change when presented with new data. When they respond to new information, their reactions are typically slow. This bias is linked to the difficulty in processing new data. Under cognitive pressure, individuals, when presented with multifaceted information, may find it more comfortable to hold on to past beliefs than adopt new ones (Pompian, 2006). Ahsan & Malik (2016) confirmed that conservatism bias significantly influences the relationship between openness to experience and long-term investment intentions.

Investors tend to hold onto their expectations gently. Once a certain position is taken, it becomes extremely difficult for them to shift from it (Montier,2002; as cited in Jain &Kesari, 2019). Conservative bias leads to a narrow-mindedness that makes investors unhurried to respond to new facts or improvements and to update their beliefs accordingly (Márcia et al., 2014, as cited in Giri& Adhikari, 2023). Conservative-biased managers may eventually adapt to new conditions; however, the adjustments tend to be gradual, driven by attachment to the past resistance to change (Nobre et al., 2022).

2.3.1 .9 Ambiguity Aversion Bias

In various conditions, people make decisions based on clearly estimated probabilities associated with particular outcomes. In other cases, however, they do not identify the probabilistic structure of events. Economists point to the former condition as risk, and the latter as ambiguity (Butler et al., 2014).

Ambiguity Aversion is a cognitive bias in which people hate to speculate when probability distributions are vague or unclear. This tendency to shy away from uncertainty

is known as ambiguity aversion (Pompian, 2006). It is a psychological prejudice that reflects a preference for conditions where outcome probabilities are identified over those involving unknown risks or vague, even when the acknowledged prospects are less favorable (Komba, 2025).

It is a cognitive bias that occurs when people exhibit an aversion to gambling due to mysterious probability distributions. Usually, it refers to individuals' hesitation to act under uncertain conditions. Ambiguity differs from the concept of risk, which describes conditions where the likelihood of unsystematic events is fully identified. It is a pervasive element in real life and plays a major role in many economic crises. For example, ambiguity often influences the fiscal reforms of the social security system decisions (Berger &Bosetti, 2020).

People prefer to take risks regarding events that they are familiar with, rather than those they do not understand, even though the actual level of perceived risk is the same (Heath and Tversky, 1991; Fox and Tversky, 1995, as cited in Lunn, 2013). Ambiguity aversion may arise from limited cognitive capacity or a tendency to depend on heuristics to avoid the complexities involved in evaluating probabilities (Ritter, 2003; Venkatraman et al., 2006, as cited in Komba, 2025)

Ambiguity aversion reflects a dislike for circumstances where people are uncertain regarding the likelihoods of outcomes, rather than, or in addition to, a dislike for variability in outcomes (Butler et al., 2014).

Since financial asset returns are often risky and at times, ambiguous, aversion to risk and to ambiguity helps explain why people may be hesitant to invest in stocks, thus contributing to the equity premium (Epstein and Schneider, 2010, as cited in Butler et al., 2014). When investors receive news signals of uncertain quality, they tend to place more value on the worst scenario (Li et al., 2017). Breueret al (2017) provided evidence that cash holdings become less valuable as ambiguity aversion increases. Consequently, managers reduce cash holdings in response to ambiguity-averse investors' behavior.

An imperative aspect of ambiguity aversion is the competence effect; investors who perceive themselves as more knowledgeable about financial decisions, especially those who do not distinguish ambiguity in investment situations, are more confident in acting on their decisions. Ambiguity-averse investors demand higher expected returns to compensate for perceived risks associated with an asset. As a result, they tend to stick with conservative investments. This bias can also lead investors to think that their employers' securities are safer than those of other firms, simply because outside firms' investments are perceived as more vague (Pompian, 2006).

Surveys among investors (Olsen and Troughton, 2000) and laboratory experiments (Sarin and Weber, 1993) support the relevance of ambiguity in financial decision-making processes (Breueret al, 2017). Several studies have linked major events during the 2008-2009 global Financial Crisis to ambiguity - specifically, to weakly understood information and investors' aversion to uncertainty that is difficult to quantify, rather than to risk (Guidolin& Rinaldi, 2013). Berger &Bosetti (2020) explored ambiguity preferences among real-life policymakers at the Paris UN climate conference. Their findings revealed that policymakers are, in general, ambiguity averse. Furthermore, this aversion does not fundamentally stem from irrational behavior, but from intrinsic preferences regarding unknown probabilities.

2.3.1 .10 Mental Accounting bias

The term mental accounting was introduced by Thaler (1985). It refers to the cognitive process - or rather- the set of cognitive operations- that individuals and households use to arrange, assess, and track financial activities. This involves creating specific accounts in the mind (Swacha-Lech &Solarz, 2019). Mental accounting reflects people's propensity to code, categorize, and assess economic outcomes by grouping their assets into non-fungible (non-identical) mental accounts (Pompian, 2006).

This cognitive bias reveals people's propensity to code, classify, and estimate economic results by mentally pooling and allocating their assets into several separate, interchangeable mental accounts. People assign significance to money depending on the

specific mental category it belongs to and are placed in, and make decisions relying on each mental account independently. As a result, they often make unreasonable judgments by failing to consider the overall financial picture (Barberis and Huang, 2001; Brennan, 2001; Lim, 2006; Hsu, 2022).

Mental accounting is closely related to the concept of fungibility. Thaler (1990) proposed that fungibility is the idea that money has no labels. He argued that money held in one mental account is not considered a perfect alternative for money in a different account, in contrast to neoclassical theory and the lifecycle model, which assume that the marginal propensity to consume (MPC) is the same for all forms of wealth (supposing no transition costs, etc). The creation of these particular mental accounts demonstrates the non-fungibility effect. Furthermore, Thaler (1999) identified three elements of mental accounting that violate the economic principle of fungibility:

- The way individuals distinguish and experience the results.
- The allocation of specific financial resources and expenditures to particular accounts.
- The frequency with which these accounts are evaluated, and how narrowly or broadly they are defined (Swacha-Lech &Solarz, 2019).

Framing also plays a significant role in mental accounting. In this context, framing refers to how people change their perceptions of money and investments based on the surrounding conditions they experience (Pompian, 2006). In finance, framing encompasses the coding, categorization, and assessment of financial decisions.Mental accounting bias makes people visualize their investments as divided into distinct “buckets,” or accounts, such as college savings or retirement funds, often resulting in unreasonable discrimination between returns from income and those from capital appreciation (Pompian, 2006).

Investor behavior associated with mental accounting is reflected in their tendency to divide their finances into separate and different accounts based on subjective criteria, such as the sources of funds and intended use of revenue (Widyastuti, 2011), as cited in Anwar et al. (2023).

According to Anwar et al. (2023), numerous studies investigating the relationship between mental accounting and investment decisions have produced conflicting findings. Research by Cherono et al. (2019) and Hunguru et al. (2020) found that mental accounting influences investment assessments; in contrast, Hallale and Gadekar (2019) reported only a weak relationship, while studies of Aziz & Khan (2016) and Jain et al. (2020) found no significant association between mental accounting and investment decisions.

2.3.1 .11 Confirmation bias

Confirmation bias is a cognitive bias characterized by a form of selective perception, where individuals emphasize thoughts and information that corroborate and support their existing beliefs while undervaluing or ignoring information that disagrees with their beliefs. It describes people's natural tendency to persuade themselves of what they already desire to believe (Pompian, 2006).

Confirmation bias also contributes to selection bias during the process of gathering evidence to support specific beliefs, whereby judgment makers often scrutinize, overestimate, or actively look for information that aligns with their views, while simultaneously overlooking or undervaluing evidence that may challenge those claims (Pompian, 2006).

Changing one’s beliefs is often difficult, and people tend to cling tightly to their existing viewpoints. It is usually easier to ignore alternative viewpoints than to revise long-held and deeply rooted ideas. Because individuals often assume their current beliefs are accurate, those beliefs serve as heuristics for assessing new information (Hernandez & Preston, 2013). However, this tendency can result in weaker decision-making, as relevant evidence is not thoroughly evaluated (Hernandez & Preston, 2013).

Confirmation bias is thus a form of selective perception that stresses information consistent with one's existing beliefs, while disregarding opposing information. It highlights the human ability to convince them about everything they desire to trust in. It

also reflects a common tendency to attain and acquire new information in ways that are consistent with a person's pre-existing ideas (Costa et al., 2017). Such biased tendencies have been well-documented across various fields, including cognitive psychology, social psychology, politics, and economics (Allahverdyan &Galstyan, 2014).

Festinger's Cognitive Dissonance Theory provides a framework for understanding confirmation bias. According to this theory, information that disagrees with an individual's beliefs creates cognitive dissonance- a psychologically negative and uncomfortable state- that leads people to avoid or downplay facts that disconfirm their ideas, while seeking information that aligns with their beliefs. This tendency is supported by findings from Schwind et al. (2012, as cited in Costa et al. 2017), as well as earlier work by Festinger (1957), Frey (1986), and Russo et al. (1996, as cited in Park et al. 2010).

The need to reduce cognitive dissonance also fuels confirmation bias among investors, particularly when they seek information on online message boards. This bias can lead to underreaction to new information and reinforcement of existing beliefs (Park et al., 2010).

Psychologists associate confirmation bias with a range of contributing factors. These include emotional causes, such as discomfiture, inflexibility, and wishful thinking, and cultural influences like superstition and traditional customs. Physiological justifications have also been proposed: the evolutionary development of the human brain may have favored the use of heuristics- mental shortcuts that enable rapid, good decision-making, but can also result in systematic prejudices. Moreover, recent research suggests that the human brain is inclined to form conclusions that enhance positive emotions and minimize negative ones (Sabourian & Sibert, 2009).

According to Allahverdyan &Galstyan (2014), confirmation bias can manifest in two ways: information acquisition or information assimilation, or both simultaneously. In the investment context, confirmation bias makes investors search for only information that verifies their opinions about an investment, while ignoring information that might oppose

their ideas. As a result, investors may continue holding under-diversified portfolios (Pompian, 2006).

2.3.1 .12 Hindsight Bias

Hindsight bias is a cognitive bias that represents the inclination to claim, “I knew it all along!” after an occurrence has elapsed (Roese &Vohs, 2012). It makes people perceive that the event was unsurprising, even if it was unpredictable. This bias is associated with the fact that the human mind has a greater ease in processing actual outcomes compared to the infinite range of possibilities that could have occurred but did not appear. As a result, people tend to overrate the accuracy of their forecasts. Hindsight bias describes people's mistaken belief that they had accurately forecasted an outcome (Pompian, 2006).

According to Fischoff (1975), hindsight bias is the inclination to recognize an occurrence that has already happened as less surprising than it truly was and to overestimate the degree to which one originally forecasted it (Lunn, 2013). Several psychological theories attempt to explain hindsight bias, including Just World Theory, Impression Management Theory, and Cognitive Explanation Theory. The cognitive explanation theory indicates that people make incorrect forecasts of occurrence or claim that they “Knew the event all along”. They argue the outcome was expected- even when it was not. Mistakes in memory and recall make people feel skilled through their experience, even after the recognition is set (Hussain et al, 2013).

Roese and Vohs (2012) outline three levels of hindsight bias: memory distortion, inevitability, and foreseeability.

Memory distortion: This level focuses on the misremembering of one’s prior judgment, often expressed as, “I said it would happen. It is typically observed when a remembered judgment is benchmarked directly in opposition to a recorded previous reaction, like in the memory design.

Inevitability: This stage engages beliefs about the objective nature of the world, for example, the belief that a past event was programmed and predetermined, as in: "It had to happen". It may be measured using ratings that reflect belief in inevitability, such as: "Under the given circumstances, no different outcome was possible". The level builds on top of memory distortion, implying that inevitability includes memory distortion; however, it holds beliefs about the causal forces that make specific results appear more unsurprising than others.

Foreseeability: This level is subjective in nature and focuses on beliefs about an individual's knowledge and skill, such as: "I knew it would happen". It includes thinking that you personally could have predicted and foreseen a real-life occurrence, therefore feeling that "I knew it all along." This level is appraised by self-report ratings, for example: "The stock performance was easily expected when it was purchased. This level builds on top of inevitability, that is, it includes beliefs about the objective position of the world, but also contains beliefs about one's own skill to recognize the world.

Roese and Vohs (2012) propose that hindsight bias involves three categories of input—cognitive, metacognitive, and motivational—that have different effects on the three stages of hindsight prejudice.

Cognitive inputs: reveal operations of memory. Three memory-related processes contribute to hindsight bias: recollection, knowledge updating, and sensemaking.

Recollection. Within recollection, people try to retrieve their previous, pre-event forecasts (Erdfelder& Buchner, 1998). For example, people might fail to reclaim the response they presented to a past directory question, like: What is the distance from Minneapolis to Chicago?.

Knowledge updating. The human memory system is outstandingly adept at absorbing new information and linking it with what is previously recognized. Knowledge updating refers to the combination of new information into presented memory constructions, an instantiation of the reconstructive character of human memory.

Sensemaking. Sensemaking involves clarification that accomplishes meaning in words of the outcome's larger results for the sensemaker (Kruglanski, 1989; Lombrozo, 2006; Wilson & Gilbert, 2008). It contains more complicated and elaborate processing than knowledge updating.

Metacognitive inputs: Metacognitions refer to thoughts about one's own thinking (Flavell, 1979; Werth, Strack, &Förster, 2002). Comprehending that you have been able to narrate your youth best friend's phone number since you were a teen is an example of metacognitive thinking. Since metacognitive inputs focus on subjective opinions, they must (and do) apply their maximum influence on the most subjective level of hindsight bias -foreseeability (Nestler et al., 2010).

Motivational inputs: reveal desires and requirements. They mainly influence the foreseeability level that is sensitive to two shapes of motivational input: the need for closure and self-esteem. Both constructs might replicate either constant individual dissimilarity or temporary activation of motivational states.

Need for closure. People prefer to view the world as predictable, and the idea that many events are at the mercy of mysterious, uncertain, and accidental likelihood can be frightening and unsettling.

Self-Esteem. People struggle to protect and improve optimistic visions of self-perceptions.

The influence of hindsight bias on short-term investment behavior was confirmed, and noted that hindsight bias distorts investment choices, exposing investors to extreme risk due to mistaken expectedness of events and outcomes (according to Tchai, 2012; as cited in Hussain et al, 2013). Individuals implement this hindsight behavior and claim to have expected certain financial outcomes to reinforce their self-assurance and prestige in the eyes of others (Christensenszalanski and Willham, 1991; Guilbault et al., 2004; Roese and Vohs, 2012; as cited in Aren &Hamamci, 2021).

If an investment's value rises, hindsight-biased investors often tend to rephrase and reconstruct their memories to describe the favorable growth as if it were expected. This may motivate extreme risk-taking, as they start to think that they have predictive powers. Conversely, investors "rewrite history" if they do not perform well and deny memories of prior, wrong predictions to lessen discomfiture and avoid embarrassment. They may also overly blame their financial managers when funds perform badly. Given what has happened in securities markets, they recognize every growth as foreseeable. On the other side, hindsight bias may lead investors to undeservedly admire and appraise their financial managers when funds' returns are good (Pompian, 2006).

Similarly, hindsight-biased individuals may underrate the risk of overlooking or postponing a mortgage payment, viewing it as a one-time, isolated event. At the same time, they may overrate their capacities to make future payments, encouraging individuals to take on excessive debt caused by mistaken reliance on a financing method derived from a previous success that may have been accidental (Lucarelli &Mazzocchini, 2019).

2.3.1 .13 Recency Bias

Recency bias is a cognitive bias in which individuals tend to more evidently remember and highlight new occurrences than those that happened in the near or distant past. In finance, overcoming recency bias can be a particularly challenging task. Clients often exhibit this attitude by basing investment judgments on recent events, which may result in illogical behaviors, such as investing in popular investment trends or selling assets during market declines (Jain &Kesari, 2020).

People give a high influence and weight to the most recent information compared to earlier information. Accordingly, individuals are likely to make choices based on the most recent events, devoid of considering the information previously acquired. This can influence the overall quality of decision-making (Rudiawarni et al., 2020). The recency effect reflects the thinking that new information is more significant than older information, even when there is no logical basis for this assumption, leading to giving excessive weight

to new facts during judgment (Aren, 2019; as cited in Aren &Hamamci, 2021; Aren &Hamamcı, 2023).

According to Baulkaran& Jain (2024), a survey conducted by Cerulli Associates (2020) among 300 financial advisors revealed that behavioral prejudices most probable to influence their decisions include overconfidence, loss aversion, confirmation, availability, and recency. The results showed that 82% of advisors acknowledged being influenced by loss aversion, 65% exhibited overconfidence, and 51% exhibited recency bias.

Loewenstein et al. (2003; as cited in Rabbani et al., 2021) suggested that recency bias, like other cognitive tendencies, occurs because a person's existing emotional state forms an anchor point that makes a platform for subsequent thoughts, feelings, and behaviors. This aligns with cognitive inclination in which people disproportionally recall and highlight recent events and experiences more than those that happened in the near or far-away long-ago (Pompian, 2006).

According to belief adjustment theory, the order in which information is received impacts the judgment. The order is appraised through two systems: primacy and recency effects. The primacy effect is revealed if the first information is more influential on the judgment, and the recency effect if the last information has a greater impact (Habbe and Mande, 2016). However, it is usually established that the recency effect is stronger (Palczewski et al., 2016; as cited in Aren &Hamamci, 2021).

In investment behavior, recency bias is evident when investors follow managers who have shown strong make short-term returns (e.g., over one to three years) and base their investment decisions merely on these recent results. Such investors often extrapolate patterns and make forecasts based on past data samples that are very likely to be right. This makes them exposed to buying at market peaks. They frequently invest in certain asset classes at inappropriate times and incur losses as a result. Recency-biased investors tend to overlook fundamental value and focus solely on recent increasing price performance. Additionally, they often ignore appropriate asset allocation (Pompian, 2006).

2.3.1 .14 Framing Bias

Framing bias is a Cognitive bias that reflects the tendency of decision makers to respond differently to diverse situations depending on the framework in which an option is offered (or framed). A choice frame is the decision maker's biased thought of the actions, results, and possibilities associated with a specific option. The adopted frame is restricted partially by how the problem is structured and social norms, customs, and the decision maker's personal traits (Pompian, 2006).

Framing bias demonstrates the propensity of individuals to choose to respond to conditions differently. People react differently when identical information is presented dissimilarly (De Quidt &Ghatak, 2018). Framing effects express how information is presented can drastically manipulate the decision. Individuals often do not respond in the same manner to the same choices depending on the approach they are structured. For example, investment decisions can be affected by whether information about possible gains and losses is framed (Sathya &Gayathiri, 2024).

Fundamental principle in prospect theory (Tversky and Kahneman, 1981) is the thought that the utility of a result is related to the outcome's distance from a reference point. The theory is based on the idea that different framings of the same problems can lead to different selections, with the possibility of important consequences for well-being (Gianinazzi, 2019).

According to Tversky & Kahneman (1980), as cited in Barbosa (2022), there are three diverse ways the framing effect occurs;

Framing of contingency, which expresses the assurance effect on preferences by illustrating that a desirable choice becomes less attractive if its likelihood of happening is decreased.

Framing of Acts: mainly correlated to notions of risk aversion or risk seeking, this type depends on the certainty of winning or losing when concluding credible actions.

People would choose a guaranteed small gain over a larger gain with a lesser likelihood of happening.

Framing of outputs, which shows that a person decides by viewing it from an impartial standpoint, and recognizing whether the output is a gain or a loss, influences whether the behavior is risk-averse or risk-seeking.

Narrow framing, or framing, arises when persons do not process correctly all relevant information, and create unproductive or misguided decisions, reasonably with a decisive description by James Druckman. People can make better decisions if they adopt a broader frame and consider all the related variables. Concisely, it can be articulated as a type of rigidity or stubbornness in making decisions (Lucarelli &Mazzocchini, 2019).

Framing bias also includes the occurrence of narrow framing, which happens in situations where people focus too narrowly on one or two aspects of a situation, ignoring other vital elements in decision-making. The way questions are asked can influence investors' behavior, like responses to issues of risk tolerance that are excessively conservative or excessively aggressive. In case questions are expressed in the framework of "gain", a risk-averse answer is more likely. Whereas those expressed and framed in the framework of "loss" can promote possible risk-seeking behavior (Pompian, 2006).

The framing biases influence managers' choices; even if the financial outcomes are identical, a manager may adopt a dissimilar investment policy relying on whether prospective outcomes are presented as a gain or a loss (Ranjan, 2025).

Framing frameworks are often illogical and inconsistent, yet they still affect financial decisions. Positively expressed questions are more expected to get positive answers, and pessimistically expressed questions are more expected to get negative answers. Positively expressed response options are more likely to be chosen than pessimistically expressed options. Narrow framing may also lead long-term investors to focus on short-term price fluctuations in asingle stock or business. This is consistent with narrow loss aversion, where the emphasis is just on short-term market fluctuations, leading to excessive trading. Both Framing and loss aversion may explain extreme risk aversion

behavior. For example, an investor who has experienced a net loss becomes inclined toward more dangerous investments, while one with a net gain is inclined toward safer options (Pompian, 2006). Burakov (2014) found that framing and endowment effects can sometimes weaken the efficiency of growth constraints on bank capital adequacy in reducing extreme risk-taking by banks during the credit cycle.

2.3.2 Emotional biases

An emotional bias is a mental state that arises as an outcome of intuitive judgments rather than reasonable decisions (Akinkoye & Bankole, 2020). Examples of emotional prejudices include overconfidence, regret aversion, loss aversion, and self-control prejudices.

Emotional prejudices are hard to correct since they derive from desire or feeling rather than mindful estimates. Unlike cognitive prejudices, which come from mistaken analysis, improved information, counsel, and suggestions may repair them (Pompian, 2012).

2.3.2.1 Endowment Bias

Endowment bias is an emotional bias in which people assign greater value to an asset simply because they have property rights to it, compared to when they do not (Pompian, 2006). This emotional prejudice causes people to value possessions more highly than non-possessive assets. As a result, they often demand a higher price to give up something than they would be willing to pay to acquire it. Knetsch and Sinden (1984) illustrated this in an experiment where participants were given a $2.00 cash gift or a lottery ticket. Later, they were offered the opportunity to exchange the lottery ticket for cash or the other way around. However, only a few participants decided to make the exchange. Those who received the lottery tickets tended to value and prefer them more than those who were given money (Kahneman et al. 1991).

This behavior contradicts standard economic theory, which assumes that a person's willingness to pay for a good or an object should equal their willingness to accept

dispossession of the good or the object when the withdrawal is quantified in the shape of compensation. Ownership appears to "endow" the asset with a quantity of added value (Pompian, 2006). Endowment bias reflects a psychological tendency to overweight the value of owned objects, leading to a discrepancy between buying and selling prices.

In the realm of investing, endowment bias can lead investors to hold onto inherited securities, even when it is not financially rational to do so. Investors may avoid selling assets they have already acquired due to reluctance to incur transaction costs- even when those costs are minimal compared to the potential downside of a risky investment. Investors are more likely to keep assets they are familiar with and their behavioral patterns (Pompian, 2006).

2.3.2.2 Self-Control Bias

Self-Control Bias is an emotional bias that reflects a human behavioral inclination to prioritize immediate consumption at the expense of future saving. Money is a common area in which people are well-known to exhibit a lack of self-control (Pompian, 2006). This bias causes people to favor direct gratification over long-term goals.

Shefrin and Thaler (1988) proposed the involvement of self-control in financial behavior. When making financial decisions, people often face conflict between the short-term benefits and gaining the prolonged benefits; their ability to manage immediate desires and consider long-term consequences shapes their consumption habits and attitude, and influences various financial behaviors (Rey-Ares et al. 2021). In economics, the self-control issue refers to conflicting time preferences in the intertemporal options. It involves an internal struggle between a farsighted self and a narrow-minded self within each individual (Liu et al. 2019).

In financial management, self-control refers to a policy of investment planning by directing available funds toward appropriate investments planning. It reflects an individual's capacity to manage thoughts, feelings, difficulties, and actions. Tangney et al. (2004) identify four main dimensions of self-control: controlling thoughts, emotions, impulses, and performance. Research has confirmed the impact of self-control investment

decisions (Sekścińska et al., 2021; Addinpujoartanto &Darmawan, 2020, as cited in Anwar et al, 2023).

This bias arises from an inconsistency between people's overarching wishes and their incapacity, often due to insufficient self-discipline, to act in ways that support achieving those goals. For example, self-control-biased investors often fail to adequately prepare for retirement. This bias can also result in disproportionate allocation and cause investors to overlook fundamental financial principles such as compound interest and dollar-cost averaging (Pompian, 2006).

In managerial decision-making, studies have shown a positive relationship between self-control and both business and individual performance (Lauring et al., 2019, as cited in Aren &Hamamci, 2021). Firms may prefer current income over potentially higher future income due to future uncertainty. Similarly, managers might prefer projects with immediate, lower profits, rather than investments offering greater long-term profits (Aren &Hamamci, 2021).

Self-control plays a crucial role in financial management – for instance, resisting the impulses or motivations irrationally and instead prioritizing spending on needs rather than wants (according to Baumeister, 2002; as cited in Lita et al., 2018). According to Karlsson (1998; as cited in Lita et al., 2018), self-control helps individuals evade short-term preferences in favor of long-term goals. Thus, it serves as an effective policy for prudent financial management, careful resource allocation, and ensuring long-term planning and investment. Strömbäck et al., (2017) explored the role of self-control in financial behavior, particularly in retirement planning and credit use. Achtziger et al. (2015) found that individuals with low self-control are more likely to engage in compulsive shopping. Similarly, Gathergood (2012) reported that people with poor financial self-control are more prone to credit defaults and unplanned spending on durable goods- often resulting in over-indebtedness. Overall, research confirmed that self-control influences people's attitudes toward saving.

2.3.2.3 Optimism Bias

Optimism bias is an emotional bias. Optimistic Investors –regarding markets, the economy, and the prospects for strong performance of their investments- often think that terrible investments will not happen to them—but merely to “others” (Pompian, 2006).

This emotional bias expresses the tendency to overrate the probability of positive potential outcomes and underrate the chance of unfavorable ones. Optimistic individuals may misjudge their qualified skills to manage risks and outcomes by employing the qualitative method in risk assessment and basing credit risk estimation on personal opinion and experience. Likewise, an optimistic bank manager may disregard quantitative analysis in credit risk management, instead focusing attention on their own perceptions and anticipations (Azouzi& Bacha, 2023).

Empirical evidence confirmed that people tend to assign higher prospects to positive and good life events, like career success, a happy marriage, or a long and healthy life- even when they are aware of objective statistics like divorce rates, and so on (Weinstein, 1980; WeinsteinKlein, 1995, as cited in Kádár et al., 2023).

In business evaluation, analysts may miscalculate the risk of financial distress or bankruptcy due to overoptimism. A similar pattern appears in the credit market, when credit is refunded, people may expect improvements in their future income situation and a rise in financial knowledge, even when adverse conditions might lead to the opposite outcome (Kozma et al., 2018, as cited in Kádár et al., 2023).

Optimism also leads investors to adopt an inside view, rather than the more appropriate outside view, when making financial decisions. The inside view focuses on details of the current situation and involves personal involvement. In contrast, the outside view objectively evaluates an existing situation based on the empirical data of the outcomes obtained in historically connected conditions (Pompian, 2006).

Optimistic investors are most likely to overweight their portfolios with company stock, thinking that downturns are more likely to affect other firms more than their own.

They often assume they are achieving market-level returns, while ignoring the effects of inflation, fees, and taxes that grind down these returns. These investors may place undue self-belief in overly positive forecasts, such as optimistic earnings estimates from analysts or favorable company reports. They may also tend to make investments close to their local geographic state, driven by excessive optimism about their home area's economic prospects (Pompian, 2006).

In lending, optimism bias can lead credit officials to overestimate the likelihood of positive business outcomes, while underestimating the probability of bad incidents and risks affecting business. This can result in biased evaluations of loan applications. Studies have shown that optimism bias significantly affects credit decisions in banking (Ondolos et al., 2021). According to Baklouti (2015, as cited in Ondolos et al. 2021), optimism can negatively influence bank credit quality, as overly optimistic officials are more likely to make inaccurate forecasts.

2.3.2.4 Loss Aversion Bias

Loss version is an emotional bias first developed by Kahneman and Tversky (1979) through Prospect theory. It describes how people normally feel a stronger desire to avoid losses than to obtain gains. Psychologically, the pain of a loss is typically twice as powerful a motivator as the pleasure of making a gain of equal magnitude; for example, a loss-averse person may demand at least a two-dollar gain for every one dollar placed at risk. In such a scenario, risks that do not "pay double the return" are often deemed unacceptable (Pompian, 2006). Emotional factors, such as the fear of losing something, can confuse judgment and lead to dangerous decision-making behaviors (Ranjan, 2025).

It occurs when people typically experience a stronger desire to evade losses than to attain gains. It refers to the heightened vulnerability of the decision-maker to unfavorable modifications from the reference point compared to favorable ones of the same magnitude. People generally employ appropriate techniques to mitigate potential losses when making judgments (Azouzi& Bacha, 2023).

In the context of investment, loss-averse managers may preserve underperforming investments for longer than necessary to avoid suffering a loss, which might negatively affect long-term profitability (Barberis et al., 2001; as cited in Ranjan, 2025). Those investors keep losing investments for a long time in anticipation of retrieving what they lost. They may also prematurely sell winning investments out of fear and panic that profits will evaporate if they don't sell. This behavior can cause investors to unintentionally engage in more hazardous portfolios than they otherwise would if they just got rid of the investment and took a better investment opportunity (Pompian, 2006).

Loss aversion also affects the credit decision-making in banking. The act of granting credit is an inherently risky task. In this regard, a bank CEO avoids making unbalanced or risky decisions regarding both the bank's financial position and customer relations. This decision might be influenced by loss-aversion (Souissi et al., 2016). According to Sawers et al. (2011, as cited in Souissi et al. 2016), employees operating under high-reward systems may be more likely to make riskier decisions than others may. However, a CEO concerned with maintaining market reputation may feel extremely frustrated to support risk-taking behavior among subordinates, in order to sustain his professional standing and stability.

Loss aversion bias has been shown to significantly affect credit decision-making in banking institutions (Bacha &Azouzi, 2019; as cited in Ondolos et al., 2021). It is particularly evident in bankers' propensity to assign higher risk to new companies, high-risk sectors, and entities with inadequate financial or business data (Ondolos et al., 2021).

Traders and investment banking managers often prioritize loss avoidance over profit-generating (Willma et al., 2002). Bank managers who are reluctant to incur losses may prefer using a quantitative process involving statistical analysis in credit risk evaluation. For example, when questioning a borrower's creditworthiness, a bank director could adopt a more analytical and logical approach while evaluating the default risk (Azouzi& Bacha, 2023).

2.3.2.5 Regret Aversion Bias

Regret expresses the common emotional experience of sorrow or displeasure over actions that have been done or not done (according to Landman, 1987; as cited in Gazel, 2015). This sadness may stem from comparing the real result with the hypothetical alternative results, as well as from the sense of responsibility or self-blame for the unsatisfactory outcome. Regret aversion illustrates the tendency to avoid making decisions out of the fear of feeling regret after selecting an option that either ultimately turns out to be suboptimal or disappointing (Gazel, 2015).

Regret Aversion bias is an emotional bias. Regret-averse people avoid taking important actions because they panic that, in hindsight, any path they choose could prove less than ideal. This bias aims to prevent the emotional hurt of regret associated with potentially bad decisions (Pompian, 2006).

Even when a choice is logical and based on the available facts, people prefer to evade regret in conditions where they feel they have made a mistaken choice (De Meza et al., 2008). In the context of investment, regret aversion often leads individuals to avoid making vital financial decisions, risk-averse investors hold on to losing investments for too long, and they fear confessing mistakes and incurring losses (Gazel, 2015).

Regret-averse people endeavor to avoid pain, which comes from two kinds of mistakes:

- **Errors of commission**: happen when individuals take mistaken actions.
- **Errors of omission**: arise from wrong inaction, such as missing opportunities (Pompian, 2006).

Regret theory assumes that numerous individuals experience sensations named as regret and rejoicing; in addition, it assumes that during decision-making under uncertainty, they seek to predict and consider those feelings. It suggests that individuals are rational but base their decisions not only on the potential rewards but also on anticipated emotional

consequences – particularly the expectancy of regret (according to Pompian, 2006, as cited in Gazel, 2015).

Regret-averse investors are drawn back from entering markets that have lately declined, fearing continued market decline and the regret of making a poor investment decision. They may hold on to underperforming positions too long and evade selling the dropped investment, due to an aversion to confessing they are mistaken. Similarly, regret aversion may result in "herding behavior, when several investors follow the crowd consensus to bound the likelihood of regret in the future. On the other hand, regret-averse investors may also hold onto winning stocks for too long out of fear that selling a doing well stock could lead to missing opportunities for more forthcoming gains (Pompian, 2006).

2.3.2.6 Status Quo Bias

Status quo bias- an emotional bias introduced by William Samuelson and Richard Zeckhauser in 1988- inclines people faced with multiple options to choose the one that maintains or reinforces the current state (i.e., the "status quo") rather than choosing alternatives that might lead to change. People affected by status quo bias tend to favor things remaining fairly unchanged. This reflects the judgment that a choice is more appealing simply because it is selected as the "status quo" than in the case it is not (Pompian, 2006). Geng (2016) explains that status quo bias illustrates decision-makers' propensity to stick with a default option.

This prejudice arises when individuals are presented with a set of alternative options but select the option that preserves or expands the present state, instead of alternatives that may lead to modification. It takes place with people who prefer items to remain quite unchanged. As Rasmussen (2000) notes, people often hate losses more than they prefer gains of a similar magnitude, which contributes to a preference for the status quo, unsuccessful in renewing ideas wisely.

According to Geng. 2016), status quo influences choice through many channels. Loss-aversion theory (Tversky and Kahneman 1991) suggests the status quo acts as a

reference point, and losses relative to this point weigh more heavily on preferences than equivalent gains. Inertia theory (Ritov and Baron 1992; Schweitzer 1994) presumes that individuals tend to prefer inaction, and maintaining the status quo requires merely doing nothing. Decision avoidance theory (Anderson 2003; Dean 2008) argues that individuals prefer to avoid making decisions, particularly when they are required to choose from too many choices. Incomplete preference theory (Mandler 2004) reconciles status quo bias with traditional consumer theory by suggesting that people with fixed but incomplete preferences may display status quo bias.

This bias can be produced by several multifaceted and interrelating factors, including the economic costs of making the change, aversion to losing what one currently possesses, and the likelihood of regret following a modification (Fleming et al, 2010).

In some contexts, status quo bias can save time and cognitive effort. Samuelson and Zeckhauser (1988) illustrated this with the example of a colleague who constantly chooses the same sandwich for lunch. This consistent behavior conserves brain capability and speeds up decision-making. However, status quo bias can be risky when change would develop the manner of conducting things. In this case, the colleague might miss a healthier or tastier sandwich option, simply due to unwillingness to try that new sandwich (Godefroid et al, 2023).

The prospect theory (Kahneman and Tversky, 1979) further clarifies status quo bias through the concept of loss aversion. Investors, for example, tend to fear losses more than they value equivalent gains. The shape of the investors' value function in prospect theory is S-shaped. During the decision-making process, people give more weight to loss than gain considerably. Moreover, loss has a bigger influence on people's emotions than the same quantity of gain. Tversky and Kahneman (1991) found that the value evaluated based on the loss is twice as much as the gain. This leads people to hate any choice that might result in loss and seek to evade it (Li et al, .2009).

Moreover, status quo bias is reinforced by two key factors: first, the high number of alternatives, and second, the complexity involved in assessing alternatives, which

consumes more time and requires skill. Research shows that as the number of alternatives rises, the trouble of decision-making becomes more complex, along with the status quo protection actions rising (Aren &Hamamci, 2021).

Individuals may be discouraged from investing in fields outside their area of expertise and proficiencies due to status quo prejudice. Concerns about potential regret often drive this bias, leading people to make errors of omission noticeably less severe than errors of commission (Zeckhauser et al. 1991). In many cases, doing nothing- even when it leads to a poorer outcome-is viewed as favourable to taking action that results in negative results (Michael Collins & Urban, 2014).

Status quo prejudice can lead investors to remain inactive, maintaining investment positions that are misaligned with their risk/return profiles. This inaction may result in taking on unnecessary risks or investing too conservatively. Status quo bias may work with Loss aversion bias. Where the fear of potential loss discourages investors from reallocating or altering investment positions, instead, they may prefer to maintain the current situation, perceiving it as less risky.

Investors affected by status quo bias tend to hold onto securities that feel familiar or emotionally comfortable. However, this subjective comfort can be detrimental to achieving financial goals, as a sense of attachment to a bad-performing security is not a valid reason to possess it. In many cases, investors continue to hold securities-whether inherited or previously purchased- because of an aversion to transaction costs of selling. This can be risky because paying a commission or a tax is a small price for leaving a bad investment or properly portfolio diversification (Pompian, 2006).

According to Gubaydullina et al,. (2011), empirical research confirms the presence of status quo bias in investment decisions, when a reference point is established. Multiple studies support this finding, including those by Patel, Zeckhauser, and Hendricks (1991); Agnew, Balduzzi, and Sundén (2003); Kempf and Ruenzi (2006).

3 The Credit Decision

3.1 Decision–Making

The term decision is defined as a choice made about something after considering several possibilities (dictionary.cambridge.org). Decision-making is the study of recognizing and selecting options based on the decision maker's values and preferences. According to March (2010), as cited in Lunenburg (2011), decision-making represents the process of making choices from among alternatives. Management theorists agree that decision-making is one of the most vital—if not the most essential—of all management activities (Drucker, 2010; Mintzberg, 2008; Simon, 1997, as cited in Lunenburg, 2011). Making a decision involves identifying alternative options, evaluating as many of them as feasible, and selecting the one that best aligns with our goals, objectives, desires, values, and so on (Harris, 1980).

3.2 Determinant of Credit Decision

3.2.1 General Decision–Making Process

Following the rational model, the decision-making process includes six steps: identifying the problem, generating alternatives, evaluating alternatives, choosing an alternative, implementing the decision, and evaluating decision effectiveness (Schoenfeld, 2011, as cited in Lunenburg, 2010).

Baker et al. (2001) advocated that the First main concern in the decision-making process is to identify the audience for the decision – that is, the decision-maker(s) and stakeholders involved. This reduces ambiguity in problem definition, requirements identification, goals establishment, and evaluation criteria.

Step 1: Define the Problem: The initial step in the process is Problem definition. At a minimum, the definition should recognize root causes, limiting assumptions, organizational and system boundaries, and any stakeholder concerns. The goal is to clearly articulate the issue in a concise, one-sentence problem statement that includes both the

preliminary conditions and the preferred conditions. A written problem statement is crucial to guarantee that all decision makers are aligned on what needs to be addressed before moving to the next steps.

Step 2: Determine Requirements: Requirements are conditions that any satisfactory solution must meet. They explain what the solution is expected to accomplish. For instance, a requirement might state that a process must produce a minimum of ten units per day. Any alternatives that produce fewer than ten units would be rejected. With the consensus of the decision-makers, professionals in areas such as operations, environment, health, and further industrial areas typically provide the requirements that the possible alternative must satisfy.

Step 3: Establish Goals: Goals are broad statements of intent and represent desirable programmatic values- for example, decreasing employee radiological exposure, lower costs, or minimizing public risk. Goals exceed the lowest requirements to include needs and desires. They are framed positively. They help in recognizing valuable alternatives. Goal setting is essential in describing alternatives.

Step 4: Identify Alternatives: Alternatives represent different approaches for transitioning from the current condition to the preferred situation. The requirements and goals are evaluated, and alternatives are proposed to meet the requirements and fulfill as many goals as possible. Usually, alternatives vary in their capability to satisfy all requirements and goals. If an alternative does not satisfy the requirements, it may be discarded, or the requirement may be adjusted or removed, or reclassified as a goal. The explanation of each alternative should clearly demonstrate how it solves the defined problem and how it differs from other alternatives.

Step 5: Define Criteria: The best alternative will closely accomplish the goals. Decision criteria are used to distinguish among alternatives based on the goals. Each criterion should measure something important and be independent of others. Criteria must meaningfully distinguish between alternatives. They should: reflect all goals, be important

to the decision maker's thoughtful evaluation of alternatives' implications, avoid double-counting, and focus on elements of the problem that are within control.

Step 6: Select a decision-making tool: The choice of technique depends on the difficulty of the problem and the team's expertise. Generally, the easier the method, the better. More complex analyses can be incorporated later if necessary. Commonly used tools include: Pros and Cons Analysis, Kepner-Tregoe Decision Analysis (K-T), Analytic Hierarchy Process (AHP), Multi-Attribute Utility Theory Analysis (MAUT), Cost Benefit Analysis (CBA), and Custom Tailored Tools.

Step 7: Evaluate alternatives against criteria: Alternatives can be assessed using quantitative techniques, qualitative techniques, or any approach. Criteria should be measured, and the alternatives ranked. A sensitivity and uncertainty analysis should be conducted to develop the selection practice's value.

Step 8: Validate solution (s) against problem statement: Once a preferred alternative is determined, the solution should be evaluated to ensure it effectively addresses the problem. A final solution achieves the preferred condition, meets the requirements, and accomplishes the goals aligned with the decision maker's values. After validation, the preferred alternative is presented as a suggestion to the decision-maker. A final written report should be provided, detailing the decision-making process, assumptions, methodologies, and conclusions advocating the ultimate solution.

3.2.2 Systematic and Intuitive Decision Making.

People process information through two cognitive systems: the rational system and the experiential system. A greater propensity to rely on the rational system- and/or reduced reliance on the experiential system predicts more satisfactory decisions. Conversely, less use of the rational system and stronger inclination toward the experiential system tend to result in more heuristic judgments. Furthermore, the research found that rational and intuitive decision-making styles are correlated with framing effects (Shiloh et al. 2002).

3.2.2.1 Systematic Decision Making.

Mitroff (1983) indicated that cognitive style refers to how individuals take in information from the outside world and make decisions based on that information. On the information gathering dimension, individuals can be classified as either sensing types, who are data–sensitive, or intuitive types, who rely on a more holistic approach and act as data-filterers. On the decision-making dimension, individuals are either logical thinking types or feeling types.

Hunt et al. (1989) proposed two decision types: analytics and intuitive. This classification is based on evidence suggesting that the data-gathering and decision-making dimensions are not independent (e.g., Behling, Gifford, & Tolliver, 1980). Keen (1973) found that systematic information gatherers tend to be thinking information evaluators, whereas intuitive information gatherers are more feeling information evaluators. As a result, most individuals can be classified as either consistently analytic or consistently intuitive in both how they gather and how they evaluate information (Hunt et al, 1989, p.125)

In the domain of General Decision-Making Style (GDMS; Scott & Bruce, 1995), systematic decision making is defined as a rational decision involving a thorough search for and logical evaluations of alternatives. For example, individuals demonstrating this style might say: I make decisions logically and systematically.

In the Thinking and Working Style Questionnaire (TWSA), a Systematic decision-making style is described as an inclination to rationally and deliberately examine a situation to recognize systematic patterns or rules. For example, I usually make decisions in a systematic and orderly way (Sagiv et al, 2010). Similarly, in the Assessment of Career Decision-Making (ACDM; Harren, 1979), the rational decision-making style is defined as involving rational, objective deliberation and self-appraisal. For example, a representative self-statement for this style is: “I am very systematic when I go about making an important decision”.

3.2.2.2 Intuitive decision-making

Intuition is a mental process that delivers perceptions unconsciously (Jung, 1933). According to Simon (1996), intuitions are acts of recognition. Shirley &Langan-Fox (1996) described intuitions as a feeling of knowing with certainty based on insufficient information and without conscious awareness of rational thinking. Shapiro & Spence (1997) defined intuitions as an unconscious, holistic processing manner in which judgments are made without conscious awareness of the rules of understanding used for inference, which can feel correct, even if the individual is incapable of articulating the cause.

Burke &Miller (1999) described intuition as a cognitive conclusion based on the decision maker's prior experiences and emotional inputs. Policastro (1999) referred to intuitions as an unspoken shape of knowledge that guides decision-making in a favorable direction. Lieberman (2000) stated that intuition is the subjective experience of a typically unconscious, quick, and rational process and is inaccessible to consciousness, and that relying on exposure to the field or problem space can precisely extract probabilistic contingencies. Hogarth (2001:p.14) described intuition as thoughts formed with little clear effort, and typically without conscious awareness, involving little or no conscious consideration. Myers (2002) called it the capability to gain direct, immediate knowledge before rational analysis. Kahneman (2003: 697) defined intuition as beliefs and preferences that come to mind rapidly and with little reflection. Decision-makers who rely on intuition regularly possess a profound confidence in the accuracy of their choices (Bas et al., 2019, as cited in Hallo & Nguyen, 2021).

Intuition involves relying on hunches and feelings. For example, when making decisions, I rely upon my instincts. It is closely related to the intuitive thinking style, characterized by emotional self-awareness and imagination. For instance, when I make a decision, I just trust my inner feelings and reactions. Even on important decisions, I make up my mind pretty quickly.

The experiential system, an intuitive thinking style, is Associative, emotional, low effort, rapid to implement but slow to change, parallel, immediate, outcome-oriented, holistic, preconscious, and passively experienced -with the process opaque to the individual. For example, I used my gut feelings, and I had flashes of insight (Novak & Hoffman, 2009). Epstein (2003) identified three core components of experiential thinking: intuition, affectivity, and imagination (Novak & Hoffman, 2009). Intuition stands in contrast with analysis-based decision-making.

In psychology, decision-making has been studied through experiments and in real-world observation using both quantitative and qualitative methods. There are two distinct methods of thinking: intuition and analytical reasoning. Intuition is viewed as involuntary, habitual, easy, out of control, unconscious, and quick. In contrast, analytical thinking is considered intentional, handy, effortful, mindful, deliberative, and slow. Some believe that rational analysis always yields better outcomes, while others argue that intuition is a more effective technique for resolving complex problems. Although intuition can provide a rapid default response, analysis is often required to evaluate and either accept or reject a decision. Another perspective is that these two processes operate in parallel and conflict with each other (Hallo & Nguyen, 2021).

Because intuition occurs automatically and unconsciously with slight effort, it can be prone to errors. This supports the notion that intuition is a poorer decision-making technique. That is because in this information-saturated world, individuals are overwhelmed with messages and often lack the capacity to think carefully about everything all the time (Hallo & Nguyen. (2021).

Thanos (2023) found that merging rationality and intuition simultaneously leads to more effective strategic decisions, indicating that managers can exert control over outcomes. In dynamic situations, teams that combine rationality and intuition outperform those that rely on intuition or rationality individually. According to Miller and Ireland (2004, as cited in Shepherd et al., 2024), when an executive relies on intuition, other decision-makers may not recognize or obligate with the decision. Intuition can also face challenges in top management teams, particularly when developing new, novel products

and strategies. Predominantly, when a new or irregular decision appears, there is a risk that executives overrate the accuracy of their intuition.

There are diverse cognitive styles in problem-solving and decision-making. Ewing (1977) noted that the systematic style is frequently "honored," whereas intuitive decision-making tends to be viewed as irrational and emotional. Moreover, two broad problem-solving styles are commonly identified -systematic and intuitive, along with two information-gathering styles- perceptive and receptive (Hurst et al., 1983).

Systematic thinkers evaluate situations, identify the actual problem, plan a solution, and follow a step-by-step process to implement it. In contrast, Intuitive thinkers rely on feelings, delay firm commitments, and continually redefine the problem in search of potential solutions. Perceptive information collectors begin with a mental model of significant information, search for facts that support this model, and focus on relationships between facts. Receptive information collectors, on the other hand, concentrate on facts and details without fitting them into a specific framework. They suspend judgment, evade preconceptions, and are often "fascinated with the feel and inherent quality of new facts" (Ewing, 1977, p. 72 as cited in Hurst et al., 1983).

According to Wu (2022), recent literature identifies two key groups that are acknowledged to identify intuition in decision-making (Boucouvalas [1997]; Sinclair and Ashkanasy [2005]; Shirley and Langan-Fox [1996]). The first is that stresses the significance of sensory and affective components in the intuitive process (e.g., Bastick [1982]; Epstein [1998]; Parikh et al. [1994]; Petitmengin-Peugeot [1999]; Dane and Pratt [2007]). The second group viewed intuition in research as an experience or expertise-based occurrence that uses implied knowledge, which is gathered through experience and recovered by prototype recognition (e.g., Behling and Eckel [1991]; Brockman and Anthony [1998]; Isenberg [1984]; Klein [1998]; Simon [1987]).

Hensman& Sadler-Smith (2011) highlighted several key conclusions regarding intuition in decision making, involving:

Outcomes of intuition: Intuitions can be convincing and attractive, but they are generally less valid than rational analyses. Intuitions should be viewed as a hypothesis, subject to empirical testing and the possibility of being falsified.

Cognitive and affective processes: Intuitions are involuntary, obvious throughout a range of modalities, and might be expressible through metaphor and are used when time is limited, but supported by rational analysis, whenever feasible.

Individual factors: Experience enhances confidence and credibility in intuitive decisions. While Intuiting occurs at the individual phase, intuitive judgments are often executed at a collective level.

Decisional factors: Complex decisions often involve an opinion element and, consequently, are hard to explain through rational analysis alone. Features of the decision, like time pressure and riskiness, influence the use of intuition.

Organizational contextual factors: In business social environments, intuitions require both support and justification. Moreover, Intuition can create chances for organizational learning.

3.3 Determinant of Credit Decision

Credit decisions as organizational decisions are inherently hazardous. A comprehensive assessment of customers' credit risk is imperative, particularly in light of potential financial difficulties, as borrowers may not be able to reimburse their liabilities. Erroneous assessments can negatively influence liquidity and compromise an organization's competitiveness (Schotten &Morais, 2019).

Credit decisions are fundamental to banks' strategic planning. Good quality credit is a major source of profit for financial institutions. However, these decisions carry significant risk; many poor credit choices can result in economic failure. The key challenge lies in distinguishing between credit-worthy and high-risk applicants (Kabari& Nwachukwu, 2013). Before the 1980s, loan approvals, particularly for substantial credit

contracts such as mortgages or unsecured fixed-term loans, involved detailed, prolonged face-to-face interviews between the branch manager and the applicants. These experienced human underwriters assessed creditworthiness based on personal interaction and subjective judgments (Finlay, 2009).

The credit decision process involves collaboration between two banking functions: the business area (typically client relationship managers or credit officers) and the risk management division or risk/credit analysts (Kádár et al., 2023). A mutual agreement between representatives from both divisions is necessary for a loan application to be approved (Walter, 2019, as cited in Kádár et al., 2023).

In making a credit decision, loan officers encounter three options: deny the request, approve it with modified terms, or accept the application as received. This decision is informed and supported by a thorough analysis of financial data, the bank's credit policy, current economic conditions, legal requirements, and established standards, and the credit analyst's personal judgment (Atieh, 1990).

From a micro-level perspective, the decision to extend or reject credit is made by staff at commercial branches and within the risk analysis function (Peón& Calvo, 2010). According to conventional economic theories applied to banking, banks are presumed to be proficient in understanding clients' needs, offering appropriate products that absolutely fulfill their requirements and hopes, and managing associated risks. Moreover, banks are expected to avoid taking on risks that exceed their risk-bearing ability and to maximize long-run profitability by avoiding fiscal decisions that could jeopardize this goal (Kozma et al., 2018, as cited in Kádár et al., 2023).

For major credit agreements- such as mortgages or unsecured fixed-term loans - a detailed, in-person meeting between the candidate and a qualified lender (e.g., a branch manager) is often required. Traditionally, bankers were familiar with borrowers and their personal circumstances, including account history and family background, etc. Even when applications were submitted by mail, underwriters assessed creditworthiness using subjective judgment to decide whether to approve the loan (Finlay, 2009). These

judgments are influenced by the underwriter's perception of the applicant's ability to repay.

According to Tversky and Kahneman (1974), as cited in Kang & Park (2019), judgmental heuristics and cognitive biases are common not only among the general public but also among professionals. It is hazardous to assume that financial professionals are more logical than the public. Kang & Park (2019) confirmed the presence of heuristics such as representativeness, availability, and anchoring and adjustment heuristics in the decision-making process of bank employees.

3.3.1 Rational dynamics in credit decision

3.3.1.1 The 'Five Cs'.

The 'Five Cs' of credit, as illustrated by Savery (1977), form a key framework of decision-making procedure in lending and granting. The 5Cs of credit investigation essential approach that is conventionally used in commercial banks (Janckowicz&Hisrich, 1987; Ondolos et al., 2021). The Five Cs include:

Capital and Collateral: assets such as a home or vehicle offered as protection against the debt.

Capacity: The applicant's capability to meet the approved loan repayments, the candidate's income, and expenditure.

Character. The applicant's intention to pay back and the overall 'respectability' of the applicant.

Conditions. The broad market conditions and industry-specific situations. Analysis is done to determine applicant information meets the Cs, along with a credit reference organization's credit report; the banker will employ their perception and knowledge to make the credit conclusion. Finlay, S. (2009).

3.3.1.2 Credit scoring

Credit scoring emerged as a chief decision-making tool in consumer credit markets in the latter part of the 20th century (Finlay, 2009). Credit scoring is a decision techniques that help lenders in settling on who, and how much credit should be given (Abdou& Pointon, 2011).

According to Anderson (2007), CRISTEA & BREZEANU (2022), the term credit scoring represents two concepts: credit and scoring. "Credit" signifies "buy now, pay later," coming from the Latin expression "credo", indicating "I believe" or "I trust". While "scoring" involves "the utilize of a mathematical instrument to group order cases depending on real or perceived quality to distinguish them and ensure objective and reliable decisions. So, scores as "numbers" to symbolize a particular quality, or "grades" that as "letters" or "labels" to stand for single or many qualities. Therefore, it concludes 'the use of numerical models to convert appropriate data into mathematical calculations to generate credit decisions. It also reflects the implementation of statistical forms to estimate the probability that a potential borrower will default on the requested loan (Abdou & Pointon, 2011).

A credit-scoring models help in distinguishing between fine and terrible credit applicants. The sorting techniques used range from conventional or based on sophisticated statistical methods. Conventional techniques include multiple linear regression, discriminant analysis, probit analysis, and logistic regression. Sophisticated statistical methods involve expert systems, neural nets, fuzzy algorithms, and genetic algorithms (Hand and Henley, 1997; Abdou & Pointon, 2009).

According to Finlay (2009), credit products encompass a wide range of financial tools designed to meet diverse borrowing needs. These include:

Mortgages: loans for purchasing fixed assets, such as property, and are typically secured against the borrower's home.

Personal loans (installment loans): unsecured loans that do not require collateral.

Retail credit (retail loans): loans for purchasing durable goods like furniture or washing machines.

Hire-purchase agreements: similar to retail loans but operate on a conditional sale basis, where the goods remain legally owned by the lender until full or partial repayment is made.

Card accounts: allow clients to purchase goods and services under agreements with credit card issuers.

Charge accounts: provide interest-free credit for a set period before the full balance becomes due; these are common in grocery or convenience stores.

Revolving loans (flexi loan or a budget account) involve the borrower agreeing to make fixed monthly payments and having access to funds up to a limit, typically twice the monthly payment.

Mail order catalogue accounts allow borrowers to order items from a catalogue and repay over time. Overdrafts: enable a borrower to spend more than their available bank balance. Pawning, or pledging, involves a loan secured by property held by the lender until repayment.

Payday loans are short-term loans repaid with interest on the borrower's next payday, while cheque cashing services provide funds in exchange for post-dated cheques.

3.3.2 Behavioral credit decision-making

From the perspective of illogical decision-making, the psychosomatic approach to bankers' credit decision emphasizes the cognitive limitations exhibited by loan executives through various psychological decision-making prejudices. This includes reliance on intuition and deliberation in their credit assessments (Trönnberg&Hemlin, 2012; 2014,

ascited in Ondolos et al., 2021). These findings highlight the impact of human factors on credit decisions.

Empowering human capital is essential to improving human performance. Key human capital attributes - such as financial education, credit experience, and emotional intelligence-play a moderating role in lessening biases among credit officers during decision-making (Ondolos et al. 2021). Dobbie et al. (2021) examined prejudice in consumer lending by analyzing the quasi-random assignment of loan assessors who evaluate the profitability of marginal loan candidates. Their study revealed a significant bias against immigrant and older credit candidates.

Making a management-level lending decision requires evaluating multiple alternatives. In this process, bankers aim to identify many alternatives and select the option with the highest likelihood of success and the strongest alignment with the bank's objectives and vision (Satpathy& Mishra, 2019). The credit decision-making process serves to suitably reduce the uncertainty associated with available alternatives, thereby enabling more rational decision-making. However, because uncertainty is reduced, and complete uncertainty is rarely achievable, every credit decision inherently involves some degree of risk. If there were no uncertainty, no actual decision would be made by bankers. To add to this complex process, bankers often rely on algorithms- a structured set of procedures or formulas- designed to produce a predetermined outcome (Satpathy& Mishra, 2019).

4. Previous studies

Melenberg (2025) used three proxies to signify the overconfidence of loan officers and managers at microfinance institutions (MFI): Loan Growth (LG), Loan Loss Provision (LLP), and Net Profit Margin (NPM). Using quantitative models such as linear regression and random forest, the study evaluates the effect of overconfidence on an MFI’s credit risk. The results confirmed a relationship between loan officials’ overconfidence- proxied by Net Profit Margin-and the institution’s credit risk- measured by Portfolio at Risk (90 days).

Interestingly, lower profit margins were associated with superior credit risk (i.e, the loan portfolio quality gets worse). However, this does not reflect overconfidence on the part of the loan administrator. Conversely, higher profit margins were found to increase the risk of defaults. Potentially because credit executives overrate their skill to manage credit risk, interpreting current high profit margins as evidence of their skill and achievement, thereby approving more loans.

Bose et al. (2025) examined how soft (qualitative) information influences the lending decisions of female credit officers in a leading European bank. The findings suggest that soft information decreases information asymmetry, enabling female executives to make more informed credit decisions- leading to larger loan amounts and a lower likelihood of default. Additionally, female approvers were more likely to support female subordinates by granting more credit to loan applications managed by them. This behavior is attributed to the tendency of female credit officers to excel at gathering and applying soft information, owing to their stronger client relationships and heightened awareness of potential career risks associated with making errors. The study ruled out alternative justifications, such as differences in workload, experience, optimism, skill, and screening capabilities between female and male officers.

Penn & Jude (2024) analyzed the influence of four cognitive biases -Prior hypotheses bias, escalating commitment, reasoning by analogy, and illusion of control- on the credit decisions of 47 loan officers at microfinance institutions. Using multiple regression analysis, the study confirmed that all four biases significantly affect the credit decisions. The authors encouraged loan officials to be more aware of the interference of cognitive biases in the decision-making process and to strengthen ethical responsiveness during loan evaluations.

Baulkaran& Jain (2024) examined whether behavioral biases affect financial planners and their recommendations for home equity release options to fund retirement income. The results indicated that many behavioral biases influence comfort level and recommendations provided by financial planners for various retirement finance strategies. The results showed that female planners, planners with higher education, and those

working on non-bank institutions demonstrated less mental accounting bias. In contrast, older and higher-income planners show a reduced level of loss aversion. The outcomes reveal that biases- remarkably, mental accounting and herding- shape planners' willingness to advise for the use of home equity. Additionally, retirement income strategies are significantly influenced by these cognitive biases. Planners exhibiting mental accounting bias or the gambler's fallacy are more likely to prioritize selling investments, while those affected by loss aversion tend to sell and reduce investments.

The broad results of the study of Farrugia (2024) revealed a significant effect of demographic factors on the number of behavioral biases among Maltese retail investors. The demographic factors considered include gender, age, employment and marital status, investment experience, and investment size. The behavioral biases examined in the study include anchoring, cognitive dissonance, confirmation, conservatism, framing, herding, home bias, loss aversion, overconfidence, representativeness bias, self-attribution, and self-attribution bias. The findings confirmed that male investors tend to exhibit higher levels of overconfidence, while female investors demonstrate a greater level of loss aversion and home bias. Younger investors were more inclined to self-attribution and anchoring bias, while more experienced investors were less vulnerable to these particular biases but still exhibited overconfidence. Unmarried investors were more likely to display anchoring bias, loss aversion, and self-attribution bias compared to their married counterparts. The results showed that public sector staff had higher levels of loss aversion compared with those working in the private sector. In addition, investors with less experience were more susceptible to anchoring and home bias, whereas larger investment sizes were connected with increased vulnerability to anchoring and herding bias. Education level was found to have only a partial impact on behavioral biases, with anchoring bias being the only one nearing statistical significance.

Kádár et al (2023) investigated the cognitive thinking of business-side credit officers and risk analysts, including behavioral biases of risk aversion, overconfidence, overoptimism, and representativeness bias. This was explored through a questionnaire distributed among relationship managers and risk analysts working in the large corporate division of eight of the twelve largest banks in Hungary, all active in financing of large

corporate clients. The study confirmed that the decision-making of both relationship managers and risk analysts is characterized by risk aversion, overconfidence, overoptimism, and representativeness heuristics. The researchers recommended the implementation of a 'firewall' to separate risk analysts from direct client contact, advocating that credit requests be evaluated solely based on factual data. The conflict of interest between the loan officer and risk analyst does not stem from differences in risk appetite, but rather from divergent incentive systems following the diverse positions. Loan officers are incentivized to issue the highest number of loans possible, whereas risk analysts are not – and cannot be – motivated by the same criteria. Due to the representativeness heuristic arising from personal contact, along with the other heuristics, credit officers tend to overrate the likelihood of positive and good results and underestimate potential poor results, leading them to approve a loan contract for a larger amount than the risk analyst.

Azouzi& Bacha (2023) investigated the impact of bankers' behavioral biases- specifically emotional bias such as overconfidence, optimism, loss aversion, and cognitive dissonance- on credit risk policies in Tunisian banks, including the risk evaluation techniques (quantitative vs. qualitative techniques). The study revealed that these biases influence bankers' selection of credit risk evaluation methods. Findings showed that overconfident, optimistic, and loss-averse bankers are more likely to apply quantitative methods, such as scoring models, for credit risk evaluation. In contrast, bankers with high cognitive dissonance tend to prefer a qualitative approach.

In a related study, Bertrand &Burietz (2023) examined how loan officers' biases influence credit decision-making, with a focus on the role of different types of information in determining loan spreads. They distinguished two categories of information: hard information (quantitative data, such as borrower credit grade) and soft information (qualitative data, such as the length of the bank–borrower relationship or the bank's position in the client's overall banking pool.

Loan officials who see borrower grade as a significant aspect give loans with more spreads; in contrast, those who valued soft information, such as the relationship length and

bank positioning, were more likely to reduce loan spreads, reflecting a more favorable approach. The study further showed that male loan officers, highly practiced loan executives, and those holding a bachelor's certificate considerably increased loan costs when hard information was deemed essential. On the other hand, female loan officers with an other-oriented approach, beginner loan officers, or a master's degree significantly decreased loan spreads when soft information is considered crucial. Lastly, the study identified notable dissimilarities in how loan officers' prejudices influence loan completion, depending on the industry sector of the borrowing company.

Farooq et al (2022) analyzed how herding behavior affects corporate trade credit policies and financial performance. Using data of 13,089 non-financial companies across 50 countries, and applying the dynamic Generalized Method of Moments (GMM) model, the study revealed that corporate firms aggressively imitate their peer firms' trade credit policies. However, this imitation behavior harms financial performance, as peer-driven policies are not always suited to the adopting firms. Many companies frequently adopt trade credit policies that are inappropriate for their corporate needs. The study highlighted that the peer effect regarding trade credit pattern is a highly structured adverse consequence on financial performance due to herding behavior among similar companies.

Ekberg (2022) scrutinized whether Swedish Commercial Banks' loan administrators' judgment affects mortgage credit choices. The study confirmed a substantial contradiction in decision-making, highlighting that judgment fundamentally affects the decision-making process. The researchers emphasized the need for clear guidelines on how mortgage application data is reviewed and how appropriate credit decisions are made. Loan officers demonstrated great variation in the credit amounts and interest rates they offered for loan applications.

Galli et al., (2020) analyze the influence of gender biases on firm behavior in bank credit using a sample of European SMEs from various countries. The findings demonstrate consistent evidence that women-led firms are more likely than their male peer to refrain from applying for loans. However, when they do apply, female-led businesses do not appear to experience gender –based discrimination from creditors. Nonetheless, signs of

gender discrimination tend to emerge during periods of economic expansion. The study recommends policy measures aimed at reducing the barriers women-led SMEs face when accessing credit markets.

Ondolos et al., (2021) contributed to the understanding of SMEs' financing decisions by developing an innovative bounded rational framework for credit officer decisions. This framework incorporates both rational and irrational determinants that affect credit decisions for SME financing. The rational component is based on rational decision theory, while the non-rational (irrational) component is informed by intuitive decision theory. The study emphasized the role of human capital in decreasing behavioral biases among credit officers. It identified key factors influencing decisions, including: fundamental factors such as character, capacity, capital, collateral, and condition. In addition, behavioral factors such as intuition, loss aversion, optimism, and overconfidence. Moreover, human capital factors such as financial education, credit experience, and emotional intelligence.

Strohmaier et al. (2021) analyzed whether similarity bias affects Dutch bankers specialized in distressed credit and work in banking divisions that deal with financially troubled businesses. Though the experiment did not find a direct influence of similarity bias on credit extension decisions, mediation analysis showed that the relationship between perceived similarity and credit decision is mediated by causal attributions and judgments of trustworthiness. The most indirect effect of perceived similarity to the possibility of extending credit was through perceived trustworthiness. Thus, while similarity bias did not directly determine credit decisions, it affected their causal attributions and trustworthiness judgments.

Adam et al., (2020) found that overconfident executives are more likely to issue rate-increasing performance-sensitive debt (PSD) compared to rational managers. These behaviorally biased managers select contracts with higher performance-pricing sensitivities- such as pricing grids with steeper slopes. Firms led by overconfident managers tend to underperform after issuing such PSD contrast compared to firms with rational executives.

Bacha &Azouzi (2019) studied the effect of gender and emotional bias on credit risk management in Tunisian banks using a Bayesian Network approach. Their findings confirmed that emotional bias contributes to the cross-sectional heterogeneity in banks' risk-taking behavior. The study concluded that the gender of directors influences their inclination to delegate credit decision-making. Optimistic and overconfident female executive bankers tend to be more conservative than their male counterparts and are more likely to favor a centralized credit decision-making process. Furthermore, financial literacy was found to significantly influence the credit decisions, whereas bank size had no impact.

Iqbal (2019) applied attribution theory to explore the impact of managerial behavioral biases on expected outcomes. Studying 58 banks across 16 emerging economies from 2007 to 2015. The researcher used unsupervised hierarchical clustering to identify the latent groups of banks within the data and the system GMM method to predict performance. The study was consistent with the attribution theory, showing that management received credit for positive anticipated outcomes and distancing themselves from negative results, indicating self-attribution bias. The findings suggested that this bias in annual reports could help policymakers to identify high-risk banks and take protective procedures to avoid the predictable cost of failures, and assist investors in better analysis of investment profitability.

Beck et al., (2018) examined the consequences of same-gender preferences on credit in a large Albanian lending institution. The research indicated that first-time borrowers assigned to loan officers of the opposite sex were less expected to return for subsequent credit. This influence was more pronounced in situations where loan officers had limited prior experience with borrowers of the opposite gender and in contexts where they were more careful to perform according to their gender beliefs, as evidenced by market competition and branch size. Additionally, the first-time borrowers paired with opposite-sex loan officers tend to receive smaller loan amounts, shorter maturities, and higher interest rates. However, they do not face superior arrears. The findings suggest the presence of own-gender bias, as well as learning effects that can lead to the withdrawal of such bias.

D’Angelo et al. (2018) investigated whether borrower characteristics such as gender, age, beauty, race, and education influence the likelihood of obtaining credit. Using in-person questionnaires conducted with credit officers in southern Italy and analyzing the data through logistic regression, the study found evidence that a few influences of bias related to gender, age, and beauty. However, no significant discrimination was observed based on race or the applicant's cultural level. The results support the existence of adverse selection mechanisms in the credit-granting process.

Cole et al., (2015) explored how High-powered incentives affect loan officer performance in screening and approving loans. While these incentives aim to enhance screening quality and profitability, their impact is mitigated by delayed compensation and limited liability within incentive structures. The study found that although career distress and personality traits influence selection behavior, the response to financial incentives does not vary by traits such as overconfidence, optimism, and risk-aversion. Additionally, incentive contracts can distort credit risk evaluations by skilled and experienced experts. Loans evaluated under a tolerant incentives structure were judged to be considerably less risky than identical loans evaluated under pay-for-performance.

Souissi et al. (2016) analyzed how the emotional prejudices of bank CEO's in Tunisia influenced the banks’ incentive systems, which were implemented to encourage lower-rank executives, mainly account managers, who directly manage client companies. Using a survey method, the study found that the bank CEO’s choices regarding incentive systems specifically for the account manager were largely driven by their own practiced assessment and emotional bias, such as optimism and overconfidence, as well as their opinion of the potential risk involved (loss aversion).

Trönnberg &Hemlin (2014) investigated how 88 Swedish bank loan officers perceived the decision-making process when assessing commercial loan requests. The finding indicated that loan officers primarily rely on forethought and less on feelings when making decisions. They experienced greater complexity when evaluating cases involving soft information –such as client relationships- compared to decisions based on hard information like financial information. Furthermore, most decision-making circumstances

include existing rather than new clients, and low-risk rather than high-risk classifications. The study identified a strong influence of organizational dynamics, including lending practices, on loan choices.

Rad et al., (2014) investigated the risk aversion of 75 Swedish loan officers- both female and male -In their evaluation of small and medium-sized enterprises' (SME) loan requests. The study found that female loan officers place greater emphasis on collateral (used as a proxy for risk aversion) when assessing first-time credit requests compared to their male counterparts; however, there are no significant gender differences in risk aversion when evaluating additional loan requests. The study found that factors such as age, education, tenure, insight, and location had no significant effect on credit officers' level of risk aversion. Based on these findings, the researchers recommend forming female-male loan officer teams to promote more objective assessments of SME loan applications.

Beck et al., (2013) studied gender differences in loan officer performance in a commercial bank in Albania. They found that loans managed and overseen by female loan officers are less likely to become problematic compared to loans managed by male loan officers. This result cannot be justified by borrower or loan officer choice or differences in screening, workload, and knowledge. However, whilst the performance gap consistently exists for female borrowers, female loan officers only demonstrate a performance advantage with experienced male borrowers and do not with borrowers that are legal bodies. The study infers this as evocative evidence for female loan officers' superior capability to build trust-based relationships with borrowers.

Lunn (2013) explored Ireland's banking crisis from a behavioral economics perspective, examining how behavioral biases in decision-making contributed to the development and severity of the crisis. The study analyzed decision of key decision-makers –including consumers, businesspeople, bankers and regulators, politicians academics and journalists and civil servants, through seven observable phenomena: Extrapolation bias (Projection bias, Overinference), Confirmation bias (Myside bias), Overconfidence bias (Over-optimism bias, miscalibration), Ambiguity aversion (Aversion to Knightian

uncertainty, Illusion of explanatory depth), Behavioural convergence (Bandwagon effects, Herding, Information cascades, Conformity, Groupthink), Time inconsistency (Present bias, hyperbolic discounting), Loss/gain asymmetry (Loss aversion, endowment effect). The findings confirmed the influence of these biases, and noted that Ireland's prolonged boom, rapid financial integration, and lack of relevant historical experience heightened the susceptibility of decision-makers to flawed economic and financial way of thinking.

Nilsson &Öhman (2012) examined the extent and forms of loan requests from small and medium-sized enterprises (SMEs) in a risk-averse banking environment, highlighting how loan officers may evaluate applications defensively. Through interviews with 76 loan officers across three regional offices and a focus group meeting at a major Swedish commercial bank, the study explored shifts in strategy and control systems following the recent financial crisis. Results indicated that in a risk-averse banking context, lending officers might evaluate SME loan applications defensively to a significant level. This defensive behavior manifests in various forms: rejection of loan applications, approval contingent on collateral or high interest rates, or giving of credits just to clients who conduct most of their financial activities within the bank. Both internal and external methods contribute to the defensive loan evaluation behavior. The consequences include fewer Type II errors (credit losses), but more Type I errors (denial of loans that would have been repaid successfully), while loan officers seek to avoid change and blame.

Sabourian & Sibert (2009) rationalized the behavior of bankers and other financial services employees whose rewards are tied to perceived skill and long-term performance. The model may also explain behaviors akin to confirmation bias in other contexts, such as policymakers who support ineffective policies and scientists who resist accepting contrary hypotheses. The study suggested that reward structures leading to confirmation bias could also contribute to asset price anomalies. Behavioral finance research uses confirmation bias, especially overconfidence, to explain empirical pricing puzzles. Daniel et al (1998) argue that overconfident market participants overestimate the accuracy of their information more than the market, leading to negative long-lag autocorrelations and excessive volatility in stock market data (Sabourian & Sibert, 2009).

Bruns et al. (2008) scrutinized the responsibility of general and specific human capital- measured in terms of education, banking experience, lending experience, and recent small-business loan experience- in the decision policies of 114 Swedish loan officers when evaluating small-business loan applications. The study outcomes revealed that human capital characteristics had only a marginal influence on decision policy contingencies and that specific human capital had no significant impact on the likelihood of loan approval. However, the study did find that the similarity between the loan officers' human capital and the applicants' human capital was a significant predictor of loan approval.

Carter et al., (2007), using both experimental and qualitative methods, investigated the role of gender in bank lending judgments, emphasizing the criteria and practices employed by male and female loan officers. The findings indicated similarities in the principles used to evaluate male and female applicants. While modest differences were revealed in the evaluation criteria applied by male and female officers to male and female loan requests, more significant differences were identified in the lending processes they employed. The study advocated that gender remains an imperative, yet often hidden, factor in bank lending.

Buttner& Rosen (1988) analyzed how loan officers perceive the gender of entrepreneurs. A total of 106 Southeastern American banks loan administrators -60 males and 46 females- appraised women, men, or successful entrepreneurs based on nine characteristics commonly associated with entrepreneurial success: persuasiveness, leadership, endurance, propensity to take risks, low conformity, lack of emotionalism, low need for support, autonomy, and readiness for change. The results showed that traits accredited to winning male entrepreneurs were more frequently attributed than to women. Women were considerably rated as less successful entrepreneurs than men in terms of risk-taking, autonomy, readiness for change, low need for support, lack of emotionalism, leadership, and endurance, as assessed by bank loan officers. The gender-based differences in the other aspects were statistically significant.

Chapter 3: Study Methodology

This chapter illustrates the methodology used in this research, including the research design, population, sample size, and technique, data collection methods, and analysis techniques.

Following a review of prior studies on behavioral biases and their influence on credit decisions, this study adopts a quantitative research approach. This method is appropriate because the topic has already been identified, and the aim is to assess the prevalence of the issue within the population. The study utilizes secondary data, such as academic books, research, and uses the survey questionnaire as primary data (Ondolos et al. 2021; Azouzi & Bacha, 2023; Ekberg, 2022; Sihombing &Prameswary, 2023; Jarboui &Boujelbene, 2012).

This research is largely inspired and informed by Michael M. Pompian's book Behavioral Finance and Wealth Management (2006), which categorizes behavioral biases into two main types: cognitive biases and emotional biases, as follows:

Table 3.1: Variables of the study

Cognitive biases	Emotional biases
✓ Overconfidence.	✓ Endowment bias.
✓ Representativeness bias.	✓ Self-control bias.
✓ Anchoring and adjusting bias.	✓ Optimism bias.
✓ Cognitive dissonance bias.	✓ Loss aversion bias.
✓ Availability bias.	✓ Regret aversion bias.
✓ Self-attribution bias	✓ Status Quo bias.
✓ Illusion of control bias.	
✓ Conservatism bias.	
✓ Ambiguity aversion bias.	
✓ Mental accounting bias.	

✓ Confirmation bias.
✓ Hindsight bias.
✓ Recency bias.
✓ Framing biases.

3.1 Study Population

The population of this study consists of all credit officers, credit managers, and credit analysts, 9as well as branch managers working in the ten Palestinian commercial banks as of the end of 2023, as confirmed by the Palestinian Monetary Authority (PMA) in its 2023 Annual Report, as well as through information obtained directly from the banks via their websites and email. (PMA, 2023; pma.ps). They are as follows:

Table 3.2: population of the study

No.	Bank name in English	Bank name in Arabic	Bank types	Branches number	Number of employees of branches and offices	Population
.1	Bank of Palestine	فلسطين م.ع.م	local	74	812	91
.2	Palestine investment bank	بنك الاستثمار الفلسطيني	local	21	158	-
.3	Quds bank	بنك القدس	local	38	277	40
.4	The National Bank	البنك الوطني	local	37	181	-
.5	Cairo Amman Bank	بنك القاهرة عمان	Foreigner	22	186	-
.6	Arab bank	البنك العربي	Foreigner	34	381	90

.7	Bank of Jordan	بنك الأردن	Foreigner	19	188	50
.8	The Egyptian Arab Land Bank	البنك العقاري المصري العربي	Foreigner	7	58	19
.9	Jordan Ahli Bank	البنك الأهلي الأردني	Foreigner	10	82	21
.10	Housing Bank Palestine	بنك الإسكان للتجارة و التمويل	Foreigner	15	139	55
	Total number			277	2462	366

3.2 Study Sample:

Due to the relatively small size of the population, the sample for this study includes all credit officers, credit analysts, credit managers, and branch managers from the ten Palestinian commercial banks. A simple random sampling method is employed in this study (Anjum, 2015; Sihombing &Prameswary, 2023).

The data collected through the sample questionnaires will be analyzed using the Statistical Packages for Social Scientists (SPSS) program. The analysis will involve descriptive statistics to generalize the findings regarding the impact of behavioral biases on credit decision-making in Palestinian banks. Additionally, graphical display of the variables will be used to illustrate and recognize attributes of the data (Ekberg, 2022).

3.3 Questionnaire Design:

Questionnaires are suitable for research tools because they gather data that is not directly observable by asking about individuals' feelings, behaviors, accomplishments, motivations, and experiences of persons (Mellenbergh, 2008; as cited in Odoyo, 2019). In this research, a structured survey questionnaire will be developed to collect the necessary data. It will consist of closed-ended questions to facilitate the data collection process.

The first section of the questionnaire covers demographic questions- such as gender, age, qualifications, experience, and occupation. These items are obtained from Badarin &Louay (2019) and Al-Salwadi, Masharqa, &Awda (2020), to suit the Palestinian context, with modifications made based on feedback from an academic reviewer.

The second section includes items that measure behavioral biases; these items will be obtained and developed to fit the credit decision-making context, drawing on relevant literature (e.g., Kádár et al. 2023; Ondolos et al. 2021; Azouzi& Bacha, 2023; Ekberg, 2022). The behavioral biases are obtained from Michael M. Pompian's book "Behavioral Finance and Wealth Management" (2006).

The third section consists of items that assess the dependent variable: the banking credit decision. These items are obtained from existing literature, and according to recommendations from a psychology reviewer, to ensure effective measurement of decision-making dimensions. Consequently, the questionnaire assesses both intuitive and rational thinking styles, drawing on the work of Scott &Bruce(1995), Buch et al,. (2021), Leykin &DeRubeis (2010), Otaify (2023), Ondolos et al., (2021), Hamilton et al., (2016).

3.3.1 The questionnaire's validity and reliability

Validity and reliability are fundamental concepts in evaluating research quality. Validity refers to the integrity of the research findings, particularly whether the employed method measures what it is intended to measure. Reliability, on the other hand, is the extent to which the study can be replicated via the identical method and produce the same outcomes (Bryman & Bell, 2015, as cited in Ekberg, 2022).

Reliability evaluates the degree to which a research instrument yields consistent data over repeated administrations. In research, it can be influenced by random error, which is the deviation from the true measurement caused by inaccurate coding and unclear instructions to the respondents (Odoyo, 2019). Thus, reliability reflects the sustainability and objectivity of the survey questions (Demidova, 2022).

In this study, the reliability of the questionnaire will be assessed to examine the consistency, accuracy, and stability of the measurement. This will depend on the Cronbach alpha coefficient (Achieng, 2022; Ganbat et al., 2021; Sihombing &Prameswary, 2023; Soraya et al., 2023; Weru, 2019; Shaheen &Shaheen, 2019; Jarboui &Boujelbene, 2012).

According to Bryman and Bell (2011), a Cronbach's alpha value of at least 0.7 is required to confirm that the measurements are reliable. However, other statisticians argue that values of the Cronbach's alpha above 0.6 may also be acceptable (Shelby, 2011; as cited in Usman, 2018).

Validity represents the level to which conclusions based on numerical scores are suitable, meaningful, and useful. It is evaluated depending on the research purpose, population, and characteristics of the measurement environment (Britt, 2006). Validity is considered the most vital measure and determines whether an instrument measures what it is thought to measure (Kothari, 2004; as cited in Odoyo, 2019). It also reflects how appropriately the research method is capturing the original key goals and research questions (Demidova, 2022).

To assess the validity of the questionnaire, Pearson’s correlation was used for this test, which is a common method for achieving this (Thambireddy, 2021). Furthermore, the questionnaire was reviewed by academic experts in finance and psychology to ensure content validity. A pilot test was conducted to evaluate the clarity and relevance of the questionnaire

statements to the research topic. According to Mugenda and Mugenda, between 1% and 10% of the study population can be employed in a pilot study to pre-test research questionnaires. This step is important to allow for adjustments to the questionnaire, ensuring objectivity and effectiveness of the process (Usman, 2018).

In this study, a pilot study was conducted to enhance the validity of the questionnaire (Athur, 2014;Achieng, 2022). The pretest aimed to guarantee the clarity and relevance of the statements used in the study, particularly since many of the items were developed for this research purpose, to examine if there is any vagueness in the questionnaire. The questionnaire was distributed in Arabic.

Due to certain limitations- such as the preferences of some banks to distribute only the final version of the questionnaire- the pilot study was conducted with a sample of 20 individuals. This aligns with the literature recommendations regarding the appropriate pilot study sample size. Isaac and Michael (1995) proposed that samples of 10 to 30 participants encompass practical benefits" (p. 101), including simplicity, simple calculation, and the capability to test hypotheses. Similarly, Hill (1998) recommended 10 to 30 participants for pilot studies in survey research, while van Belle (2002) advocated that using at least 12 observations when constructing a confidence interval" (p. 11), as cited from Johanson& Brooks (2010).

3.4 The pilot study questionnaire results

After pretesting the questionnaire statements for clarity and relevance, it was observed that a higher percentage of responses focused on the clarity aspect ("clear" or "not clear"), while a smaller proportion addressed the relevance of the statements. As a result, the clarity ratings were generally high, whereas the relevance ratings were, on average, moderate. Due to the small sample size of the pilot study, and to keep potentially valuable items, another pilot study of thirty participants was conducted to measure only the relevance of items consisting on 7 pointlikert scale, asking participants about their agreement on the degree of relevance of items, Starting from strongly agree, somewhat agree, I agree, I don't know, I somewhat disagree, I disagree, I strongly disagree.

Engler et al., (2019) applied the principle of consensus, stating that an item would be considered accepted if 60% or more of the respondents, either as a whole or within the specific groups, agreed on its importance, relevance, or clarity. Lawshe (1975) recommended that for a panel of 20 experts (panelists), a minimum Content Validity Ratio (CVR) of 0.42 is required to establish the content validity of an item. Although the participants in this pilot study were not all experts, approximately 50% had more than 10 years of experience. Therefore, this research adopts a similar threshold as a benchmark to assess items' relevance and clarity, using Lawshe's guideline as one of the references. In some studies, a minimum acceptable agreement level of 70% has been used to determine the clarity and relevancy of the questionnaire items (Yaghoubifard et al., 2016; Delgado-Rico et al., 2012), (Tilden, Nelson,and May,1990, as cited in Gilbert & Prion, 2016). Additionally, Yaghmaei (2003) suggested using a 75% agreement threshold. Based on the two pilot studies' results, the following criteria in Table 3 are applied in determining which statement would be included for the final version of the questionnaire:

Table 3.3: acceptance criteria

Only if the item's clarity is ≥ 0.7, and relevance is ≥ 0.7	The item is accepted.
If the item's relevance is < 0.7, and clarity is < 0.7	The item is deleted
If the item's relevance **or** clarity< 0.7	The item is deleted

The final questionnaire consisted of **63** statements. Items related to framing bias (Items No. 76 and 77) were removed due to their accidental omission from some of the distributed questionnaires, resulting in an insufficient number of responses for analysis. Additionally, the remaining items related to the framing effect were deemed not sufficient in terms of relevance. Therefore, the framing effect was excluded from the research.

76	In credit evaluation, I will approve a credit application of a sure gain of ₹ 5000 and a probable gain of ₹ 10000.
77	In credit evaluation, I will approve a credit application at a sure loss of ₹ 5000 and a probable loss of ₹ 10000.

Some variables ended up with (2-3) statements for measurement. Specifically, status quo bias had only two measurement items. Following the research of Eisinga et al., (2013), which emphasizes that, according to the True-Score theory, all else being equal, a greater number of items leads to better construct representation, and recommends raising the number of items to make measures more reliable. However, if the research design or off-design conditions result in a scale that contains just two likely congeneric items, then the Spearman-Brown reliability estimation is the appropriate method to apply.

The Status quo items were derived from the studies by Kipsaat &Olweny (2020), with modifications. Other variables ended up with (1) statements for measurement, namely, Cognitive dissonance bias and Recency bias; therefore, the two variables were removed from the final questionnaire. The confirmation biases were removed due to the removal of the statement as a result of the pilot studies.

The following table shows the behavioral biases and the number of statements:

Table 3.4: Number of statements of the final questionnaire

Behavioral bias	**Number of Statements**
Overconfidence and Self-Attribution	5
Representativeness	4
Anchoring	3
Endowment effect	4
optimism	3
hindsight bias	4
Status quo	2
Self-control bias	4
Illusion of control bias	3

Mental accounting bias	4
Regret aversion bias	4
Loss aversion bias	4
Availability bias	4
Conservatism bias	5
ambiguity aversion bias	5
The credit decision	5
Total	63

The pilot study's statements, results, and references

Table 3.5: Pilot study, reference, results

Behavioral bias	Statement in English	References	Relevance	Clarity	Decision
Overconfidence andSelf-Attribution					
1.	I am always ready to defend my ideas in public.	Azouzi& Bacha (2023)	0.8	0.9	accepted
2.	-Kishor, Nawal. (2022). I am confident of my ability to make investment decisions better than others. - Armansyah, R. F. (2022). My investment skills are much better than other investors. **Modified to:** My credit decision skills are much better than other colleagues.	Armansyah,(2022). Kishor, Nawal. (2022).	0.8	0.8	accepted
3.	I believe that my skills and knowledge of the stock market can help me to outperform the market **Modified to**: I believe that my skills and knowledge of the credit can help me to outperform the market.	Baker, et al., (2019)	0.8	0.9	accepted
4.	I am an experienced investor. **Modified to:** I am experienced in credit.	Mansour (2023). Baker, et al., (2019)	0.8	0.8	accepted
5.	I generally don't need the services of a financial planner when investing in financial products.	Weru (2019).	0.8	0.7	accepted

	Modified to: I generally don't need the advice from others when making credit decisions.				
Representativeness					
6.	Investors tend to attribute good characteristics of a company directly to good characteristics of its property. **Modified to:**I tend to attribute good characteristics of credit applications directly to good characteristics of their applicants.	Usman (2018).	0.8	0.8	accepted
7.	I make investment decisions based upon my assessment of performance of previous investments of similar kind. **Modified to:** I make credit decisions based upon my assessment of the performance of previous credit applications of a similar kind	Ritika, & Kishor, N. (2022)	0.8	0.8	accepted
8.	-All my investment decisions are based on trend analysis of some of my similar investment searlier. -You use trend analysis to make investment decisions. -I use trend analysis to make investment decisions. **Modified to:** I use trend analysis to make credit decisions.	Nada &Moa'mer(2013) . Mer &Vishwakarma, (2023). Siraji (2019). Usman (2018) Ritika, & Kishor, N. (2022):	0.8	0.7	accepted
9.	-I avoid investments in stocks that have a	Mer &Vishwakarma,	0.8	0.8	accepted

	history of poor earnings. -I tried to avoid investing in companies with a history of poor earnings. **Modified to:** I tried to avoid approving credit applications from companies with a history of poor earnings.	(2023). Nada &Moa'mer(2013). Siraji, (2019).			
10.	If a new financial advisor gives me an accurate prediction about a product today, then she/he is likely to do the same in the future. **Modified to:** If a new applicant gives me accurate information about a credit application today, then she/he is likely to do the same in the future.	Weru (2019)	0.8	0.5	Deleted
Anchoring					
11.	I fix a target price for buying and selling the security in advance. **Modified to:** I fix a target price for accepting and rejecting the credit application in advance.	Ritika, & Kishor, N. (2022).	0.8	0.7	accepted
12.	I usually rely on past experience in the market for my next investment. **Modified to:** I usually rely on past experience in the market for my next credit decision.	Ritika, & Kishor, N. (2022).	0.6	0.7	Deleted
13.	When trading, I utilize the stock's acquisition price as a point of reference. **Modified to**: When evaluating a credit	Devkota, (2024).	0.8	0.8	accepted

	application, I utilize the credit application collateral value as a point of reference.				
14.	Current price of the security helps me to forecast its future price. **Modified to:** The current credit amounts of approved applications help me forecast the credit amounts of future applications.	Ritika, & Kishor, N. (2022).	0.8	0.9	accepted
15.	I am unlikely to buy a stock if it is more expensive than last year. **Modified to:** I am unlikely to approve a credit application if its interest rate is lower than the rate I approved last year.	Otaify (2023).	0.6	0.6	Deleted
Cognitive dissonance					
16.	When my investments are not doing well, I still hold the belief that I made the right decision. **Modified to:** When a credit applications I approved are not doing well (defaults), I still hold the belief that I made the right decision.	Kipsaat &Olweny, (2020).	0.8	0.6	Deleted
17.	I move along with decisions I do not necessarily agree with when other members of the team overrule me.	Kipsaat&Olweny, (2020).	0.6	0.9	Deleted
18.	Confronted with similar but mutually exclusive investment choices, I select the one I can strongly justify. **Modified to:** Confronted with similar but mutually exclusive credit decisions, I select the one I can strongly justify.	Kipsaat&Olweny, (2020).	0.8	0.9	accepted

19.	When I come across new information, I find it hard to change decisions I already made.	Kipsaat&Olweny, (2020).	0.8	0.6	Deleted
20.	I find it conflicting when outcomes do not match the effort expended.	Kipsaat&Olweny, (2020).	0.6	0.8	Deleted
Endowment effect					
21.	When valuing an asset of my own, I assign a value to what the asset represents to me rather than the value it has in the market. **Modified to:** When valuing a credit application I assessed, I assign a value to what the application represents to me rather than the value it has in the market.	Barbosa, et al. (2024).	0.8	0.7	accepted
22.	I keep the shares I already own, despite being advised to sell them. **Modified to**: I keep the credit applications I already approved, despite being advised to cancel them.	Armansyah, (2022).	0.8	0.8	accepted
23.	I am reluctant to transfer the shares I own even if it sells or bequeaths. **Modified to:** I am reluctant to transfer the credit applications I assigned, even if it is to another section.	Armansyah, (2022)	0.8	0.5	Deleted
24.	I have shares that I have owned for a long time so it is difficult for me to sell. **Modified to**: I have credit applicants that I have worked with for a long time, so it is difficult for me to stop approving their	Armansyah, (2022).	0.8	0.7	Accepted

	applications.				
25.	I really appreciate the shares bequeathed to me. **Modified to:** I really appreciate the money of the bank I work for, as if it were my own.	Armansyah, (2022).	0.8	0.7	accepted
confirmation					
26.	I ignore information related to stock selection that is contrary to belief. **Modified to:** I ignore information related to a credit decision that is contrary to belief.	Armansyah, (2022).	0.8	0.6	Deleted
27.	When an investment is not going well, I seek information thatconfirms I made the right decision. **Modified to:** When an approved credit application is not going well, I seek information that confirms I made the right decision.	Ritika, & Kishor, N. (2022).	0.6	0.7	Deleted
28.	I do not change my mind even if I start to lose investments that I believe will be profitable. **Modified to:** I do not change my mind even if I start to lose credit applications that I believe will be profitable.	Armansyah, (2022).	0.8	0.6	Deleted
29.	I feel doubts occur when there is other information during stock selection. **Modified to:** I feel doubts occur when there is other information during credit evaluating.	Armansyah, (2022).	0.8	0.6	Deleted
30.	I value positive information more than negative	Ritika & Kishor,	0.6	0.8	Deleted

	information regarding my investment choices **Modified to:** I value positive information more than negative information regarding my credit application choices."	N. (2022).			
Recency bias					
31.	I'm basing my decision on the most recent information I've gathered.	Armansyah, (2022).	0.8	1.0	accepted
32.	I always remembering and focusing on the past information of financial market.	Jain &Kesari, (2022).	0.6	0.9	Deleted
33.	I give more importance to short-term performance compared to long-term performance.	Jain &Kesari, (2022).	0.8	0.6	Deleted
34.	I make short-term decisions of investments that deviate from my financial plans **Modified to:** I make short-term decisions of credit that deviate from my credit plans.	Jain &Kesari, (2022).	0.8	0.5	Deleted
35.	I make decisions of investments based on recent events, expecting that those events will continue into the future. **Modified to**: I make decisions of credit based on recent events, expecting that those events will continue into the future	Jain &Kesari, (2022).	0.6	0.8	Deleted
optimism					
36.	I foresee the upcoming life events positively	Ondolos et al., (2021).	0.8	0.9	accepted

		Souissi&Jarboui, (2018).			
37.	In general, I would feel reallyoptimistic whenever I have to decide for something important.	Ondolos et al., (2021). Souissi&Jarboui, (2018).	0.6	0.7	Deleted
38.	I always anticipate good returns, even during unfavorable economic conditions.	Kipsaat&Olweny, (2020).	0.8	0.8	accepted
39.	I plan to contribute with accomplishments that would sound greater than the average achievements.	Ondolos et al., (2021). Souissi&Jarboui, (2018).	0.7	0.8	accepted
40.	I feel pessimistic with regard to the bank's internal status.	Ondolos, et al., (2021).	0.6	0.8	Deleted
hindsight bias					
41.	I have a good ability to predict returns when making investment decisions. **Modified to:** I have a good ability to predict outcomes when making credit decisions.	Kipsaat&Olweny, (2020).	0.8	0.9	accepted
42.	I don't get surprised by my investments' returns, whether favorable or adverse. **Modified to:** I don't get surprised by the outcomes of my credit decisions, whether favorable or adverse.	Kipsaat&Olweny, (2020).	0.7	0.7	accepted

43.	My investments turn out the way I expected. **Modified to:** Credit applications that I approved turned out the way I expected.	Kipsaat&Olweny, (2020).	08	0.8	accepted
44.	I believe that I would have gained more if my advisor had waited for alonger period. **Modified to**: I believe I would have gained more if some of my credit applicants had opted for longer-term credit periods.	Baker et al., (2019).	0.8	0.8	accepted
45.	I would be convinced if in 2006–2007, someone had told me that a financial crisis would happen in a year. **Modified to:** I would be convinced if in before several years, someone had told me that a financial crisis would happen in a year.	Baker et al., (2019).	0.6	0.8	Deleted
Status qou					
46.	I hardly make changes in the portfolio I already hold. **Modified to:** I hardly make changes to credit applications I've already decided on.	Kipsaat&Olweny, (2020).	0.8	0.7	Deleted
47.	Most of my investments are within a determined risk range. **Modified to:** Most of my approved credit applications are within a defined risk range.	Kipsaat&Olweny, (2020).	0.6	0.6	Deleted
48.	I would rather make modest returns from investments I already hold than earn high returns from new high-risk ventures.	Kipsaat&Olweny, (2020).	0.8	0.8	accepted

	Modified to :I would ratherthe bank makes modest returns from credit applications I already approved than earn high returns from new high-risk credit applications.				
49.	My current investment decisions are mostly similar to the decisions I made in the past. **Modified to:** My current credit decisions are mostly similar to the decisions I made in the past.	Kipsaat&Olweny, (2020).	0.8	0.7	accepted
50.	I think about changing my portfolio, but many times I do not change it. **Modified to**: I think about changing the types of credit applications I approve, but many times, I do not change them.	Baker et al., (2019)	0.6	0.7	Deleted
Self-control bias					
51.	I have a hard time breaking bad habits	Strömbäck, et al, (2017 Hirvonen, (2018).	0.1	0.9	Accepted
52.	I get distracted easily	Strömbäck, et al, (2017	0.8	0.7	Accepted
53.	I have trouble concentrating.	Hirvonen, (2018).	0.6	0.6	Deleted
54.	I'm good at resisting temptation.	Strömbäck, et al, (2017 Hirvonen,	0.8	1.0	accepted

		(2018).			
55.	I do things that feel good in the moment but regret later on	Strömbäck, et al, (2017	0.7	0.7	Accepted
56.	My convenience plays an important role in the decisions I make.	Strömbäck, et al, (2017	0.6	0.9	Deleted
Illusion of control bias					
57.	You believe your eye for good investment gives you control on the outcomes. **Modified to**: You believe your eye for good credit applications gives you control on the outcomes	Bogunjoko, (2021).	0.8	0.9	accepted
58.	In the work context , even in situations that involve uncertain information from the external organizational environment , I keep control of the situation.	Borges &Janissek-Muniz, (2021).	0.7	0.9	accepted
59.	I can make my invention a success even though others might fail. **Modified to**: I can make my approved credit applications a success even though others might fail.	Adomdza, (2004).	0.8	0.8	accepted
60.	It is unlikely that a disruptive situation will significantly affect the market where my company operates. **Modified to**: It is unlikely that a disruptive situation will significantly affect the market where my bank operates.	Borges &Janissek-Muniz, (2021).	0.7	0.6	Deleted

61.	Some people are just born lucky.	Bogunjoko, (2021).	0.7	0.6	Deleted
62.	The longer I've been losing, the more likely I am to win.	Bogunjoko, (2021).	0.0	0.6	Deleted
Mental accounting bias					
63.	I tend to treat each element of my investment portfolio separately. **Modified into**: I tend to treat each element of my credit application separately.	Baker, et al., (2019) Khan, (2020). Bogunjoko, (2021).	0.8	0.9	accepted
64.	I don't care about the performance of my investment portfolio as a whole but I care about the return of each account separately. **Modified into:** I don't care about the performance of my approved credit applications as a whole, but I care about the return of each application separately.	Khan, (2020).	0.7	0.6	Deleted
65.	I earmark the investments purpose wisely and maintain them separately. **Modified to**: I evaluate the credit applications' purpose wisely and manage them separately.	Ritika, & Kishor, N.(2022).	0.8	0.9	accepted
66.	I categorize my investments into various purposes such as leisure, children's education and so on. **Modified to:**I categorize credit applications based on various intended purposes, such as	Ritika, & Kishor, N. (2022).	0.8	0.8	accepted

	personal expenses, education, and so on.				
67.	I categorize income based on sources of income.	Adiputra, et al., (2024).	0.6	0.9	Deleted
68.	I always compare income and expenses.	Adiputra et al., (2024).	0.8	1.0	accepted
Regret aversion bias					
69.	I regret when I miss an opportunity of getting goodreturns	Kishor, N. (2022)	0.6	0.9	Deleted
70.	I avoid investing in profitable assets if I had incurred losses in similar investments in the past. **Modified to:** I avoid approving profitable credit applications if I had incurred losses in similar ones in the past.	Kishor, N. (2022)	0.8	0.7	accepted
71.	I changed my investment decisions in light of the wrong decisions I had made earlier. **Modified to**: I changed my credit decisions in light of the wrong decisions I had made earlier.	Kishor, N. (2022)	0.7	0.7	accepted
72.	Holding loss-making investments for longer time is more painful than disposing profitable investments early. **Modified to:** Holding on losing credit applications for a longer time is more painful than rejecting profitable ones early.	Kishor, N. (2022).	0.6	0.5	Deleted
73.	I became risk seeking because I have made profits in the past.	Kishor, N. (2022).	0.8	0.8	accepted

74.	I became risk averse because I have incurred losses in the past.	Kishor, N. (2022).	0.7	0.8	accepted
Framing bias					
75.	You prefer to make investment decisions using pictorial appearances rather than just a piece of information in words. **Modified to:** I prefer to make credit decisions using pictorial appearances rather than just a piece of information in words.	Bogunjoko, (2021).	0.3	0.7	Deleted
76.	In credit evaluation, I will approve a credit application of a sure gain of ₹ 5000 and a probable gain of ₹ 10000.	Singh et al. (2016)	-	-	Deleted
77.	In credit evaluation, I will approve a credit application at a sure loss of ₹ 5000 and a probable loss of ₹ 10000.	Singh et al. (2016)	-	-	Deleted
78.	Investors usually make positive decisions on property investment. **Modified to:** I usually make positive decisions on credit applications.	Usman, (2018).	0.4	0.8	Deleted
79.	Investors usually make negative decisions on property investment. **Modified to:** I usually make negative decisions on credit applications.	Usman, (2018).	0.4	0.5	Deleted
Loss aversion bias					
80.	Loss of Rs. 1,000 is more painful than	Kishor, N.	0.7	0.6	

	happiness of Rs. 1,000 profit. Modified to: Loss of 1,000 dollars is more painful than the happiness of 1,000 dollar profit. / only currency changed.	(2022). Ritika, & Kishor, N. (2022)			Deleted
81.	I usually try to predict the negative results likely to emanate from my acts.	Ondolos et al., (2021). Souissi&Jarboui , (2018).	0.8	0.5	Deleted
82.	-When it comes to investment consideration, loss of capital is more important than returns. **Modified to**: When it comes to credit consideration, loss of capital is more important than returns	Otaify, (2023).	0.8	0.6	Deleted
83.	In financial contexts, the word 'risk' signifies 'danger.'	Ondolos et al., (2021). Souissi&Jarboui , (2018). Azouzi& Bacha, (2023	0.7	0.8	accepted
84.	When I face a challenge, I give up because I am afraid of failing.	Azouzi&Bacha,. (2023).	0.8	0.8	accepted
85.	I feel nervous when more losing stocks have in my investment. **Modified to:** I feel nervous when I approve several unsuccessful credit applications.	Otaify, (2023).	0.7	0.8	accepted

86.	I will not increase my investment if the market performance is poor. **Modified to**: I will not approve more credit applications if the market performance is poor.	Otaify, (2023).	0.8	0.8	accepted
Availability bias					
87.	I believe that familiar stock is a safer one. Modified to : I believe that the familiar credit sector is a safer one.	Vidya, (2023).	0.7	1.0	accepted
88.	I prefer to invest in the well-known companies that have wider media coverage. **Modified to**: I prefer to approve credit applications from well-known applicants who have wider media coverage.	Siraji, (2019).	0.7	0.9	accepted
89.	I prefer to buy local stocks than international stocks because the information on local stocks is more available. **Modified to**: I prefer to approve credit applications from local credit applicants rather than international ones because the information on local applicants is more available.	Siraji, (2019).	0.8	0.9	accepted
90.	I prefer to invest in the companies which I know their history and management. **Modified to**: I prefer to approve credit applications from companies, which I know their history and management.	Siraji, (2019).	0.7	0.8	accepted
91.	I give more weight to information that is easy	Shah,(2024)	0.6	0.7	Deleted

	to recall or recent.				
Conservatism bias					
92.	I usually wait for the market reaction to verify the importance of the information and then cautiously decide what to do.	Barbosa, et al. (2024).	0.8	0.8	Deleted
93.	I considered past situations when making new managerial or investment decisions. **Modified to:** I considered past situations when making new credit decisions.	Barbosa, et al. (2024).	0.7	0.8	accepted
94.	I only invest if the market is propitious and attractive. **Modified to:** I only approve credit applications if the market is propitious and attractive.	Barbosa, et al. (2024).	0.8	0.9	accepted
95.	When I decide to invest in a new venture/business, I compare it with investments that had an acceptable return in the past and then I decide on the new investment. **Modified to**: When I decide whether to approve a credit application for a new venture/business, I compare it with credit applications that had an acceptable return in the past and then I decide on the new credit application.	Barbosa, et al. (2024).	0.7	0.8	accepted
96.	I stick on to old information as future is uncertain.	Ritika, & Kishor, N. (2022).	0.8	0.7	accepted
ambiguity aversion bias					

97.	I accept higher returns in case of the investments with higher levels of risk. **Modified to**: I accept higher returns in case of the credit application with higher levels of risk.	Ritika & Kishor, N. (2022).	0.7	0.9	accepted
98.	I prefer investments with secured return. **Modified to:** I prefer credit applications with secured return.	Ritika & Kishor, N. (2022).	0.7	0.9	accepted
99.	I do not invest when I am not very sure of the returns. **Modified to**: I do not approve a credit application when I am not very sure of the returns.	Ritika & Kishor, N. (2022).	0.8	0.8	accepted
100.	There is a right way and a wrong way to do almost everything.	Cavatorta&Schröder,(2019).	0.7	0.9	accepted
101.	I feel relieved when an ambiguous situation suddenly becomes clear.	Cavatorta&Schröder,(2019).	0.8	0.9	accepted

The credit Decision			**Relevance**	**Clarity**	**Decision**
102.	When I make a decision, I trust my inner feelings and reactions.	**<u>Intuitive</u>** Scott&Bruce(1995). Buch, et al,. (2021). Leykin&DeRubeis, (2010) Otaify, (2023).	0.7	0.8	accepted

		Ondolos, et al., (2021).			
103.	When I make a decision, it is more important for me to feel the decision is right than to have a rational reason for it.	**Intuitive** Scott&Bruce(1995). Buch, et al., (2021). Leykin&DeRubeis, (2010) Otaify, (2023).	0.7	0.7	accepted
104.	I make decisions based on intuition.	**Intuitive** Hamilton, et al (2016).	0.8	0.6	Deleted
105.	I make decisions in a logical and systematic way.	**Rational** Scott& Bruce (1995). Buch, et al,. (2021).	0.7	0.8	accepted
106.	When making a decision, I consider various options in terms of a specific goal.	**Rational** Scott&Bruce(1995). Buch, et al,. (2021). Leykin&DeRubeis, (2010)	0.8	0.9	accepted
107.	I prefer to gather all the necessary information before committing to a decision.	**Rational** Hamilton, et al (2016).	0.7	0.9	accepted

The final questionnaire statements

Table 3.6: the final questionnaire statements

Behavioral bias	Statement in English
1- Overconfidence and Self-Attribution	
1.	I am always ready to defend my ideas in public.
2.	My credit decision skills are much better than other colleagues.
3.	I believe that my skills and knowledge of the credit can help me to outperform the market.
4.	I am experienced in credit.
5.	I generally don't need the advice from others when making credit decisions.
2- Representativeness	
6.	I tend to attribute good characteristics of credit applications directly to good characteristics of their applicants.
7.	I make credit decisions based upon my assessment of the performance of previous credit applications of a similar kind
8.	I use trend analysis to make credit decisions.
9.	I tried to avoid approving credit applications from companies with a history of poor earnings.
3- Anchoring	
10.	I fix a target price for accepting and rejecting the credit application in advance.
11.	When evaluating a credit application, I utilize the credit application collateral value as a point of reference.
12.	The current credit amounts of approved applications help me forecast the credit amounts

	of future applications.
4- Endowment effect	
13.	When valuing a credit application I assessed, I assign a value to what the application represents to me rather than the value it has in the market.
14.	I keep the credit applications I already approved, despite being advised to cancel them.
15.	I have credit applicants that I have worked with for a long time, so it is difficult for me to stop approving their applications.
16.	I really appreciate the money of the bank I work for, as if it were my own.
5- optimism	
17.	I foresee the upcoming life events positively
18.	I always anticipate good returns, even during unfavorable economic conditions.
19.	I plan to contribute with accomplishments that would sound greater than the average achievements.
6- hindsight bias	
20.	I have a good ability to predict outcomes when making credit decisions.
21.	I don't get surprised by the outcomes of my credit decisions, whether favorable or adverse.
22.	Credit applications that I approved turned out the way I expected.
23.	I believe I would have gained more if some of my credit applicants had opted for longer-term credit periods.
7- Status qou	
24.	I would rather the bank makes modest returns from credit applications I already approved than earn high returns from new high-risk credit applications.
25.	My current credit decisions are mostly similar to the decisions I made in the past.

8- Self-control bias	
26.	I have a hard time breaking bad habits
27.	I get distracted easily
28.	I'm good at resisting temptation.
29.	I do things that feel good in the moment but regret later on
9- Illusion of control bias	
30.	You believe your eye for good credit applications gives you control on the outcomes
31.	In the work context, even in situations that involve uncertain information from the external organizational environment, I keep control of the situation.
32.	I can make my approved credit applications a success even though others might fail.
10- Mental accounting bias	
33.	I tend to treat each element of my credit application separately.
34.	I evaluate the credit applications' purpose wisely and manage them separately.
35.	I categorize credit applications based on various intended purposes, such as personal expenses, education, and so on.
36.	I always compare income and expenses.
11- Regret aversion bias	
37.	I avoid approving profitable credit applications if I had incurred losses in similar ones in the past.
38.	I changed my credit decisions in light of the wrong decisions I had made earlier.
39.	I became risk seeking because I have made profits in the past.
40.	I became risk averse because I have incurred losses in the past.
12- Loss aversion bias	

41.	In financial contexts, the word ‘risk’ signifies ‘danger.’
42.	When I face a challenge, I give up because I am afraid of failing.
43.	I feel nervous when I approve several unsuccessful credit applications.
44.	I will not approve more credit applications if the market performance is poor.
13- Availability bias	
45.	I believe that the familiar credit sector is a safer one.
46.	I prefer to approve credit applications from well-known applicants who have wider media coverage.
47.	I prefer to approve credit applications from local credit applicants rather than international ones because the information on local applicants is more available.
48.	I prefer to approve credit applications from companies, which I know their history and management.
14- Conservatism bias	
49.	I usually wait for the market reaction to verify the importance of the information and then cautiously decide what to do.
50.	I considered past situations when making new credit decisions.
51.	I only approve credit applications if the market is propitious and attractive.
52.	When I decide whether to approve a credit application for a new venture/business, I compare it with credit applications that had an acceptable return in the past and then I decide on the new credit application.
53.	I stick on to old information as future is uncertain.
15- ambiguity aversion bias	
54.	I accept higher returns in case of the credit application with higher levels of risk.

55.	I prefer credit applications with secured return.
56.	I do not approve a credit application when I am not very sure of the returns.
57.	There is a right way and a wrong way to do almost everything.
58.	I feel relieved when an ambiguous situation suddenly becomes clear.
1- The credit decision	
59.	When I make a decision, I trust my inner feelings and reactions.
60.	When I make a decision, it is more important for me to feel the decision is right than to have a rational reason for it.
61.	I make decisions in a logical and systematic way.
62.	When making a decision, I consider various options in terms of a specific goal.
63.	I prefer to gather all the necessary information before committing to a decision.

Exploratory and confirmatory analysis

The confirmatory analysis was attempted several times; however, it did not yield interpretable results. This was primary due to the small sample size used for confirmatory analysis, a common challenge in balancing between a very small sample size, which may fail to detect meaningful effects, and a very large sample, which increase cost and time (Wang, Watts, Anderson, & Little, 2013; Nicolaou &Masoner, 2013, as cited in Kyriazos, 2018).

Scale development, particularly factor analysis, generally requires a large sample size (DeVellis, 2017; Costello & Osborne, 2005, as cited in Kyriazos, 2018). This limitation becomes even more critical when structural equation modeling (SEM), specifically confirmatory analysis, is used as a validation method, since SEM also requires a large sample (Kline, 2016; Brown, 2015; Shumacker& Lomax, 2016; Wang et al., 2013; Wang & Wang, 2012, as cited in Kyriazos, 2018).

Furthermore, parameter estimates, chi-square tests, and general goodness of fit indices are similarly sensitive to sample size (Kyriazos, 2018). The statistical power and precision of CFA -and SEM models in general- are influenced by sample size (Brown, 2015, as cited in Kyriazos, 2018). Deciding on the sample size or sample power for CFA is more complex than for exploratory factor analysis (EFA), as CFA models are based on theoretical structures with many interdependent parameter estimates, including covariances and standard errors, which become less precise in small samples (Kline, 2016, as cited in Kyriazos, 2018).

Additionally, specific fit indices behave differently in small samples in company with model estimators, model complexity, assumptions of multivariate normality, and variable independence (Fan &Sivo, 2007; Saris, Satorra, & van der Veld, 2009, as cited in Byrne, 2012, as cited in Kyriazos, 2018).

The chi-square test is a particularly sensitive fit measure to sample size; in small sample sizes (<200), it may fail to reject an inappropriate model, whereas in large samples, it may incorrectly reject an adequate model (Gatignon, 2010; Singh et al., 2016, as cited in Kyriazos, 2018). According to Wang and Wang (2012, as cited in Kyriazos, 2018), validating a factor structure with many indicators per factor is often hard, as several error terms are likely to be correlated.

In the CFAs, increasing the number of latent variables in a model substantially raises the minimum required sample size. For instance, shifting from a one-factor to a two-factor model can at least double the required sample size. For example, one-factor, four-indicator model, the necessary sample sizes are 190, 90, and 60 participants for factor loadings of .50, .65, and .80, respectively (Wolf et al., 2013).

In the present study, the sample size was not large enough to be split for separate EFA and CFA analysis without risking misestimation of results. Consequently, both EFA and CFA will be conducted on the full sample. This approach has been supported by Prooijen and Kloot (2001, as cited in Mohd-Zainal et al., 2018). Following Lau, (2021), Dirlik&Kartal, (2022), Massé, et al., (2022, Kumari, et al., (2013), and Moslehpour, et al. (2024), on using Confirmatory factor analysis on the full database and given the sensitively of EFA and CFAto sample sizes, conducting both analysis on the final sample allowed for more accurate results.

3.5 Data Measurement

This study employs a Likert Ordinal Scale to assess the attitudes under examination. This type of scale-response question emphasizes the strength of the respondent's feelings, as described by Burns and Bush (2000), as cited in Wahlbeck (2009). The scale ranges from 1 to 5, reflecting the levels of agreement or disagreement with statements, as outlined in the accompanying table (Jain &Kesari, 2020; Achieng, 2022; Riaz & Iqbal, 2015; Sihombing &Prameswary, 2023; Athur, 2014; Azouzi& Bacha, 2023). The "**Neutral**" option was selected instead of **"I don't know"** to better align with the study's objective of measuring the effect of the behavioral biases on credit decision making, and to facilitate clear interpretation of the results.

The neutral choice provides mid-points such as might, might not, and so on. It assists respondents in answering questions when they are unsure of their responses, and also saves them time in thinking of answers (Agrawal, 2010, as cited in Taherdoost, 2022).

Item	Scale
Strongly agree	5
Agree	4
Do not know/neutral	3
Disagree	2
Strongly Disagree	1

The Empirical Model

The Model is: The Regression Equation given below was used:

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \beta_9X_9 + \beta_{10}X_{10} + \beta_{11}X_{11} + \beta_{12}X_{12} + \beta_{13}X_{13} + \beta_{14}X_{14} + \beta_{15}X_{15} + \beta_{16}X_{16} + + \varepsilon$$

Y = the Dependent Variable: BCD = The Banking Credit Decision

α = the constant

The Independent Variables are:

$X_{1=}$ Overconfidence and Self-Attribution Bias

$X_{2=}$ Representativeness bias

$X_{3=}$ Anchoring and adjusting bias

X_4 = Availability bias

X_5 = Illusion of control bias

$X_{6=}$ Conservatism bias

X_7 = Ambiguity aversion bias

X_8 = Mental accounting bias

$X_{9\ =}$ Hindsight bias

X_{10} = Endowment bias

X_{11} = Self-control bias

X_{12} = Optimism bias

$X_{13=}$ Loss aversion bias

$X_{14=}$ Regret aversion bias

X_{15}= Status Quo bias

ε = the Error

$\beta_1 x_1 \ldots\ldots X_n$ = The Predictors

The independent variable The dependent variable

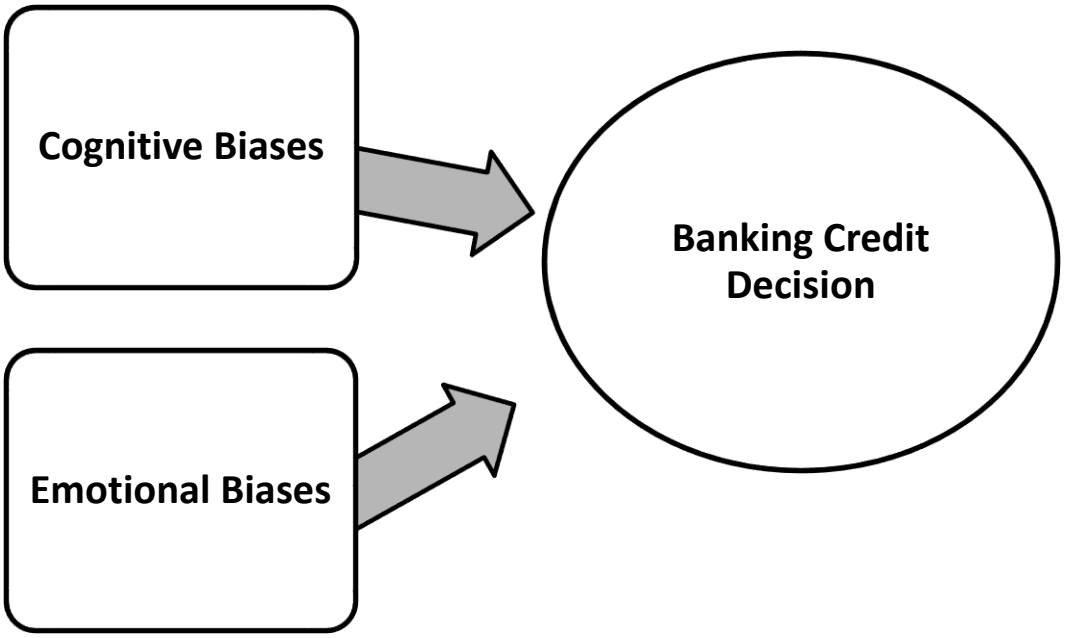

Figure 3.1: The graphical model

Chapter Four

The Study Results

4.1 Introduction

This study aimed to identify ***The Effect of Behavioral Biases on Banking Credit Decision***. It also aimed to identify the effect of several variables on the responses. To accomplish the aims of the study, the researcher analyzed the data from the questionnaire in accordance with the study questions and hypothesis.

4.2 The study Variables

The variables below are included in this study, which are classified into independent and dependent:

Independent Variables

The behavioral biases with their domains of (Overconfidence and self-attribution, Representativeness, Anchoring, Endowment bias, optimism bias, Hindsight bias, status quo bias, self-control bias, Illusion of control bias, Mental Accounting bias, regret Aversion bias, Loss aversion bias, Availability bias, Conservatism bias, and Ambiguity aversion bias.

Dependent Variables

The Banking Credit Decisions.

Demographic Variable:

1. **Gender**: two categories (males and females).
2. **Age:** Four categories (20-30 years, 31-40 years, 41-50 years, and above 50 years)
3. **Educational level**: Three categories (B.A, M.A., and Ph.D.)
4. **Occupation:** four categories (Credit Analyst, Credit Facilitates Officer, Credit Manager, and Branch Manager).
5. **Years of Experience:** four categories (Less than 5 years, 6 -10 years, 11-15 years, and more than 16 years).

4.3 The Study Population and Sample

The collected questionnaire sample consisted of 262 credit facilities staff, credit analysts, credit managers, and branch managers working in Palestinian banks.

Some population-related information from certain banks could not be obtained due to their decision not to provide the data and time constraints; therefore, those banks were excluded from the study.

The Krejecie and Morgan (1970) table was used to determine the required sample size given a population size of 366; the required sample size is ≈ 188.

The Krejecie morgan 1970 formula is:

$S = X^2 NP (1-P) / d^2 (N-1) + X^2 P (1-P)$

s = required sample size.

*X*2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

The researchers demonstrated that no calculations are required when using the table below to determine the appropriate sample size for a given population. Only the table should be considered. Table 1 is valid for any defined population (Krejecie and Morgan, 1970).

Table 4.1: The Krejecie and Morgan (1970) table

TABLE 1
Table for Determining Sample Size from a Given Population

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size.
S is sample size.

The background of the study sample varies in terms of gender, age, educational level, job title, and experience. Table 4.2 illustrates the demographic characteristics of the study sample.

Distribution of the study Sample According to the Study's Independent Variables

Table 4.2: The demographic characteristics of the study sample.

Variable	Class	Frequency	Percentage %
Gender	Male	160	61.1
	Female	102	38.9
Age	20-30 Years	91	34.7
	31-40 Years	97	37.0
	41- 50 Years	49	18.7
	More than 51 Years	25	9.5
Educational level	B.A	236	90.1
	M.A	26	9.9
Job title	Credit Analyst	30	11.5
	Credit Facility Officer	146	55.7
	Credit manager	30	11.5
	Branch Manager	56	21.4
Years of experience	5 and less	81	30.9
	6-10	46	17.6
	11-15	69	26.3
	16 and more	66	25.2
Total		262	100.0

4.4 Reliability of the Questionnaire

The reliability of the questionnaire was assessed using Cronbach's Alpha. The following tables illustrate the results.

Table 4.3: Cronbach's Alpha test for the study tool

Domain	Items	Cronbach Alpha
Overconfidence	5	0.798
Representativeness	4	0.857
Anchoring	3	0.802
Endowment bias	4	0.746
optimism bias	3	0.777
Hindsight bias	4	0.840
status que bias	2	0.872
self-control bias	4	0.818
Illusion of control bias	3	0.718
Mental Accounting bias	4	0.818
Regret Aversion bias	4	0.733
Loss aversion bias	4	0.834
Availability bias	4	0.758
Conservatism bias	5	0.760
Ambiguity aversion bias	5	0.810
Total(behavioral biases)	**58**	0.940
Total(banking credit decisions)	**5**	0.870

Results in Table (3) illustrate that the Cronbach Alpha coefficient for the study instrument ranged from 0.870 to 0.940 for the domains of (banking credit decisions) and (behavioral biases). These values are considered excellent and acceptable for the purpose of the study.

4.5 Statistical Procedures

The collected data were analyzed using (SPSS) to provide answers to the study's questions. The following procedures were employed:

1. Means, frequencies, standard deviations, and percentages to estimate the relative percentage of each item.
2. UNIANOVA test to examine the statistical differences according to the demographic variables.
3. Cronbach's Alpha to test the consistency of the questionnaire items.
4. Multiple Regression analyses to determine the *influence of* behavioral biases *on* banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks
5. Pearson Correlation Matrix to determine the relationship between behavioral biases and banking credit decisions from the perspective of Palestinian credit analysts/officers, managers, and branch managers in Palestinian banks.
6. Post hoc tests to identify the differences related to assumptions rejected by One-Way ANOVA.

4.6 Data Analysis

The data were pretested before analysis for normality and multicollinearity. To assess the normality of the dependent variables, the study employed the Kolmogorov–Smirnov (KS) test.

Multicollinearity refers to a situation in which two or more predictor variables in a multiple regression model are highly correlated, such that one can be linearly predicted from the others with a high degree of accuracy (Kock & Lynn, 2012, as cited in Usman, 2018). In this

study, a correlation matrix was used to examine multicollinearity, with a threshold of 0.7 indicating severe multicollinearity (Cooper & Schindler, 2008, as cited in Usman, 2018).

The results in **the Table(4) show** that there is no multicollinearity among the variables.

Table4.4: Multicollinearity Test

Variable	Overconfidence	Representativeness	Anchoring	gift bias	optimism bias	Hindsight bias	status que bias	self-control bias	Illusion of control bias	Mental Accounting bias	Aversion to remorse bias	Loss aversion bias	Availability bias	Conservatism bias	Ambiguity aversion bias
Overconfidence		0.573**	0.273**	0.489**	0.440**	0.204**	0.091	0.439**	0.273**	0.109	0.090	0.343**	0.401**	0.259**	0.359**
Representativeness			0.375**	0.591**	0.515**	0.334**	0.156*	0.509**	0.286**	-0.022-	0.126*	0.270**	0.347**	0.306**	0.306**
Anchoring				.466**	0.424**	0.456**	0.035	0.208**	0.327**	-.039-	0.299**	0.173**	0.366**	0.541**	0.427**
gift bias					0.617**	0.391**	0.155*	0.393**	0.332**	0.076	0.354**	0.314**	0.385**	0.401**	0.423**
optimism bias						0.528**	0.305**	0.462**	0.180**	0.174**	0.296**	0.155*	0.318**	0.385**	0.332**
Hindsight bias							0.240**	0.307**	0.313**	0.052	0.385**	0.113	0.310**	0.488**	0.195**
status que bias								0.294**	0.074	0.177**	0.059	0.213**	0.195**	0.114	0.076
self-control bias									0.551**	0.048	0.265**	0.456**	0.374**	0.257**	0.405**
Illusion of control bias										0.015	0.279**	0.395**	0.406**	0.342**	0.367**
Mental Accounting bias											0.136*	-0.057-	0.053	0.001	-.106-
Aversion to remorse bias												0.247**	0.447**	0.460**	0.290**
Loss aversion bias													0.433**	0.296**	0.370**
Availability bias														0.427**	0.313**
Conservatism bias															0.565**
Ambiguity aversion bias															

The researcher employed the subsequent scale to represent the estimation level of sample responses. To limit the length of the cells of the five-point Likert scale (minimum and maximum limits, the range has been considered (5-1=4), divided by the correct length of the cell

(4/5=0.80), and added to the lowest value of the scale (1) to reach the highest limit of this cell. Cell limits are explained and revealed in Table (5):

Table 4.5: Scale for representing the estimation level of sample responses

Mean	**Percentage %**	**Estimation Level**
4.20 and more	84.0 % and more	*Very High*
3.40-4.19	68.0 – 83.8 %	*High*
2.60-3.39	52.0 – 67.8 %	*Moderate*
1-80- 2.59	36.0 – 51.8 %	*Low*
Less than 1.8	35.9% and less	*Very Low*

To be noting that the exploratory and confirmatory factor analysis were attempted several times again on the final sample; however, it did not give interpretable results. The reason is that the small sample size used for confirmatory analysis is mainly a common challenge in determining between a small sample size, which may not detect significant effects, and following the advice and recommendation of not doing the tests and being enough with the made tests and analysis.

4.7 Results

4.7.1 Results related to the study Questions

4.7.1.1 Results related to the main study Question which is:

Is there a significant positive influence at (α≤0.05) of behavioral biases on banking credit decisions from the perspective of Palestinian credit officers/analysts/managers/branch managers in Palestinian banks?

To answer the main study question, multiple regression with the input method (Enter) has been used. The results are in the following table:

Table 4.6: Multiple Regression analyses to determine the influence of behavioral biases on banking credit decisions from the perspective of Palestinian credit officers*/analysts/managers/branch managers* in Palestinian banks

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.*
	B	Std. Error	Beta		
(Constant)	1.060	0.327	___	3.238	0.001*
Overconfidence andSelf-Attribution	0.372	0.075	0.376	4.958	0.000*
Representativeness	0.016	0.073	0.019	0.224	0.823
Anchoring	0.286	0.073	0.342	3.927	0.000*
Endowment effect	0.109	0.082	0.108	1.330	0.185
optimism	0-.014	0.080	-0.018	-0.172	0.864
hindsight bias	—	___	—	___	—

Status quo	-0.014	0.080	-0.018	-0.172	0.864
Self-control bias	0.072	0.080	0.062	.902	0.368
Illusion of control bias	0.186	0.078	0.207	2.384	0.018*
Mental accounting bias	0.114	0.075	0.131	1.523	0.129
Regret aversion bias	-0.059	0.074	-0.045	-0.796	0.427
Loss aversion bias	0.154	0.091	0.125	1.701	0.090
Availability bias	0.219	0.068	0.219	3.199	0.002*
Conservatism bias	0.285	0.074	0.283	3.876	0.000*
ambiguity aversion bias	0.134	0.088	0.138	1.516	0.131
Total degree	-1.459	.652	-.923-	-2.237-	0.026*

*. The mean difference is significant at the 0.05 level

The results show that *banking credit decision* is being impacted only by behavioral biases (Overconfidence and Self-Attribution, Anchoring, Illusion of control bias, Availability bias, Conservatism bias, and the total degree). An increase in the total degree) as the statistical significance levels were less than 0.05. Except for the effect of hindsight bias, it does not affect the credit decision. The results indicated that (Representativeness, Endowment effect, optimism, Status quo, Self-control bias, Mental accounting bias, Regret aversion bias, Loss aversion, and ambiguity aversion bias) had no effect, as the statistical significance levels were greater than 0.05.

The highest domains effects were respectively (Overconfidence and Self-Attribution, Anchoring, Conservatism bias, Availability bias, and Illusion of control bias).

4.7.1.1.1 Results related to the first sub- study Question which is:

What are the perspectives of Palestinian credit officers in Palestinian banks on the behavioral biases?

To answer this question, the researcher used means, standard deviations, and estimation levels for the total degree of ***behavioral biases*** and their domains, as shown in the following table.

Table 4.7: Means, Standard Deviations, percentages, and estimated level of behavioral biases and their domains in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	1	Overconfidence and Self-Attribution	3.91	0.57	78.2	High
2	12	Loss aversion bias	3.86	0.56	77.2	High
3	2	Representativeness	3.80	0.67	76.0	High
4	4	Endowment effect	3.79	0.56	75.8	High
5	8	Self-control bias	3.76	0.63	75.2	High
6	13	Availability bias	3.67	0.56	73.4	High
7	9	Illusion of control bias	3.66	0.65	73.2	High
8	15	ambiguity aversion bias	3.64	0.59	72.8	High
9	3	Anchoring	3.61	0.67	72.2	High
10	5	optimism	3.46	0.73	69.2	High
11	14	Conservatism bias	3.39	0.58	67.8	Moderate
12	11	hindsight bias	3.18	0.46	63.6	Moderate
13	6	Regret aversion bias	3.07	0.82	61.4	Moderate

14	10	Mental accounting bias	2.87	0.43	57.4	Moderate
15	7	Status quo	2.83	0.48	56.6	Moderate
Total			3.50	0.35	70.0	High

Table 4.7 shows that the total degree of the perspectives of Palestinian credit officers in Palestinian banks on the behavioral biases was (3.50), which suggests a high level of estimation. The highest mean was given to the domain (Overconfidence and Self-Attribution). The lowest was for the domain (Status quo.).

The results of the items of the domains were in the following tables:

Table 4.8: Means, Standard Deviations, percentages, and estimated level of (Overconfidence and Self-Attribution) in descending order

Rank.	**No. In the Questionnaire**	**Item**	**Means**	**standard deviations**	**Percentage %**	**Estimated level**
1	1	I am always ready to defend my ideas in public.	4.24	0.75	84.8	Very High
2	3	I believe that my skills and knowledge of the credit can help me to outperform the market.	4.09	0.75	81.8	High
3	5	I generally don't need the advice from others when making credit decisions.	3.83	0.93	76.6	High
4	2	My credit decision skills are much better than other colleagues.	3.76	0.80	75.2	High
5	4	I am experienced in credit.	3.62	0.98	72.4	High
Total			3.91	0.57	78.2	High

Table 4.8 shows that the total degree of Overconfidence and Self-Attribution was (3.91), which suggests a high level of estimation. The highest mean was given to the item (I am always ready to defend my ideas in public.). The lowest was for the item (I am experienced in credit...).

Table 4.9: Means, Standard Deviations, percentages, and estimated level of (Representativeness.) in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	4	I tried to avoid approving credit applications from companies with a history of poor earnings.	3.96	0.80	79.2	High
2	1	I tend to attribute good characteristics of credit applications directly to good characteristics of their applicants.	3.78	0.96	75.6	High
3	2	I make credit decisions based upon my assessment of the performance of previous credit applications of a similar kind	3.77	0.85	75.4	High
4	3	I use trend analysis to make credit decisions.	3.71	0.87	74.2	High
Total			3.80	0.67	76.0	High

Table 4.9 shows that the total degree of Representativeness was (3.80), which suggests a high level of estimation. The highest mean was given to the item (I tried to avoid approving credit applications from companies with a history of poor earnings...). The lowest was for the item (I use trend analysis to make credit decisions.).

Table 4.10: Means, Standard Deviations, percentages, and estimated level of (Anchoring.) in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	3	The current credit amounts of approved applications help me forecast the credit amounts of future applications.	3.82	0.88	76.4	High
2	1	I fix a target price for accepting and rejecting the credit application in advance.	3.64	0.94	72.8	High
3	2	When evaluating a credit application, I utilize the credit application collateral value as a point of reference.	3.36	0.89	67.2	Moderate
Total			3.61	0.67	72.2	High

Table 4.10 shows that the total degree of Anchoring was (3.61), which suggests a high level of estimation. The highest mean was given to the item (The current credit amounts of approved applications help me forecast the credit amounts of future applications...). The lowest was for the item (When evaluating a credit application, I utilize the credit application collateral value as a point of reference.).

Table 4.11: Means, Standard Deviations, percentages, and estimated level of (Endowment effect.) in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	3	I have credit applicants that I have worked with for a long time, so it is difficult for me to stop approving their applications.	3.95	0.81	79.0	High
2	2	I keep the credit applications I already approved, despite being advised to cancel them.	3.80	0.81	76.0	High
3	1	When valuing a credit application I assessed, I assign a value to what the application represents to me rather than the value it has in the market.	3.73	0.87	74.6	High
4	4	I really appreciate the money of the bank I work for, as if it were my own.	3.68	0.87	73.6	High
Total			3.79	0.56	75.8	High

Table 4.11 shows that the total degree of the Endowment effect was (3.79), which suggests a high level of estimation. The highest mean was given to the item (I have credit applicants that I have worked with for a long time, so it is difficult for me to stop approving their applications). The lowest was for the item (I really appreciate the money of the bank I work for, as if it were my own).

Table 4.12: Means, Standard Deviations, percentages, and estimated level of (optimism.) in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	2	I always anticipate good returns, even during unfavorable economic conditions.	3.55	1.00	71.0	High
2	1	I foresee the upcoming life events positively.	3.41	0.97	68.2	High
2	3	I plan to contribute with accomplishments that would sound greater than the average achievements.	3.41	1.05	68.2	High
Total			3.46	0.73	69.2	High

Table 4.12 shows that the total degree of optimism was (3.46), which suggests a high level of estimation. The highest mean was given to the item (I always anticipate good returns, even during unfavorable economic conditions.). The lowest was for the items (I plan to contribute with accomplishments that would sound greater than the average achievements.. And I foresee the upcoming life events positively.).

Table 4.13: Means, Standard Deviations, percentages and estimated level of (hindsight bias.) in descending order

Rank.	No. In the Questionnaire		Item Means	standard deviations	Percentage %	Estimated level
1	3	Credit applications that I approved turned out the way I expected.	3.47	1.00	69.4	High
2	4	I believe I would have gained more if some of my credit applicants had opted for longer-term credit periods.	3.19	1.06	63.8	Moderate

3	1	I have a good ability to predict outcomes when making credit decisions.	3.00	1.07	60.0	Moderate
4	2	I don't get surprised by the outcomes of my credit decisions, whether favorable or adverse.	2.61	1.24	52.2	Moderate
Total			3.07	0.82	61.4	Moderate

Table 4.13 shows that the total degree of hindsight bias was (3.07) which suggests moderate level of estimation. The highest mean was given to the item (Credit applications that I approved turned out the way I expected.). The lowest was for the items (I don't get surprised by the outcomes of my credit decisions, whether favorable or adverse.).

Table 4.14: Means, Standard Deviations, percentages, and estimated level of (Status quo.) in descending order

Rank.	**No. In the Questionnaire**	**Item**	**Means**	**standard deviations**	**Percentage %**	**Estimated level**
1	2	My current credit decisions are mostly similar to the decisions I made in the past.	3.58	.90		High
2	1	I would rather the bank makes modest returns from credit applications I already approved than earn high returns from new high-risk credit applications.	2.09	0.63		Low
Total			2.83	0.48	56.6	Moderate

Table 4.14 shows that the total degree of Status quo was (2.83), which suggests a moderate level of estimation. The highest mean was given to the item (My current credit decisions are mostly similar to the decisions I made in the past.). The lowest was for the items (I would rather the

bank makes modest returns from credit applications I already approved than earn high returns from new high-risk credit applications.).

Table 4.15: Means, Standard Deviations, percentages, and estimated level of (Self-control bias.) in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	2	I get distracted easily	3.97	0.88	79.4	High
2	4	I do things that feel good in the moment but regret later on	3.91	0.71	78.2	High
3	3	I'm good at resisting temptation	3.82	0.86	76.4	High
4	1	I have a hard time breaking bad habits	3.72	0.58	74.4	High
Total			3.76	0.63	75.2	High

Table 4.15 shows that the total degree of Self-control bias was (3.76) which suggests a high level of estimation. The highest mean was given to the item (I get distracted easily.). The lowest was for the items (I have a hard time breaking bad habits).

Table 4.16: Means, Standard Deviations, percentages, and estimated level of (Illusion of control bias.) in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	3	I can make my approved credit applications a success even though others might fail.	3.83	0.80	76.6	High
2	2	In the work context, even in situations that involve uncertain information from the external organizational environment, I keep control of the situation.	3.65	0.85	73.0	High
3	1	You believe your eye for good credit applications gives you control on the outcomes.	3.51	1.15	70.2	High
Total			3.66	0.65	73.2	High

Table 4.16 shows that the total degree of Illusion of control bias was (3.66), which suggests a high level of estimation. The highest mean was given to the item (I can make my approved credit applications a success even though others might fail). The lowest was for the items (You believe your eye for good credit applications gives you control on the outcomes.).

Table 4.17: Means, Standard Deviations, percentages and estimated level of (Mental accounting bias.) in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	3	I categorize credit applications based on various intended purposes, such as personal expenses, education, and so on.	3.82	1.13	76.4	High
2	1	I tend to treat each element of my credit	3.68	072	73.6	High

		application separately.				
3	4	I always compare income and expenses	2.00	0.60	40.0	*Low*
4	2	I evaluate the credit applications' purpose wisely and manage them separately.	1.96	0.61	39.2	*Low*
Total			2.87	0.43	57.4	Moderate

Table 4.17 shows that the total degree of Mental accounting bias was (3.66), which suggests a moderate level of estimation. The highest mean was given to the item (I categorize credit applications based on various intended purposes, such as personal expenses, education, and so on.). The lowest was for the items (I evaluate the credit applications' purpose wisely and manage them separately.).

Table 4.18: Means, Standard Deviations, percentages and estimated level of (regret aversion bias.) in descending order

Rank.	**No. In the Questionnaire**	**Item**	**Means**	**standard deviations**	**Percentage %**	**Estimated level**
1	3	I became risk seeking because I have made profits in the past.	3.70	0.87	74.0	High
2	4	I became risk averse because I have incurred losses in the past.	3.66	0.85	73.2	High
3	2	I changed my credit decisions in light of the wrong decisions I had made earlier.	3.37	0.96	67.4	Moderate
4	1	I avoid approving profitable credit applications if I had incurred losses in similar ones in the past.	1.98	0.64	39.6	Low
Total			3.18	0.46	63.6	Moderate

Table 4.18 shows that the total degree of **Regret aversion**bias was (3.18), which suggests a moderate level of estimation. The highest mean was given to the item (I became risk-seeking because I have made profits in the past.). The lowest was for the items (I avoid approving profitable credit applications if I had incurred losses in similar ones in the past.).

Table 4.19: Means, Standard Deviations, percentages and estimated level of (Loss aversion bias.) in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	4	I will not approve more credit applications if the market performance is poor.	4.02	0.77	80.4	High
2	3	I feel nervous when I approve several unsuccessful credit applications.	3.87	0.74	77.4	High
3	1	In financial contexts, the word 'risk' signifies 'danger.'	3.84	0.79	76.8	High
4	2	When I face a challenge, I give up because I am afraid of failing.	3.70	0.76	74.0	High
Total			3.86	0.56	77.2	High

Table 4.19 shows that the total degree of Loss aversion bias was (3.86), which suggests a high level of estimation. The highest mean was given to the item (I will not approve more credit applications if the market performance is poor.). The lowest was for the items (When I face a challenge, I give up because I am afraid of failing.).

Table 4.20: Means, Standard Deviations, percentages and estimated level of (Availability bias.) in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	2	I prefer to approve credit applications from well-known applicants who have wider media coverage.	3.93	.81	78.6	High
2	3	I prefer to approve credit applications from local credit applicants rather than international ones because the information on local applicants is more available.	3.92	.88	78.4	High
3	1	I believe that the familiar credit sector is a safer one.	3.80	.83	76.0	High
4	4	I prefer to approve credit applications from companies, which I know their history and management.	3.02	1.13	60.4	Moderate
Total			3.67	0.56	73.4	High

Table 4.20 shows that the total degree of Availability bias was (3.67) which suggests high level of estimation. The highest mean was given to the item (I prefer to approve credit applications from well-known applicants who have wider media coverage.). The lowest was for the items (I prefer to approve credit applications from companies, which I know their history and management.).

Table 4.21: Means, Standard Deviations, percentages and estimated level of (Conservatism bias.) in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	4	When I decide whether to approve a credit application for a new venture/business, I compare it with credit applications that had an acceptable return in the past and then I decide on the new credit application.	3.77	0.84	75.4	High
2	3	I only approve credit applications if the market is propitious and attractive.	3.57	0.73	71.4	High
3	5	I stick on to old information as future is uncertain.	3.41	0.93	68.2	Moderate
4	2	I considered past situations when making new credit decisions.	3.18	1.04	63.6	Moderate
5	1	I usually wait for the market reaction to verify the importance of the information and then cautiously decide what to do.	3.03	0.99	60.6	Moderate
Total			3.39	0.58	67.8	Moderate

Table 4.21 shows that the total degree of Conservatism bias was (3.39), which suggests a moderate level of estimation. The highest mean was given to the item (When I decide whether to approve a credit application for a new venture/business, I compare it with credit applications that had an acceptable return in the past, and then I decide on the new credit application.). The lowest was for the items (I usually wait for the market reaction to verify the importance of the information and then cautiously decide what to do.

Table 4.22:Means, Standard Deviations, percentages, and the estimated level of (ambiguity aversion bias.) in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	4	There is a right way and a wrong way to do almost everything.	4.08	0.68	81.6	High
2	2	I prefer credit applications with secured return.	3.91	0.74	78.2	High
3	1	I accept higher returns in case of the credit application with higher levels of risk.	3.64	0.92	72.8	High
4	3	I do not approve a credit application when I am not very sure of the returns.	3.52	0.91	70.4	High
5	5	I feel relieved when an ambiguous situation suddenly becomes clear.	3.07	1.02	71.4	High
Total			3.64	0.59	72.8	High

Table 4.22 shows that the total degree of ambiguity aversion bias was (3.64), which suggests a high level of estimation. The highest mean was given to the item (There is a right way and a wrong way to do almost everything.). The lowest was for the items (I feel relieved when an ambiguous situation suddenly becomes clear).

4.7.1.1.2 Results related to the second study sub- Question which is:

What are the perspectives of Palestinian credit officers in Palestinian banks on the banking credit decision?

To answer this question, the researcher used means, standard deviations, percentages, and estimation levels as shown in the following table.

Table 4.23: Means, Standard Deviations, percentages of the perspectives of Palestinian credit officers in Palestinian banks on the banking credit decision in descending order

Rank.	No. In the Questionnaire	Item	Means	standard deviations	Percentage %	Estimated level
1	5	I prefer to gather all the necessary information before committing to a decision.	4.32	0.69	86.4	Very High
2	2	When I make a decision, it is more important for me to feel the decision is right than to have a rational reason for it.	4.06	0.74	81.2	High
3	1	When I make a decision, I trust my inner feelings and reactions.	3.97	0.75	79.4	High
4	3	I make decisions in a logical and systematic way.	3.83	0.79	76.6	High
5	4	When making a decision, I consider various options in terms of a specific goal.	3.80	0.79	76.0	High
Total			4.00	0.56	80.0	High

Table 4.23 shows that the total degree of the perspectives of Palestinian credit officers in Palestinian banks on the banking credit decision was (4.00), which suggests a high level of estimation. The highest mean was given to the item (I prefer to gather all the necessary information before committing to a decision.). The lowest was for the item (I make sure to include at least one multimedia element (When making a decision, I consider various options in terms of a specific goal.).

4.7.1.2 Results related to Study Hypotheses

4.7.1.2.1 Results related to the First key study hypotheses

There is a significant positive relationship at (α≤0.05) between behavioral biases and banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks.

To analyze the first study's hypotheses, a Pearson Correlation Matrix was used to show the relation between behavioral biases and banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks. Table 4.24 shows the results."

Table 4.24: Pearson Correlation Matrix to show the relation between behavioral biases and banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks

Variables/ Behavioral biases		**Banking credit decisions**
Overconfidence and Self-Attribution	Pearson Correlation	0.444**
	Sig. *	0.000
Representativeness	Pearson Correlation	0.274**
	Sig. *	0.000
Anchoring	Pearson Correlation	0.397**
	Sig. *	0.000
Endowment effect	Pearson Correlation	0.323**
	Sig. *	0.000
optimism	Pearson Correlation	0.161**
	Sig. *	0.009
hindsight bias	Pearson Correlation	0.093

	Sig. *	0.135
Status quo	Pearson Correlation	0.017
	Sig. *	0.788
Self-control bias	Pearson Correlation	0.352**
	Sig. *	0.000
Illusion of control bias	Pearson Correlation	0.360**
	Sig. *	0.000
Mental accounting bias	Pearson Correlation	-0.141*
	Sig. *	0.023
Regret aversionbias	Pearson Correlation	0.245**
	Sig. *	0.000
Loss aversion bias	Pearson Correlation	0.438**
	Sig. *	0.000
Availability bias	Pearson Correlation	0.457**
	Sig. *	0.000
Conservatism bias	Pearson Correlation	0.378**
	Sig. *	0.000
ambiguity aversion bias	Pearson Correlation	0.521**
	Sig. *	0.000
Total of Behavioral biases	Pearson Correlation	0.490**

	Sig. *	0.000

**Correlation is significant at the 0.01 level

*Correlation is significant at the 0.05 level

Table 4.24 shows that there is a strong positive statistically significant relation at (0.01) between the level behavioral biases and banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks. Pearson Correlation is (0.490), and the significant value is (0. 000), which is less than (0.05). That means the more behavioral biases, the more credit decisions there are. Moreover, there are positive statistically significant relations between (Overconfidence and Self-Attribution, Representativeness, Anchoring, Endowment effect, Endowment effect, optimism, Self-control bias, Illusion of control bias, Regret aversion bias, Loss aversion bias, Availability bias, Conservatism bias, and ambiguity aversion bias) while there is a negative statistical significant relation at (0.05) between Mental accounting bias and Banking credit decisions. Pearson Correlation is (-0.141) and the significant value is (0. 000) which is less than (0.05).

Based on the results of the First key study hypotheses, the results of the sub-hypotheses can be interpreted as follows:

4.7.1.2.1.1 Results related to the first sub-hypotheses study hypotheses

H2: There is a significant positive relationship between cognitive biases and banking credit decisions.

As shown in Table 23, there is a strong, positive, statistically significant relation at (0.01) between level behavioral biases and banking credit decisionsfrom the perspective of Palestinian credit officers in Palestinian banks. Pearson Correlation is (0.490), and the significant value is (0. 000), which is less than (0.05).

There are positive statistically significant relations between (Overconfidence and Self-Attribution, Representativeness, Anchoring, Illusion of control bias, Availability bias, Conservatism bias, and ambiguity aversion bias), while there is a negative statistically significant

relation at (0.05) between Mental accounting bias and Banking credit decisions. Pearson Correlation is (-0.141), and the significant value is (0. 000), which is less than (0.05).

As for the Overconfidence and Self-Attribution bias is with Pearson Correlation is (0.444) and the significant value is (0. 000). Representativeness with Pearson Correlation is (0.274) and the significant value is (0. 000). Anchoring with Pearson Correlation is (0.397) and the significant value is (0. 000). Illusion of control bias with Pearson Correlation is (0.360) and the significant value is (0. 000). Availability bias with Pearson Correlation is (0.457) and the significant value is (0. 000). Conservatism with Pearson Correlation is (0.378) and the significant value is (0. 000). ambiguity aversion bias with Pearson Correlation is (0.521), and the significant value is (0. 000)

Therefore, there is a significant positive relationship between cognitive biases (**Overconfidence andSelf-Attribution, Representativeness, Anchoring, Illusion of control bias, Availability bias, Conservatism bias, and ambiguity aversion bias)**and banking credit decisions.

4.7.1.2.1.2 Results related to the second sub-hypotheses study hypotheses

H3: There is a significant positive relationship between emotional biases and banking credit decisions.

Likewise, there are positive statistically significant relations between (Endowment effect, optimism, Self-control bias, Regret aversion bias, Loss aversion bias) and Banking credit decisions.

Endowment effect: Pearson Correlation is (0.323) and the significant value is (0. 000). The Optimism bias: Pearson Correlation is (0.161) and the significant value is (0. 000). The Self-control bias with Pearson Correlation is (0.352) and the significant value is (0. 000). Regret aversionbias with Pearson Correlation is (0.245) and the significant value is (0. 000). And Loss aversion bias with Pearson Correlation is (0.438) and the significant value is (0. 000).

Therefore, there is a significant positive relationship between emotional biases **(Endowment effect, optimism, Self-control bias, Regret aversion bias, Loss aversion bias)** and banking credit decision.

4.7.1.2.2 Results related to the Second study hypotheses

There are significant differences at (α≤ 0.05) in the perspectives of Palestinian credit officers in Palestinian banks on the behavioral biases due to(gender, age, educational level, job title, and years of experience.

To analyze the second study's hypotheses, Univariate Analysis of Variance (ANOVA) was used, and the following tables show the results:

Table 4.25: Statistical description of the Study Sample

Variable	Category	N	Mean	Standard Deviation
Gender	Male	160	3.61	0.30
	Female	102	3.32	0.36
	Total	262	3.50	0.35
Age	20-30 Years	91	3.43	0.33
	31-40 Years	97	3.51	0.39
	41- 50 Years	49	3.65	0.27
	More than 51 Years	25	3.42	0.34
	Total	262	3.50	0.35
Educational level	B.A	236	3.510	0.35
	M.A	26	3.44	0.35
	Total	262	3.50	0.35

Job title	Credit Analyst	30	3.58	0.30
	Credit Facility Officer	146	3.49	0.38
	Credit manager	30	3.47	0.41
	Branch Manager	56	3.49	0.26
	Total	262	3.50	0.35
Experience	5 and less	81	3.39	0.31
	6-10	46	3.54	0.35
	11-15	69	3.57	0.41
	16 and more	66	3.53	0.33
	Total	262	3.50	0.35

Table 4.25 shows that there are differences in the means of the perspectives of Palestinian credit officers in Palestinian banks on the behavioral biases due to (gender, age, educational level, job title, and years of experience. Univariate Analysis of Variance (ANOVA) was used to show these differences, and the following table shows the results:

Table 4.26: Univariate Analysis of Variance (ANOVA) for the perspectives of Palestinian credit officers in Palestinian banks on the behavioural biases due to(gender, age, educational level, job title, and years of experience

Study sample Variables	Type III Sum of Squares	df	Mean Square	F	Sig.*
Gender	1.018	1	1.018	10.990	0.001*
Age	0.675	3	0.225	2.429	0.066
Education	0.031	1	0.031	0.333	0.565
Job title	0.081	3	0.027	0.292	0.831
Experience	0.893	3	0.298	3.213	0.024*

*The mean difference is Significant at the $\alpha \leq 0.05$ level

Table 4.26 shows no statistically significant differences at $\alpha \leq 0.05$ in the perspectives of Palestinian credit officers in Palestinian banks on the behavioral biases due to (age, educational level, and job title). The significant values were (0066, 0.565, and 0.831) respectively, which are more than 0.05.

On the other hand, there are statistically significant differences at $\alpha \leq 0.05$ in the perspectives of Palestinian credit officers in Palestinian banks on the behavioral biases due to (gender and years of experience). The significant values were (0.001and 0.024)respectively, which are less than 0.05. These gender differences are for males due to the mean of (3.61), while the mean of females is (3.32).

In order to know the differences in experience, a post hoc test was used, and the following table shows the results.

Table 4.27 Post hoc Test for comparative comparison (LSD) for perspectives of Palestinian credit officers in Palestinian banks on the behavioral attributed to the variable of experience

Level	5 and less	6-10	11-15	16 and more
5 and less	____	-0.1477*	-0.1753*	-0.1412*
6-10	____	____	-0.0276	0.0065
11-15	____	____	____	0.0341
16 and more	____	____	____	____

*The mean difference is Significant at the $\alpha \leq 0.05$ level

Table 4.27 shows that there are differences between levels of (5 and less) and levels of (6-10, 11-15, and 16 and more**)** in favor of levels of (6-10, 11-15, and 16 and more).

4.7.1.2.3 Results related to the Third study hypotheses

There are significant differences at (α≤ 0.05) in the perspectives of Palestinian credit officers in Palestinian banks on the bank credit decisions due to (gender, age, educational level, job title, and years of experience.

To analyze the third study's hypotheses, Univariate Analysis of Variance (ANOVA) was used, and the following tables show the results:

Table 4.28: Statistical description of the Study Sample

Variable	Category	N	Mean	Standard Deviation
Gender	Male	160	4.11	0.52
	Female	102	3.82	0.59
	Total	262	4.00	0.56
Age	20-30 Years	91	3.81	0.59
	31-40 Years	97	4.05	0.51
	41- 50 Years	49	4.25	0.54
	More than 51 Years	25	3.99	0.53
	Total	262	4.00	0.56
Educational level	B.A	236	4.00	0.56
	M.A	26	4.00	0.63
	Total	262	4.00	0.56
Job title	Credit Analyst	30	3.94	0.60
	Credit Facility Officer	146	3.93	0.59

	Credit manager	30	4.06	0.52
	Branch Manager	56	4.16	0.47
	Total	262	4.00	0.56
Experience	5 and less	30	3.94	0.60
	6-10	146	3.93	0.59
	11-15	30	4.06	0.52
	16 and more	56	4.16	0.47
	Total	262	4.00	0.56

Table 4.28 shows that there are differences in the means of the perspectives of Palestinian credit officers in Palestinian banks on the bank credit decisions due to gender, age, educational level, job title, and years of experience. Univariate Analysis of Variance (ANOVA) was used to show these differences, and the following table shows the results:

Table 4.29: Univariate Analysis of Variance (ANOVA) for the perspectives of Palestinian credit officers in Palestinian banks on the bank credit decisions due to (gender, age, educational level, job title, and years of experience

Study sample Variables	Type III Sum of Squares	df	Mean Square	F	Sig.*
Gender	1.308	1	1.308	5.964	0.015*
Age	4.437	3	1.479	6.742	0.000*
Education	0.005	1	0.005	0.021	0.885
Job title	4.519	3	1.506	6.868	0.000*
Experience	1.263	3	0.421	1.919	0.128

*The mean difference is Significant at the $\alpha \leq 0.05$ level

Table 4.29 shows **no** statistically significant differences at $\alpha \leq 0.05$ in the perspectives of Palestinian credit officers in Palestinian banks on the ***bank credit decisions*** due to **Education**

and **experience**. The significant values were (0.885and 0.128) respectively, which are more than 0.05.

On the other hand, there are statistically significant differences at $\alpha \leq 0.05$ in the perspectives of Palestinian credit officers in Palestinian banks on the *bank credit decisions* due **to (gender, age, and job title).** The significant values were (0.015, 0.000, and 0.000) respectively, which are less than 0.05. These gender differences are for males due to the mean of (4.11), while the mean of females is (3.82).

In order to know the differences in age and job title, a post hoc test was used, and the following tables show the results.

Table 4.30 Post hoc Test for comparative comparison (LSD) for perspectives of Palestinian credit officers in Palestinian banks on the bank credit decisions attributed to the variable of age

Level	20-30 Years	31-40 Years	41- 50 Years	More than 51 Years
20-30 Years	____	-0.2404*	-0.4440*	-0.1788
31-40 Years	____	____	0.2404	0.0616
41- 50 Years	____	____	____	0.2651
More than 51 Years	____	____	____	____

*The mean difference is Significant at the $\alpha \leq 0.05$ level

Table 4.30 shows that there are differences between the levels of (20-30 Years) and the levels of (31-40 Years and 41- 50 Years) in favor of the levels of (31-40 Years and 41- 50 Years).

Table 4.31 Post hoc Test for comparative comparison (LSD) for perspectives of Palestinian credit officers in Palestinian banks on the bank credit decisions attributed to the variable of job title

Level	Credit Analyst	Credit Facility Officer	Credit manager	Branch Manager
Credit Analyst	____	0.0097	-0.1200	-0.2212*
Credit Facility Officer	____	____	0.1297	-0.2309*
Credit manager	____	____	____	-0.1012
Branch Manager	____	____	____	____

*The mean difference is Significant at the $\alpha \leq 0.05$ level

Table 4.31 shows that there are differences between the level of (Branch Manager) and levels of (Credit Analyst and Credit Facility Officer) in favor of level of (Branch Manager).

Chapter 5: Results Discussion and Recommendations

Based on the literature and previous studies, and within the Palestinian context, the results of this study were interpreted. This chapter presents the discussion of results of the results of the study sample's responses to the distributed questionnaire. Additionally, some recommendations and propositions based on the findings are provided.

This study aims to achieve the following objectives: to investigate the dynamics that influence banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks, to identify strategies to manage and overcome these dynamics, and to mitigate their effects in order to improve the quality and effectiveness of banking credit decisions.

The study employs a quantitative research approach to assess the prevalence of these issues within the population. It utilizes secondary data, including academic books and previous research, and primary data collected through a survey questionnaire. The population of this study consists of all credit officers, credit managers, credit analysts, and branch managers working in the Palestinian commercial banks. This study uses a Likert Ordinal Scale to assess the attitudes under examination.

5.1Results Discussion

5.1.1 Results discussion of the First Question.

The first question of the study states: “Is there a significant positive relationship between behavioral biases and banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks?”

The results showed that there is a significant positive relationship between behavioral biases and banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks. In particular, the biases of Overconfidence andSelf-Attribution, Anchoring and adjusting, Illusion of control bias, Availability bias, and

Conservatism bias were found to influence credit decisions. This finding aligns with the study's objective to identify and analyze the dynamics that affect banking credit decisions from the perspective of Palestinian credit officers. Among these biases, the study sample was most affected by overconfidence and self-Attribution, followed by anchoring, conservatism bias, availability bias, and illusion of control bias, respectively.

These findings show that the Palestinian credit officers' decisions are influenced by behavioral biases, which are characterized by irrationality rather than a fully logical and systematic decision-making process. This contradicts the traditional theories that individuals are rational decision-makers and make decisions through a scientifically grounded decision-making process.

These results are consistent with previous research. For example, Kádár et al, (2023) confirmed the effect of behavioral biases on the decision-making processes of credit officers and risk analysts in corporate lending, including biases such as risk aversion, overconfidence, overoptimism, and representativeness. Similarly, Madaan & Singh (2019) highlighted the irrationality of the investment decision-making process, showing that overconfidence and herding significantly influence investment decisions.

Furthermore, these findings align with Suntheim &Sironi (2012), who provide evidence that behavioral biases among bank CEOs can impact bank performance and financial system stability. Lunn (2013) also confirmed that behavioral biases in decision-making contributed to the development and severity of Ireland's banking crisis. Additionally, Nilsson &Öhman (2012) found that in a risk-averse banking context, lending officers may evaluate SME loan applications defensively.

These results can also address the second and third research questions of the study.

5.1.2 Results Discussion of the Second Question.

The Second Question states: "Do cognitive biases have a significant positive influence on banking credit decision-making from the perspective of Palestinian credit officers in Palestinian banks?"

The results showed that cognitive biases, including Overconfidence andSelf-Attribution, Anchoring and adjusting bias, Illusion of control bias, Availability bias, and Conservatism bias, have a significant positive influence on banking credit decision-making from the perspective of Palestinian credit officers in Palestinian banks. Conversely, cognitive biases such as Representativeness, Mental accounting bias, and ambiguity aversion bias did not affect the credit decision-making, as their statistical significance levels were greater than 0.05.

These findings are consistent with Mardjono et al., (2025), who showed that CEO overconfidence significantly influences risk management practices in digital banks, particularly in areas of moral hazard and adverse selection. Similarly, the results align with Iqbal (2019), whose findings, based on attribution theory, indicate that management tends to take credit for promising predictable results while distancing themselves from weaker outcomes.

These results achieve the objective of this study, which is to measure the association between cognitive biases in banking credit decisions from the perspective of Palestinian credit officers in Palestinian banks.

Furthermore, Melenberg (2025) confirmed a relationship between loan officials' overconfidence- proxied by net profit margin-and the institution's credit risk, measured by the portfolio at risk (90 days). Penn & Jude (2024) also confirmed that cognitive biases – such as Prior hypotheses bias, escalating commitment, reasoning by analogy, and illusion of control- significantly affect the credit decisions.

In line with Kádár et al (2023), the decision-making of business-side credit officers and risk analysts and risk analysts is characterized by risk aversion, overconfidence, overoptimism, and representativeness heuristics. Additionally, Adam et al., (2020) found that overconfident executives are more likely to issue rate-increasing performance-sensitive debt (PSD) compared to rational managers.

5.1.3 Discussion of the Third Question

The third research question states: “Do emotional biases have a considerable positive influence on banking credit decision-making from the perspective of Palestinian credit officers in Palestinian banks?”

The results showed that emotional biases, including the Endowment effect, optimism, Status quo, Self-control bias, Regret aversionbias, and Loss aversion, had no significant influence on banking credit decision-making from the perspective of Palestinian credit officers. This is because their statistical significance levels were greater than 0.05, as follows: Regret aversionbias: (0.427), Loss aversion bias: (0.090), Endowment effect: (0.185), optimism: (0.864), Status quo: (0.864), Self-control bias: (0.368).

The findings contradict Bacha &Azouzi (2019), who confirmed that emotional bias contributes to cross-sectional heterogeneity in banks' risk-taking behavior. They also contradict Azouzi & Bacha (2023), who found that emotional biases, including optimist and loss-averse, as well as cognitive biases such as overconfident, influence bankers ‘preference for quantitative methods (e.g., scoring) in credit risk evaluation. In case of high emotional cognitive dissonance, biased bankers tend to prefer the qualitative method.

Similarly, Ondolos et al., (2021) identified behavioral factors such as intuition, loss aversion, optimism, and overconfidence as key influencers of decision-making. Souissi et al. (2016) also found that bank CEO’s choices regarding incentive systems for account managers were largely driven by their own assessment and emotional bias, such as optimism and overconfidence, and their perception of potential risk (loss aversion).

5.1.4 Results Discussion of the Fourth Question

The fourth research question states: What is the degree of relevance of behavioral biases in the banking credit decision-making process from the perspective of Palestinian credit officers in Palestinian banks?

The results indicate that the overall perceived relevance of behavioral biases in the credit decision-making process, from the perspectives of Palestinian credit officers, was

3.50, implying a high level of estimation. The highest mean scores were given to the domain of Overconfidence and Self-Attribution, followed by Loss Aversion Bias and Representativeness. The lowest mean was recorded for the Status quo bias.

Most behavioral biases were rated as highly relevant. The standard deviations ranged from 0.43 to 0.82, indicating low to moderate variability and a good level of homogeneity among the samples. This demonstrates that the credit officers' responses were largely consistent regarding the effect of behavioral biases, suggesting a high level of agreement on the study items. The partial differences in responses are satisfactory and align with the statistical standards commonly applied in social science research.

5.1.5 Results discussion of the Fifth Question, which states: "How do demographic characteristics (gender, age, qualifications, experience, and occupation) relate to the behavioral biases?"

To answer this question, two aspects were considered:

1- Whether there are significant differences at ($\alpha \leq 0.05$) in the perspectives of Palestinian credit officers in Palestinian banks on the behavioral biases due to (gender, age, educational level, job title, and years of experience.
2- Whether there are significant differences at ($\alpha \leq 0.05$) in the perspectives of Palestinian credit officers in Palestinian banks on the bank credit decisions due to (gender, age, educational level, job title, and years of experience.

First Point: behavioral biases

The results showed that some demographic characteristics –especially age, educational level, and job title- did not exhibit statistically significant differences ($\alpha \leq 0.05$) in the perspectives of Palestinian credit officers on behavioral biases. In contrast, significant differences were observed with respect to gender and years of experience.

Gender differences: male officers had a higher mean score (3.61), compared to females (3.32),indicating that males tend to observe behavioral biases more clearly and have better acknowledgment and awareness of behavioral biases than females.

Experience differences: differences were found between officers with 5 and less years of experience and those with 6-10, 11-15, and 16 and more, favoring the more experienced groups (6-10, 11-15, and 16 and more). Table 26 demonstrates that significant differences exist only between the least experienced officers and all other experience groups. These differences suggest that more experienced credit officers have more levels of behavioral attributes.

This possibly will be attributed to the fact that more years of experience direct people to depend more on experience and their own insight decisions making, which possibly raises the chances of behavioral prejudices rising.

Second point: Bank Credit Decisions

The results indicated significant differences ($\alpha \leq 0.05$) in the perspectives of Palestinian credit officers regarding bank credit decisions due to gender, age, and job title, while no significant differences were found for Education and experience (with p-values 0.885 and 0.128, respectively).

Gender differences: male officers had a higher mean score (4.11), compared to females (3.82), indicating that males tend to have stronger awareness of credit decisions.

Age differences: differences were observed between officers aged 20-30 and those aged 31-40 and 41- 50, favoring the older groups. This suggests that mature age, often associated with increased professional experience and accumulated knowledge, positively influences the capability to recognize and assess credit decisions objectively.

This may be attributed to the fact that advancing age and professional experience increase dependence on past knowledge, and qualified perception and opinions, which possibly will encourage the appearance of behavioral biases in judgment.

Officers over 51 years showed no significant differences compared to the younger group, indicating that credit perceptions stabilize at certain age levels.

Job title differences: Branch Managers showed that they are more affected by behavioral biases compared to credit analysts and credit facility officers (Table 30). This may be attributed to broader managerial experience, greater responsibilities, direct participation, and connection in Decision-Making processes under work pressure, which may increase their reliance on personal judgment and thus expose them more to behavioral biases through their position.

Several studies support these findings: Farrugia (2024) found that demographic factors (gender, age, employment and marital status, investment experience, and investment size) significantly affected behavioral biases such as anchoring, cognitive dissonance, confirmation, conservatism, framing, herding, home bias, loss aversion, overconfidence, representativeness bias, self-attribution, and self-attribution bias. Specifically, male investors exhibited higher overconfidence, while females demonstrated higher loss aversion and home bias. Younger investors were more prone to self-attribution and anchoring bias, whereas more experienced investors were less susceptible but still exhibited overconfidence. Education had only a limited impact, primarily on anchoring bias.

Bacha &Azouzi (2019) confirmed that gender affects credit decision-making. Optimistic and overconfident female executive bankers tend to be more conservative than male bankers and prefer centralized credit decision-making. Beck et al., (2013) reported that loans managed by female officers were less likely to become problematic, suggesting that females build stronger trust-based relationships with borrowers. Rad et al., (2014) found that female officers placed greater emphasis on collateral when assessing first-time credit requests, though no gender differences were noted for subsequent loans.

Bertrand &Burietz (2023) observed that male, highly experienced loan officers with bachelor's degrees increased loan costs when hard information was crucial. Whereas female officers, with an other-oriented approach, beginners, or those with a master's degree, reduced loan spreads when soft information was important. Carter et al., (2007)

found modest differences in evaluation criteria between male and female officers but highlighted gender as an imperative, often hidden, factor in the lending process.

6 Recommendations

1- The study results showed that behavioral biases affect banking credit decisions. Therefore, the study recommends giving more attention and caution to these biases in the banking sector to improve decision quality and reduce potential losses and costs resulting from poor decisions.

2- Based on the study results, it is recommended to develop customized training programs that explain behavioral biases and train employees on how to minimize their effects. This will help achieve better performance and more successful outcomes.

3- The study also recommends revising the bank's incentives system to account for the impact of behavioral biases, such as loss aversion bias and other factors that may influence officers' performance and goal achievement.

4- Maintain a balance between data-driven analysis and intuitions when making decisions.

5- Encourage officers to make decisions within an appropriate time frame- neither rushing nor delaying- especially in critical situations, while carefully considering all possible outcomes.

6- Examine behavioral biases within the organization itself, as internal biases may differ from one firm to another and can influence employees 'decisions.

7- Focus on items of high relevance but moderate or low clarity to make them easier to understand. Enhancing clarity will support further research and help identify additional behavioral biases that influence credit decisions.

8- Establish decision-making criteria that protect employees from excessive stress while ensuring alignment with the bank's strategic goals. This promotes sound, confident, and unbiased decisions.

9- Regularly review approved decisions to identify weaknesses and factors that influenced outcomes. Use these insights to improve procedures and prevent similar mistakes in the future.

10- Conduct a comprehensive review of incentive structures, promotion policies, hiring practices, and training programs to minimize the impact of behavioral biases on decision-making.
11- Identify and strengthen behavioral tendencies that positively influence decision quality and performance. When properly managed, such biases and tendencies can improve profitability and organizational resilience.
12- Integrate methods to detect, understand, and manage behavioral biases within strategic and risk management frameworks to improve adaptability and competitiveness.

7 **Limitations** :

This study encounters several limitations that may guide future research. First, the respondents were employees working in the credit departments of Palestinian conventional banks. Because the sample represents only one type of bank in a single country, the generalisability of the results is limited. Therefore, conducting similar research in other types of banks- such as Islamic banks- and in other countries would help obtain a more comprehensive understanding of the effect of behavioral biases on credit decision-making.

Another limitation is the sample size. The inability to obtain a larger sample size restricts the generalisability of the results. Future studies are recommended to include larger sample sizes. A third limitation concerns the measurement tools used in the study. The study relied solely on a structured questionnaire. Future studies could complement questionnaires with additional methods, such as in-depth interviews with managers and credit officers.

Finally, this study focuses on cognitive and emotional biases in credit decision-making. Other types of biases –such as herd bias, social bias, present bias, group effect bias, similarity bias, and others- may influence decision making but were not examined in this research. Future research should consider including these additional biases to provide a deeper and more comprehensive view of the effect of behavioral biases on credit decisions.

8 Suggestions

1- Conducting cross-cultural studies across multiple banks to better understand and compare behavioral biases that affect credit-decision-making and profitability.
2- Examine behavioral biases among top management officers, whose decisions have a critical impact on banks' performance.
3- Use diverse research methods- such as interviews with senior executives- to gain deeper insights into banking decisions and develop advanced techniques to assess behavioral biases.
4- Investigate behavioral biases in other areas of the banking industry beyond the credit division.
5- Design and implement strategies to reduce the influence of behavioral biases on decision-making.
6- Extend research to include other financial institutions that significantly affect the economy and financial stability.
7- Collaborate with universities to create reliable, customized tools for measuring and managing behavioral biases within financial organizations.
8- Identify the underlying causes of behavioral biases and apply targeted interventions to mitigate their negative effects on decision-making.

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Appendices

Appendix 1: The Arabic pilot study questionnaire:

عزيزي المستجيب/ عزيزتي المستجيبة:

نشكركم على مشاركتكم في هذه الاستبانة، هي جزء من متطلبات الحصول على درجة الدكتوراه. تهدف هذه الاستبانة إلى قياس أثر التحيزات السلوكية على قرار الائتمان المصرفي لدى موظفي التسهيلات الائتمانية، ومحللي الائتمان، ومديري الفروع في البنوك الفلسطينية. يرجى إعطاؤنا القليل من وقتكم الثمين للإجابة على أسئلة هذا الاستبانة، مع العلم أن جميع المعلومات التي سيتم جمعها سوف تستخدم لأغراض البحث العلمي فقط وسيتم التعامل معها بسرية تامة.

الجزء الأول: المعلومات الديموغرافية:

الرجاء وضع اشارة (√) في المربع المناسب.

1- الجنس:

ذكر	أنثى

2- الفئة العمرية:

20-30	31-40	41-50	50 فأكثر

3- المستوى التعليمي:

بكالوريوس	ماجستير	دكتوراه

4- المُسمَّى الوظيفي

مُحلِّل ائتمان	مُوظف تسهيلات ائتمانية	مُدير ائتمان	مُدير فرع

5- عدد سنوات الخبرة

5 أو اقل	6-10	11-15	16 فأكثر

الجزء الثاني: القسم الأول: التحيزات السلوكية.

نرجو قراءة الفقرات التالية بعناية ووضع إشارة (√) في المربع المناسب.

التحيز السلوكي	الفقرة	واضحة	غير واضحة	تنتمي للموضوع	لا تنتمي للموضوع	ملاحظات
الثقة المفرطة والإسناد الذاتي						
.1	أنا مستعد دائمًا للدفاع عن أفكاري أمام الجمهور.					
.2	مهاراتي في اتخاذ القرارات الائتمانية تفوق بكثير مهارات زملائي الآخرين.					
.3	اعتقد أن مهاراتي ومعرفتي في مجال الائتمان يمكن ان تساعدني على التفوق على السوق.					
.4	أنا موظف خبير في مجال الائتمان.					
.5	عادة لا أحتاج إلى الاستشارة عند اتخاذ قرارات ائتمانية.					
تحيز التمثيل						
.6	أميل إلى ربط الخصائص الجيدة لطلبات الائتمان بشكل مباشر بالخصائص الجيدة لمقدمي الطلبات.					
.7	أتّخذُ قرارات الائتمان بناءً على تقييمي لأداء طلبات ائتمانية سابقة من نوع مشابه.					
.8	استخدم تحليل الاتجاهات لاتخاذ قرار الائتمان.					
.9	أحاول تجنب الموافقة على طلبات الائتمان من الشركات التي لديها تاريخ في تحقيق أرباح ضعيفة.					
.10	إذا قَدّم لي مُتَقَدِّم جديد معلومات دقيقة بِشأن طَلب الائتمان اليوم، فَمِنَ المُرَجَّح أن يَستمر في تقديم معلومات دقيقة مُستقبلًا.					
تحيز الترسيخ						
.11	أحدد مسبقاً سعراً مستهدفاً لقبول أو رفض طلبات الائتمان.					
.12	أعتمد عادةً على خبرتي السابقة في السوق عند اتخاذ قراري الائتماني الجديد.					
.13	عند تقييم طلب الائتمان، أستخدم قيمة الضمان الخاص بطلب الائتمان كنقطة مرجعية في عملية التقييم.					
.14	تساعدني مبالغ الائتمان في الطّلبات المُعتمدة حالياً على التّنبُّؤ بمبالغ					

	الائتمان في الطلبات المستقبلية.					
15.	مِن غير المُرجَّح أن أوافق على طلب ائتمان إذا كانت نسبة فائدته أقل من النسبة التي وافقت عليها في العام الماضي.					
تحيز التنافر الإدراكي						
16.	عندما لا تحقق طلبات الائتمان التي وافقت عليها نتائج جيدة (مثل التخلف عن السداد)، أظلُّ مقتنعاً أنني اتخذت القرار الصحيح.					
17.	ألتزم بالقرارات التي لا أتفق معها بالضرورة، عندما يتخذ أعضاء الفريق الآخرون قرارات مخالفة لرأيي.					
18.	عندما أواجه قرارات ائتمانية متشابهة ولكنها متعارضة ولا يمكن الجمع بينها، أختار الخيار الذي يمكنني تبريره بقوة.					
19.	في حال ظهور معلومات جديدة، لا أغيّر قراري الائتماني الذي كنت قد اتخذتُه مسبقاً.					
20.	أجد الأمر متضارباً عندما لا تتوافق النتائج مع الجهد المبذول.					
تحيز الهبة						
21.	عند تقييم طلب ائتمان سبق لي تقييمه، أقيّمه بناءً على ما يمثله بالنسبة وليس استناداً إلى قيمته السوقية.					
22.	أبقي على طلبات الائتمان التي وافقتُ عليها، رغم النصيحة بإلغائها.					
23.	أنا متردد في نقل طلبات الائتمان التي تعاملت معها حتى لو كانت إلى قسم آخر.					
24.	لديّ متقدمون للحصول على الائتمان تعاملت معهم لفترة طويلة، لذلك أجد صعوبة في التوقف عن الموافقة على طلباتهم.					
25.	أقَدِّر أموال البنك الذي أعمل فيه كَما لو كانت أموالي الخاصة.					
تحيز التأكيد						
26.	أتجاهل المعلومات المتعلقة بقرار الائتمان والتي تتعارض مع معتقداتي.					
27.	عندما لا تسير الأمور على ما يرام في طلب الائتمان المُعتمد بشكل جيد، أبحث عن المعلومات التي تؤكد أنني اتخذت القرار الصحيح.					
28.	لا أغَيِّر رأيي حتى لو بدأت أخسر طلبات الائتمان التي أعتقد أنها ستكون مربحة.					
29.	اشعر بالشكوك عندما تظهر معلومات جديدة أثناء تقييم الائتمان.					
30.	أقدِّر المعلومات الإيجابية أكثر من المعلومات السلبية فيما يتعلق بخيارات طلب الائتمان لدي.					

تحيز الحداثة						
.31	أستند في قراري على أحدث المعلومات التي جمعتها.					
.32	أنا دائمًا أتذكر وأركز على المعلومات السابقة المتعلقة بالسوق المالية.					
.33	أعطي أهمية أكبر للأداء على المدى القصير مقارنة بالأداء على المدى الطويل.					
.34	أتخذ قرارات ائتمانية قصيرة الأجل تنحرف عن خططي الائتمانية.					
.35	أتّخذ قرارات الائتمان بناءً على الأحداث الأخيرة، متوقعًا أن تستمر هذه الأحداث في المستقبل					
تحيز التفاؤل						
.36	أتوقع الأحداث القادمة في حياتي بشكل إيجابي.					
.37	بشكل عام، أشعر بتفاؤل شديد عندما يَتَعيَّن علي اتخاذ قرار بشأن شيء مهم.					
.38	أتوقع دائمًا عوائد جيدة، حتى في ظل الظروف الاقتصادية الصعبة.					
.39	أَخَطط لأن أسهم بإنجازات تبدو أعظم من الإنجازات المتوسطة					
.40	أشعر بالتشاؤم بشأن الوضع الداخلي للبنك.					
تحيز الإدراك المتأخر						
.41	لدي قدرة جيدة على التنبؤ بالنتائج عند اتخاذ قرارات الائتمان.					
.42	لا أتفاجأ بنتائج قراراتي الائتمانية، سواء كانت إيجابية أو سلبية.					
.43	جاءت نتائج طلبات الائتمان التي وافقتُ عليها كما توقعت.					
.44	أعتقد أنني كنت سأحقق عائداً أكبر لو أن بعض طالبي الائتمان قد اختاروا فترات سداد أطول أجلاً.					
.45	كنت سأقتنع لو أنَّ أحدًا أخبرني قبل عدة سنوات أن أزمة مالية ستحدث خلال عام.					
تحيز الوضع الراهن						
.46	نادراً ما أجري تعديلات على طلبات الائتمان التي سبق أن اتخذت قراري بشأنها.					
.47	معظم طلبات الائتمان التي أوافق عليها تقع ضمن نطاق المخاطر المحدد.					
.48	أفضل أن يحصل البنك على عوائد متوسطة من طلبات الائتمان التي وافقت عليها مسبقاً بدلاً من كسب عوائد مرتفعة من طلبات ائتمان					

	جديدة عالية المخاطر.					
49.	قرارات الائتمانية الحالية تشبه إلى حد كبير القرارات التي اتخذتها في الماضي.					
50.	أفكر في تغيير أنواع طلبات الائتمان التي أوافق عليها، لكنني غالبًا لا أغيّرها.					
تحيز ضبط النفس						
51.	أجد صعوبة في التخلص من العادات السيئة.					
52.	أتأثر بسهولة بالتشويش.					
53.	أجد صعوبة في التركيز					
54.	استطيع مقاومة الإغراءات.					
55.	أقوم بالأعمال التي تسعدني في وقتها, لكنني اشعر بالندم لاحقاً.					
56.	أعطي اهتماماً لراحتي عند اتخاذ القرار.					
تحيز وهم السيطرة						
57.	ملاحظتي لطلبات الائتمان الجيدة تجعلني قادراً على التحكم في نتائج الائتمان .					
58.	في سياق العمل، حتى في المواقف التي تنطوي على معلومات غير مؤكدة من البيئة التنظيمية الخارجية، أحافظ على السيطرة على الموقف.					
59.	استطيع أن اجعل طلبات الائتمان التي أوافق عليها ناجحة حتى عندما يفشل زملائي في طلباتهم.					
60.	من غير المرجح أن يؤثر الوضع المضطرب بشكل كبير على السوق الذي يعمل فيه بنكي.					
61.	يولد بعض الناس محظوظين.					
62.	كلما طالت مدة خسارتي، زادت احتمالية فوزي.					
تحيز المحاسبة العقلية						
63.	أميل إلى التعامل مع كل بند من بنود طلب الائتمان بشكل منفصل عن الآخر.					
64.	لا يهمني أداء طلبات الائتمان المعتمدة ككل، بل يهمني عائد كل طلب على حدة.					
65.	أقوم بتقييم غرض طلبات الائتمان بحكمة وأديرها بشكل منفصل.					

.66	أقوم بتصنيف طلبات الائتمان بحسب الاستخدام المخطط لها، مثل الإنفاق الشخصي والتعليم وغيرها.					
.67	أقوم بتصنيف الدخل بناءً على المصدر الذي يأتي منه.					
.68	دائمًا أقارن بين الدخل والمصروفات.					
تحيز النفور من الندم						
.69	أشعر بالندم عندما افقد فرصة الحصول على عوائد جيدة.					
.70	أتجنب الموافقة على طلبات الائتمان المربحة إذا كنت قد تكبدت خسائر في طلبات مماثلة في الماضي.					
.71	قمت بتغيير قراراتي الائتمانية في ضوء القرارات الخاطئة التي اتخذتها في وقت سابق.					
.72	إن الاحتفاظ بائتمانات خاسرة لفترة طويلة هو أكثر إيلاماً من رفض طلبات ائتمانية مربحة مبكراً.					
.73	أصبحتُ أبحث عن المخاطرة لأنني حقّقتُ أرباحًا في الماضي.					
.74	أصبحتُ أتجنب المخاطرة لأنني تكَبَّدتُ خسائر في الماضي.					
تحيز التأطير						
.75	أفضل اتخاذ قرارات الائتمان باستخدام الصور البصرية بدلاً من الاكتفاء بالمعلومات النصية.					
.76	عادةً ما أتخذ قرارات ايجابية بشأن طلبات الائتمان.					
.77	عادةً ما أتخذ قرارات سلبية بشأن طلبات الائتمان.					
تحيز النفور من الخسارة						
.78	أؤمن أن الاحتفاظ بطلبات ائتمانية خاسرة لفترة طويلة أكثر إيلاماً من تفويت فرص منح طلبات ائتمان مربحة سابقاً.					
.79	أحاول عادةً توقّع النتائج السلبية التي قد أن تنتج عن أفعالي.					
.80	عندما يتعلق الأمر بالنظر في منح الائتمان، فإن خسارة رأس المال أهم من العوائد.					
.81	عندما اسمع كلمة مخاطرة في السياق المالي, فان أول ما تبادر في ذهني هو " الخطر".					
.82	عندما أواجه تحديًا، أستسلم لأنني أخاف من الفشل.					
.83	اشعر بالتوتر في عند تقييم عدة طلبات ائتمانية خاسرة بشكل متتالي.					
.84	لن أوافق على المزيد من طلبات الائتمان إذا كان أداء السوق ضعيفاً.					

تحيز التوافر						
.85	أعتقد أن قطاع الائتمان المألوف هو الأكثر أماناً.					
.86	أفضل الموافقة على طلبات الائتمان المقدمة من متقدمين معروفين يحظون بتغطية إعلامية واسعة.					
.87	أفضّل الموافقة على طلبات الائتمان من المتقدمين المحليين بدلاً من المتقدمين الدوليين لِأنَّ المعلومات المتعلقة بالمتقدمين المحليين متاحة بشكل أكبر.					
.88	أفضّل الموافقة على طلبات الائتمان المقدمة من الشركات التي أعرف تاريخها وإدارتها.					
.89	أعطي وزناً أكبر للمعلومات التي من السَّهل تَذَكُّرها أو الحديثة.					
تحيز المحافظ						
.90	عادةً ما أنتظر ردَّ فِعل السوق للتأكد من أهمية المعلومات، ثم أقرر بحذر ما يجب فعله.					
.91	لقد أخذت في الاعتبار المواقف السابقة عند اتخاذ قرارات ائتمانية جديدة.					
.92	أوافق فقط على طلبات الائتمان إذا كانت السوق مناسبة وجذابة.					
.93	عندما أقرر ما إذا كنت سأوافق على طلب ائتمان لمشروع/عمل تجاري جديد، أقوم بمقارنته بطلبات الائتمان التي كان لها عائد مقبول في الماضي، ثم أقرر بشأن طلب الائتمان الجديد.					
.94	أتمسك بالمعلومات القديمة لأن المستقبل غير مُؤكّد.					
تحيز النفور من الغموض						
.95	أوافق على عوائد أعلى في حالة طلبات الائتمان ذات المستويات العالية من المخاطر.					
.96	أفضل طلبات الائتمان ذات العائد المضمون.					
.97	لا أوافق على طلب الائتمان عندما لا أكون متأكدًا تمامًا من العائدات.					
.98	هناك طريقة صحيحة وطريقة خاطئة للقيام بكل شيء تقريباً.					
.99	أشعر بالارتياح عندما يصبح الموقف الغامض واضحًا فجأة.					

الجزء الثاني: القسم الثاني: القرار الائتماني المصرفي.

نرجو قراءة الفقرات التالية بعناية ووضع إشارة (√) في المربع المناسب.

القرار الائتماني	الفقرة	واضحة	غير واضحة	تنتمي للموضوع	لا تنتمي للموضوع	ملاحظات
.100	عندما اتخذ قراراً ائتمانياً، أثق بمشاعري وردود أفعالي الداخلية.					
.101	عندما اتخذ قراراً، من المهم بالنسبة لي أن اشعر أن القرار صائب، أكثر من أن يكون لدي سبب منطقي لاتخاذه.					
.102	أتخذ القرارات بناءً على الحدس.					
.103	اتخذ القرارات بطريقة منطقية ومنهجية.					
.104	عندما اتخذ قراراً, أفكر في خيارات متعددة تتعلق بهدف محدد.					
.105	أُفَضِّلُ أن أجمعَ كلّ المعلومات اللازمة قبل اتخاذ أيّ قرار.					

شكراً لتعاونكم

Appendix 2: The Arabic final questionnaire:

عزيزي المستجيب/ عزيزتي المستجيبة:

نشكركم على مشاركتكم في هذه الاستبانة، هي جزء من متطلبات الحصول على درجة الدكتوراه. تهدف هذه الاستبانة إلى قياس أثر التحيزات السلوكية على قرار الائتمان المصرفي لدى موظفي التسهيلات الائتمانية، ومحللي الائتمان، ومديري الائتمان ومدراء الفروع في البنوك الفلسطينية. يرجى إعطاؤنا القليل من وقتكم الثمين للإجابة على أسئلة هذا الاستبانة، مع العلم أن جميع المعلومات التي سيتم جمعها سوف تستخدم لأغراض البحث العلمي فقط و سيتم التعامل معها بسرية تامة.

الجزء الأول: <u>المعلومات الديموغرافية:</u>

الرجاء وضع اشارة (√) في المربع المناسب.

1- الجنس:

ذكر	أنثى

2- الفئة العمرية:

30-20	40-31	50-41	50 فأكثر

3- المستوى التعليمي:

بكالوريوس	ماجستير	دكتوراه

4- المُسمَّى الوظيفي

مُحلِّل ائتمان	مُوظف تسهيلات ائتمانية	مُدير ائتمان	مُدير فرع

5- عدد سنوات الخبرة

5 أو اقل	10-6	15-11	16 فأكثر

الجزء الثاني: القسم الأول: التحيزات السلوكية.

نرجو قراءة الفقرات التالية بعناية ووضع إشارة (√) في المربع المناسب.

التحيز السلوكي	الفقرة	أوافق بشدة	أوافق	لا اعلم	لا أوافق	لا أوافق بشدة
الثقة المفرطة والإسناد الذاتي						
.1	أنا مستعد دائمًا للدفاع عن أفكاري أمام الجمهور.					
.2	مهاراتي في اتخاذ القرارات الائتمانية تفوق بكثير مهارات زملائي الآخرين.					
.3	اعتقد أن مهاراتي ومعرفتي في مجال الائتمان يمكن ان تساعدني على التفوق على السوق.					
.4	أناموظف خبير في مجال الائتمان.					
.5	عادة لا أحتاج إلى الاستشارة عند اتخاذ قرارات ائتمانية.					
تحيز التمثيل						
.6	أميل إلى ربط الخصائص الجيدة لطلبات الائتمان بشكل مباشر بالخصائص الجيدة لمقدمي الطلبات.					
.7	**أتّخذ قرارات الائتمان بناءً على تقييمي لأداء طلبات ائتمانية سابقة من نوع مشابه.**					
.8	استخدم تحليل الاتجاهات لاتخاذ قرار الائتمان.					
.9	أحاول تجنب الموافقة على طلبات الائتمان من الشركات التي لديها تاريخ في تحقيق أرباح ضعيفة.					
تحيز الترسيخ						
.10	أحدد مسبقاً سعراً مستهدفاً لقبول أو رفض طلبات الائتمان.					
.11	عند تقييم طلب الائتمان، أستخدم قيمة الضمان الخاص بطلب الائتمان كنقطة مرجعية في عملية التقييم.					
.12	**تساعدني مبالغ الائتمان في الطّلبات المُعتمدة حالياً على التّنبُؤ بمبالغ الائتمان في الطلبات المستقبلية.**					
تحيز الهبة						
.13	عند تقييم طلب ائتمان سبق لي تقييمه، أقيّمه بناءً على ما يمثله بالنسبة وليس استناداً إلى قيمته السوقية.					
.14	**أبقي على طلبات الائتمان التي وافقتُ عليها، رغم النصيحة بإلغائها.**					

.15	**لديّ متقدمون للحصول على الائتمان تعاملت معهم لفترة طويلة، لذلك أجد صعوبة في التوقف عن الموافقة على طلباتهم.**					
.16	أَقَدِّر أموال البنك الذي أعمل فيه كَما لو كانت أموالي الخاصة.					
تحيز التفاؤل						
.17	أتوقع الأحداث القادمة في حياتي بشكل إيجابي.					
.18	أتوقع دائمًا عوائد جيدة، حتى في ظل الظروف الاقتصادية الصعبة.					
.19	أخَطط لأن أسهم بإنجازات تبدو أعظم من الإنجازات المتوسطة					
تحيز الإدراك المتأخر						
.20	لدي قدرة جيدة على التنبؤ بالنتائج عند اتخاذ قرارات الائتمان.					
.21	لا أتفاجأ بنتائج قراراتي الائتمانية، سواء كانت إيجابية أو سلبية.					
.22	**جاءت نتائج طلبات الائتمان التي وافقتُ عليها كما توقعت.**					
.23	أعتقد أنني كنت سأحقق عائداً أكبر لو أن بعض طالبي الائتمان قد اختاروا فترات سداد أطول أجلاً.					
تحيز الوضع الراهن						
.24	أفضل أن يحصل البنك على عوائد متوسطة من طلبات الائتمان التي وافقت عليها مسبقاً بدلاً من كسب عوائد مرتفعة من طلبات ائتمان جديدة عالية المخاطر.					
.25	قرارات الائتمانية الحالية تشبه إلى حد كبير القرارات التي اتخذتها في الماضي.					
تحيز ضبط النفس						
.26	أجد صعوبة في التخلص من العادات السيئة.					
.27	أتأثر بسهولة بالتشويش.					
.28	استطيع مقاومة الإغراءات.					
.29	أقوم بالأعمال التي تسعدني في وقتها, لكنني اشعر بالندم لاحقاً.					
تحيز وهم السيطرة						
.30	ملاحظتي لطلبات الائتمان الجيدة تجعلني قادراً على التحكم في نتائج الائتمان .					
.31	في سياق العمل، حتى في المواقف التي تنطوي على معلومات غير مؤكدة من البيئة التنظيمية الخارجية، أحافظ على السيطرة على الموقف.					
.32	استطيع أن اجعل طلبات الائتمان التي أوافق عليها ناجحة حتى عندما يفشل زملائي في طلباتهم.					
تحيز المحاسبة العقلية						
.33	أميل إلى التعامل مع كل بند من بنود طلب الائتمان بشكل منفصل عن الآخر.					

.34	أقوم بتقييم غرض طلبات الائتمان بحكمة وأديرها بشكل منفصل.					
.35	أقوم بتصنيف طلبات الائتمان بحسب الاستخدام المخطط لها، مثل الإنفاق الشخصي والتعليم وغيرها.					
.36	دائمًا أقارن بين الدخل والمصروفات.					
	تحيز النفور من الندم					
.37	أتجنب الموافقة على طلبات الائتمان المربحة إذا كنت قد تكبدت خسائر في طلبات مماثلة في الماضي.					
.38	قمت بتغيير قراراتي الائتمانية في ضوء القرارات الخاطئة التي اتخذتها في وقت سابق.					
.39	أصبحتُ أبحث عن المخاطرة لأنني حقَّقتُ أرباحًا في الماضي.					
.40	أصبحتُ أتجنب المخاطرة لأنني تكَبَّدتُ خسائر في الماضي.					
	تحيز النفور من الخسارة					
.41	عندما اسمع كلمة مخاطرة في السياق المالي, فان أول ما تبادر في ذهني هو " الخطر".					
.42	عندما أواجه تحديًا، أستسلم لأنني أخاف من الفشل.					
.43	اشعر بالتوتر في عند تقييم عدة طلبات ائتمانية خاسرة بشكل متتالي.					
.44	لن أوافق على المزيد من طلبات الائتمان إذا كان أداء السوق ضعيفاً.					
	تحيز التوافر					
.45	أعتقد أن قطاع الائتمان المألوف هو الأكثر أماناً.					
.46	**أفضل الموافقة على طلبات الائتمان المقدمة من متقدمين معروفين يحظون بتغطية إعلامية واسعة.**					
.47	أفضّل الموافقة على طلبات الائتمان من المتقدمين المحليين بدلاً من المتقدمين الدوليين لِأنَّ المعلومات المتعلقة بالمتقدمين المحليين متاحة بشكل أكبر.					
.48	أفضّل الموافقة على طلبات الائتمان المقدمة من الشركات التي أعرف تاريخها وإدارتها.					
	تحيز المحافظ					
.49	عادةً ما أنتظر ردَّ فِعل السوق للتأكد من أهمية المعلومات، ثم أقرر بحذر ما يجب فعله.					
.50	لقد أخذت في الاعتبار المواقف السابقة عند اتخاذ قرارات ائتمانية جديدة.					
.51	أوافق فقط على طلبات الائتمان إذا كانت السوق مناسبة وجذابة.					

.52	عندما أقرر ما إذا كنت سأوافق على طلب ائتمان لمشروع/عمل تجاري جديد، أقوم بمقارنته بطلبات الائتمان التي كان لها عائد مقبول في الماضي، ثم أقرر بشأن طلب الائتمان الجديد.					
.53	أتمسك بالمعلومات القديمة لأن المستقبل غير مُؤكَّد.					
تحيز النفور من الغموض						
.54	أوافق على عوائد أعلى في حالة طلبات الائتمان ذات المستويات العالية من المخاطر.					
.55	أفضل طلبات الائتمان ذات العائد المضمون.					
.56	لا أوافق على طلب الائتمان عندما لا أكون متأكدًا تمامًا من العائدات.					
.57	هناك طريقة صحيحة وطريقة خاطئة للقيام بكل شيء تقريباً.					
.58	أشعر بالارتياح عندما يصبح الموقف الغامض واضحًا فجأة.					

الجزء الثاني: القسم الثاني: القرار الائتماني المصرفي.

نرجو قراءة الفقرات التالية بعناية ووضع إشارة (√) في المربع المناسب.

القرار الائتماني		أوافق بشدة	أوافق	لا اعلم	لا أوافق	لا أوافق بشدة
.59	عندما اتخذ قراراً ائتمانياً،أثق بمشاعري وردود أفعالي الداخلية.					
.60	عندما اتخذ قراراً،من المهم بالنسبة لي أن اشعر أن القرار صائب، أكثر من أن يكون لدي سبب منطقي لاتخاذه.					
.61	اتخذ القرارات بطريقة منطقية ومنهجية.					
.62	عندما اتخذ قراراً, أفكر في خيارات متعددة تتعلق بهدف محدد.					
.63	**أفضِّلُ أن أجمعَ كلّ المعلومات اللازمة قبل اتخاذ أيّ قرار.**					

شكراً لتعاونكم

List of reviewers

The reviewer's name	Specialization
Dr. Zahran Daraghmeh	PhD in Accounting
Dr.SharifMusbah Naser Abukarsh	PhD in Finance
Dr. Nasser Khalil Abdelaziz Saafeen	PhD in Psychology
Dr. Naser Mufrej	PhD in Financial Economics
Dr. Wael Mustafa Fayez Mahmoud	Post Doctorate Fellowship (Psychology Teaching/ Research/ Clinical Observation).

تأثير التحيزات السلوكية على قرار الائتمان المصرفي

اسماء حسن سليم سلمي

أسماء لجنة الإشراف:

د. محمد صالح

د. ناصر عبد الكريم

دكتور سونيل مهشواري

الملخص باللغة العربية

تبحث هذه الدراسة أثر التحيزات السلوكية على قرارات الائتمان المصرفي، مع التركيز على التحيزات المعرفية والعاطفية. تشمل التحيزات المعرفية التي تم فحصها: الثقة المفرطة، والتمثيل، ,والترسيخ والتعديل، والتنافر المعرفي، والتوافر، والإسناد الذاتي، ووهم السيطرة، والمحافظة، وتجنب الغموض، والمحاسبة العقلية، والتأكيد، والإدراك المتأخر، والحداثة، وتحيز التأطير. أما التحيزات العاطفية فتشمل: تحيز التَمَلُّك ، وضبط النفس، والتفاؤل، وتجنب الخسارة، وتجنب الندم، وتحيز الوضع الراهن. تستخدم هذه الدراسة منهجًا بحثيًا كميًا، وتعتمد على بيانات ثانوية من الأدبيات الأكاديمية وبيانات أولية جُمعت من خلال استبيان وُزِّع على موظفي الائتمان، ومحللي الائتمان، ومديري الائتمان، ومديري الفروع في عشرة بنوك تجارية فلسطينية، حيث تم اختيار المشاركين عشوائيًا. تُظهر النتائج أن قرارات الائتمان المصرفي تتأثر بشكل كبير بالثقة المفرطة، والإسناد الذاتي، والترسيخ والتعديل، ووهم السيطرة، والتوافر، والمحافظ، ومؤشر التحيز السلوكي العام، حيث كانت مستويات دلالتها الإحصائية أقل من 0.05. وكان تحيز الإدراك المتأخر هو التحيز المعرفي الوحيد

الذي لم يُظهر أي تأثير، بينما لم تُظهر تحيزات التمثيل، وتأثير التَمَلُّك، والتفاؤل، والوضع الراهن، والتحكم الذاتي، والمحاسبة العقلية، وتجنب الندم، وتجنب الخسارة، وتجنب الغموض أي تأثير يُذكر، حيث كانت مستويات دلالتها الإحصائية أعلى من 0.05. وتوصي الدراسة بإجراء بحوث مستقبلية تتضمن مقارنات بين الثقافات في بيئات مصرفية مختلفة، ودراسة التحيزات السلوكية بين الإدارة العليا، وتوظيف أساليب متنوعة مثل المقابلات التنفيذية لاكتساب رؤى أعمق، وتطوير تقنيات متقدمة لقياس التحيزات السلوكية، واستكشاف التحيزات في أقسام مصرفية أخرى غير الائتمان، وتحديد الأسباب الكامنة وراء هذه التحيزات لتصميم تدخلات مُستهدفة تُحسّن جودة عملية صنع القرار.

الكلمات المفتاحية: فلسطين، الائتمان، الإدراك، العاطفة، التحيز